

THE  
**SINGAPORE**  
RED DATA BOOK

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RED LISTS OF SINGAPORE BIODIVERSITY



# THE SINGAPORE RED DATA BOOK

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## RED LISTS OF SINGAPORE BIODIVERSITY

Editors

G.W.H. Davison

J.W.M. Gan

D. Huang

W.S. Hwang

S.K.Y. Lum

D.C.J. Yeo

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Red Lists of Singapore Biodiversity, Third Edition

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| S. Lai, W.N. Lam, S.M.L. Lee, P.K.F. Leong,       |    |
| J. Leong-Škorničková, D.C.H. Liew, R.C.J. Lim,    |    |
| W.H. Lim, Y.W. Low, H.K. Lua, L. Neo, X.Y. Ng,    |    |
| M.A. Niissalo, A. Phang, M.L. Rodda, W.W. Seah,   |    |
| D.C. Thomas, I.M. Turner, K.M. Wong, S.M. Yaakub, |    |
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## FOREWORD

We have come a long way in discovering more about our natural heritage since the release of the first Singapore Red Data Book in 1994. As we continue our journey towards transforming Singapore into a City in Nature, our commitment remains steadfast in our efforts to safeguard our native biodiversity and integrate nature into our urban landscape, while ensuring a liveable and sustainable environment for everyone.

Today, we enjoy the benefits of living close to nature through our extensive network of parks, park connectors and ecological corridors across Singapore – anchored by our Nature Reserves.

By taking a science-based approach to nature conservation, we continue to enhance and restore natural habitats and enable the long-term survival of our native biodiversity. The National Parks Board (NParks)'s Nature Conservation Master Plan consolidates and intensifies our conservation efforts. Examples include NParks' Species Recovery Programme, which helps rare species that are endemic, native or critically endangered to thrive.

This third edition of the Singapore Red Data Book marks a timely update in our biodiversity knowledge, and guides us in our conservation efforts moving forward. It is the result of 15 years of work, building upon the efforts from earlier editions of the Book. The breadth and depth of coverage of native species in this Book has increased significantly – more than tripled – over the past edition.

This book is made possible only because of the community coming together and working together. To produce this publication, NParks worked with the National University of Singapore's Lee Kong Chian Natural History Museum and the Nature Society Singapore. They represent the partnership of government, academia and civil society that continues from the approach taken for the second edition of the Singapore Red Data Book.

I trust that this book will continue to inform and inspire conservation efforts in Singapore, serving as a useful resource for people to better appreciate and cherish our biodiversity. I believe it will also encourage young Singaporeans with a passion for nature to look into addressing the gaps in our knowledge and find ways to make Singapore the best home for us and the biodiversity that share this island.

To all the editors, scientists and volunteers of the Singapore Red Data Book, thank you for contributing towards Singapore's transformation into a City in Nature, and your tireless efforts in conserving our natural heritage for generations to come.

**DESMOND LEE**

Minister for National Development  
Minister-in-charge of Social Services Integration  
Singapore

## PREAMBLE

The IUCN Red List Categories and Criteria were developed for classifying species at risk of global extinction. Assessments of living species have been performed at the global level and results published in Red Data Books since the early 1960s. In the years thereafter, IUCN recognised that it could be useful to have regional assessments for species at the national and even local levels.

The first Singapore Red Data Book (SRDB) of threatened plants and animal species was compiled by Wee Yeow Chin and Peter K.L. Ng in the early 1990s with the book published in 1994. Inputs were sought and received from a wide variety of professionals who were also dedicated nature lovers. The intent was to highlight biodiversity that was in trouble and at risk of being extirpated so that conservation plans could be drawn up for actions to follow.

The second edition of the SRDB (RDB2) was published 14 years after the first edition – in 2008. The intervening years saw Singapore's landscape change biologically, physically, and politically. New conservation areas were established with the gazettelement of the Labrador Nature Reserve (2001) and the Sungei Buloh Wetland Reserve (2002), while Chek Jawa in Pulau Ubin was administratively protected (2001). The human population of Singapore had increased while land reclamation and development work for urban infrastructure as well as a large increase in building projects meant that there were impacts to natural habitats affecting the populations of many native species.

Fast forward to today, the present third edition of the SRDB (RDB3) is produced by the National Parks Board working together with the National University of Singapore's Lee Kong Chian Natural History Museum and the Nature Society (Singapore), representing the partnership of government, academia and civil society that continues from RDB2. The six members of the editorial team formed in this partnership also constitute the core of the steering committee behind RDB3.

All contributors to the RDB3 project were invited to an inaugural workshop, which was held primarily to provide consistency, so far as it was practically possible, to the application of assessment criteria at the national level and across diverse taxa. The workshop enabled participants contributing to the RDB3 to hear the rationale of the RDB3 project and the call for data and stock take of the biodiversity of Singapore. It also promoted a common understanding among the contributors, enabling them to engage as well as to understand one another's perspectives on various issues.

In this RDB3, the number of taxonomic groups with species assessed has increased significantly over the RDB2, including new assessments of algae, fungi, poriferans (sponges), freshwater aquatic bugs, assassin bugs, marine insects, tanaids and marine fishes - chondrichthyans (sharks and rays). These taxonomic groups have species that are being assessed and assigned a category of threat status for the very first time. In addition to the breadth of coverage across taxa, many taxonomic groups have seen an increase in the depth of coverage. For example, only one ant species was assessed in RDB2, whereas in RDB3, 230 species were assessed. Taxa such as bees, beetles, cnidarians, echinoderms, flies, marine fishes, molluscs, moths, scleractinians, spiders and wasps also saw substantial numbers of species assessed for the first time. This increased the number of species compiled in the RDB3 over the RDB2 from just above 2,900 species to more than 9,400 species.

As editors, we have endeavoured to make a fair compilation of opinions from the contributors who are experts, specialists and authors in their respective fields. We are aware that compilations and categorisations of this nature are never exhaustive or perfect. While significant strides have been made over the past 16 years in both terrestrial and, especially, marine biodiversity, the ecological information on the population sizes and rates of decline that are required to assign the category of threat status using the IUCN threat categories is still patchy for many taxa even for national territories as small as Singapore's.

As such, there are plenty of opportunities for everyone with an interest in biodiversity to contribute to the body of knowledge and understanding that leads to the conservation and management of species, species recovery programmes and, just as importantly, the conservation of habitats and the ecological corridors connecting them in Singapore.

While the contributions to this book are substantial, and for which we hope will help spark an interest and raise awareness among readers that Singapore is home to a multitude of biodiversity, we have also enabled easy and convenient access to the general public to refer to the checklists and Red Lists of the species from the taxonomic groups covered in this book on the NParks biodiversity webpages.

We look forward to the growing use of this edition of the Singapore Red Data Book.

**Geoffrey Davison**  
**James Gan**  
**Huang Danwei**  
**Hwang Wei Song**  
**Shawn Lum**  
**Darren C.J. Yeo**

Singapore  
May 2024

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### CONTRIBUTORS

#### **Editors of The Singapore Red Data Book: Red Lists of Singapore Biodiversity**

G.W.H. Davison, J.W.M. Gan, D. Huang, W.S. Hwang, S.K.Y. Lum, D.C.J. Yeo

#### **Applying the Red List Categories**

G.W.H. Davison

#### **Restoring Singapore's Biodiversity: From a Garden City to a City in Nature – Laws, Policies and Environmental Governance**

L.H. Lye

#### **Algae**

A.C. Lee, J. Fong, Z.T. Yip, R.S.W. Yeo, V. Kwan

## **Flora**

D.J. Middleton, S. Lindsay, B.C. Ho, K.Y. Chong, P. Athen, Bazilah Ibrahim, J. Chen, L.M.J. Chen, L.M. Choo, J.W.M. Gan, S.K. Ganesan, E.M. Gardner, A.Q. Hu, S.L. Koh, H. Kurzweil, S. Lai, W.N. Lam, S.M.L. Lee, P.K.F. Leong, J. Leong-Škorničková, D.C.H. Liew, R.C.J. Lim, W.H. Lim, Y.W. Low, H.K. Lua, L. Neo, X.Y. Ng, M.A. Niissalo, A. Phang, M.L. Rodda, W.W. Seah, D.C. Thomas, I.M. Turner, K.M. Wong, S.M. Yaakub, C.K. Yeo, Y.S. Yeoh

## **Fungi**

A.M.F. Choong, S.M.L. Lee

## **FAUNA : INVERTEBRATES**

### **Porifera – Sponges**

S.C. Lim

### **Cnidaria (non-Scleractinia)**

N.W.L. Yap, R.M. Oh, I. Iesa

### **Cnidaria (Scleractinia) – Stony Corals**

L.C.S. Ng, S.Y.K. Chan, R. C. Poquita-Du, D. Huang

### **Polycladida – Flatworms**

S.J.W. Tong, R.S.L. Ong

### **Marine Annelida – Segmented Worms**

Y-L. Lee, H.P. Ang, C.H. Chuar, Gayathri D/O Sivananthan

### **Mollusca – Molluscs**

S.K. Tan, K.S. Tan

### **Blattodea – Termites and Cockroaches**

M. Foo, R. Choo (assessment dataset)

### **Coleoptera – Beetles**

L.F. Cheong, W.F.A. Jusoh, X.R. Ong, S. Yap

### **Diptera – Flies**

Y. Ang

### **Hemiptera – Freshwater Aquatic Bugs**

A.D. Tran, R. Choo, M.J.J. Chang, W.S. Hwang

### **Hemiptera (Reduviidae) – Assassin Bugs**

W.S. Hwang, R. Choo, H. Yeo

### **Hymenoptera – Bees & Wasps**

Z.W.W. Soh, J.X.Q. Lee, J.S. Ascher

### **Hymenoptera (Formicidae) – Ants**

W.Y. Wang

### **Lepidoptera – Butterflies**

S.K. Khew, H. Tan, Y-K. Tea, A. Soh, J. Soong

**Lepidoptera – Moths**

A. Jain, J. Chua, C.W. Gan

**Odonata – Dragonflies & Damselflies**

R.W.J. Ngiam, M.F.C. Ng

**Orthoptera – Crickets and Katydid**

M.K. Tan

**Phasmida – Stick Insects**

F. Seow-Choen

**Arachnida – Spiders**

D.J. Court, J.K.H. Koh (checklist)

**Miscellaneous Arthropoda and Onychophora**

W.S. Hwang

**Arthropoda – Tanaidacean Crustaceans**

C.K. Chim

**Arthropoda – Freshwater Decapod Crustaceans**

Y. Cai, D.J.J. Ng, L.X. Gan, E.X.P. Toh, D.C.J. Yeo

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J.C.E. Mendoza, B.Y. Lee, P.K.L. Ng, D.C.J. Yeo

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M.J.J. Chang, L. Cheng, A.D. Tran, W.S. Hwang

**Echinodermata – Sea Stars, Feather Stars, Brittle Stars, Sea Cucumbers and Sea Urchins**

I. Iles, D.J.W. Lane, H.P.-S. Wong, T.S. Tay

**FAUNA : VERTEBRATES**

**Freshwater Fishes**

B.W. Low, H.H. Tan, J.T.B. Kwik, Y. Zeng, D.C.J. Yeo

**Marine Fishes**

Z. Jaafar, K.K.P. Lim, J.K.Y. Low

**Amphibians**

N.J. Thomas, I.S. Law, K.K.P. Lim

**Reptiles**

N.J. Thomas, I.S. Law, K.K.P. Lim

**Birds**

D.L. Yong, A. Chia, A. Jain, B.P.Y.-H. Lee, D.Z.W. Li, G.W.H. Davison, G. Lim, G.C. Tan, J. Lee, K.C. Lim, K.S. Lim, M. Nyanasengaran



**Marine Mammals**

S.Z.H. Ng, Z. Jaafar

**Terrestrial Mammals**

N.T-L. Lim, B.P.Y.-H. Lee, R.C.H. Teo, M.A.H. Chua, S.H. Yeo, M.D.Y. Khoo, T.K. Fung

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## AFFILIATIONS OF EDITORS AND CONTRIBUTORS

### EDITORS

#### **Editors of The Singapore Red Data Book: Red Lists of Singapore Biodiversity**

|                |                                                                                                                                                                                                  |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| G.W.H. Davison | National Parks Board, Singapore                                                                                                                                                                  |
| J.W.M. Gan     | National Parks Board, Singapore                                                                                                                                                                  |
| D. Huang       | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore<br><br>Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |
| W.S. Hwang     | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore                                                                                                   |
| S.K.Y. Lum     | Asian School of the Environment,<br>Nanyang Technological University<br><br>Nature Society Singapore                                                                                             |
| D.C.J. Yeo     | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore<br><br>Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |

### CONTRIBUTORS

#### **Applying the Red List Categories**

|                |                                 |
|----------------|---------------------------------|
| G.W.H. Davison | National Parks Board, Singapore |
|----------------|---------------------------------|

#### **Restoring Singapore's Biodiversity: From a Garden City to a City in Nature – Laws, Policies and Environmental Governance**

|          |                                                                                                                                                                                                    |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L.H. Lye | Hon. Advisor & former Director, Asia-Pacific Centre for<br>Environmental Law (APCEL), Faculty of Law,<br>National University of Singapore<br><br>Advisory Council Member, Nature Society Singapore |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**ALGAE**

|            |                                                                                            |
|------------|--------------------------------------------------------------------------------------------|
| A.C. Lee   | Tropical Marine Science Institute,<br>National University of Singapore                     |
| J. Fong    | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |
| Z.T. Yip   | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |
| R.S.W. Yeo | Amakusa Biological Marine Laboratory,<br>Kyushu University, Japan                          |
| V. Kwan    | Centre for Nature-based Climate Solutions,<br>National University of Singapore             |

**FLORA**

|                 |                                                                                 |
|-----------------|---------------------------------------------------------------------------------|
| D.J. Middleton  | National Parks Board, Singapore<br><br>Royal Botanic Garden Edinburgh, Scotland |
| S. Lindsay      | National Parks Board, Singapore<br><br>Royal Botanic Garden Edinburgh, Scotland |
| B.C. Ho         | National Parks Board, Singapore                                                 |
| K.Y. Chong      | National Parks Board, Singapore                                                 |
| P. Athen        | National Parks Board, Singapore                                                 |
| Bazilah Ibrahim | National Parks Board, Singapore                                                 |
| J. Chen         | National Parks Board, Singapore                                                 |
| L.M.J. Chen     | National Parks Board, Singapore                                                 |
| L.M. Choo       | National Parks Board, Singapore                                                 |
| J.W.M. Gan      | National Parks Board, Singapore                                                 |
| S.K. Ganesan    | National Parks Board, Singapore                                                 |
| E.M. Gardner    | Case Western Reserve University,<br>Ohio, United States of America              |
| A.Q. Hu         | National Parks Board, Singapore                                                 |

|                      |                                                                                  |
|----------------------|----------------------------------------------------------------------------------|
| S.L. Koh             | National Parks Board, Singapore                                                  |
| H. Kurzweil          | National Parks Board, Singapore                                                  |
| S. Lai               | National Parks Board, Singapore                                                  |
| W.N. Lam             | Asian School of the Environment,<br>Nanyang Technological University             |
| S.M.L. Lee           | National Parks Board, Singapore                                                  |
| P.K.F. Leong         | National Parks Board, Singapore                                                  |
| J. Leong-Škorničková | National Parks Board, Singapore                                                  |
| D.C.H. Liew          | National Parks Board, Singapore                                                  |
| R.C.J. Lim           | National Parks Board, Singapore                                                  |
| W.H. Lim             | National Parks Board, Singapore                                                  |
| Y.W. Low             | National Parks Board, Singapore                                                  |
| H.K. Lua             | National Parks Board, Singapore                                                  |
| L. Neo               | National Parks Board, Singapore                                                  |
| X.Y. Ng              | National Parks Board, Singapore                                                  |
| M.A. Niissalo        | National Parks Board, Singapore                                                  |
| A. Phang             | National Parks Board, Singapore                                                  |
| M.L. Rodda           | National Parks Board, Singapore                                                  |
| W.W. Seah            | National Parks Board, Singapore                                                  |
| D.C. Thomas          | National Parks Board, Singapore                                                  |
| I.M. Turner          | National Parks Board, Singapore<br><br>Royal Botanic Gardens Kew, United Kingdom |
| K.M. Wong            | National Parks Board, Singapore                                                  |
| S.M. Yaakub          | International Blue Carbon Institute,<br>Conservation International               |
| C.K. Yeo             | National Parks Board, Singapore                                                  |
| Y.S. Yeoh            | National Parks Board, Singapore                                                  |

**FUNGI**

|               |                                                                                            |
|---------------|--------------------------------------------------------------------------------------------|
| A.M.F. Choong | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |
| S.M.L. Lee    | National Parks Board, Singapore                                                            |

**FAUNA : INVERTEBRATES****Porifera – Sponges**

|          |                                                                                            |
|----------|--------------------------------------------------------------------------------------------|
| S.C. Lim | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |
|----------|--------------------------------------------------------------------------------------------|

**Cnidaria (non-Scleractinia)**

|            |                                                                                                |
|------------|------------------------------------------------------------------------------------------------|
| N.W.L. Yap | Tropical Marine Science Institute,<br>National University of Singapore                         |
| R.M. Oh    | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore     |
| I. Iesa    | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |

**Cnidaria (Scleractinia) – Stony Corals**

|                  |                                                                                                                                                                                                  |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L.C.S. Ng        | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore                                                                                                       |
| S.Y.K. Chan      | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore                                                                                                       |
| R. C. Poquita-Du | Senckenberg Biodiversity and Climate Research Centre,<br>Senckenberg Gesellschaft für Naturforschung                                                                                             |
| D. Huang         | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore<br><br>Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |

**Polycladida – Flatworms**

|             |                                                                        |
|-------------|------------------------------------------------------------------------|
| S.J.W. Tong | Tropical Marine Science Institute,<br>National University of Singapore |
| R.S.L. Ong  | Tropical Marine Science Institute,<br>National University of Singapore |

**Marine Annelida – Segmented Worms**

|                          |                                                                        |
|--------------------------|------------------------------------------------------------------------|
| Y-L. Lee                 | Tropical Marine Science Institute,<br>National University of Singapore |
| H.P. Ang                 | Tropical Marine Science Institute,<br>National University of Singapore |
| C.H. Chuar               | Tropical Marine Science Institute,<br>National University of Singapore |
| Gayathri D/O Sivananthan | Tropical Marine Science Institute,<br>National University of Singapore |

**Mollusca – Molluscs**

|          |                                                                                                |
|----------|------------------------------------------------------------------------------------------------|
| S.K. Tan | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| K.S. Tan | Tropical Marine Science Institute,<br>National University of Singapore                         |

**Blattodea – Termites and Cockroaches**

|        |                                                                                                |
|--------|------------------------------------------------------------------------------------------------|
| M. Foo | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
|--------|------------------------------------------------------------------------------------------------|

**Coleoptera – Beetles**

|              |                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------|
| L.F. Cheong  | c/o Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| W.F.A. Jusoh | School of Science, Monash University Malaysia                                                      |
| X.R. Ong     | Tropical Ecology and Entomology Lab,<br>Nanyang Technological University                           |
| S. Yap       | Asian School of the Environment,<br>Nanyang Technological University                               |

**Diptera – Flies**

|        |                                                                                                |
|--------|------------------------------------------------------------------------------------------------|
| Y. Ang | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
|--------|------------------------------------------------------------------------------------------------|

## **Hemiptera – Freshwater Aquatic Bugs**

|              |                                                                                                |
|--------------|------------------------------------------------------------------------------------------------|
| A.D. Tran    | Faculty of Biology, Vietnam National University, Hanoi                                         |
| R. Choo      | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| M.J.J. Chang | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore     |
| W.S. Hwang   | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |

## **Hemiptera (Reduviidae) – Assassin Bugs**

|            |                                                                                                |
|------------|------------------------------------------------------------------------------------------------|
| W.S. Hwang | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| R. Choo    | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| H. Yeo     | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore     |

## **Hymenoptera – Bees and Wasps**

|             |                                                                                            |
|-------------|--------------------------------------------------------------------------------------------|
| Z.W.W. Soh  | National Parks Board, Singapore                                                            |
| J.X.Q. Lee  | No. 2, 2/F, Sai Wang Lane, Sai Kung, N.T., Hong Kong                                       |
| J.S. Ascher | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |

## **Hymenoptera (Formicidae) – Ants**

|           |                                                                                                |
|-----------|------------------------------------------------------------------------------------------------|
| W.Y. Wang | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
|-----------|------------------------------------------------------------------------------------------------|

## **Lepidoptera – Butterflies**

|           |                                                                                                                                                                                                     |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S.K. Khew | c/o Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore<br><br>Butterfly Circle ( <a href="http://www.butterflycircle.com">www.butterflycircle.com</a> ) |
| H. Tan    | Butterfly Circle ( <a href="http://www.butterflycircle.com">www.butterflycircle.com</a> )<br><br><a href="mailto:tan.horace@gmail.com">tan.horace@gmail.com</a>                                     |

Y-K. Tea                      Australian Museum Research Institute, Sydney,  
New South Wales, Australia

                                    School of Life and Environmental Sciences,  
University of Sydney, New South Wales, Australia

A. Soh                         atronox2006@yahoo.com.sg

J. Soong                      jonathan.soongster@gmail.com

### **Lepidoptera – Moths**

A. Jain                         Nature Society Singapore

                                    bioSEA Pte Ltd

J. Chua                       Nature Society Singapore

C.W. Gan                    Nature Society Singapore

### **Odonata – Dragonflies and Damselflies**

R.W.J. Ngiam               yanrobin@hotmail.com

M.F.C. Ng                    thebudak@gmail.com

### **Orthoptera – Crickets and Katydid**

M.K. Tan                     Department of Biological Sciences, Faculty of Science,  
National University of Singapore

### **Phasmida – Stick Insects**

F. Seow-Choen              c/o Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

### **Arachnida – Spiders**

D.J. Court                    c/o Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

J.K.H. Koh                    c/o Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore



**Miscellaneous Arthropoda and Onychophora**

W.S. Hwang                                      Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

**Arthropoda – Tanaidacean Crustaceans**

C.K. Chim                                      Tropical Marine Science Institute,  
National University of Singapore

**Arthropoda – Freshwater Decapod Crustaceans**

Y. Cai                                          National Parks Board, Singapore

D.J.J. Ng                                      National Parks Board, Singapore

L.X. Gan                                      Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

E.X.P. Toh                                    Department of Biological Sciences, Faculty of Science,  
National University of Singapore

D.C.J. Yeo                                    Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

Department of Biological Sciences, Faculty of Science,  
National University of Singapore

**Arthropoda – Horseshoe Crabs and Marine Decapod Crustaceans**

J.C.E. Mendoza                            Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

B.Y. Lee                                      Tropical Marine Science Institute,  
National University of Singapore

P.K.L. Ng                                    Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

Department of Biological Sciences, Faculty of Science,  
National University of Singapore

D.C.J. Yeo                                    Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

Department of Biological Sciences, Faculty of Science,  
National University of Singapore

**Arthropoda – Marine Insects**

|              |                                                                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M.J.J. Chang | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore                                                                                            |
| L. Cheng     | Scripps Institution of Oceanography,<br>University of California, San Diego<br><br>c/o Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| A.D. Tran    | Faculty of Biology, Vietnam National University, Hanoi                                                                                                                                |
| W.S. Hwang   | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore                                                                                        |

**Echinodermata – Sea Stars, Feather Stars, Brittle Stars, Sea Cucumbers and Sea Urchins**

|              |                                                                                                    |
|--------------|----------------------------------------------------------------------------------------------------|
| I. Iesa      | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore     |
| D.J.W. Lane  | c/o Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| H.P.-S. Wong | Tropical Marine Science Institute,<br>National University of Singapore                             |
| T.S. Tay     | Tropical Marine Science Institute,<br>National University of Singapore                             |

**FAUNA : VERTEBRATES****Freshwater Fishes**

|             |                                                                                                |
|-------------|------------------------------------------------------------------------------------------------|
| B.W. Low    | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore     |
| H.H. Tan    | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore |
| J.T.B. Kwik | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore     |
| Y. Zeng     | Asian School of the Environment,<br>Nanyang Technological University                           |

Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

Department of Biological Sciences, Faculty of Science,  
National University of Singapore

## Marine Fishes

Z. Jaafar

Department of Biological Sciences, Faculty of Science,  
National University of Singapore

Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

J.K.Y. Low

National Parks Board, Singapore

K.K.P. Lim

Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

## Amphibians and Reptiles

N.J. Thomas

National Parks Board, Singapore

Herpetological Society of Singapore

I.S. Law

Herpetological Society of Singapore

K.K.P. Lim

Lee Kong Chian Natural History Museum, Faculty of Science,  
National University of Singapore

## Birds

D.L. Yong

BirdLife International

Nature Society Singapore

A. Chia

Nature Society Singapore

A. Jain

BirdLife International

Nature Society Singapore

bioSEA Pte. Ltd

B.P.Y.-H. Lee

Wildlife & Natural Heritage Division, Royal Commission for Al-Ula,  
Kingdom of Saudi Arabia

D.Z.W. Li

National Parks Board, Singapore

G.W.H. Davison

National Parks Board, Singapore

G. Lim

Nature Society Singapore

|                  |                                                                                            |
|------------------|--------------------------------------------------------------------------------------------|
| G.C. Tan         | Nature Society Singapore                                                                   |
| J. Lee           | Mandai Nature, Mandai Wildlife Group                                                       |
| K.C. Lim         | Nature Society Singapore                                                                   |
| K.S. Lim         | Nature Society Singapore                                                                   |
| M. Nyanasengaran | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |

**Marine Mammals**

|           |                                                                                                                                                                                                  |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S.Z.H. Ng | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore                                                                                                       |
| Z. Jaafar | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore<br><br>Department of Biological Sciences, Faculty of Science,<br>National University of Singapore |

**Terrestrial Mammals**

|               |                                                                                                                                                                                  |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N.T-L. Lim    | National Institute of Education,<br>Nanyang Technological University                                                                                                             |
| B.P.Y.-H. Lee | Wildlife & Natural Heritage Division, Royal Commission for Al-Ula,<br>Kingdom of Saudi Arabia                                                                                    |
| R.C.H. Teo    | National Parks Board, Singapore                                                                                                                                                  |
| M.A.H. Chua   | Lee Kong Chian Natural History Museum, Faculty of Science,<br>National University of Singapore                                                                                   |
| S.H. Yeo      | Nature Society Singapore                                                                                                                                                         |
| M.D.Y. Khoo   | National Parks Board, Singapore                                                                                                                                                  |
| T.K. Fung     | Department of Biological Sciences, Faculty of Science,<br>National University of Singapore<br><br>Centre for Nature-based Climate Solutions,<br>National University of Singapore |

# APPLYING THE RED LIST CATEGORIES

G.W.H. DAVISON

## **Rationale for the Red Data Book**

Red Data Books were first begun in 1961 by the International Union for the Conservation of Nature and Natural Resources (IUCN). They were loose-leaf ring binders containing one sheet of paper for each species, considered at global level, and covered only a relatively small number of interesting and charismatic species, mostly birds and mammals. The species included made up the “Red List” of threatened species. Whenever the text on a species was revised, the outdated sheet could be removed and replaced by the new one.

Red Lists have changed dramatically. They are still produced globally, but many nations and even some subnational territories have produced regional and local Red Lists or Red Data Books. The functions have also expanded. Currently, they:

- Help to fulfill and to track performance and commitment to international treaty obligations (e.g. the Convention on Biological Diversity)
- Provide common terms of reference and baseline data on the status of species, of biodiversity as a whole, and information for Singapore’s biodiversity reports (including for planning purposes, environmental impact assessments)
- Highlight taxonomic groups and individual species for conservation action (including habitat recovery, connectivity, species recovery programmes).

## **Background to previous editions**

The first edition of the Singapore Red Data Book was published by the Nature Society Singapore in 1994 and edited by representatives of the society (NSS) and the National University of Singapore (NUS). The categories of threat used then were Extinct (Ex), Endangered (E), Vulnerable (V), Rare (R), and Indeterminate (I). The second edition (RDB2) was published in 2008, with representatives of NSS, NUS and the National Parks Board (NParks). It had greater taxonomic coverage of the flora and fauna and used the revised threat categories then recommended by IUCN and adopted by the global conservation community.

A third edition of the Singapore Red Data Book (RDB3) was required in order to:

- Update information for all potential users;
- Improve taxonomic and species coverage;
- Enhance consultation with a broader pool of expertise;
- Align more closely with the recommended IUCN guidelines for the assessment process; and
- Provide background information relevant to new and amended legislation (see the chapter in this volume).

The basic principles that were applied throughout the Red Data Book revision were:

- That the IUCN criteria apply across all taxonomic groups;
- That assessments are fact based;
- That the precautionary principle should be applied; and
- That the assessments be done according to the best of the groups' current knowledge, recognizing the continuing shifts in status and information.

The individuals and organisations responsible for the Singapore Red Data Book already intended, before RDB2, that it would eventually become an on-line resource. RDB3 now begins that trend with both print and a summarized on-line version.

## Resources

In addition to the Singapore Red Data Book first edition and second edition, useful guiding documents were:

- Bubbs, P.J., Butchart, S.H.M., Collen, B., Dublin, H., Kapos, V., Pollock, C., Stuart, S.N. & Vié, J.-C. 2009. IUCN Red List Index - Guidance for National and Regional Use. IUCN, Gland, Switzerland.
- IUCN Species Survival Commission. 2012a. IUCN Red List Categories and Criteria, Version 3.1. Gland, Switzerland.
- IUCN Species Survival Commission. 2012b. Guidelines for Application of IUCN Red List Criteria at Regional and National Level. Version 4.0. IUCN, Gland, Switzerland. (<http://www.iucnredlist.org/technical-documents/categories-and-criteria>).
- IUCN Standards and Petitions Subcommittee. 2017. Guidelines for Using the IUCN Red List Categories and Criteria. Version 13. Prepared by the Standards and Petitions Subcommittee, IUCN. Gland, Switzerland. Downloadable from <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>

## Steering Committee

A steering committee was formed consisting of representatives of the National Parks Board, Nature Society (Singapore) and the National University of Singapore. On 10th September 2019, the steering committee members held a coordination meeting:

The approach taken for the third edition was articulated. The tripartite group of academia, civil society and government as practiced in the second edition should continue. The steering committee had been formed to drive the project, approve editors and taxonomic leads, manage the process and scientific strategy, define and realise the publication of the Red Data Book. The committee members agreed on the following:

- Adherence to IUCN principles and guidelines as far as is practical in the national context;
- Highlighted the composition of the steering committee and the leads for all taxonomic groups;
- The form of credits and acknowledgements for all parties involved in the work was discussed.

Comments were welcomed on the Species Information Sheet template. Specific comments received include how to calibrate and assess between what is endangered nationally but abundant throughout its range in other countries; this comment also applies especially to invertebrates that have largely disappeared from Singapore but are abundant in

South-east Asia. Other comments included adding additional fields such as a "Justification" field and also the date of "First Record for Singapore", "Number of Digital Records", and "Remarks".

It was agreed to circulate an amended Species Information Sheet to all taxonomic leads for further collaborative comments.

Mention was made of the plant taxonomy groups. The Singapore Herbarium (SING) had largely worked out the species list of higher plants for the forthcoming Flora of Singapore project and was already in the process of assigning status and categories to every species.

Discussion was held on the development of common standards for invertebrates so that there would be consistency in application across taxonomic groups. The taxonomic leads for the various invertebrates were encouraged to coordinate their mutual approach.

As a guideline, the overall approach would include all Singapore native species. All other species that are non-native, naturalised and hybrids would be subject to further scrutiny by the steering committee for consideration. The status of non-breeding migrant and vagrant animal species would rely on their international assessment by IUCN, because criteria such as breeding population size, number of mature individuals, and area of occupancy do not apply in the Singapore national context.

Taxonomic Group Leads were identified, and each leader was invited to form a group to consider the status of every species respectively.

## **Participants' Workshop**

A full day workshop was held on 7th March 2020. There were 65 participants including independent experts and taxonomic specialists, the Group Leads and their group members, and representatives of the National Parks Board, Nature Society (Singapore), National University of Singapore, and Wildlife Reserves Singapore. The expectations of the workshop by participants were:

- Learning from other taxon groups' experiences;
- Addressing instances where there are incomplete data;
- Achieving alignment between taxa and between global/regional/local assessments;
- Understanding and using IUCN criteria properly especially for data deficient taxa, unknown taxa, invertebrates, and small geographic areas;
- Resolving inconsistencies of assessment across taxa;
- Credible information that will help guide policy, development and conservation management plans; and
- Managing the 'Species Information Sheets' that had been prepared as a resource document for participants to use in compiling relevant information for every species.

There was substantial agreement on key issues. All taxonomic group leads were encouraged to commence assessment for their respective taxonomic groups and to complete the assignment of categories and status.

- **Native Species**

All native species were to be assessed while non-native species were to be excluded unless they are of conservation concern but to be placed in a holding section.

- **Residents and Migrants**

We aimed to assess the status of migrants and not vagrants. Vagrants to Singapore already globally assessed by IUCN may be noted in a separate list.

- **Hybridisation**

Natural hybrids were to be assessed (should look for and focus on parent species and assess them) and artificial hybrids were not to be assessed.

- **Nationally Extinct versus Non-Extinct**

Time frame criteria were adopted to determine a threshold for presuming that a species is Nationally Extinct: No records for 30 years for plants, and 50 years for animals with some flexibility based on recent context and justifications.

- **Endemic species**

Assessment should mirror the existing IUCN red list status and an endemic species not yet assessed should have both the national and global IUCN assessments done. Any non-alignment at national and global levels should be followed by coordination with IUCN for a review in change of status.

- **Cryptic species**

Described species to be assessed; and if there is strong evidence to suspect the presence of an undescribed cryptic species, then groups may provide an assessment with thorough justification.

- **Data Deficient**

All taxon leads were advised to attempt a status for all species, other than DD, by relying on historic records and other data. No target was given for the number of taxa that may be listed as DD.

The process was impacted soon after the workshop by the advent of Covid-19 and response measures including transmission 'circuit breakers' when everyone in Singapore was advised to stay at home as much as possible and to avoid public spaces and public gatherings. However, taxon expert groups were able to continue their efforts through emails and the use of other technology in IT, preparing the requisite information in the form of MS Excel™ spreadsheets.





## Red List Criteria and Categories

The criteria used internationally for assessing threat levels include:

- Absolute population size and number of mature (potentially breeding) individuals;
- Rate of decline
- Range size and fragmentation

The categories used in this third edition are shown in Table 1. They follow the categories and definitions used by IUCN, plus one additional category relevant to Singapore (Not Listed).

Table 1. The list of categories used in RDB3 and the criteria applied to each category

|                              | Category                    | Abbreviation | Criteria                                                                                                                                                             |
|------------------------------|-----------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Not Threatened</b>        | Least Concern               | LC           | Not approaching the threat criteria                                                                                                                                  |
|                              | Near Threatened             | NT           | Approaching but not yet reaching the threshold for the threat criteria                                                                                               |
| <b>Threatened</b>            | Vulnerable                  | VU           | There are fewer than 1,000 mature individuals but more than 250 and there may or may not be any other evidence of decline, small range size or fragmentation         |
|                              | Endangered                  | EN           | There are fewer than 250 mature individuals and no other evidence of decline or fragmentation                                                                        |
|                              | Critically Endangered       | CR           | There are fewer than 50 mature individuals OR, if more than 50 but fewer than 250 mature individuals, with some evidence of decline or fragmentation                 |
| <b>Extirpated or Extinct</b> | Presumed Nationally Extinct | NEx          | The species is extinct (extirpated) within Singapore but it still survives outside Singapore                                                                         |
|                              | Globally Extinct            | EX           | The species is extinct all over the world, both in the wild and in cultivation                                                                                       |
| <b>Other Categories</b>      | Data Deficient              | DD           | Species eligible for assessment at the national level but with inadequate information to make an informed assessment                                                 |
|                              | Not Applicable              | NA           | Species that are not eligible for assessment at the national level (mainly introduced taxa and vagrants)                                                             |
|                              | Not Evaluated               | NE           | Species that are possibly eligible for assessment but have not yet been evaluated against the criteria                                                               |
|                              | Not Listed                  | NL           | Species not listed in the records (in the IUCN Global Red List database, or the Singapore RDB1 and RDB2) for whatever reason (e.g., taxonomic uncertainty, synonyms) |

## Scope and Coverage

The entire land area, freshwater system and marine territory of Singapore has been included within the geographical scope.

All species of angiosperms, pteridophytes and bryophytes were included. Most recorded species of algae were included (a significant improvement to previous editions), but information about fungi and lichens is still too fragmentary to make a full species-by-species assessment.

All species of vertebrates were included, whether terrestrial, freshwater or marine. There have been major advances in coverage of invertebrate groups, notably cnidarians, soft and hard corals, polyclads, molluscs, beetles, flies, bees, wasps, ants, moths, dragonflies and damselflies, spiders, and marine insects. In the first and second editions, small selections from these groups had been included as examples. But since 2008 there have been major surveys of national scope (e.g., spiders, and the Comprehensive Marine Biodiversity Survey) as well as in some of Singapore's key nature reserves and natural areas (Nee Soon freshwater swamp forest, Bukit Timah Nature Reserve, Pulau Ubin). These have permitted much improved coverage and assessments of status.

Already in the second edition, taxonomic coverage of horseshoe crabs and marine decapods, butterflies, phasmids and echinoderms were largely complete, and the status of all species has been revised for the third edition.

## Realities in Singapore

The land area of Singapore including all its offshore islands is currently about 735.2 km<sup>2</sup>, and it has increased owing to various land reclamation projects during the past two centuries. For comparison, Rhode Island (the smallest US state) is more than four times bigger and Denmark is 60 times bigger than Singapore. The human population density of about 9,000 individuals per square kilometre, very high in comparison with the global average, reflects the fact that Singapore is a city state with extremely limited hinterland.

Small size and high population density have placed significant constraints on land use. Areas of dense urban development, non-natural soil profiles (e.g. through reclamation, landfill and site preparation following many years of prior agricultural and mixed land use) meant that most natural habitats were modified long before the modern conservation era. Even by the end of the 19th century the extent of primary forest was extremely limited, and very little primary forest has been lost since 1900.

The small size of Singapore has meant that populations of all species of plants and animals, even those occurring as commensals with man, are limited. For even the best-known species in such a small area as Singapore, there is seldom any information about population size, area of occupancy and rates of decline. Like other countries, Singapore has difficulty using the criteria to modify categories at 'regional' or national level. This is primarily because man-made political boundaries are a poor reflection of biological processes and limits.

In spite of that, surprising diversity still remains, with more than 2600 species of native plants. Since the publication of the second edition of the Red Data Book there have even been discoveries of totally new plant species such as *Hanguana rubinea* and a new orchid *Nervilia singaporensis*, as well as numerous rediscoveries of species previously thought to have been extirpated such as the orchid *Pinalia floribunda*. New records of species already known from neighbouring countries include even big trees such as *Dipterocarpus chartaceus*. There have been major changes in populations of conspicuous animals such as the Eurasian wild boar, smooth otter and red junglefowl, also of less conspicuous species such as sambar deer, lesser mouse-deer and Malayan porcupine, and there have undoubtedly been changes in many overlooked species as well.

The concept of Singapore as a Garden City was introduced shortly after national independence in 1965. The result was impressive greenery in the form of roadside treescapes, as well as the conservation of forests within the Central Catchment. The concept then developed further to make Singapore a City in a Garden: the implication was that Singapore had shifted from greenery maintained in a garden that was an adjunct to development, towards a garden with a city embedded in it. That concept has since transitioned into a City in Nature, in which both flora and fauna are recognised and valued as an integral part of everyone's day-to-day life in Singapore.

Singapore has adopted very long-term planning horizons. The Urban Redevelopment Authority leads the formulation of the iterative Concept Plan, relevant many decades into the future, through well defined consultation procedures between government agencies, non-governmental organisations, members of the public, and the private sector. The broad brush approach of the Concept Plan is elaborated within Master Plans that have shorter time horizons. Accompanying plans are prepared for special purposes including the Parks and Waterbodies Plan, which includes designated National Parks, Nature Reserves and Nature Areas.

There has been a succession of Singapore Green Plans (SGP), beginning with the SGP 2012 (covering the years 2002–2012), then SGP 2020 (2012–2020) and the next SGP is in preparation covering the period up to 2030. There is also a Singapore Blue Plan (SBP) covering the marine environment and biodiversity. These plans all rely on consultation with communities and non-governmental organisations.

In addition to the above, government agencies maintain much longer lists of sites requiring consultation on biodiversity and options for requiring environmental impact assessments.

Singapore has a National Biodiversity Strategy and Action Plan (NBSAP) reflecting national policy and commitments under the Convention on Biological Diversity. SGP, SBP and NBSAP are all underpinned by the species listing in the Singapore Red Data Book. A Nature Conservation Masterplan outlines the National Parks Board's plans to coordinate, strengthen and intensify our biodiversity conservation efforts.

The National Parks Board is the principal agency responsible for the conservation of biological diversity in Singapore. Significant changes in scope occurred in 2017 when the former Agri-Food and Veterinary Agency (AVA) was split. The veterinary and animal health functions, wildlife trade and management, and enforcement of wildlife protection under the old Animals and Birds Act and the Wild Animals and Birds Act (now completely revised and re-enacted) were all subsumed under the National Parks Board.

The National Parks Board is responsible for maintenance and management of the two national parks, four nature reserves, more than 400 public parks (some of them termed 'nature parks'), and roadside plantings ('Streetscapes') throughout Singapore. In addition there is a system of Park Connectors for pedestrians and cyclists, connecting parks and public spaces throughout the country, with a Round Island Route that will eventually link them all together.

Some streetscapes have been upgraded to Nature Ways by dense interplanting between tall roadside trees, consisting of both higher and lower vegetation layers, understorey and ground vegetation. These now give emphasis to native plant species (including some on the Red List) that support native wildlife. They have greater biomass, more complex layered structure, and greater plant species diversity than unmodified lines of roadside trees. Nature Ways are intended to benefit the public by providing greater shade, more variety and pleasant surroundings, to facilitate people's movement and access to green spaces especially for pedestrians, and to facilitate the natural spread of animal and plant populations from area to area.

Innovative connectors for wildlife have been created such as the BKE wildlife bridge, and rope connectors for use by arboreal monkeys and squirrels,

## **Species Recovery Programme**

A Species Recovery Programme was introduced in 2015 as part of the Nature Conservation Masterplan. It aims to conserve native flora and fauna by targeting endemic, rare or threatened native species in Singapore through

reintroduction, habitat enhancement and protection efforts. Some species targeted by the programme occur in small populations or in only a few places. The programme thus aims to increase the populations of these species and help them survive adverse environmental changes, together with the help of volunteers including academia and the nature community.

In 2020, NParks announced its aim to have 90 plant and 40 animal species under the programme by 2030. In 2021 the targets were raised to 100 plant and 60 animal species by 2030. These efforts to strengthen the conservation of our endangered and key species will further restore ecological habitats for our wildlife and provide Singaporeans with greater access to biodiversity and a more immersive experience in nature.

Ten species of hard corals were added so as to enhance the resilience of Singapore's reefs, as they are extremely vulnerable to climate change. The coral nubbins of these species will be nurtured in NParks' coral nursery at St John's Island and outplanted onto reef enhancement units off Sisters' Islands Marine Park when ready. Further research and conservation efforts focused on these reef-building hard corals will enhance the resilience of Singapore's reefs and benefit the marine life that inhabit them. In addition, 17 animal species that have ongoing species recovery efforts will be included into the programme. This brings the total number of species under the Species Recovery Programme to 80 plant and 40 animal species, as of September 2023. These include trees, climbers, palms, orchids, gingers, freshwater prawns and crabs, butterflies, amphibians, birds and mammals. All of the targeted species have threatened status in the Singapore Red Data Book.

## **Uses of the Singapore Red Data Book**

All of the steps mentioned above, including the designation of park connectors, nature ways, national parks, nature reserves, corridors for animal and plant dispersal, the Concept Plan, Master Plan and Parks and Waterbodies Plan, the Singapore Green Plans and Blue Plans, the lists of sites for biodiversity consultation and environmental impact assessment, all make reference to the Singapore Red Data Book (first, second, and now third edition) as a fundamental reference when assessing biodiversity values.

The choice of species for the Species Recovery Programme is also guided by the Red Data Book.

Least Cost Pathway analysis has been used to identify appropriate routes for enhancement. Source areas (where species of interest already occur), and potential sites for the spread of these species (where they do not yet occur) are identified, and connecting routes evaluated in terms of distance, cost and ease of creating suitable ecological links that can facilitate movements from patch to patch.

Agent Based Modelling is now being used to analyse animal movements between patches, including the dispersal of their propagules (e.g., coral larval dispersal), and plant colonization and genetic exchange (e.g., mangrove fruit dispersal).

The listing of threat status is of basic importance to environmental impact assessments (EIAs). The EIA processes are able to quantify rarity, the number of species under threat, the types of threat, and their relationship to specific development proposals and project designs. The use of the Red Data Book ensures that consultants are using a common source and that studies are comparable across sites.

Newer conservation techniques include camera trapping, bioacoustics, telemetry, the use of drones, and eDNA (environmental DNA or trace DNA). Their use often depends on the existence of biodiversity databases, intelligent

or interactive intuitive databases, and Artificial Intelligence. For example, ultrasound detection of bats requires specialized (but increasingly affordable) equipment, and also a robust library of definitively identified recordings to be used for comparison. Bioacoustics to detect birds or crickets and grasshoppers requires similarly robust databases, and recordings can be analysed by training computer programmes to identify sound patterns.

## **Tracking Conservation Progress with Biodiversity Databases**

When the IUCN criteria are consistently applied to a wide range of organisms, then changes in the number of species in each category can be used as a tracking system to determine whether we are approaching the target of the Convention on Biological Diversity (CBD): to reduce the rate of loss of the world's biodiversity by the year 2010. Since 1988 or 1994, when the criteria for different groups of organisms underwent their last major amendments, such tracking has been possible at a global scale (Butchart et al. 2004, 2005), at regional scale (Gregory et al. 2005) and at individual country level, for example Switzerland (Keller et al. 2005) and Britain (Eaton et al. 2005).

The relevant organisations in Singapore — principally the National Biodiversity Centre and the Singapore Herbarium under the National Parks Board; the Nature Society Singapore; and the Lee Kong Chian Natural History Museum of the National University of Singapore — are repositories for species information that can be analysed using the IUCN criteria. Enthusiasts also maintain databases on selected groups of their interest, such as seagrasses, molluscs, dragonflies, birds and other vertebrates. Singapore records are also represented on international databases such as eBird. Hence it should be possible to use the IUCN categories as a measurement of Singapore's performance in contributing towards the 2030 target of the CBD, and our performance in the decades beyond.

# RESTORING SINGAPORE'S BIODIVERSITY: From A Garden City To A City In Nature - Laws, Policies And Environmental Governance

LYE LIN HENG

*This chapter provides a short history of Singapore's journey in nature conservation, from the time of its independence in 1965, to the present. It examines the efforts of the National Parks Board (NParks), guided by government policies as expressed in the Singapore Green Plans, and the laws that were passed to protect flora, fauna and the natural environment. It concludes with NParks' Biodiversity Impact Assessment Guidelines; and the aspirations expressed in the Singapore 2030 Green Plan.*

## Introduction

The tiny city-state of Singapore (735.2 km<sup>2</sup>) faces the constant challenge of development versus conservation. Much of its original forest cover was cleared in the early years for gambier, pepper, rubber, and coconut plantations. Mangroves were exploited for firewood, charcoal, and prawn farms. Demands on the land were exacerbated upon independence with the urgent need to urbanise and industrialise. The need for more land made necessary the reclamation of its coastline and islands, which also adversely impacted the marine environment.

Today, more than 95% of the original forest cover has been cleared, and less than 10% of what remains is primary forest.<sup>1</sup> The present forest reserves cover 5% of total land area and harbour over 50% of remaining native biodiversity. Singapore has also lost up to 65% of its live coral cover since 1986,<sup>2</sup> as well as 95% of its mangroves<sup>3</sup> and 85% of its sand and mudflats.<sup>4</sup>

Despite these challenges, Singapore has made concerted efforts to protect and preserve its greenery and has received many accolades for its efforts, the latest being voted the cleanest and greenest city, on 13<sup>th</sup> September 2021.<sup>5</sup> Many native species have adapted successfully to the urban habitat, species of plants and animals new to science continue to be discovered, and some species thought to have been extirpated have had remnant populations rediscovered. It has been a journey of learning, as Singapore moved from merely greening its environment in the most expeditious way, which unwittingly brought in some alien invasive species, to carefully considered efforts to restore habitats and populations of native species.

## From Garden City to City in a Garden

The Garden City was conceived by Singapore's first Prime Minister, Mr. Lee Kuan Yew, as a strategy to woo foreign investors as well as to make the environment more pleasant, particularly to reduce the heat of the tropics.<sup>6</sup> The greening of Singapore as a government policy was declared in Parliament in 1968 when, during the second reading of the Environmental Public Health Bill, the Minister stated, "The improvement in the quality of our urban environment

<sup>1</sup> *The Natural Heritage of Singapore* 3<sup>rd</sup> ed. 2010; Hugh Tan, Chou LM, Darren Yeo, Peter Ng. See also Peter K. L. Ng, Richard Corlett & Hugh T. W. Tan, *Singapore Biodiversity: An Encyclopaedia of the Natural Environment and Sustainable Development*, Editions Didier Millet, 2011.

<sup>2</sup> Ria Tan, "Loss of coastal ecosystems" (December 2019), wildsingapore, online: <[www.wildsingapore.com/wildfacts/concepts/loss.htm](http://www.wildsingapore.com/wildfacts/concepts/loss.htm)>.

<sup>3</sup> Chou Loke Ming, "Nature and Sustainability of the Marine Environment", in Wong Tai-Chee et al, ed, *Spatial planning for a sustainable Singapore* (Berlin: Springer Science & Business, 2008) 169 at 170.

<sup>4</sup> Zeehan Jaafar et al, *The Singapore Blue Plan 2018* (Singapore: The Singapore Institute of Biology, 2018) at 55.

<sup>5</sup> Singapore was voted the cleanest and greenest city in the world, according to Time Out survey (yahoo.com)

<sup>6</sup> See Lee Kuan Yew, *From Third World to First – The Singapore Story: 1965-2000 – Singapore and the Asian Economic Boom* (Harper Collins Publishers: New York, 2000).at 176:

To achieve First World standards in a Third World region, we set out to transform Singapore into a tropical garden city...We planted millions of trees, palms and shrubs. Greening raised the morale of people and gave them pride in their surroundings. We taught them to care for and not vandalize the area. We did not differentiate between middle-class and working-class areas... Within a year, there was a distinct spruceness of public spaces.

See also Lee Sing Kong, "Concept of the Garden City" in Ooi Giok Ling, ed., *Environment and the City: Sharing Singapore's Experience and Future Challenges* (Singapore: Times Academic Press, 1995) at 133; and Lye Lin-Heng, "A Fine City in a Garden – Environmental Law and Governance in Singapore", [2008] Sing JLS 68-117.

and the transformation of Singapore into a garden city – a clean and green city – is the declared objective of the Government.”<sup>7</sup> PM Lee started the first Tree Planting Day in 1967 even before it became fashionable in the developed world. An Annual Tree Planting Day was launched on the first Sunday of November 1971. “In wooing investors, even trees matter”, reaffirmed Lee on 1 August 1996, when the Economic Development Board celebrated its 35<sup>th</sup> Anniversary.<sup>8</sup>

Singapore’s concerted efforts to green the city have been highly successful. In 1998, NParks declared that its mission “has evolved from realising a vision for a Garden City to creating a City in a Garden where the island’s seamless green infrastructure of parks and streetscapes play an essential part of Singaporeans’ lives, homes, workplaces and playgrounds.”<sup>9</sup> Today, Singapore continues to place great emphasis on its greenery. It has strengthened its laws to protect its biodiversity and eco-systems, progressing to “a City in Nature”. This paper provides a quick overview of these laws.

## Nature Conservation Laws

Laws to protect Singapore’s wild flora and fauna were passed over a hundred years ago, starting with the Protection of Wild Birds Ordinance in 1884.<sup>10</sup>

The Wild Animals and Birds Act (WABA) was passed in 1965 and renamed in 2020 as the Wildlife Act (WA) 1965, commencing 31 December 2021. It is ‘An Act for the protection, preservation and management of wildlife for the purposes of maintaining a healthy ecosystem and safeguarding public safety and health, and for related matters.’ This Act and its subsidiary laws used to be administered by the Agri-Food and Veterinary Authority (AVA) but are now administered by the National Parks Board (NParks). It requires NParks to appoint a Director-General, Wildlife Management.

Today, under the Wildlife Act (2020) all wildlife (fauna) are protected in Singapore, with added protection given to highly endangered species. There are also laws protecting trees and other plants. The extent of protection depends on their location as different laws and regulations apply. The greatest protection is for nature reserves and national parks, where breaches of the law will entail a fine of up to S\$50,000 or imprisonment of up to six months, or both fine and imprisonment under the Parks and Trees Act (PTA) 2005. Flora and fauna in public parks are protected to a lesser extent under the same Act. Separate laws protect parks in Sentosa Island, and parks administered by the Jurong Town Corporation (JTC) and the Public Utilities Board (PUB). Lastly, there are laws governing particular areas in Singapore, such as tree conservation areas and a marine park.

### (1) General protection for wildlife in Singapore

The Wildlife Act 2020<sup>11</sup> protects all wild animals in Singapore – defined to include “any mammal, bird, reptile, amphibian, fish or invertebrate”. It is an offence to kill, trap, take or keep any wildlife without written permission from NParks - maximum \$5,000 fine for a first offence and \$10,000 for a subsequent offence (s. 5C). These penalties are enhanced for wildlife listed in the Wildlife (Protected Species) Rules, 2020 – fine \$50,000 or imprisonment for up to 2 years or both fine and imprisonment. These Rules protect 11 categories and species of mammals (including otters,

<sup>7</sup> Mr. Chua Sian Chin, Minister for the Environment, in Sing., *Parliamentary Debates*, vol. 28 at col. 396 (16 December 1968).

<sup>8</sup> See Chan Chin Bock, *Heart Work – Stories of How EDB Steered the Singapore Economy from 1961 to the 21<sup>st</sup> Century* (Singapore: Economic Development Board, 2002);

<sup>9</sup> See NParks, “Singapore, The Garden City – Looking Ahead”, online: [http://www.nparks.gov.sg/gardencity\\_d.asp](http://www.nparks.gov.sg/gardencity_d.asp); see also “City in a Garden Plan” set out for Singapore” *The Straits Times* (11 December 1998); “Look Up, See the Green” *The Straits Times* (24 February 2001); and “Green Piece” *The Straits Times* (5 October 2002). See Mission and History - Who We Are - National Parks Board (NParks) for a history of NParks and a timeline of its evolution and conservation efforts.

<sup>10</sup> See Lye Lin Heng, “Wildlife Protection Laws in Singapore”, (1991) *SJLS* 287–319; Lye Lin Heng, “Legal Protection of the Natural Environment”, *State of the Natural Environment in Singapore*, Clive Briffett and Ho Hua Chew eds., Nature Society, Singapore, June 1999; Joseph Chun, “Wildlife Law in Singapore: Protecting Wildlife in the “Garden City” in *Wildlife Law: A Global Perspective* (ABA Publishing, 2008); Joseph Chun “Enhancing the Garden City: Towards a Deeper Shade of Green” (2006) *Singapore Academy of Law Journal*, Melissa B.N. Tan and Hugh T.W. Tan, *The Laws relating to Biodiversity in Singapore*, Raffles Museum of Biodiversity Research, NUS (2013).

<sup>11</sup> Singapore’s statutory laws can be found on this site - Home - Singapore Statutes Online ([agc.gov.sg](http://agc.gov.sg))

Sunda pangolin, Masked palm civet, Large Indian civet, Sunda slow loris, the Raffles' banded langur, fruit bats and flying foxes); 6 categories and species of birds; 9 categories and species of reptiles; 3 categories of fishes (rays, saw fishes and seahorses) and 8 categories and species of invertebrates (the Common birdwing butterfly, Giant clams and six categories of corals).

However, some wildlife species are not protected. These are listed in the Wildlife (Exemption) Order - 4 species of mammals (rats and mice), 4 species of birds, 5 species of lizards, and all invertebrates other than those that are specially protected under the Wildlife (Protected Species) Rules, 2020.

The Act also prohibits the "intentional" feeding of wildlife without permission from NParks – fine \$5,000 for a first offence, \$10,000 fine for subsequent offences (s. 5A). It is also an offence to release any wildlife "in any place" unless with written approval – fine \$5,000 (s. 5B). It is an offence to set up any spring gun, trap or device for the purpose of hunting or trapping a wild animal, if that device is likely to endanger human life – fine \$20,000 or imprisonment up to 12 months or both fine and imprisonment (s. 7). The sale or export of any wildlife (whether alive or dead) is an offence – fine \$10,000 or 12 months imprisonment or both; but if the animal is a protected species, the fine is \$50,000 or imprisonment up to 2 years or both (s. 8). It is also an offence to import any "living" wildlife without permission – fine \$10,000 or imprisonment up to 12 months or both (s. 9). These penalties are enhanced if the offence is committed in the course of an "animal-related business" (defined in the Act) - fine up to \$20,000 or imprisonment up to 12 months or both (s.5C (3)(b)).

Authorised officers and the police are given wide powers - they may remove wildlife traps on any private property, search, seize and arrest without a warrant (s.11A, 11B, 12). The court has power to order forfeiture of a conveyance seized in the commission of the offence (s.12C-E), and power to authorize repayment of expenses incurred in storage, housing, maintenance, transport, repatriation or disposal of any seized item (s 12F). The court may also direct that any fine or part thereof be paid to the informer as a reward (s.13).

However, section 6 allows the occupier or person in charge of any land to "kill, trap or take any wildlife found damaging or destroying the crops or any other property thereon." This provision should be removed, particularly for protected species of wildlife, as they are extremely precious in urbanised Singapore. If it remains, the law should place the onus on the owner of property that was allegedly damaged by wildlife, to prove that he had taken all reasonable steps to protect his property and prevent any access by wildlife.

## *(2) Enhanced Protection for flora and fauna in Nature Reserves and National Parks*

Singapore has four nature reserves (Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Labrador Nature Reserve and the Sungei Buloh Wetland Reserve)<sup>12</sup> and two national parks (the Singapore Botanic Gardens and Fort Canning Park). All are protected under the Parks and Trees Act (PTA), 2005.<sup>13</sup>

Various activities are prohibited in a national park or nature reserve (s. 9 PTA). It is an offence to capture, displace or feed any animal; disturb or take its nest; use or possess any net, trap or hunting device for its capture, or carry out any activity which may injure or kill any animal. It is also an offence to release any animal into a nature reserve or to allow a domestic animal to stray into a nature reserve. The penalty is a fine up to \$50,000, or imprisonment up to six months or both fine and imprisonment, and a daily fine of \$500. The term 'animal' is given a very wide definition in section 2, to mean 'any mammal (other than man), bird, reptile, amphibian, fish (including shellfish), insect or any other living creature, vertebrate or invertebrate, and includes any egg or young thereof'.

<sup>12</sup> Sungei Buloh and the Bukit Timah Nature Reserve are also ASEAN Heritage Parks, declared on 18 December 2003 and 19 October 2011 respectively. See Joseph Chun, "The Protection of Nature Reserves under the Parks and Trees Act – A Deep Dive," APCEL Working Paper series 1905 (dec 2019).

<sup>13</sup> Act 4 of 2005.



For plants, it is an offence to carry out any activity within any national park or nature reserve which causes alteration, damage or destruction to any property, tree or plant within the park. The same penalties apply. Smoking is prohibited (fine up to \$2,000).<sup>14</sup>

### *(3) Protection of flora and fauna in Public Parks*

A 'public park' is defined under the PTA (section 2) as 'any State land, any land belonging to the NParks or any other land, which is:

- (a) utilised as a public park, marine park, recreation ground, playground, garden, public open space, walk, park connector or green verge; and
- (b) managed or maintained by the Board.

The same prohibitions apply except the penalties are reduced to a maximum fine of \$5,000 (see Parks & Trees Regulations). There are also restrictions on the bringing of animals (other than a pet or guide dog) into a national park or public park or allowing the animal to enter any water body. For plants, it is an offence to cut, collect or displace any tree or plant or clear, break up, dig or cultivate any land. In both cases, the penalty is a maximum fine of \$2,000.

### *(4) Protection of flora and fauna in other parks in Singapore*

Specific laws protect flora and fauna in the parks managed by the Jurong Town Corporation (JTC), Sentosa Development Corporation, and the Public Utilities Board (PUB).

The JTC manages several parks that used to include the Chinese Garden and Japanese Garden (today managed by the National Parks Board as the Jurong Lake Gardens). Various offences are listed under the JTC (Parks) Regulations<sup>15</sup>, particularly Regulation 4 that relate to the protection of animals, fish and waterfowl, birds, reptiles, insects as well as trees and plants. There are also restrictions on the bringing in of dogs and other animals to JTC parks. The maximum fine is \$500 for each offence.

#### Sentosa Development Corporation Parks

The Sentosa Development Corporation Regulations<sup>16</sup> apply to Sentosa Island as well as eleven other smaller islands, namely St John's Island; Kusu Island; Pulau Hantu; Terumbu Retan Laut; Sister's Islands; Pulau Renggit; Lazarus Island; Pulau Seletar; Pulau Sudong; Pulau Jong; and Pulau Biola. Regulation 7 lists various acts that are prohibited on these islands. They are quite similar to the offences under the JTC (Parks) Regulations, including the prohibition on collection of any bird's egg or nest and the removal of any plant or tree. The penalty is a fine of up to \$2,000.<sup>17</sup>

#### Catchment Area Parks (under the Public Utilities Board (PUB))

The Public Utilities (Reservoirs, Catchment Areas and Waterway) Regulations were passed in 2006.<sup>18</sup> "Catchment Area Parks are defined in the First Schedule to include a long list of reservoirs as well as some lakes. The Second Schedule specifies boundaries of the "Central Water Catchment Area", and the Third Schedule relates to parts of the Kallang River as a "waterway".

Regulation 6 lists various prohibited activities in Catchment Area Parks. These are quite similar to JTC and Sentosa Island parks, prohibiting the damage of any flora and the killing, hunting, shooting or trapping of any animal or the doing of any act which causes injury to the fauna. Regulation 7 lists activities that require prior approval – these include

<sup>14</sup> Regulation 23 above.

<sup>15</sup> Rg.2, GN.No. S 285/1988.

<sup>16</sup> Rg.1 GN No.S 454/1997

<sup>17</sup> Regulation 57.

entering or fishing in any reservoir or stream; collecting any bird's egg or nest; releasing any animal or allowing any animal to stray into a catchment area park; or removing or cut any plant, shrub or tree. Additional offences (unless with a permit) include using any part of the Central Water Catchment Area or Catchment Area Park as a location for the shooting of a film or the setting of a play; using live bait for fishing; drawing water from any reservoir or stream; releasing any animal into the waters or feeding marine animals. The penalty is a maximum fine of \$3,000.

## (5) General Protection of Flora

### Tree Conservation Areas

The Parks and Trees (Preservation of Trees) Order 1991, designated two areas of Singapore as tree conservation areas.<sup>19</sup> It is an offence to cut down a tree with a girth that exceeds 1 metre, measured half a metre from the ground, if it is growing on vacant land or in a tree conservation area. Such trees can only be felled with permission of the Commissioner of Parks and Recreation. The penalty is a fine of up to S\$50,000 (s. 13-15 PTA). The PTA also empowers the Commissioner to order any person to maintain or preserve a tree in a tree conservation area.

The Commissioner may protect a large tree or group of large trees (girth of at least one metre) by serving a Tree Conservation Notice, (s. 15, PTA). However, this can be done only if the tree is either in a tree conservation area or is growing on vacant land. This Notice can be revoked at any time. In 2002, a real estate corporation was fined \$8,000 (the maximum fine then was \$10,000) for cutting down the last Changi tree (*Hopea sangal*) in a tree conservation area, taking into account that it was a first-time offender. The company was also ordered to pay S\$76,035 as compensation to the state for loss of the tree.<sup>20</sup>

### Heritage Road Green Buffers

Trees and plants along the verges of roads with mature trees and greenery may be protected, by designation as Heritage Road Green Buffers (s. 16, PTA). Five roads have been so gazetted – they are Mount Pleasant Road, South Buona Vista Road, Lim Chu Kang Road, Arcadia Road, and Mandai Road.<sup>21</sup> It is the duty of the Board to manage and maintain these areas (s. 17). No tree or plant within these buffers can be cut or damaged without the permission of the Board (s. 18). The penalty of a maximum fine of \$50,000 applies.

### Heritage Trees

In 2001, NParks established a Heritage Tree Scheme for the conservation of Singapore's mature trees. The public may nominate these trees via an online Heritage Tree nomination form. The list of nominated trees will be inspected by arborists from NParks before being submitted to the Heritage Tree Panel for approval. The criteria for endorsement of a Heritage Tree include (dependent on species) a girth (trunk circumference) of more than 5 metres and /or botanical, social, historical, cultural and/or aesthetical value. However, it does not appear that trees designated as "Heritage Trees" have legal protection per se. To date, there are some 260 heritage trees, located all over the island, each specifically mentioned in "Singapore's Heritage Trees Register", kept by NParks.<sup>22</sup>

<sup>18</sup> S 401/2006, formerly Public Utilities (Catchment Area Parks) Regulations (S 48/89). Amended by S 235/2010, S 70/2015 and S 155/2018.

<sup>19</sup> The two tree conservation areas are: (1) The area bounded by Dunearn Road, Whitley Road, Mt. Pleasant Road, Thomson Road, Lornie Road, Pan Island Expressway, Clementi Road, Pasir Panjang Road, Telok Blangah Road, Lower Delta Road, Ayer Rajah Expressway, Alexandra Road, River Valley Road, Fort Canning Road and Selegie Road; (2) The area bounded by Netheravon Road, Cranwell Road, Loyang Avenue, Loyang Way, Upper Changi Road North and Changi Village Road.

<sup>20</sup> See Felling of the Chengal Pasir tree | Infopedia (nlb.gov.sg).

<sup>21</sup> Section 15, PTA, Parks and Trees (Heritage Road Green Buffers) Order, 1 June 2006.

<sup>22</sup> <https://www.nparks.gov.sg/gardens-parks-and-nature/heritage-trees>

## Planting Areas and Streetscapes

The PTA enables the Commissioner of Building Control, where building works are being carried out, to require that the area be surrounded by a 'planting area' of certain dimensions (s. 22-27). It is an offence to carry out building works within these planting areas or to interfere with these planting areas (s. 24 - fine \$30,000 and a daily fine of \$500 for a continuing offence). The occupier of the premises has a duty to maintain the planting area (s. 25). The Commissioner is also empowered under s. 27 to require that the occupier of any premises "fronting, adjoining or abutting any public street", plant or replant any tree or plant within the green margin as well as maintain it, and even clear the area of weeds or cut the grass.

### *(6) The Protection of Marine Life and Eco-systems*

Although four coral reefs were identified for conservation under the Singapore Green Plan in 1992, only one marine park exists – the Sisters' Island Marine Park, established in 2014. This is a 40 hectare area around Sisters' Islands and along the western reefs of both St John's Island and Pulau Tekong.<sup>23</sup> In 2017 the definition of a 'public park' under the Parks & Trees Act was amended to include 'land utilised as a marine park'; and "marine park" is defined to mean "any area of the sea or seabed that is set aside for conservation of marine organisms and is designated in Part III of the Schedule."<sup>24</sup>

It would appear that with the 2017 amendment to the PTA, the responsibility for marine conservation and protection of marine parks falls on NParks. Indeed, NParks is assuming increasing responsibility for surveys and data collection on marine life, protection and rehabilitation projects. The Singapore Land Authority (SLA) is responsible for the issuing of licences for removal of the substrate (sand, rock, coral) under the State Lands Encroachment Act (1883), but not for living organisms on the substrate or in the water column.

The Singapore Food Agency is responsible for the Fisheries Act<sup>25</sup> and its regulations. These laws require persons who use fishing gear to obtain a licence. Fishing vessels plying at any port in Singapore also require a licence. The trapping of fish by explosives or poisons, and the use of trawl nets are prohibited. Penalties include a fine of up to \$10,000 and/or imprisonment of up to 12 months. It is an offence to keep dangerous fish such as the piranha, and the penalty is a fine of up to \$50,000 and/or imprisonment up to 12 months.<sup>26</sup>

## **Trade in Endangered Species - CITES**

Singapore acceded to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in 1986 and passed the Endangered Species (Import and Export) Act (ESA) in implementation, in 1989. This was repealed and replaced with a new ESA in 2006<sup>27</sup> and this again was substantially amended in 2022, with effect from 1 November 2022. Each amendment increased penalties and tightened loopholes. NParks is now the authority that enforces the ESA, taking over from the Agri-Food and Veterinary Authority (AVA) which no longer exists as from 2019. NParks has appointed a Director, Wildlife Trade Control to implement the ESA.

CITES has three appendices – Appendix I is a list of animals and plants on the verge of extinction (no trade is allowed except for non-commercial purposes e.g. scientific research); Appendix II lists species which are not now threatened with extinction but may become so unless trade is carefully controlled; Appendix III lists species that need

<sup>23</sup> <https://www.straitstimes.com/singapore/environment/5-things-about-the-sisters-islands-singapores-first-marine-park> (15 July 2014)

<sup>24</sup> Act 4 of 2005, Cap 216, amended by Act 9 of 2017.

<sup>25</sup> Cap. 111, 2002 Rev. Ed. 1st January 1969, Amended by Act 11 of 2019 and Act 2015 of 2019.

<sup>26</sup> Animals and Birds (Piranha) Rules 2019, S 210/19.

special control in specific countries that list them. In all three cases, permits are required from various authorities and monitored by the CITES Secretariat in Geneva, Switzerland.

Singapore's ESA prohibits trade in endangered animals, plants and their by-products, unless with a permit from the National Parks Board. The subsidiary laws prohibit the sale of parts and derivatives of tigers, rhinoceros (horns) and elephants (tusks and teeth). Artificially propagated plants with proper permits may be brought into Singapore. As from 1 November 2022, ivory is prohibited from display except for educational or religious purposes.

Under the ESA, the penalty for trade in Appendix I species is a maximum fine of \$100,000 (up from \$50,000 previously) for each specimen of that scheduled species (but not to exceed \$500,000 or the market value of all the specimens of that species at the time of the offence, whichever is higher) or imprisonment for up to 6 years or both fine and imprisonment. For specimens in Appendix II or III, the maximum fine is \$50,000 for each specimen of that species (but not exceeding \$500,000 or the market value at the time of the offence, whichever is higher) or imprisonment up to 4 years or both fine and imprisonment. This new law makes it clear that the ESA applies to specimens on transit – proper permits must be issued by the country of export at least 14 days before its arrival in Singapore, and by the country of import or the final destination.<sup>28</sup> The same penalties for breach apply.

However, in the case of an offence by a corporation, unincorporated association or partnership, the fines are doubled – for Appendix I species, a maximum fine of \$200,000 for each specimen of that scheduled species (but not exceeding \$1,000,000 or the market value of all the specimens of that species at the time of the offence, whichever is higher), or imprisonment up to 8 years or both; and for Appendix II and III specimens, the maximum fine is \$100,000 for each specimen of that scheduled species (but not to exceed \$1,000,000 or the market value at the time of the offence, whichever is higher) or to imprisonment for a term not exceeding 6 years or both.

Officers from NParks have wide powers of enforcement including powers to investigate and powers of entry, search and seizure. Persons may be arrested without a warrant, and items used in connection with the offence including any conveyance such as vehicles, aircraft or ships or may be seized and forfeited, with some exceptions.

## Protection of Biological Diversity

Singapore signed the Convention on Biological Diversity (CBD) in 1993 and ratified it on 21 December 1995. Many steps have been taken towards implementing this framework Convention. Surveys have been done of the biodiversity resources in Singapore. Under Article 15 (Access to Genetic Resources), States have sovereign rights over their natural resources; and access to genetic resources is to be determined by national laws. NParks has devised an application form which requires all persons conducting taxonomic/ecological research to seek prior written permission from the Board, but only for research on organisms within areas under the control or management of the Board.<sup>29</sup> The form requires the applicant to state the purpose for this research, the methodology (including duration and frequency of intended field survey or schedule of field trips); the logistic and field requirements (equipment, manpower, field survey locations, permanent traps/plots, marking, etc.). It also requests details on the collection of specimens – the applicant is to indicate the type/number/amount/ collection frequency required, specimen collection type (e.g., whether whole plant, animal, or part), the field or locality of research. The application requires a minimum of two weeks' processing time. As for marine species, the application must be made to the Land Office for permission. There does not appear to be any prescribed form.

<sup>27</sup> 2020 Rev. ed.

<sup>28</sup> See PP v Wong Wee Keong, [2019] SGCA 21; Burton Ong, Lye Lin Heng & Joseph Chun, "Regulating International Trade in Endangered Species – Transshipments of CITES-listed Species in Singapore" [2016] SingJLS 277-306.

<sup>29</sup> See Lye Lin-Heng & Rose-Liza Eisma-Osorio, "Regulatory Measures on Access & Benefit Sharing for Biological and Genetic Resources—National & Regional Perspectives from the Philippines, Singapore & ASEAN," chapter 13, Charles M. McManis & Burton Ong (2017) *Routledge Handbook of Biodiversity and the Law*.

The Research Permit devised by NParks contains various conditions. These include the following: (1) the researcher must give prior notice to NParks before he proceeds to the field; (2) he must take into account the delicate ecosystem of the field venue, observing minimum clearance and disturbance to surroundings; and (3) he must keep the team small and not schedule trips during high-peak hours such as during school.

NParks initiated the Cities Biodiversity Index, which was adopted at the Convention on Biodiversity's Conference of the Parties in Nagoya in 2010.<sup>30</sup> The Singapore Index comprises three components;

- (a) Biodiversity in the City,
- (b) Ecosystem Services provided by the Native Biodiversity in the City, and
- (c) Governance and Management of Biodiversity in the City.

In this form, it would function as a monitoring tool.<sup>31</sup> It is being tested now by other cities.

## **Beyond the Garden City to a City in Nature - Land Stewardship**

The Garden City concept has been criticized as being "more successful in 'taming and manicuring' the urban environment with greenery and less so with protecting the ecological integrity of the natural heritage of Singapore."<sup>32</sup> Environmental lawyers have also expressed disquiet that notwithstanding laws to protect wildlife habitats and ecosystems, "these laws are powerless against state encroachment."<sup>33</sup> Examples include the cutting of a 50 meter swathe separating the Bukit Timah Nature Reserve from the Central Catchment Nature Reserve in 1985 and the removal of part of the Kranji Reservoir Marshes in 2004 to make way for Singapore's 20<sup>th</sup> golf course, the Kranji Sanctuary Golf Course. Indeed, a major controversy started in 1992, soon after Singapore shared its 1992 Green Plan at the UNCED meeting in Rio, as this was soon followed by a proposal to take part of the Lower Peirce Reservoir (legally protected as part of a nature reserve) for a golf course. Thereafter came the proposed reclamation of Chek Jawa, a rich inter-tidal eco-system. The Nature Society objected strongly to both these proposed projects, producing its own Environmental Impact Assessment (EIA) as the authorities refused to disclose theirs.<sup>34</sup> Recent controversies include the Cross-Island mass rapid transit line which will cut beneath one of the country's largest nature reserves; the Bukit Brown cemetery, the Mandai Nature project, the Dover Forest and the Clementi Forest.

These issues are exacerbated as Singapore's laws do not provide for mandatory EIAs for projects that may have an adverse impact on the environment. The essence of the EIA is to "Look before you Leap", and it is a very important tool in planning for development projects. The nearest statutory equivalents to the EIA are sections 26 and 36 of the Environmental Protection and Management Act (EPMA<sup>35</sup>), both of which relate to environmental pollution and hazardous installations. They focus only on industries or projects with high polluting capacity, whereas EIAs require a comprehensive, integrated and detailed study of all potential impacts on the environment, including ecological and sociological impacts. It is also a hallmark of EIA laws that they allow public participation and access to information, whereas sections 26 and 36 do not involve any third parties.

Many multilateral environmental instruments have called for states to implement EIAs, including the Rio Declaration on Environment and Development, 1992; the Convention on Biological Diversity (CBD), Agenda 21 (Earth's Action Plan)

<sup>30</sup> <https://www.nparks.gov.sg/biodiversity/urban-biodiversity/the-singapore-index-on-cities-biodiversity>

<sup>31</sup> <https://www.nparks.gov.sg/-/media/nparks-real-content/biodiversity/singapore-index/handbook-on-the-singapore-index-on-cities-biodiversity-cbd-ts98.ashx>

<sup>32</sup> Joseph Chun, "Enhancing the Garden City: Towards a Deeper Shade of Green" (2006) 18 Sing. Ac. LJ. 248 at 250.

<sup>33</sup> See Joseph Chun, "Wildlife Law in Singapore: Protecting Wildlife in the 'Garden City'", chapter 5 pp 201-256 in *Wildlife Law – A Global Perspective*, Raj Panwani, ed. (2008), American Bar Association at p. 213. See also J Chun "The Protection of Nature Reserves under the Parks and Trees Act – A Deep Dive", APCEL working paper 2019.

<sup>34</sup> See Goh Hong Yi, "The Nature Society, Endangered Species and Conservation in Singapore", chapter 8 in *Nature Contained – Environmental Histories of Singapore*, Timothy P Barnard (ed.), NUS Press, 2014, pp 245-275.

<sup>35</sup> Cap. 94A, 2002 Rev. ed; Act

and the 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources.<sup>36</sup> The EIA process is also promoted by the United Nations Environment Program (UNEP).<sup>37</sup>

Today, EIAs continue to be done in Singapore on an ad hoc basis, but increasingly, access to EIAs has been given to non-government organisations such as the Nature Society. It would appear that the authorities and responsible NGOs have started to work at achieving a workable partnership in caring for the environment. Announcements have been made on the Government Gazette informing readers that the EIA report can be viewed.<sup>38</sup> However, as there is no legislation mandating environmental impact studies, there is no system in place for the proper facilitation of such studies. There is no spelling out of the roles of the different parties, the right of the public to be informed and to be allowed to participate in the process of deliberation. This is a glaring inadequacy in our laws.

In 2020, NParks released its *Biodiversity Impact Guidelines*<sup>39</sup>, stating that it is the biodiversity component of a full EIA and that “Development projects that are in or near to sensitive areas such as Nature Reserves, Nature Areas and areas of biodiversity interest, and all coastal and marine development projects, will be subject to greater scrutiny on their impacts to biodiversity.” However, this still falls short of an EIA as it only focuses on the impacts on biodiversity of a proposed development project whereas an EIA examines all the potential impacts of a proposed project including issues relating to pollution and contamination of natural resources as well as social impacts. The Guidelines are also not mandatory as they are not laws.

In February 2021, the government announced its Green Plan 2030, a “whole-of-nation movement” to advance the national agenda on sustainable development.<sup>40</sup> The plan, which is spearheaded by five ministries, charts Singapore’s green targets over the next 10 years, mindful of the challenges of climate change. In the context of nature, it aims to build “A City in Nature” with specific and laudable targets including the addition of new parks, more green spaces, and the planting of one million more trees.

## Conclusion

While Singapore has indeed become the clean and green city state that its first Prime Minister strived for, it can do better. This calls for ethical public land stewardship using the concept of the public trust, wherein the government is viewed as trustee of all publicly-owned lands, for present and future generations of citizens and is under an obligation to give due consideration to ecological concerns and involve the public in its deliberations on land-use.<sup>41</sup> It is essential that Singapore’s laws require the conduct of full EIAs before any development project is allowed to proceed. This is especially critical as climate change is a reality, and decisions on land use must be very carefully considered with the fullest possible information. There is therefore a need for public participation in environmental decision-making, as a true measure of the partnership between the state and the people.

Finally, this chapter calls for environmental education, which should include an understanding of ecology as well as ethics. This should be the way forward, in the spirit of Agenda 21, towards attaining the Sustainable Development Goals (SDGs), with government and citizens as co-stewards of the land for future generations of Singaporeans.<sup>42</sup>

<sup>36</sup> See Article 14 of the ASEAN Agreement; Article 14 of the CBD; and Section III of the Agenda 21.

<sup>37</sup> See <http://www.unep.fr/pc/pc/tools/eia.htm>

<sup>38</sup> See the EIA commissioned by Jurong Town Corporation, relating to the reclamation of Pulau Ular. This appeared in the Government Gazette on 13 July 2006, informing the public that the EIA can be viewed at their office; see online <http://www.egazette.com.sg/Document/gg/2006/065016.pdf> Re the Cross Island MRT line, the Land Transport Authority has released its EIA online. See LTA | Environmental Impact Assessment (Phase 2) Report

<sup>39</sup> [bia-guidelines.pdf](http://bia-guidelines.pdf) (nparks.gov.sg)

<sup>40</sup> Home (greenplan.gov.sg)

<sup>41</sup> See Joseph Chun, “Reclaiming the Public Trust in Singapore”, [2005] SAclJ 717-746; Lye Lin Heng, “Land Law and the Environment - Re-examining the Concept of Ownership and Forging New Rights and Obligations in a Changed World”, (2010) SAclJ 189-229.

<sup>42</sup> For a comprehensive text on Singapore’s environmental laws, see Joseph Chun and Lye Lin Heng, *Environmental Law in Singapore* (2019), Singapore Academy of Law, 759 pp.

# ALGAE

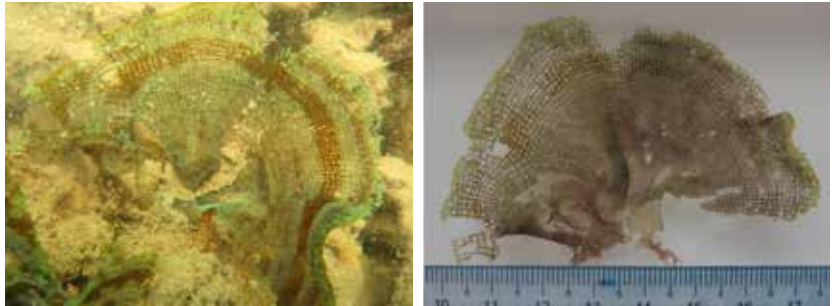
MICHELLE LEE AI CHIN, JENNY FONG, YIP ZHI TING,  
REGINA YEO SHU WEN, VALERIE KWAN

Algae were a taxon not assessed in the 2<sup>nd</sup> edition of the Singapore Red Data Book. For this 3<sup>rd</sup> edition, a total of 1107 species of algae were considered for assessment of which 932 were Not Evaluated (NE), 159 were Data Deficient (DD) and 16 were given a category of threat status of Least Concern (LC). While none of the algae species have been assessed as threatened, there is much work that remains to be done for anyone who is interested to study this fascinating taxon. A brief overview of some of the algae found in Singapore is provided in the following pages in the hope that some readers may choose to take an interest in this taxon with such a large number of species that are as yet awaiting detailed study in Singapore.

**Phylum:**  
**Rhodophyta**

**Family:**  
**Delesseriaceae**

**Genus:**  
***Martensia* K.Hering,**  
**1841**



Left image: field image, Pulau Hantu reef flat 14 Jan 2013; Right image: laboratory image

*Martensia* is a red alga that has thin membranous blades when young, mature thallus becoming net-like in appearance towards the edges. Generally sparsely distributed, most often found in sandy environments.

**Phylum:**  
**Rhodophyta**

**Family:**  
**Rhizophyllidaceae**

**Genus:**  
***Portieria***

**Species:**  
***Portieria hornemannii***  
**(Lyngbye) P.C.Silva 1987**



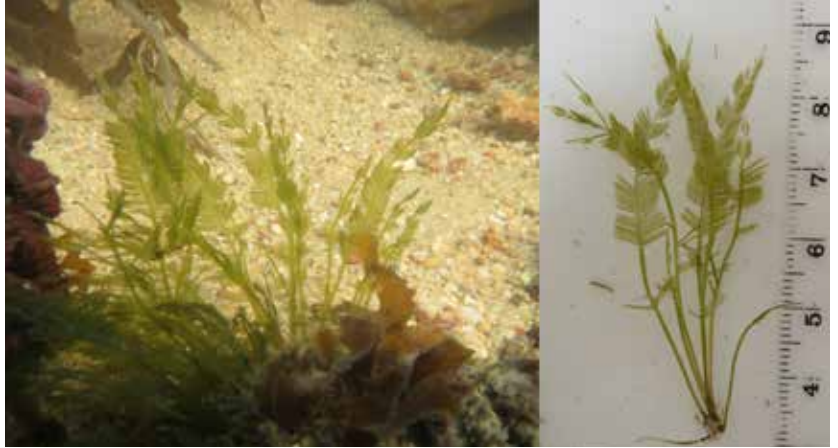
Left image: field photo Pulau Subar Laut, 28 Feb 2012; Right image: close up, scale bar = 5 mm

*Portieria hornemannii* is a small red alga, up to 50 mm tall. It is easily distinguishable by the in-curved tips of the thallus. This red alga is often found in areas of higher wave exposure, particularly on rocks and rubble in subtidal environments.

Phylum:  
Chlorophyta

Family:  
Bryopsidaceae

Genus:  
*Bryopsis* J.V.Lamouroux,  
1809



Left image: field photo, St. John's Island reef flat 12 Jan 2013

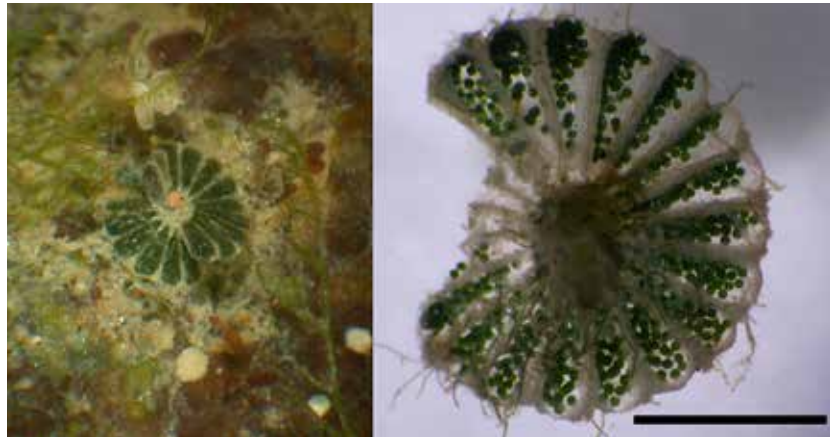
*Bryopsis* is a common green alga with feather-like fronds, growing on hard substratum such as rock, rubble and dead corals. Some species can form large seasonal blooms which persists for several months. Widely distributed in Singapore, found in many different habitats.

Phylum:  
Chlorophyta

Family:  
Polyphysaceae

Genus:  
*Parvocaulis*

Species:  
*Parvocaulis parvulus*  
(Solms-Laubach)  
S.Berger, Fettweiss,  
Gleissberg, Liddle,  
U.Richter, Sawitzky &  
Zuccarello, 2003



Left image: field photo, St. John's Island reef flat 12 Jan 2013; Right image: close up of cap, scale bar = 1 mm

*Parvocaulis parvulus* is a small green alga that is usually less than 2.5mm in diameter, resembling a daisy in appearance, consisting of a cap on a stalk. Often overlooked due to its small size. Can be found growing on rocks and rubble in the intertidal and subtidal.



Phylum:  
Ochrophyta

Family:  
Dictyotaceae

Genus:  
*Padina* Adanson, 1763,  
nom. cons.



Left image: Field photo of *Padina* sp, Pulau Hantu 14 Jan 2013; Right image: Pressed *Padina* sp. algae (herbarium specimen)

*Padina* is a fan-shaped brown alga, commonly found in both intertidal and subtidal environments, growing on rocks and rubble. Found in many areas in Singapore, in low to moderate cover.

Phylum:  
Ochrophyta

Family:  
Dictyotaceae

Genus:  
*Dictyota* J.V.Lamouroux,  
1809



Left image: field photo Pulau Satumu 21-08-2008; Right image: laboratory photo of cleaned algae, scale bar = 5 mm

*Dictyota* is a brown alga that is characterized by flattened blades that are dichotomously branched. Found in many areas in Singapore, in low to moderate cover.

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# FLORA

D.J. MIDDLETON, S. LINDSAY, B.C. HO, K.Y. CHONG, P. ATHEN, BAZILAH IBRAHIM, J. CHEN, L.M.J. CHEN, L.M. CHOO, J.W.M. GAN, S.K. GANESAN, E.M. GARDNER, A.Q. HU, S.L. KOH, H. KURZWEIL, S. LAI, W.N. LAM, S.M.L. LEE, P.K.F. LEONG, J. LEONG-ŠKORNIČKOVÁ, D.C.H. LIEW, R.C.J. LIM, W.H. LIM, Y.W. LOW, H.K. LUA, L. NEO, X.Y. NG, M.A. NIISSALO, A. PHANG, M.L. RODDA, W.W. SEAH, D.C. THOMAS, I.M. TURNER, K.M. WONG, S.M. YAAKUB, C.K. YEO, Y.S. YEOH

Included in this account are the bryophytes (liverworts, mosses and hornworts), lycophytes, ferns, gymnosperms and flowering plants. The classification systems we use here are the same as used in the *Flora of Singapore* (Middleton et al., 2019b) and are explained in more detail there. We do not include the algae and fungi which are classified separately.

The starting point to assess the conservation status of the plants of Singapore is the exploration of Singapore's forest and other habitats, the identification of the species found, and a comprehensive and accurate list of the taxa that occur in the country (Er et al., 2022). The greater the number of collections made in a country, coupled with the resources to properly study those collections, the better the chance that a country's plant diversity has been accurately recorded. Singapore has the highest collection density of any country in Southeast Asia, and possibly in the world (Middleton et al., 2019a).

There have been several checklists over time, the most recent and most detailed of which is the checklist and bibliography published by Lindsay et al. (2022). That list also included the most recent published national conservation assessment applied to each of Singapore's plant taxa or, when there was no previous published assessment or when the authors of the checklist and bibliography knew the previous assessment to be inaccurate, a new assessment was given. Lindsay et al. (2022) made clear, however, that they were not comprehensively reassessing all of the species known from Singapore as this was something to be done for the *Singapore Red Data Book* instead. Nevertheless, almost 1200 new or updated assessments were published in Lindsay et al. (2022). All the taxa recorded as Not Evaluated in Lindsay et al. (2022) have now been evaluated. The total number of native species and the number of species in each IUCN category is presented in Table 1.

The reassessment of the conservation status of all native plant taxa in Singapore has now been completed and is presented here. Since Lindsay et al. (2022), three species new to science and 16 new records of native species have been published. Moreover, about 28 species recorded by Lindsay et al. (2022) as Nationally Extinct have been rediscovered and their conservation assessments are updated here. In addition, further research has clarified the native status or otherwise of several species. As research on Singapore's plant diversity continues and as we progress with our work on the *Flora of Singapore*, we shall have an ever-more accurate list of the species that occur, whether they are native or not, where they can be found, what their ecological niches are, and what their conservation needs are. Research in the wider region and internationally will lead to the publication of papers which challenge our established norms. For example, since the publication of Lindsay et al. (2022), a paper has been published which has made some fundamental changes to the genus *Shorea* in the iconic plant family Dipterocarpaceae (Ashton & Heckenbauer, 2022). These changes and others are incorporated here and will be reflected in forthcoming *Flora of Singapore* accounts, meaning that a few species now have names different from those presented in Lindsay et al. (2022).

As a consequence of the substantial reassessments that already appeared in Lindsay et al. (2022), rather fewer taxa than one might expect, given the greater scrutiny applied in this work, have updated or new assessments, around 301 in all. The changes in some of the threat categories between the data presented in Lindsay et al. (2022) and the data

presented in Table 1, particularly for the bryophytes, is primarily due to the assessment of species previously listed as Not Evaluated rather than due to material differences in the fortunes of species in Singapore.

It should be borne in mind that this new review of the threatened statuses of Singapore's plants relies upon and builds upon the work published in Lindsay et al. (2022) which was compiled by over 100 authors. The authorship of this new review of the plants for the *Red Data Book* does not include the entire authorship of Lindsay et al. (2022) but rather only those who were actively involved in the reassessments and updating of the data presented here.

In the second edition of the *Singapore Red Data Book*, Tan (2008) presented a mixed picture of the prospects for plant diversity conservation in Singapore, emphasising both the huge deforestation in Singapore but also that the rate of deforestation has not been matched by a proportionate rate of species loss. This latter point, that Singapore has experienced a much lower rate of species loss than one would expect based on the amount of forest loss, has also been highlighted by Turner et al. (1994) and Neo et al. (2024). Nevertheless, 78% of Singapore's extant native plant taxa are assessed in one of the threat categories. Many plant species in Singapore are known from extremely few populations, sometimes even extremely few individuals, and NParks aims to ensure that these are protected in situ and are studied to assess their reproductive potential. When possible, these species are also brought into cultivation and Singapore Botanic Gardens' Seed Bank in order to protect against population loss or declines. They are sometimes also brought into tissue culture to increase the number of individuals. Plants cultivated from native stock, including those incorporated into NParks' Species Recovery Programme, can eventually be planted out in the nature reserves, nature parks, streetscapes, parks and gardens to ensure these species persist and eventually thrive again in Singapore. These initiatives complement ongoing work to better understand the ecology of Singapore's primary and secondary forests which could lead to informed forest restoration programmes using native stock.

|               | Total Species | Globally Extinct | Nationally Extinct (NEEx) | CR/D        | EN/D       | VU/D       | LC         | DD        |
|---------------|---------------|------------------|---------------------------|-------------|------------|------------|------------|-----------|
| Liverworts    | 122           | 1                | 37                        | 37          | 22         | 5          | 15         | 5         |
| Mosses        | 156           | 0                | 42                        | 27          | 25         | 14         | 27         | 21        |
| Hornworts     | 3             | 0                | 0                         | 0           | 0          | 2          | 0          | 1         |
| Lycophytes    | 12            | 0                | 4                         | 1           | 2          | 2          | 3          | 0         |
| Ferns         | 163           | 0                | 47                        | 29          | 26         | 14         | 40         | 7         |
| Gymnosperms   | 8             | 0                | 0                         | 6           | 2          | 0          | 0          | 0         |
| Angiosperms   | 2199          | 3                | 514                       | 910         | 255        | 190        | 294        | 33        |
| <b>Totals</b> | <b>2663</b>   | <b>4</b>         | <b>644</b>                | <b>1010</b> | <b>332</b> | <b>227</b> | <b>379</b> | <b>67</b> |

Table 1. Number of native species in each of the major plant groups and disposition of these species in the IUCN categories.

# Liverworts

**Scientific Name:**

*Gaolejeunea hoi* W.Ye & Y.M.Wei

**Common Name:**

–

**Family:**

Lejeuneaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This tiny, leafy liverwort is restricted to exposed tree roots and tree bases in shade under the canopy of mature forest.

**Distribution:** In the Bukit Timah and Central Catchment Nature Reserves but in small and scattered populations. Endemic to Singapore.

**Threats:** Degradation of habitat.

Photo: Wen Ye



*Gaolejeunea hoi* colony. Inset: close up.

**Scientific Interest and Potential Value:** It was recognised as a new species in 2021 and named after a local botanist who was the first to collect specimens. The Lejeuneaceae, the largest liverwort family, includes about half of all reported liverwort species in Singapore.

**Conservation Measures:** Its known localities are in nature reserves.

**Scientific Name:**

*Podomitrium malaccense* (Steph.) Campb.

**Common Name:**

–

**Family:**

Pallaviciniaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This thalloid liverwort is restricted to soil banks, rotten logs and boulders in moist and shady gullies in mature forest.

**Distribution:** In Singapore, known in the Bukit Timah and Central Catchment Nature Reserves but in small and scattered populations confined to shady moist microhabitats. Also known from southern Thailand, Cambodia, Peninsular Malaysia, Sumatra, Borneo, Moluccas, Philippines, New Guinea and the Pacific Islands.

Photo: Ho Boon Chuan



*Podomitrium malaccense* colony.

**Threats:** Degradation of habitat and small population size.

**Scientific Interest and Potential Value:** First described from a specimen collected by H.N. Ridley on Bukit Timah. This liverwort belongs to a small genus of three species which is characterised by having sex organs that develop on the ventral surface of the thallus.

**Conservation Measures:** Its known localities are in nature reserves.

# Mosses

**Scientific Name:**

*Syrrhopodon ciliatus* (Hook.) Schwägr.

**Common Name:**

–

**Family:**

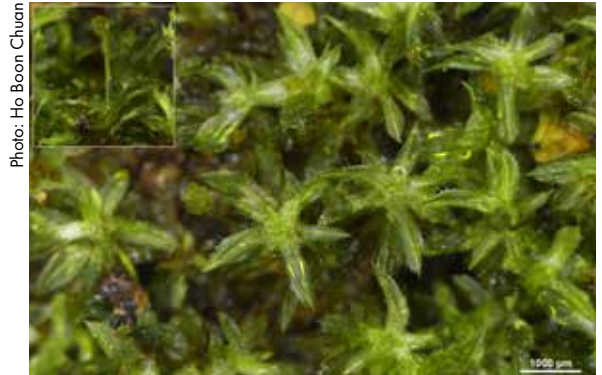
Calymperaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This moss grows on tree trunks and, occasionally, also on humus in light shade in mature secondary lowland forest. In Borneo, it has been found above 1000 m on humus overlying limestone.

**Distribution:** In Singapore, sporadic and currently known only from very small populations in the Singapore Botanic Gardens and on Pulau Semakau. It is widespread throughout Malesia, northern Australia and across Oceania.

**Threats:** Degradation of habitat.



*Syrrhopodon ciliatus* colony.

**Scientific Interest and Potential Value:** With long delicate cilia along the leaf margins, this is one of the most distinctive species in this large pantropical genus of over a hundred species. Some of its leaves are strongly modified into a tube-like structures bearing fusiform gemmae (asexual reproductive structures).

**Conservation Measures:** The population in Singapore Botanic Gardens is protected under the Parks and Trees Act.

**Scientific Name:**

*Ectropothecium singaporense* Dixon

**Common Name:**

–

**Family:**

Hypnaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Tree bases and exposed tree roots.

**Distribution:** Endemic to Singapore. Specimens have been collected from Singapore Botanic Gardens and a few parks and gardens.



*Ectropothecium singaporense* colony.



**Threats:** Staff in parks may routinely clear bryophytes from tree bases and exposed roots unaware that they are removing threatened plants.

**Scientific Interest and Potential Value:** This prostrate moss species was first described from a specimen collected in 1913 from Singapore Botanic Gardens where it persists today.

**Conservation Measures:** The populations in Singapore Botanic Gardens are protected under the Parks and Trees Act. There has been some success in the propagation of this species in the Evolution Garden of Singapore Botanic Gardens.

## Hornworts

**Scientific Name:**

*Notothylas javanica* (Sande Lac.) Gottsche

**Common Name:**

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**Family:**

Notothyladaceae

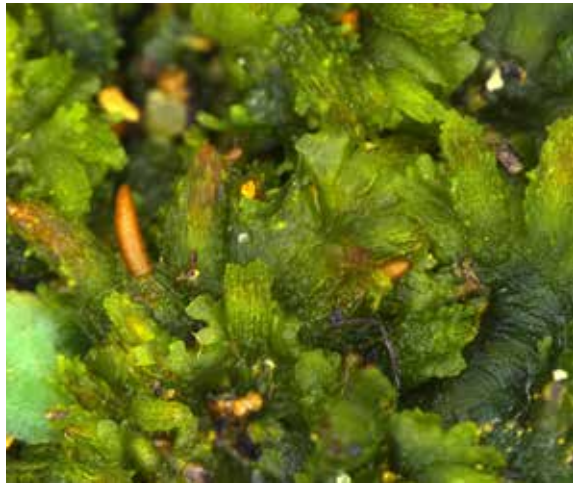
**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This thalloid species is a colonist found on the surface of disturbed soils including those in flowerpots. However, populations are short-lived and occur sporadically then disappear after a few months.

**Distribution:** In Singapore, it has been collected fewer than 10 times in the last 30 years. It is, however, likely to be more common. Also known from other tropical and subtropical parts of Asia (Sri Lanka, China, Japan, Thailand, Sumatra and Java), Australasia (Australia), America (Mexico, Panama, Brazil), and Africa (Ivory Coast, Ghana and DR Congo).

**Threats:** Availability of suitable wild habitats, sporadic distribution and small population size.

Photo: Ho Boon Chuan



*Notothylas javanica* colony.

**Scientific Interest and Potential Value:** Unlike other hornworts with typical erect sporangia, those in the genus *Notothylas* are short, finger-like and horizontal. In *Notothylas javanica*, the sporangia do not have any sutures and thus rupture irregularly to release their spores. The species is also distinguished by the absence of pseudoelaters.

**Conservation Measures:** Mostly collected from plant nurseries and gardens (horticultural settings) and more research is needed to assess its conservation needs in the wild.

# Lycophytes

**Scientific Name:**

*Phlegmariurus carinatus* (Desv.) Ching

**Common Name:**

Keeled tassel-fern, Shoelace tassel-fern,  
Paku tali kasut

**Family:**

Lycopodiaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore, a pendulous epiphyte in the crowns of tall trees. Elsewhere, also on mossy rocks in forests below 400 m.

**Distribution:** In Singapore, now only known from one locality in the Central Catchment Nature Reserve and from one rain tree close to the Central Catchment Nature Reserve. It is native to India (Andaman & Nicobar Islands) through to China and Japan and throughout continental Southeast Asia and Malesia to Australia (Queensland) and the Pacific Islands.

**Threats:** Degradation of habitat and loss of small populations. Most of the known plants are on a single rain tree in a semi-urban area that may be subject to overzealous pruning or even removal.

Photo: Ng Xin Yi



Pendent plant of *Phlegmariurus carinatus*.

**Scientific Interest and Potential Value:** Nowadays, one of only two species of native tassel-ferns; three others are presumed Nationally Extinct (NEx). A very attractive plant widely used in horticulture.

**Conservation Measures:** A small ex-situ conservation collection has recently been established at NParks' Native Plant Centre with the goal of preserving and propagating native stock. The fate of the rain tree that is home to most of the remaining plants must be closely monitored and, if necessary, its survival championed.

# Ferns

**Scientific Name:**

*Dipteris conjugata* Reinw.

**Common Name:**

Broad-leaf fern, Bua cek, Paku payung

**Family:**

Dipteridaceae

Photo: Ng Xin Yi



A stand of *Dipteris conjugata*.



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Large, terrestrial, sun-loving and stand-forming fern. In Singapore, it grows more-or-less at sea-level on coastal cliffs and steep earth embankments. Elsewhere, it grows in open montane forest and on exposed high-altitude ridges.

**Distribution:** In Singapore, now only known to occur naturally at a few coastal localities in the Western Catchment, including Pulau Sarimbun. It is native to China and Japan, through continental Southeast Asia and Malesia to Australia (Queensland) and the Pacific Islands.

**Threats:** Degradation of habitat and loss of small populations. Susceptible to being shaded-out by encroaching vegetation and to being wiped-out by cliff falls and landslides.

**Scientific Interest and Potential Value:** The populations in Singapore, which are more-or-less at sea level, are unusual for the species as a whole which is mostly known as being a species of higher altitudes up to 1700 m.

**Conservation Measures:** The remaining populations are within a military training area which affords some protection, and the species has also been included in NParks' Species Recovery Programme. The most accessible populations are regularly monitored and encroaching vegetation cleared. Propagation by rhizome division and by spores is proving difficult but one small clump has been successfully translocated from the Western Catchment to Labrador Park (a former locality) and a few sporelings have been raised from soil samples. Unverified reports of a population on Pulau Tekong warrant investigation.

**Scientific Name:**

*Lindsaea parasitica* (Roxb.) Wall. ex Hieron.

**Common Name:**

–

**Family:**

Lindsaeaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A climbing fern (reaching heights of 2–3 m) which, in Singapore, grows only on trees and only in shady places with permanently wet soil and very high humidity such as by streams in primary forest and in intact freshwater swamp forest. Elsewhere in its range it is not restricted to stream banks and swamp forest; it also climbs rocks and occurs at altitudes up to 1100 m.

**Distribution:** In Singapore, now only known from one locality in Bukit Timah Nature Reserve and two localities in the Central Catchment Nature Reserve, including Nee Soon freshwater swamp forest. It is also found in Peninsular Thailand, Peninsular Malaysia, Sumatra and Borneo.

Photo: Stuart Lindsay



*Lindsaea parasitica* climbing a tree.

**Threats:** Degradation of habitat and loss of small populations. In Singapore, this species is vulnerable to any event or activity that could alter the normal levels of the water table and changes that reduce humidity or shade.

**Scientific Interest and Potential Value:** The behaviour of this species requires further study. While currently believed to always be a ground-rooted

climber in Singapore, published descriptions claiming the species is 'epiphytic', may mean that it sometimes loses its connection to the ground.

**Conservation Measures:** The remaining populations are in protected areas. Preservation of its stream and swamp habitats is the only way to ensure the survival of this species in Singapore.

**Scientific Name:**

*Nephrolepis acutifolia* (Desv.) Christ

**Common Name:**

Sword fern, Fish-bone fern

**Family:**

Nephrolepidaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Nowadays in Singapore, only known as a low hanging (but very long) epiphyte on a range of tree species in secondary forest and parks in full or dappled sunlight. Formerly an epiphyte of trees near the sea, including in mangroves, and once reported as being 'common on ground in humus on rocky sea cliffs'. Elsewhere in its range is also epiphytic in swamp and riverine forests, on oil palms, and terrestrial in heath forest.

**Distribution:** Currently uncertain in Singapore but the distribution and habitats of the known plants suggests that more individuals may be widely scattered in secondary forests, parks and on street trees all over the island. It is native to tropical Africa and the Mascarene Islands through continental Southeast Asia and Malesia to parts of Australia and the Pacific Islands.

**Threats:** Degradation of habitat and loss of small populations. None of the known plants are in protected areas. Most are on trees that may be subject to overzealous pruning or even removal.

**Scientific Interest and Potential Value:** This is the only species of *Nephrolepis* with linear marginal sori, a characteristic that led to its misclassification in the wrong



Photo: Stuart Lindsay

Curtain of *Nephrolepis acutifolia*.

family for many years. Capable of forming a curtain of pendulous fronds up to 4 m long, this can be a strikingly beautiful fern whose horticultural potential may not yet be fully realised.

**Conservation Measures:** Although no plants are in protected areas, a few plants are epiphytic on at least one Heritage Tree which affords them some protection. Plants salvaged from a rain tree before it was cut down are being propagated in NParks' Native Plant Centre nursery for introduction to suitable sites. The fate of the other trees that are home to this fern must be closely monitored and, if necessary, their survival championed.

# Gymnosperms

**Scientific Name:**  
*Cycas edentata* de Laub.

**Common Name:**  
Paku raja

**Family:**  
Cycadaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore, in coastal forests along shorelines..

**Distribution:** Found on Pulau Tekong and in the Western Catchment. Also in Myanmar, Thailand, Vietnam, Malaysia, western Indonesia and the Philippines.

**Threats:** Loss of coastal habitats and loss of very small populations.

**Scientific Interest and Potential Value:** The only native cycad species in Singapore. It is extremely hardy and makes a striking ornamental plant, even at non-coastal locations. It is also the host plant of the native Cycad blue butterfly.

**Conservation Measures:** Individuals have been successfully propagated via manual pollination of female plants. Viable seeds have been collected from successful pollination and germinated in NParks' Native Plant Centre nursery. Established plants have been planted out to suitable coastal sites such as Kranji Marshes and Pulau Ubin.

Photo: Ng Xin Yi



Female cone of *Cycas edentata* bearing young seeds.

Photo: Ng Xin Yi



*Cycas edentata* in the wild.



**Scientific Name:***Podocarpus polystachyus* R.Br. ex Endl.**Common Name:**

Sea teak

**Family:**

Podocarpaceae

**National Status:** Endangered (EN)**Habitat and Ecology:** In Singapore, mostly in coastal forest, beach vegetation and coastal cliffs but also found in lowland forest..**Distribution:** Found on several of the southern islands, on Pulau Ubin, in Labrador Nature Reserve and in the Western Catchment. There are a few trees in the Central Catchment Nature Reserve but it is likely that these were planted.**Threats:** Loss of habitat and loss of very small populations.**Scientific Interest and Potential Value:** One of only two native conifer species in Singapore. The trees are attractive and are sometimes used as ornamental and roadside trees.**Conservation Measures:** Some of the populations are in the Central Catchment and Labrador Nature Reserves and some are in the Sisters' Islands Marine Park. Other populations are not in protected areas. The provenance of many cultivated trees is unknown. Seeds and wildings have been collected from native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to suitable coastal sites such as Sungei Buloh Wetland Reserve and Labrador Nature Reserve.

Photo: Zaki Jamil

Male cones of *Podocarpus polystachyus*.

# Angiosperms

**Scientific Name:**

*Ptyssiglottis kunthiana* (Nees) B.Hansen

**Common Name:**

–

**Family:**

Acanthaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A herb of humid primary forest. Elsewhere, also associated with limestone forest.

**Distribution:** In Singapore, only known from Bukit Timah Nature Reserve. The species is widespread in the region, occurring in Vietnam, Thailand, Peninsular Malaysia, Borneo, Java and the Philippines.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** The discovery of *Ptyssiglottis kunthiana* in Bukit Timah Nature Reserve in 2021 was the first record of both the genus and species in Singapore. The species is morphologically very variable, especially in leaf shape.

**Conservation Measures:** The species grows within a nature reserve.

Photo: Matti Niissalo



Flower of *Ptyssiglottis kunthiana*.

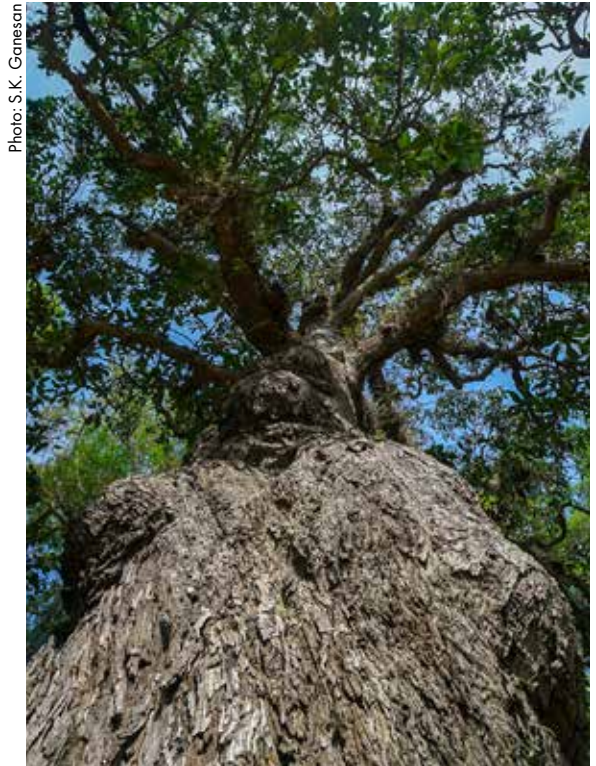
**Scientific Name:**  
*Mangifera magnifica* Kochummen

**Common Name:**  
Machang pulasan

**Family:**  
Anacardiaceae



Close up of a dissected fruit of *Mangifera magnifica*.



*Mangifera magnifica* on St John's Island.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Lowland primary forest

**Distribution:** In Singapore, known from St John's Island, Pulau Tekong and the Central Catchment Nature Reserve. Also in Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Degradation of habitat and small number of mature trees.

**Scientific Interest and Potential Value:** Adults of this species have wide-spreading and dense crowns making them ideal for planting in parks as a shade

tree. The potential problem of fallen fruits is somewhat minimized by its low frequency of flowering and fruiting, and if fruiting does occur, the edible fruits can be harvested before they fall.

**Conservation Measures:** The few mature individuals in Singapore are in protected and restricted areas, or protected under the Heritage Trees scheme. This species is included in NParks' Species Recovery Programme, through which seeds collected from the Central Catchment Nature Reserve and St. John's Island have been grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**

*Gongreos wallichii* (Wight) Rodda et al.

**Common Name:**

–

**Family:**

Apocynaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Twining climber found in lowland primary forests.

**Distribution:** In Singapore, only known from the Central Catchment Nature Reserve. Also, in Peninsular Malaysia and Borneo.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** The only known species of *Gongreos* in Singapore. This species

Photo: Yeoh Yi Shuen



Flowers of *Gongreos wallichii*.

was presumed Nationally Extinct (NEx) for nearly 200 years and was only rediscovered recently. It has potential for cultivation in urban environments. Cultivated plants develop small, urn-shaped flowers reminiscent of *Dischidia* species.

**Conservation Measures:** Seedlings have been collected and grown in NParks' Native Plant Centre nursery. Cultivation has been successful on fences and trellises.

**Scientific Name:**

*Kopsia singapurensis* Ridl.

**Common Name:**

Singapore kopsia

**Family:**

Apocynaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A small tree or shrub of swamp forest. Elsewhere, also in lowland forest.

**Distribution:** In Singapore, only known from small populations in Nee Soon freshwater swamp forest and the Upper Seletar area of the Central Catchment Nature Reserve. It is also found in Peninsular Malaysia.

**Threats:** Degradation of habitat and loss of small populations.

Photo: Zaki Jamil



Flowers of *Kopsia singapurensis*.

**Scientific Interest and Potential Value:** With attractive flowers in the national colours, this has become a popular ornamental in Singapore, particularly in Singapore Botanic Gardens but increasingly also in parks around the country.

**Conservation Measures:** The remaining wild populations are in protected areas. It is also being widely cultivated from native stock, thereby reducing

the chances of loss of the species and also reducing potential pressures on the wild populations of this attractive plant. The cultivated plants are, however, almost entirely grown from cuttings or air-layering as seed is rarely set. From the few seeds grown from cultivated *Kopsia singapurensis*, there is some evidence that they may be hybridising with cultivated *Kopsia fruticosa*.

**Scientific Name:**  
*Homalomena nathanielii*  
S.Y.Wong & P.C.Boyce

**Common Name:**  
–

**Family:**  
Araceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A herb growing mainly in wet, tropical rain forests.

**Distribution:** Currently known with certainty only from Singapore. It is now only found in the Bukit Timah and Central Catchment Nature Reserves.

**Threats:** Degradation of habitat and small population size.

**Scientific Interest and Potential Value:** First discovered in Singapore in the 19<sup>th</sup> century but described as a distinct species only recently. It has ornamental foliage and leaves.

**Conservation Measures:** Its known localities are in protected areas.

Photo: Yeoh Yi Shuen



*Homalomena nathanielii* by a small stream.



**Scientific Name:**  
*Calamus lobbianus* Becc.

**Common Name:**

**Family:**  
Areaceae



*Calamus lobbianus* in the forest.

Photo: Choo Le Min



Flowering shoot of *Calamus lobbianus*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A non-climbing palm of primary forests. Elsewhere, the species is associated with hill forests up to 700 m in altitude.

**Distribution:** In Singapore, only known from a handful of localities in the Bukit Timah and Central Catchment Nature Reserves. The species is also recorded from Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** This species is a curious example of a non-climbing, solitary rattan in a genus otherwise characterised by climbing rattans. The ripe fruits are said to be edible.

**Conservation Measures:** The species grows within nature reserves.

**Scientific Name:**  
*Dracaena breviflora* Ridl.

**Common Name:**

**Family:**  
Asparagaceae

Photo: Matti Niissalo



Flowers of *Dracaena breviflora*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore, the species seems to be restricted to swamp forest, near streams in shaded localities with permanently wet soil.

**Distribution:** In Singapore, the species is restricted to the Central Catchment Nature Reserve. There are several historical herbarium records, all well over 100 years old, of the species also occurring in Johor, Peninsular Malaysia.

**Threats:** Degradation of habitat including local stochastic events (e.g. microstorms, damage by wild boars), small population size and poaching.

**Scientific Interest and Potential Value:** Recently discovered in Singapore (observed in 2015 and formally recorded in 2020). Only three small populations are known in the wild but, if successfully propagated, the species could have horticultural value.

**Conservation Measures:** The species has been included in NParks' Species Recovery Programme. When ample material has been propagated, it will be trialed for re-introductions and made available to the public as an ornamental.

**Scientific Name:**

*Dolichandrone spathacea* (L.f.)  
K.Schum.

**Common Name:**

Mangrove trumpet tree, Tui

**Family:**

Bignoniaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Tree in the back mangroves and banks of tidal rivers and estuaries.

**Distribution:** In Singapore, *Dolichandrone spathacea* was once common in the back of mangroves and tidal rivers but is now restricted to areas in Sungei Pang Sua, Sungei Buloh Wetland Reserve and surrounding islands such as Pulau Sakeng, Pulau Semakau, Pulau Sudong, Pulau Tekong, Pulau Ubin and Pulau Unum. Elsewhere, *Dolichandrone spathacea* is a widespread species occurring in tropical and subtropical regions from India to New Caledonia.

**Threats:** Degradation of habitat.

**Scientific Interest and Potential Value:**

*Dolichandrone spathacea* is used in traditional medicine to treat bacterial infections. In some cultures, the flowers are also eaten. Like all members of the Bignoniaceae,

Photo: Koh Sin Lan



Flower of *Dolichandrone spathacea*.

*Dolichandrone spathacea* has large, attractive and scented flowers and is therefore cultivated as an ornamental tree.

**Conservation Measures:** The remaining wild populations are mostly in protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**

*Triomma malaccensis* Hook.f.

**Common Name:**

Malaccan triomma

**Family:**

Burseraceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A tree, mainly found in primary lowland forests and rarely found in secondary forests and swampy or permanently flooded sites.

**Distribution:** In Singapore, it has been collected from the Bukit Timah and Central Catchment Nature Reserves and in the Singapore Botanic Gardens Rain Forest. It is also found in Peninsular Malaysia, Sumatra, Bangka and Borneo.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** *Triomma malaccensis* is the only species in the genus. It is dioecious, meaning that male and female flowers are borne on separate individuals and both need to be present and flowering at the same time for reproduction.

Photo: Seah Wei Wei



Leaves and inflorescence of *Triomma malaccensis*.

The timber is suitable for use in indoor construction and the resin is sometimes used for torches. Since 2018, two fruiting events of the single known female individual in the MacRitchie area of the Central Catchment Nature Reserve did not result in seeds, highlighting the challenges faced in recruitment and propagation of this species.

**Conservation Measures:** Most of its localities are in nature reserves or protected areas.

**Scientific Name:**

*Garcinia griffithii* T.Anderson

**Common Name:**

Elephant kandis

**Family:**

Clusiaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** In Singapore, a medium-sized tree reaching the lower canopy in lowland forest.

Photo: Chong Kwek Yan



Fruit of *Garcinia griffithii*.



**Distribution:** Peninsular Malaysia, Sumatra, Singapore. All known individuals in Singapore (except for one collection) are in the Bukit Timah and Central Catchment Nature Reserves and Windsor Nature Park.

**Threats:** Mature individuals are widely scattered and may be vulnerable to reproductive isolation due to fragmentation and loss of connectivity for pollinators.

**Scientific Interest and Potential Value:** Distinctive leaves that are the second largest among the *Garcinia*

species of this region and have often been described as 'cabbagy'. Possibly some potential as an ornamental tree.

**Conservation Measures:** Most wild individuals are protected in nature reserves/parks. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**

*Dillenia excelsa* (Jack) Gilg var. *tomentella* (Martelli) Masam.

**Common Name:**

Simpoh ungu

**Family:**

Dilleniaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A medium to large tree. In Singapore, it is found in primary and old secondary lowland mixed dipterocarp forests.

**Distribution:** In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also known from Peninsular Malaysia (Johor).

**Threats:** Degradation and loss of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** *Dillenia excelsa* (Jack) Gilg var. *excelsa* is commonly used as an ornamental and roadside tree because it flowers often

Photo: Ng Xin Yi



Flowers of *Dillenia excelsa* var. *tomentella*.

and profusely. *Dillenia excelsa* var. *tomentella* is likely to have similar flowering habits in cultivation and may likewise have ornamental value.

**Conservation Measures:** Its known localities are in nature reserves. No fruits have been observed on an individual monitored since 2020. Attempts to propagate the species from cuttings by NParks' Native Plant Centre have so far not been successful.

**Scientific Name:**

*Rubroshorea pauciflora* (King)  
P.S.Ashton & J.Heck.

**Common Name:**

Nemesu

**Family:**

Dipterocarpaceae

Photo: S.K. Ganesan



Flowers of *Rubroshorea pauciflora*.

Photo: S.K. Ganesan



Large tree of *Rubroshorea pauciflora*.

**National Status:** Endangered (EN)

**Habitat and Ecology:** Very big emergent tree, to 30 m tall in Singapore (up to 65 m tall in Borneo), of well-drained lowland forest.

**Distribution:** In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Thailand, Sumatra, Peninsular Malaysia and Borneo.

**Threats:** Degradation of habitat and loss of adult trees.

**Scientific Interest and Potential Value:** This tree produces one of the finest red meranti timbers in the world. A street in Singapore, 'Nemesu Avenue' is named after it. This tree is often the largest of the trees in primary forests in Singapore with trees exceeding 1 m diameter often encountered.

**Conservation Measures:** All known localities are in nature reserves. Wildings have been collected from several native localities and grown in NParks' Native Plant Centre nursery and will be planted out once they reach sufficient size.

Photo: S.K. Ganesan



Leaf and seed of *Rubroshorea pauciflora*.

**Scientific Name:**  
*Sindora velutina* Baker

**Common Name:**

–

**Family:**  
Fabaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Tree to 45 m tall, generally found only in primary lowland forest.

**Distribution:** In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Habitat degradation and loss of small populations.

**Scientific Interest and Potential Value:** The rarest of all *Sindora* species in Singapore, *Sindora velutina*

Photo: Choo Le Min



Flowers of *Sindora velutina*.

is only known from eight scattered mature individuals. The colour, scent and other characteristics of the fresh flowers of this species were first documented in Singapore in 2021.

**Conservation Measures:** It is found within protected areas and seeds have been collected for propagation.

**Scientific Name:**  
*Whitfordiodendron erianthum*  
(Benth.) Dunn

**Common Name:**

–

**Family:**  
Fabaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A woody climber in primary and mature secondary forests.

**Distribution:** In Singapore, known from a handful of scattered populations in the Central Catchment Nature Reserve and one small population in the Singapore Botanic Gardens Rain Forest. Also known from Southern Thailand, Peninsular Malaysia, Sumatra and Borneo.

Photo: Ho Boon Chuan



Woody pod and two seeds inside an open pod of *Whitfordiodendron erianthum*.

**Threats:** Degradation of habitat and small population size.

**Scientific Interest and Potential Value:** This is the only species of the genus known in Singapore. The small genus of four species was recently segregated from the genus *Callerya*. The woody pods are typically ovate to obovate, inflated, the surface rugose, and each contains up to two seeds.

**Conservation Measures:** Its known localities are in protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**  
*Fagraea splendens* Blume

**Common Name:**  
–

**Family:**  
Gentianaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Shrub or hemi-epiphyte. In Singapore, found only in drier parts of freshwater swamp forest.

**Distribution:** In Singapore, found only in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also found in Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Loss of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** With thick leathery leaves and beautiful flowers, it has potential to be a good ornamental plant for parks and gardens.

Photo: Ng Xin Yi



Flowers of *Fagraea splendens*.

**Conservation Measures:** Its known localities are in a nature reserve. Individuals have been propagated via air-layering in NParks' Native Plant Centre nursery and introduced to various sites in Singapore. Manual pollination of stock plants in the nursery has produced seeds from which other plants have been grown.



**Scientific Name:**  
*Codonoboea platypus*  
 (C.B.Clarke) C.L.Lim

**Common Name:**  
 -

**Family:**  
 Gesneriaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Terrestrial herb in shaded damp gullies in mature forest.

**Distribution:** In the Bukit Timah and Central Catchment Nature Reserves but in very small populations. Also known from southern Thailand, Peninsular Malaysia and Sumatra.

**Threats:** Degradation of habitat and small population size.

**Scientific Interest and Potential Value:** One of only two species recorded from Singapore in this hyper-diverse genus, most species of which are found in the mountains of Peninsular Malaysia, Sumatra and Borneo.

**Conservation Measures:** Its known localities are in nature reserves. Native stock is also being propagated in the Tissue Culture Laboratory in Singapore Botanic Gardens. Plantlets are being grown in NParks' Native Plant Centre nursery and established plants have been planted out to several suitable sites.

Photo: Paul Leong



Flowers and leaves of *Codonoboea platypus*.



**Scientific Name:**  
*Hanguana triangulata*  
Škorničk. & P.C.Boyce

**Common Name:**

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**Family:**  
Hanguanaceae



Fruits of *Hanguana triangulata*.



Habit of *Hanguana triangulata*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Terrestrial rhizomatous herb growing in the understorey of lowland primary forest, often near or beside streams.

**Distribution:** In the Bukit Timah and Central Catchment Nature Reserves but in extremely small populations. Endemic to Singapore.

**Threats:** Degradation of habitat including local stochastic events (e.g., microstorms, damage by wild boars), small population size and poaching.

**Scientific Interest and Potential Value:** The species has potential value as a bioindicator of primary forest. In a sterile state, it is easily confused with *Hanguana podzolica*.

**Conservation Measures:** All known populations are in nature reserves. The species is included in NParks' Species Recovery Programme, but mass propagation has not been successful to date. The species, although apomictic, flowers and fruits very infrequently, is extremely slow-growing and is not easy to cultivate. Current efforts focus on frequent monitoring of wild plants and establishment in tissue culture.

**Scientific Name:**  
*Enhalus acoroides*  
(L.f.) Royle

**Common Name:**  
Tape seagrass

**Family:**  
Hydrocharitaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A seagrass of shallow intertidal areas with sandy substrate.

**Distribution:** In Singapore, it can be found along the southern mainland coastline (including reclaimed areas) such as Tanah Merah, Labrador and East Coast. The species is widely distributed across the Indo-Pacific, from Northern Australia to Southern Japan, and extends to East Africa.

**Threats:** Degradation and loss of habitat.

**Scientific Interest and Potential Value:** The largest seagrass species, *Enhalus acoroides* has strap-like



Photo: Siti M. Yackub

Coastal stand of *Enhalus acoroides*.

leaves growing up to 150 cm in length. The seeds are harvested in some coastal communities for food.

**Conservation Measures:** Requires intertidal habitats to be protected and a halt to further damage to existing seagrass meadows.

**Scientific Name:**  
*Cratoxylum arborescens*  
(Vahl) Blume

**Common Name:**  
Geronggang

**Family:**  
Hypericaceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A medium to large tree. In Singapore, it is found in primary and old secondary lowland mixed dipterocarp forests. Elsewhere, it also occurs in lower montane, heath and peat swamp forests.



Photo: Ng Xin Yi

Branches and flowers of *Cratoxylum arborescens*.

**Distribution:** In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also in southern Myanmar, Peninsular Thailand, Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Degradation and loss of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** Other members of this genus are commonly used as ornamental and roadside trees. This species may likewise have ornamental value as it produces attractive red flowers.

**Conservation Measures:** Its known localities are in nature reserves.

**Scientific Name:**  
*Litsea ridleyi* Gamble

**Common Name:**  
Ridley's litsea

**Family:**  
Lauraceae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Tree to 25 m tall in lowland forest.

**Distribution:** In Singapore, only known from the Bukit Timah and Central Catchment Nature Reserves. There are unconfirmed reports of the species from Borneo.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** If the material from Borneo is eventually identified as a different species, *Litsea ridleyi* will be confirmed as endemic to Singapore.

**Conservation Measures:** Its known localities are in nature reserves.

Photo: Ng Xin Yi



Fruits of *Litsea ridleyi*.

Photo: Ng Xin Yi



Flowers of *Litsea ridleyi*.



**Scientific Name:**  
*Magnolia singapurensis*  
(Ridl.) H.Keng

**Common Name:**  
Singapore magnolia

**Family:**  
Magnoliaceae

Photo: Ng Xin Yi



Fruit of *Magnolia singapurensis*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A tree of lowland forest and freshwater swamp forest.

**Distribution:** In Singapore, now only known from Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also known from Peninsular Malaysia, Sumatra, Bangka and Borneo.

**Threats:** Habitat degradation and loss of very small populations.

**Scientific Interest and Potential Value:** One of only four native *Magnolia* species in Singapore. With attractive white flowers and seeds with a bright pink sarcotesta, this tree may be cultivated in parks and has the potential to become a popular ornamental in Singapore. It is also suitable for marshes and other waterlogged areas owing to its tolerance of wet conditions.

**Conservation Measures:** All the known wild trees are in a nature reserve. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**

*Durio singaporensis* Ridl.

**Common Name:**

Durian bujor, Durian daun,  
Singapore durian

**Family:**

Malvaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A tree of lowland primary and late secondary forests.

**Distribution:** In Singapore, it is found in the Bukit Timah and Central Catchment Nature Reserves. Also known from Peninsular Malaysia.

**Threats:** Very small populations with few mature individuals.

**Scientific Interest and Potential Value:** The seed of this species of durian is devoid of an aril except at the base where there is a white leathery inedible aril. This species was first described by one of the past Directors of Singapore Botanic Gardens, H.N. Ridley, from material collected from Singapore and Johor. It can be used as an ornamental tree in the urban environment in Singapore because of its attractive leaves and tree form. Another attraction for planting is its specific epithet '*singaporensis*'. The potential problem of its fruits falling onto people can be mitigated by harvesting them before they ripen and fall.

**Conservation Measures:** All known populations of *Durio singaporensis* in Singapore are in nature reserves. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery.



Photo: S.K. Ganesan

*Durio singaporensis* tree.



Photo: Zaki Jamil

Flowers of *Durio singaporensis*.



Photo: Ng Xin Yi

Fruit of *Durio singaporensis*.

**Scientific Name:**  
*Phrynium hirtum* Ridl.

**Common Name:**

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**Family:**  
Marantaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Terrestrial rhizomatous herb in shaded damp gullies in primary forest.

**Distribution:** In Singapore, there is a single population of fewer than 10 individuals in the Central Catchment Nature Reserve. Also found in Thailand, Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Degradation of habitat including local stochastic events (e.g. microstorms), small population size and poaching.

**Scientific Interest and Potential Value:** The species, first recorded in Singapore in 2016, is suitable for introduction into horticulture due to its beautiful foliage. It also has potential as a bioindicator of primary forest.

Photo: Jana Leong-Škorničková



Flowers of *Phrynium hirtum*.

**Conservation Measures:** This species has been included in NParks' Species Recovery Programme and the wild populations are frequently monitored for flowering and fruit set. Efforts also focus on propagation of plants at Singapore Botanic Gardens and in NParks' Native Plant Centre nursery. Established plants have been planted out to suitable sites.

**Scientific Name:**  
*Ficus delosyae* Corner

**Common Name:**

–

**Family:**  
Moraceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Strangling hemiepiphyte or free-standing tree to 25 m tall in dry areas of freshwater swamp forest.

Photo: Reuben Lim



Leaves and figs of *Ficus delosyae*.

**Distribution:** Only one population in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve. Also known from Borneo, Peninsular Malaysia and Sumatra.

**Threats:** Degradation of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** The fig-wasp pollinators for rare fig species in Singapore

have not been studied much. This species forms small, dense bushes like *Ficus microcarpa* when consistently maintained.

**Conservation Measures:** The wild population is in a protected area. This species has been included in the NParks' Species Recovery Programme since its inception. Seeds and cuttings have been collected for growing and individuals have been planted out at many suitable sites to establish new populations.

**Scientific Name:**  
*Endocomia canarioides*  
(King) W.J.de Wilde

**Common Name:**  
–

**Family:**  
Myristicaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Tree to 30 m tall in lowland forest.

**Distribution:** Found only in two small populations in Bukit Timah Nature Reserve and the Singapore Botanic Gardens Rain Forest. Also known from southern Thailand, Peninsular Malaysia and Sumatra.

**Threats:** Degradation of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** The only monoecious genus in the family with only one species in Singapore. The male flowers on a single individual can pollinate female flowers on the same individual to form fruits with viable seeds that are attractive to large frugivorous birds.

**Conservation Measures:** The wild populations are in protected areas. This species has been included in NParks' Species Recovery Programme. Seeds from both populations have been collected and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

Photo: Reuben Lim



Branches of *Endocomia canarioides*.

Photo: Reuben Lim



Fruit of *Endocomia canarioides*.



**Scientific Name:**  
*Syzygium singaporense*  
(King) Airy Shaw

**Common Name:**  
Singapore syzygium

**Family:**  
Myrtaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A tree of freshwater swamp forest and lowland forest.

**Distribution:** In Singapore, *Syzygium singaporense* is known from Nee Soon freshwater swamp forest and the Bukit Mandai, Upper Seletar and MacRitchie areas of the Central Catchment Nature Reserve, and from Bukit Timah Nature Reserve. It is also known from Peninsular Malaysia (West Coast from Penang to Johor).

**Threats:** Degradation of habitat and loss of small populations.



Leaves and flowers of *Syzygium singaporense*.

**Scientific Interest and Potential Value:** *Syzygium singaporense* is a small- to medium-sized tree with a neat crown worthy of being introduced as a green screening tree for landscaping and streetscaping.

**Conservation Measures:** The remaining wild populations are within protected areas. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**  
*Nepenthes rafflesiana*  
Jack

**Common Name:**  
Raffles' pitcher plant

**Family:**  
Nepenthaceae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Scrambling vine in resam fern-dominated scrub, secondary forests and coastal cliffs. It is a carnivorous plant.



Pitcher of *Nepenthes rafflesiana*.



**Distribution:** In Singapore, found in the Central Catchment Nature Reserve, Kent Ridge Park, Western Catchment, and the Southern Islands. Also in Peninsular Malaysia, Borneo and Sumatra.

**Threats:** Habitat loss, poaching and ecological succession, as *Nepenthes rafflesiana* seldom persist in mature forests.

**Scientific Interest and Potential Value:** Attractive ornamental plant. Source of the protease nepenthesin, which has potential biomedical and biotechnological

applications. The pitchers act as aquatic habitats for many specialised invertebrates which are found nowhere else.

**Conservation Measures:** Large populations are well protected within nature reserves, but populations occurring outside of nature reserves in resam fern-dominated scrub are extremely vulnerable to development. Cuttings have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**  
*Scorodocarpus borneensis*  
(Baill.) Becc.

**Common Name:**  
Kulim, Bawang hutan

**Family:**  
Olacaceae

Photo: Louise Neo



Trunk and branching of *Scorodocarpus borneensis*.

Photo: Louise Neo



Fruit of *Scorodocarpus borneensis*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Slow-growing medium to large tree in primary and old secondary lowland mixed dipterocarp forests.

**Distribution:** In Singapore, it is only known from the Bukit Timah and Central Catchment Nature Reserves. Also in Peninsular Thailand, Peninsular Malaysia, Sumatra and Borneo.

**Threats:** Degradation and loss of habitat and loss of very small populations.

**Scientific Interest and Potential Value:** The only known member of its genus. The tree has a powerful odour of garlic which may be detectable even from a distance.

**Conservation Measures:** All known localities are in nature reserves. Flowering and fruiting events are being monitored by NPark's Native Plant Centre in the hope of collecting seeds to propagate.

**Scientific Name:**  
*Lepidogyne longifolia*  
(Blume) Blume

**Common Name:**  
Long-leaved lepidogyne

**Family:**  
Orchidaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Freshwater swamp forest.

**Distribution:** In Singapore, this species has only been recorded from Bukit Timah Nature Reserve. The species is widespread but often rare in the region, occurring in Peninsular Malaysia, Sumatra, Pulau Lingga, Borneo, Java, Flores, Philippines and New Guinea.

**Threats:** Small population size and loss of small populations due to stochastic events.

**Scientific Interest and Potential Value:**  
*Lepidogyne longifolia* is the only species in the genus. It was first discovered in Singapore in 2019. Only

Photo: Matti Niissalo



Leaves of *Lepidogyne longifolia*.

four plants have been found so far and they have not flowered since their discovery. The species is diverse in size and flower colour and has sometimes been split into several separate species. The population continues to be monitored for signs of flowers so that the flower morphology of the Singapore plants can be recorded. The species is vegetatively distinct with long, narrow leaves and thick stilt roots.

**Conservation Measures:** The species grows within a nature reserve.

**Scientific Name:**  
*Nervilia singaporensis*  
Niissalo

**Common Name:**  
Singapore nervilia

**Family:**  
Orchidaceae

Photo: Matti Niissalo



*Nervilia singaporensis* plant.

Photo: Matti Niissalo



Close up of flower of *Nervilia singaporensis*.

**National Status:** Endangered (EN)

**Habitat and Ecology:** Secondary forest, including old orchards, in leaf litter. Also found in freshwater swamp forest.

**Distribution:** This species is endemic to Singapore. It has been recently recorded in the Bukit Timah and Central Catchment Nature Reserves, Rifle Range Nature Park and Bukit Batok Nature Park.

**Threats:** Small population size and potential poaching.

**Scientific Interest and Potential Value:** *Nervilia singaporensis* is the only extant endemic orchid in Singapore. It has small flowers that never open fully, which makes it hard to find, and the species might be under-recorded. Unusually for the genus, this species produces new leaves and flowers year-round, but it can also go dormant during droughts.

**Conservation Measures:** The species grows within protected areas. This species is included in NParks' Species Recovery Programme and efforts are underway to propagate plants *ex situ*.

**Scientific Name:**  
*Glochidion singaporense* Gage

**Common Name:**  
Singapore cheese tree

**Family:**  
Phyllanthaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A gap and understorey tree in secondary forests.

**Distribution:** In Singapore, only known from the Central Catchment Nature Reserve. Also known from Peninsular Malaysia, Borneo and Sumatra.

**Threats:** Degradation of habitat and loss of small populations.

**Scientific Interest and Potential Value:** Potential ornamental value as a small tree with droopy phyllanthoid branches and attractive red young foliage. Named after Singapore, where it was first observed.

**Conservation Measures:** Its known localities are in nature reserves. Seeds and cuttings have been collected from native localities and grown in NParks' Native Plant Centre nursery, but did not establish.

Photo: Lam Weng Ngai



Leaves of *Glochidion singaporense*.

**Scientific Name:**

*Piper porphyphyllum* (Lindl.  
ex Blandy) N.E.Br.

**Common Name:**

Sireh rimau, Tiger's betel

**Family:**

Piperaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A slender climbing plant that is found in primary and mature secondary forest, near forest streams and on valley slopes. It climbs by adventitious roots at stem internodes which attach to the bark of trees. Slow growing, rarely observed in flower or fruit.

**Distribution:** In Singapore, only found in small numbers in localised spots in the Central Catchment Nature Reserve. It is also known from Thailand, Malaysia and western Indonesia.

**Threats:** Small, fragmented population and poaching.

**Scientific Interest and Potential Value:** The leaves on climbing stems in the forest understorey are dark green with an attractive speckled colouration, fading into a monotonous green in leaves that emerge into the exposed canopy. The leaves are reportedly used in traditional medicine for treatment of various maladies. Introduced as an ornamental in the horticultural trade for its attractive foliage.

**Conservation Measures:** All known populations are in protected areas. The species is included in NParks' Species Recovery Programme. Cuttings have been collected from native plants and grown in NParks' Native Plant Centre nursery. Established plants will eventually be planted out to suitable sites.

Photo: Lua Hock Keong



*Piper porphyphyllum* in the forest understorey climbing up a tree sapling.



**Scientific Name:**

*Singaporandia macrophylla*  
(Hook.f.) K.M.Wong

**Common Name:**

Hidung babi

**Family:**

Rubiaceae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** A shrub or small tree in the forest understorey.

**Distribution:** In Singapore, it has been recorded from Nee Soon freshwater swamp forest and the MacRitchie area of the Central Catchment Nature Reserve and in the Bukit Timah Nature Reserve. There are older collections from Chan Chu Kang, Ang Mo Kio and Changi. In the Bukit Timah long-term dynamics study plot, the population seems stable over time, with recruitment and mortality roughly in balance. Also in Peninsular Malaysia, central Sumatra and the Riau Islands.

**Threats:** Degradation of habitat.

Photo: Ng Xin Yi



Flowers of *Singaporandia macrophylla*.

**Scientific Interest and Potential Value:** Restricted in distribution to Singapore's immediate region, the genus has a unique plant form in the *Gardenia* alliance, with lateral branches bearing just a single pair of expanded leaves before termination by a flower. With large showy flowers that are produced regularly, this species could be a good prospect for ornamental horticulture.

**Conservation Measures:** All extant localities are in nature reserves. Cuttings have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants will eventually be planted out to suitable sites.

**Scientific Name:**

*Palaquium obovatum* (Griff.)  
Engl. var. *obovatum*

**Common Name:**

Nyatoh, Nyatoh putih

**Family:**

Sapotaceae

Photo: Aileen Phang



*Palaquium obovatum* tree.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Tree to 40 m tall, mostly in primary or mature secondary lowland forest patches, but also in some coastal and swamp areas.

**Distribution:** In Singapore, fragmented wild populations are present in the Bukit Timah and Central Catchment Nature Reserves and also offshore on Sentosa, Pulau Ubin, Pulau Tekong, Pulau Pawai, Big Sister's, St. John's and Lazarus islands. Found too in parts of Indonesia, Borneo, Peninsular Malaysia, Thailand and the Philippines.

**Threats:** Loss of habitat, population fragmentation and decline of mature individuals.

**Scientific Interest and Potential Value:**

Historically felled for latex used in underwater cable insulation. Today, the latex is still used in dental fillings and implants. The trees have reddish, hard timber used in furniture and boat/house construction. With distinctive obovate leaves in spirally arranged clusters, they are sometimes planted as roadside trees.

**Conservation Measures:** Occurs in nature reserves, Singapore Botanic Gardens (both in the rain forest and cultivated zones) and some nature parks. The origins of cultivated trees are mostly unknown. Seeds have been collected from several native localities and grown in NParks' Native Plant Centre nursery. Established plants have been planted out to several suitable sites.

**Scientific Name:**

*Kadsura scandens*  
(Blume) Blume

**Common Name:**

Akar dama-dama

**Family:**

Schisandraceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore, a climber in lowland forest. Elsewhere, also in tropical montane forests (to 2400 m altitude).

**Distribution:** In Singapore, only known from small populations in Nee Soon freshwater swamp forest of the Central Catchment Nature Reserve and in Bukit Timah Nature Reserve. Also known from Peninsular Malaysia, Sumatra and Java.

**Threats:** Habitat degradation and loss of very small populations.

**Scientific Interest and Potential Value:** One of only two native *Kadsura* species in Singapore. Some members of this genus have co-evolved with resin midges: the midges oviposit in the flowers, forming

Photo: Ng Xin Yi



Flower of *Kadsura scandens*.

resin-filled floral chambers that provide a food reward and nursery for their larvae; meanwhile the flowers are pollinated by the midges. With attractive red flowers, this twining climber may be cultivated on trellises and has the potential to become a popular ornamental.

**Conservation Measures:** All known localities are in nature reserves. Seeds have been collected and grown in NParks' Native Plant Centre nursery. Established plants will be planted out to suitable sites.

**Scientific Name:**  
*Zingiber singaporense* Škorničk.

**Common Name:**  
Singapore ginger

**Family:**  
Zingiberaceae



Flower of *Zingiber singaporense*.

Photo: Jana Leong-Škorničková



*Zingiber singaporense* in the nature reserve.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Terrestrial rhizomatous herb in shaded damp gullies in primary forest.

**Distribution:** In the Bukit Timah and Central Catchment Nature Reserves but in very small populations. Endemic to Singapore.

**Threats:** Degradation of habitat including local stochastic events (e.g. microstorms, damage by wild boars), small population size and poaching.

**Scientific Interest and Potential Value:** This species belongs to the same subgenus of *Zingiber* as

the ginger of commerce, *Zingiber officinale*. It also has potential as a bioindicator of primary forest. The species is suitable for introduction into horticulture.

**Conservation Measures:** All known populations are in nature reserves. The species is included in NParks' Species Recovery Programme. All currently known 13 genetic clones are cultivated at Singapore Botanic Gardens, in the nursery as well as the tissue culture lab, with plants being further propagated and reintroduced to nature reserves as well as nature parks by NParks' Native Plant Centre. Plants are also being made available to the public to alleviate stress caused by poaching.

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# FUNGI

AMY M.F. CHOONG, SERENA M.L. LEE

Fungi can be found in many different habitats: in the air (outdoor and indoor, Lim et al. 1998; Shelton, 2002), soil (Egidi et al., 2019), freshwater habitats (Raja et al., 2018), mangroves (Lee et al., 2020) and marine), surfaces or interior organs of different flora, fauna and even other fungi as well as on man-made structures. They may be endophytic in the form of commensals or mutualists; parasites, symbionts, pathogens or saprotrophs. Not only that, their roles may switch from being a commensal to pathogen to saprotroph.

Fungi provide diverse ecosystem services. Fungal mycelia and fruiting bodies are eaten by meiofauna, insects, mammals and reptiles. Decomposition of leaf litter and wood releases nutrients to support growth of other plants and to avoid potential fire from litter accumulation. Should the decomposers decline in number, the rate of decomposition will drop. After the Chernobyl explosion, the high radiation nearest to the nuclear power plant led to a proportional increase in leaf litter accumulation (Mousseau et al., 2014). Mycorrhizal fungi are especially important. They mine phosphates and nitrates to pass to plants enabling them to grow, slow down decomposition, thus carbon remains locked and not released into the atmosphere. The extensive mycelia below ground store carbon critical in this climate crisis. Fungi can be rainmakers (Hasset et al., 2015) as their spores serve as nuclei for condensation of water in cloud formation. A number of fungi have medicinal properties and there are others that have antimicrobial potential (Manusamy et al., 2023). Endophytes can be a source of novel biological active secondary metabolites as they also protect host plants from herbivores and diseases (Schulz et al., 2002).

The records of fungi in Singapore are growing slowly but a lot about their ecology or biology is still unknown. Lee et al. (2019) have found mangroves' endophytes and fungi on the surfaces of mangrove plants. The Singapore Botanic Gardens (SBG) is documenting macrofungi and slime moulds and specimens are being vouchered at the Singapore Herbarium (SING). Undergraduate projects are working closely with SBG to identify fungi found and document fungal diversity in Singapore.

The national conservation status of fungi has not been assessed for Singapore owing to the paucity of mycological studies (Choong, 2022). At the global level, the situation is slightly better. At least, it is being investigated by The Global Fungal Red List initiative (<http://iucn.ekoo.se/iucn/about/>) which started in 2013 and is led by Dr Greg Mueller, chair of the mushroom, bracket and puffball specialist group. Other groups included under this initiative are Chytrid, Zygomycete, Downy Mildew and Slime Mould; Cup-fungi, Truffles and allies; Lichens; Rust and Smuts. To date, 597 species of fungi have been evaluated and half are considered threatened (Mueller, 2022).

Some records of fungi are indirect, for example, Singapore has recorded *Thismia aseroe* and *T. fumida* (Saunders, 1996). These are angiosperms that are mycoheterotrophs, relying on arbuscular mycorrhizal fungi to supply all their nutritional needs (Feller et al., 2022). However, we do not know if these fungi can switch host should the *Thismia* be extirpated.

Threats to local fungi are especially pronounced to ectomycorrhizal fungi (ECM) associated with Dipterocarpaceae, Fagaceae, Phyllanthaceae, Juglandaceae and some others as these native plants are already endangered (Corrales et al., 2022). With the loss of forested habitats, endophytes, symbionts, saprotrophs will not fare well. Introduction of exotic tree species with their associated mycorrhizal fungi or colonization of a site by invasive plants could displace native fungi which has been documented elsewhere (Pickett et al., 2019). As Singapore has past and on-going land use change, how does that affect the fungal community should be investigated. Brinkman et al. (2019) have shown that the soil fungal communities had a massive shift from ECM to endomycorrhizal symbionts and increase Ascomycota with a decline in Basidiomycota with corresponding rise in saprotrophs and pathogens when forests are converted to rubber or oil palm plantations.

Research questions that need to be addressed in the near future:

- What species of fungi we do have in Singapore? Are there changes seasonally or between years? Are they also present elsewhere in the region? The latter will require close collaborations with regional mycologists to understand fungal distribution.
- How tight are the mycological relationships between plants and fungi especially ectomycorrhizal fungi? Can the ECM switch host if the host becomes extinct? This may be difficult to answer, perhaps molecular studies and active inoculation experiments can be conducted.
- What are the fungal compositions in good quality aquatic habitats in Singapore, for example the Nee Soon Swamp forest, the freshwater streams from nature reserves? Are they pantropical or they vary from lentic and lotic habitats?
- Can forest soil transplant help in local reforestation? Busby et al. (2022) have shown it can be possible. Mycorrhizal seedling inoculation could also aid successful reforestation using non-native plants (Assad et al., 2022)

**Scientific Name:**

*Amanita sculpta* Corner & Bas

**Common Name:**

Sculptured Toadstool

**Order/Family:**

Agaricales: Amanitaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from old growth lowland forest.

**Distribution:** Found in Asia from Singapore (TYPE), Brunei, Malaysia, Thailand, Laos into China and Japan.

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** First collected by E.J.H. Corner in the Bukit Timah Nature Reserve (BTNR) on 15 Oct 1939 and 9 July 1940 and described by him as a species new to science in 1962.

Photo: Ang Wee Foong



Not recorded again in Singapore until it was collected on 30 Aug 2020. The specimen of 2020 is deposited at the Singapore Herbarium (SING).

**Conservation Measures:** Conservation of forest habitat, particularly old growth tropical lowland forest of dipterocarp species such as *Shorea leprosula* may be helpful.

**Scientific Name:**

*Boletellus dissiliens* (Corner)  
Pegler & T.W.K. Young

**Common Name:**

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**Order/Family:**

Boletales: Boletaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from lowland dipterocarp forest (dominated by *Quercus* spp.) and under *Oncosperma tigillarum*.

**Distribution:** Found in Australia, Borneo, India, Malaysia and Singapore (TYPE).

**Threats:** Loss of suitable habitat.

Photo: Serena Lee



**Scientific Interest and Potential Value:** First 4 collections were by E.J.H. Corner in Reservoir Jungle (current day MacRitchie area) over 1931 to 1940 and described by him as a species new to science in 1972. The next 2 collections were by Chang K.L. in 1974 and 1978 in the Bukit Timah Nature Reserve (BTNR) on Hempstead Path and Boundary path respectively, these areas are currently closed for public safety and

protection of key conservation sites. The recent most 2021 collection was found within the Central Catchment Nature Reserve. The last 3 collections mentioned, are deposited at the Singapore Herbarium (SING).

**Conservation Measures:** Conservation of forest habitats.

**Scientific Name:**  
*Fistulinella nana* (Masse) E.  
Horak

**Common Name:**  
-

**Order/Family:**  
**Boletales: Boletaceae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from tropical lowland (kerangas) forest. Ectomycorrhizal.

**Distribution:** Found in Indonesia (Java), Malaysia (Sarawak), Singapore (TYPE) and Thailand.

**Threats:** Loss of suitable habitat.



**Scientific Interest and Potential Value:** The type specimen was from the Singapore Botanic Garden, Ridley 39, ser. 2 (K), before 1909 but the 2 collections in 2021, 2022 were both from Bukit Timah Nature Reserve and deposited in SING.

**Conservation Measures:** Conservation of forest habitat, particularly coastal hill dipterocarp forest.

**Scientific Name:**  
*Pulveroboletus frians* (Corner)  
Singer

**Common Name:**  
-

**Order/Family:**  
**Boletales: Boletaceae**



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from tropical lowland dipterocarp forest. Ectomycorrhizal.

**Distribution:** Found in Australia, Brunei, Malaysia and Singapore (TYPE).

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** Another species in which Bukit Timah Nature Reserve (BTNR) is its type locality, last collected in BTNR in 1939. The common chrome yellow *Pulveroboletus icterinus* has been mistaken for this species.

**Conservation Measures:** Conservation of forest habitat, particularly coastal hill dipterocarp forest.

**Scientific Name:**

*Entoloma murrayi* (Berk. & M.A. Curtis) Sacc. & P. Syd.,

**Common Name:**

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**Order/Family:**

Agaricales: Entolomataceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from secondary forest habitat in Singapore.

**Distribution:** Found in Brazil, Canada, China, Costa Rica, Honduras, Japan, Korea, Malaysia (Sabah), Mexico, Siberia, Singapore and USA (type).

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** The species was first collected in Singapore in 2018 from the forested area, close to Upper Peirce Reservoir Park, it has not been found elsewhere to date.

**Conservation Measures:** Conservation of secondary forest habitat.

Photo: Derek Liew



**Scientific Name:**

*Gloeocantharellus echinosporus*  
Corner

**Common Name:**

-

**Order/Family:**

Gomphales: Gomphaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from tropical lowland dipterocarp forest.

**Distribution:** Found in Malaysia, Borneo, Solomon Islands and Singapore (TYPE).

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** Another species in which Bukit Timah Nature Reserve (BTNR) it



its type locality, last collected in BTNR in 1939, it was Rediscovered in 2019 and is deposited in SING.

**Conservation Measures:** Conservation of forest habitat, particularly lowland dipterocarp forest.

**Scientific Name:**

*Praeearthromyces corneri* D. Stubbe,  
T.J. Baroni, T.W. Kuyper & van de  
Peppel

**Common Name:**

-

**Order/Family:**

Agaricales: Lyophyllaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded from tropical lowland dipterocarp forest.

**Distribution:** Found in Malaysia, Singapore (TYPE).



**Threats:** Loss of suitable habitat. The species may already be lost to us as the area in which it was collected had undergone restoration work and has not been located since.



**Scientific Interest and Potential Value:** It was first described by Corner from Bukit Timah Nature Reserve in 1939 as *Tricholoma furcatifolium* Corner; It was rediscovered in 2016 and is deposited in SING. The current name was a new name given as the authors who examined the type specimens did not find the presence of arthroconidia and as the DNA of the type

was not able to yield any sequences to confirm, hence a new name was given. We have since sequenced our material and confirmed it to be the same organism.

**Conservation Measures:** Substrate/soil should not be removed nor added from site in forest (in 'restoration' works).

**Scientific Name:**

***Cyathus stercoreus* (Schwein.) De Toni**

**Common Name:**

–

**Order/Family:**

**Agaricales: Nidulariaceae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Growing sparsely on mulch.

**Distribution:** Found in Argentina, Australia, Brazil, Canada, Japan, Mexico, Netherlands, Singapore, Spain, Switzerland, United States of America (TYPE).

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** Collected just once in Singapore (2013) and deposited in SING,

Photo: Ho Boon Chuan



it was in a mix collection, among the common *Cyathus subglobisporus*. It is possible that this fungus has been overlooked in collections made before 1979 and under recorded under the name of *Cyathus* sp.

**Conservation Measures:** Keep mulch and buffers moist.

**Scientific Name:**

***Cyptotrama asprata* (Berk.) Redhead & Ginns**

**Common Name:**

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**Order/Family:**

**Agaricales: Physalacriaceae**

Photo: Serena Lee





**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Grows on deadwood.

**Distribution:** Widely distributed in tropical regions of the world, including Australia, Brazil, China, Costa Rica, Japan, Malaysia, Mexico, New Zealand, Singapore, Sri Lanka (TYPE), Thailand, South Africa, United States of America.

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** It was found on a fallen twig hanging on some vines in Bukit Timah Nature Reserve, Fern Valley in 2018. The only specimen collected so far.

**Conservation Measures:** Substrate should not be removed from site.

**Scientific Name:**

***Favolus eos* (Corner) Zmitr.**

**Common Name:**

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**Order/Family:**

**Polyporales: Polyporaceae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Grows on well-decomposed wood.

**Distribution:** Malaysia and Singapore (TYPE).

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** Last reported in 1943 and rediscovered in 2015, only 3 known sites in Singapore, Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Upper Seletar Reservoir.

**Conservation Measures:** Substrate should not be removed from natural sites.

Photo: Serena Lee



**Scientific Name:**

*Lentinus tuberregium* (Fr.) Fr.

**Common Name:**

-

**Order/Family:**

Polyporales: Polyporaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** On the ground from large sclerotia (can be absent), on rotten wood, in forests and in the open.

**Distribution:** African continent, Ambon Island (TYPE), Australia, China, Malaysia, Papua New Guinea and Singapore, Solomon Islands, Thailand.

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** Last reported in 1981 and rediscovered in 2013, known from Bukit Timah Nature Reserve (1939) and the other from Singapore Botanic Gardens (Rainforest), 1965.

**Conservation Measures:** Conservation of forest habitat, particularly old growth tropical lowland forest.

Photo: Serena Lee



Photo: Serena Lee



**Scientific Name:**

*Lactifluus bicolor* (Masse) Verbeke,

**Common Name:**

-

**Order/Family:**

Russulales: Russulaceae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Solitary, growing on exposed roots.

**Distribution:** Malaysia and Singapore (TYPE).

Photo: Serena Lee



**Threats:** Loss of suitable habitat.

(Rainforest), rediscovered in Bukit Timah Nature Reserve in 2018.

**Scientific Interest and Potential Value:** Last collected in 1916 from Singapore Botanic Gardens

**Conservation Measures:** Conservation of forest habitat, particularly coastal hill dipterocarp forest.

**Scientific Name:**  
*Pisolithus albus* (Cooke & Massee)  
Priest

**Common Name:**

–

**Order/Family:**  
**Boletales: Sclerodermataceae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Coastal sand, near *Acacia* (*Acacia auriculiformis*) trees.

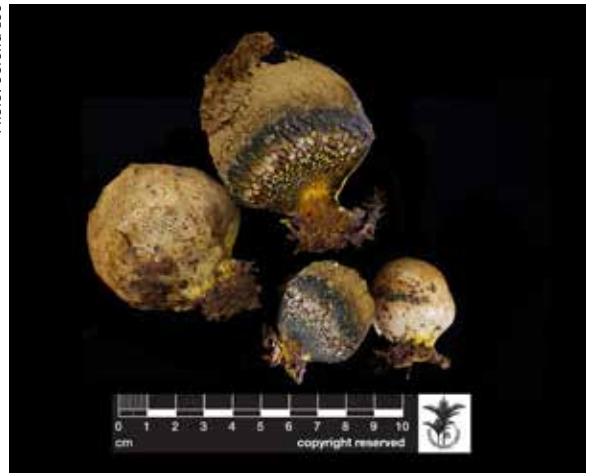
**Distribution:** Australia (TYPE), Benin, Colombia, Italy, Madagascar, New Zealand, Nigeria, Singapore, Thailand.

**Threats:** Loss of suitable habitat.

**Scientific Interest and Potential Value:** New record, found so far only on Lazarus Island, Pulau Tekukur in 2019.

**Conservation Measures:** Conservation of coastal rocky shore and coastal forest habitats.

Photo: Serena Lee



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# FAUNA : INVERTEBRATES

## Porifera – Sponges

LIM SWEE CHENG

### The state of Porifera in Singapore

There are some 250 distinct sponge species that has been documented across various habitats, including man-made structures, inter-tidal flats, coral reefs, deep seafloor at 200 m depths in the “Singapore Deeps” over the last three decades (see Hooper et al., 2000; Lim & Tan, 2008; De Voogd & Cleary, 2009; Lim et al., 2008 and 2009; Lim et al., 2012). Among these species, 131 species are included in this edition of the Singapore Red Data Book while the remaining half could only be determined to genus level and distinct Operational taxonomic unit (OTU), and hence are excluded from the list. Further taxonomic studies and revisions are required to clarify the systematics before they can be named with certainty. Nevertheless, this list serves as a crucial baseline of sponge biodiversity fauna that could inform us of changes of the fauna due to environmental factors in the future.

Notably, most of these species were recorded after large-scale land reclamations began in the 1960s. Most of these species seem to be well adapted to turbid and sedimented environments. Sponge species which are sensitive to sediments could have disappeared from Singapore waters during the decades of land reclamations before they were recorded. In this current Red List, only the Neptune’s Cup Sponge (*Cliona patera*) is classified as Critically Endangered (CR: D). Historical records from 200 years ago, as documented by John Crawford, the second British Resident of Singapore, depict its once-abundant presence in Singaporean waters (see Crawford, 1830).

However, there had been no record of the sponge in Singapore waters since 1908 (Hanitsch, 1908) for over a hundred years, until its recent rediscovery (Lim et al., 2012). The reasons for the disappearance were unknown but the reclamations of Telok Ayer Bay in 1887 and Telok Ayer Basin in the early 1900s probably played a part to their demise as sponges are sessile and filter-feeding animals which are adversely affected by increased sediment load in the environment. Unfortunately, only a few sponge species were recorded prior to these major changes in the environment, limiting our understanding. The comprehensive information presented in this edition of the Singapore Red Data Book would help better inform us of changes in sponge fauna in response to environmental shifts.

**Scientific Name:**

*Cliona patera*  
(Hardwicke, 1820)

**Common Name:**

Neptune's Cup Sponge

**Order/Family:**

Clionaida/Clionaidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** *Cliona patera* is the largest sponge species in Singapore waters that can grow over 1 m in diameter and height. It has a bowl/wine-glass shaped upper body supported by a stalk with rooting processes that anchor the sponge to the seafloor with sandy and coral rubble substrate at around 10–30 m depth in Singapore waters.

**Distribution:** In Singapore, this species is restricted to the waters off several islands in the Singapore Strait. It has also been reported in the waters of Thailand, Cambodia, and waters off Darwin (Australia).

**Threats:** Habitat loss and modification, sedimentation, and predation by turtles.

**Scientific Interest and Potential Value:** *Cliona patera*, also widely known as the Neptune's Cup Sponge, was the one of the first animals described in

Photo: Karenne Tun



Singapore over two centuries ago. The sponge was abundant in Singapore waters according to the second British Resident of Singapore, John Crawfurd, when he was holding office in 1823–26 (Crawfurd, 1830). The sponge was very popular in the past; almost every major natural history museum in the Europe has at least one specimen of the sponge. However, there had been no record of the sponge in Singapore waters since 1908 (Hanitsch, 1908) for over a hundred years until it was rediscovered in 2011 (Lim et al., 2012).

**Conservation Measures:** A few individuals have been transplanted to the Sisters' Island Marine Park for protection under maritime and conservation regulations, and they are being monitored regularly.

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# Cnidaria (non-Scleractinia)

YAP WEI LIANG NICHOLAS, OH REN MIN, IFFAH IESA

**Scientific Name:**

*Synpeachia temasek* Yap, Fautin, Ramos & Tan, 2014

**Common Name:**

Brown Peachia Anemone

**Family:**

Haloclavidae Verrill, 1899

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** A burrowing species that is encountered at the lower intertidal to subtidal zones of sandy shores. Because *S. temasek* has only ever been sighted and collected between evening and dawn, it is inferred to be nocturnal. During this time, the animal will extend itself from the substratum to presumably feed; when disturbed, it quickly retracts into the substratum. The larvae of *S. temasek* was inferred to be a parasite of the hydrozoan jellyfish, *Aequorea* sp.

**Distribution:** This is a rare species, encountered along the northern coastlines of Singapore and one locality in the Singapore Strait i.e. (Cyrene Reef). Globally, it has not been encountered anywhere else.

**Threats:** Habitat loss and modification, oil spills and extraction from its habitat.

Photo: Ria Tan



**Scientific Interest and Potential Value:** Due to the presence of a hand-shaped structure near the animal's mouth, and based on reports on closely related species (e.g., *Metapeachia* sp.), the larva of *S. temasek* is thought to be a parasite on jellyfish. Targeted research is needed to confirm this inference, and if true, to understand the impacts of this parasitic relationship on Singapore's marine ecosystem.

**Conservation Measures:** None have been undertaken yet. This species has not been sighted at its type locality (Changi Beach) since the publication of its formal description in 2014.

**Scientific Name:**

*Cyptodendrum adhaesivum*  
Klunzinger, 1877

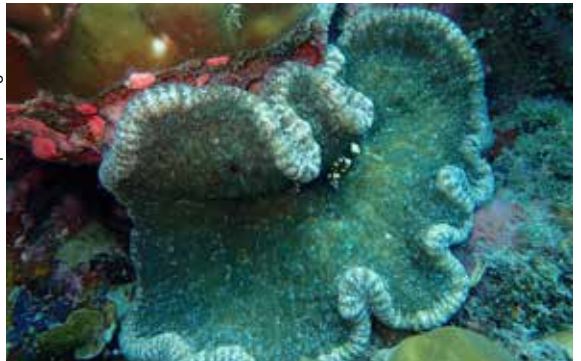
**Common Name:**

Pizza Anemone

**Family:**

Thalassianthidae Milne Edwards & Haime, 1851

Photo: Yap Wei Liang Nicholas



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found at the lower intertidal to subtidal, individuals are tightly attached to narrow, rocky crevices of coral reefs and their fringes. While observations from elsewhere (i.e., Red Sea and Thailand) have reported *C. adhaesivum* to be symbiotically associated with clownfish and anemone shrimps, such relationships with the former were not observed in individuals from Singapore. *Cryptodendrum adhaesivum* harbors dinoflagellates in its tissues.

**Distribution:** This species is found throughout the Indo-West Pacific: from the Red Sea to Indian Ocean, along

the South China Sea from Australia to Japan, and in French Polynesia.

**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills, warming and extraction.

**Scientific Interest and Potential Value:** The neurotoxins produced by this species have been the target of pharmacological research elsewhere in the world.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**  
*Pelocoetes exul*  
(Annandale, 1907)

**Common Name:**  
Branched Tentacle  
Mangrove Anemone

**Family:**  
Haliactiidae Carlgren, 1949

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found exclusively in the mangroves. While this species was encountered in mangroves along the northern coastline of mainland Singapore, it was not encountered in similar habitats around Pulau Ubin. Furthermore, *P. exul* does not appear to occur in mangroves of the Singapore Straits. This species burrows in the soft mud, with a preference to be positioned vertically as it extends out of the mud. It is rarely encountered during the day, only extending out of the soft substratum at night. When disturbed, it fires thread-like structures known as 'acontia' that are loaded with stings to defend itself. This species does not harbor dinoflagellates in its tissue.

**Distribution:** Apart from Singapore, *P. exul* has only been reported from the West and East coasts of India.

Photo: Ria Tan



**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills, invasive displacement.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**

*Stichodactyla mertensii*

Brandt, 1835

**Common Name:**

Merten's Carpet Anemone

**Family:**

Stichodactylidae Andres, 1883

**National Status:** Endangered (EN)

**Habitat and Ecology:** *Stichodactyla mertensii* inhabits the sandy benthos near coral reefs and is typically attached to a rock underneath the substratum. It is a symbiotic host to dinoflagellates, anemone fishes and shrimps. While up to eight species of anemone fishes have been reported to be associated with *S. mertensii* elsewhere, within the context of Singapore, only its relationship with *Amphiprion ocellaris* has been reported.

**Distribution:** This species has an extensive distribution, spanning across the Indo-West Pacific from the Pacific Islands in the East to the Comoro Islands at the West.

Photo: Yap Wei Liang Nicholas



**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills, warming and extraction.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**

*Heteractis doreensis*  
(Quoy & Gaimard, 1833)

**Common Name:**

Snaky Anemone,  
Long Tentacle Anemone

**Family:**

Heteractidae Andres, 1883

**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is often encountered in soft, sandy sediments or gravel benthos, with its pedal disc attached to a buried coral fragment or rock underneath the substratum. It is symbiotically associated with dinoflagellates, anemone fishes and shrimps. Elsewhere, up to four species of anemone fishes have been reported to inhabit *H. doreensis*, but in Singapore this relationship has not been observed.

Photo: Yap Wei Liang Nicholas



**Distribution:** This species occurs in across the Indo-West Pacific: from the south of Japan to the Great Barrier Reef, and along the eastern Indian Ocean.

**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills, warming, and extraction.

**Scientific Interest and Potential Value:** *Heteractis dorensis* is often marketed and sold to marine aqua hobbyists under the name 'Long Tentacle Anemone'.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**  
*Heteranthus verruculatus*  
Klunzinger, 1877

**Common Name:**  
Sand Anemone

**Family:**  
Heteranthidae Carlgren,  
1900

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species exists as two eco-morphotypes: as large, solitary individuals, or as small, clustering clonal ones. Those of the former eco-morphotype tend to be found in deep, rocky crevices, while those of the latter are mostly found extending from sandy substratum (e.g., seagrass meadows; typically found on the roots of seagrass). Clonal individuals reproduce by longitudinal fission; larger solitary individuals are inferred to reproduce sexually. Harbours dinoflagellates in its tissues.

**Distribution:** This species is distributed widely outside of Singapore: across the Indo-Pacific: from the Hawaii, the Indian Ocean to the Red Sea. It is unclear how abundance they may be in these areas; in Singapore

Photo: Yap Wei Liang Nicholas



their distribution is patchy, only occurring in less than five sites along the Singapore Strait.

**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills and warming.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.



**Scientific Name:**

*Anthopleura buddemeieri*  
Fautin, 2005

**Common Name:**

Pink-spotted Bead Anemone

**Family:**

Actiniidae Rafinesque, 1815

**National Status:** Endangered (EN)

**Habitat and Ecology:** These are attached underneath rocks or in rocky crevices, at very high intertidal zones where it is drier, unusual for a soft-bodied animal that needs to stay moist. Although many individuals are encountered at a locality, they are not densely clustered. Areas where they are found are typically near root runoff from a terrestrial forest; rocks to which they are attached are reddish and clay-like, as with crevices. Inferred to reproduce sexually only, there is presently no evidence to support that it reproduces asexually or that it broods its young. Not associated with dinoflagellates.

**Distribution:** This species has also been encountered in Papua New Guinea, Fiji and Australia's eastern coastline. Singapore is the westernmost region where this species has been found to occur.

Photo: Yap Wei Liang Nicholas



**Threats:** Habitat loss and modification and oil spills.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**

*Radianthus crista*  
(Hemprich & Ehrenberg in  
Ehrenberg, 1834)

**Common Name:**

Leathery Anemone

**Family:**

Stichodactylidae Andres,  
1883

Photo: Yap Wei Liang Nicholas



**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is found in rocky crevices of coral reefs, or in soft, sandy sediment with its column buried underneath the substratum. *Heteractis crista* is also found among hard coral thickets (e.g., those of *Acropora* sp.), with its pedal disc usually attached to a coral branch or rubble. It harbors dinoflagellate in its tissues and has been reported to be the host of over 14 species of anemonefishes elsewhere, although the ones in Singapore are rarely found to be associated with any.

**Distribution:** *Heteractis crista* can be found across the Indo-West Pacific, from the Red Sea to the French Polynesian islands.

**Threats:** Habitat loss and modification, declining water quality, sedimentation, oil spills, and warming.

**Scientific Interest and Potential Value:** Like *C. adhaesivum*, the neurotoxins produced by this species have been subjected to many pharmacological studies.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

**Scientific Name:**  
*Phyllorhiza punctata*  
von Lendenfeld, 1884

**Common Name:**  
White-spotted Jellyfish

**Family:**  
*Mastigiidae* Stiasny, 1920

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** While this species is known to be an introduced species elsewhere in the world (i.e., Atlantic), it is native to the Indo-West Pacific. Despite concerns of it being introduced elsewhere, *P. punctata* is involved in many important symbiotic relationships with both micro and macrofauna. For example, it harbours dinoflagellates in its tissues, it is a host to brittle stars, and schools of juvenile fish have also been documented to swim close to this jellyfish for protection.

**Distribution:** Native to the Indo-West Pacific, this species has been introduced to the rest of the world. In Singapore, the occurrence of this jellyfish is rare.

Photo: Yap Wei Liang Nicholas



**Threats:** Declining water quality, sedimentation, oil spills, and warming.

**Scientific Interest and Potential Value:** The symbiotic relationships that this species is involved in could be further investigated.

**Conservation Measures:** As of writing, there are no conservation measures, either locally or globally, to protect this species.

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## Cnidaria (Scleractinia) – Stony Corals

LIONEL NG CHIN SOON, SAMUEL CHAN YONG KIT, ROSA CELIA POQUITA-DU,  
HUANG DANWEI

Scleractinians (or stony corals) can be found in Singapore's shallow coastal waters, in both reef and non-reef habitats, including on urban structures such as marinas and seawalls. Collectively, they contribute habitat and provision resources for thousands of reef-associated species in Singapore's marine environment. Throughout much of Singapore's modern history, intensive coastal development and land reclamation have resulted in significant coral reef habitat loss and modification. Turbid conditions have been exacerbated, causing reduced light penetration in the water column and affecting the photosynthetic ability of the corals' algal symbionts. High sedimentation levels also cause smothering of these sessile organisms or increase the energy expenditure required to clear excess sediment. Corals are susceptible to climate change impacts, with declines in live cover caused by several mass bleaching episodes to date. The ongoing, synergistic risks of local and global stressors necessitate the implementation of active measures to protect all remaining coral species to ensure that reef ecosystem functioning is sustained. These include species recovery programmes for species in decline, habitat creation and restoration efforts to increase habitable spaces, and maritime regulation to reduce potential environmental impacts.

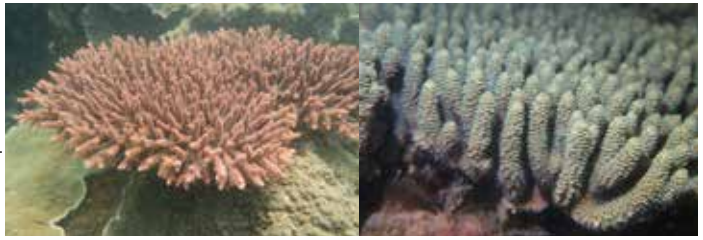
A total of 276 Indo-Pacific stony coral species have been assessed based on contemporary reef survey data, museum collections and literature reviews. Threat statuses for 142 species are proposed—one presumed Nationally Extinct (NEx), one Critically Endangered (CR), seven Endangered (EN), 20 Vulnerable (VU), 26 Near Threatened (NT), and 87 Least Concern (LC). The remaining 134 are considered Data Deficient (DD).

**Scientific Name:**  
*Acropora* spp. (48 species)

**Common Name:**  
Table corals and staghorn corals

**Family:**  
Acroporidae Verrill, 1901

Both photos: Sam Shu Qin



Left: *Acropora millepora* on the reef crest at Pulau Satumu; Right: *Acropora millepora*, classified as Endangered in the current assessment.

**National Status:** 6 Endangered (EN), 2 Vulnerable (VU), 3 Least Concern (LC), 37 Data Deficient (DD)

**Habitat and Ecology:** The genus *Acropora* consists of a large number of species (more than 149 globally, 48 in Singapore) encompassing a variety of growth forms, including plates or corymbose structures. They thrive in shallow, well-lit environments such as at reef flats or upper reef slopes. While they can form major reef structures elsewhere, *Acropora* spp. are generally uncommon in Singapore, existing mainly on reefs that experience stronger currents and good water clarity.

**Distribution:** Tropical and subtropical shallow seas globally.

**Threats:** Habitat loss and modification, sedimentation,

climate change. Particularly affected by high turbidity and thermal stress.

**Scientific Interest and Potential Value:** *Acropora* spp. are generally fast-growing and provide a variety of microhabitats for small animals or juveniles of many reef species. They are also popular in the aquarium trade. As they are not found at many Singapore sites, assessments of population change are difficult. With the exception of three species classified as Least Concern, the general outlook for the genus remains poor.

**Conservation Measures:** Some species are being propagated in coral nurseries or are under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**  
*Montipora grisea* Bernard, 1897

**Common Name:**  
-

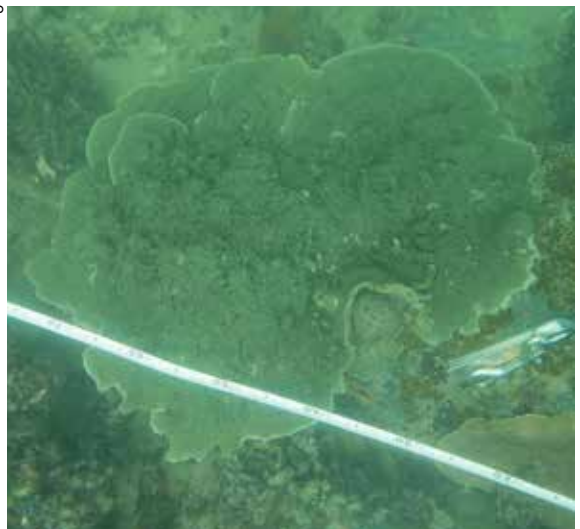
**Family:**  
Acroporidae Verrill, 1901

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Foliose or encrusting colonies. On upper reef slopes.

**Distribution:** Widely distributed in the Indo-Pacific region.

Photo: Lionel Ng



*Montipora grisea* recorded during a reef survey at Kusu Island.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Based on recent reef surveys between 2015 and 2019, this species makes up 0.42% of the total coral cover across sites in Singapore.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**

*Leptoseris explanata* Yabe & Sugiyama, 1941

**Common Name:**

–

**Family:**

Agariciidae Gray, 1847

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Foliose colonies with white margins. On lower reef slopes.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Also found in mesophotic reefs elsewhere which indicates

Photo: Huang Danwei



Fine skeletal features of *Leptoseris explanata* at Pulau Tekukor.

their tolerance to low light levels, *Leptoseris* corals are popular in the aquarium trade due to the variety of colour morphs.

**Conservation Measures:** Under protection by maritime regulations such as those at Pulau Satumu.

**Scientific Name:**

*Pavona cactus* (Forskål, 1775)

**Common Name:**

Cactus coral

**Family:**

Agariciidae Gray, 1847

Both Photos: Huang Danwei



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Foliose colonies bearing thin, contorted fronds. In turbid, wave-sheltered environments.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Spaces between fronds provide good habitat for small organisms, including a species of squat lobster described in the 1990s.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.



*Pavona cactus* at Pulau Subar Laut. The fronds are brittle and resemble potato chips.

**Scientific Name:**

*Fimbriaphyllia divisa* (Veron & Pichon, 1980)

**Common Name:**

Frogspawn coral

**Family:**

Euphylliidae Milne Edwards & Haime, 1857

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Flabello-meandroid, submassive colonies. Polyps are tubular with smaller tubular branches. In turbid environments.

**Distribution:** Tropical Central Indo-Pacific region.

**Threats:** Habitat loss and modification, climate change.

**Scientific Interest and Potential Value:** Corals of the genera *Euphyllia* and *Fimbriaphyllia* are especially

Photo: Huang Danwei



*Fimbriaphyllia divisa* at Pulau Subar Laut. Partially retracted polyps reveal its flabello-meandroid colony structure.

popular in the aquarium trade because of their fleshy and colourful tentacles. They can generally survive high sedimentation rates.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**

*Polyphyllia talpina* (Lamarck, 1801)

**Common Name:**

Mole mushroom coral

**Family:**

Fungiidae Dana, 1846

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Free-living, elongate colonies. Generally on reef crests and slopes but not found at many sites.

**Distribution:** Widely distributed in the Central Indo-Pacific region.

**Threats:** Habitat loss and modification.

Photo: Huang Danwei



*Polyphyllia talpina* at Pulau Subar Laut. Extended polyps give this free-living coral a furry appearance.

**Scientific Interest and Potential Value:** Tested as bone implant material in sheep. Known to host small snails, copepods, gall crabs and barnacles. Can generally survive in turbid conditions.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at the Sisters' Islands Marine Park.

**Scientific Name:**

*Lobophyllia hataii* Yabi, Sugiyama & Eguchi, 1936

**Common Name:**

Lobed brain coral

**Family:**

Lobophylliidae Dai & Horng, 2009

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Flabello-meandroid, submassive colonies. On reef slopes.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

Photo: Huang Danwei



*Lobophyllia hataii* off the waters of southwest Pulau Semakau.

**Scientific Interest and Potential Value:** Based on recent reef surveys between 2015 and 2019, this species makes up 0.05% of the total coral cover across sites in Singapore.

**Conservation Measures:** None known.



**Scientific Name:**  
*Dipsastraea pallida* (Dana, 1846)

**Common Name:**  
Knob coral

**Family:**  
Merulinidae Milne Edwards & Haime, 1857

Both Photos: Huang Danwei



*Dipsastraea pallida* off the waters of southwest Lazarus Island.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Massive or encrusting colonies.  
All reef environments.

**Distribution:** Widespread in the tropical Indian and Pacific Oceans.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Population has declined significantly.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**  
*Favites flexuosa* (Dana, 1846)

**Common Name:**  
-

**Family:**  
Merulinidae Milne Edwards & Haime, 1857

Photo: Huang Danwei



*Favites flexuosa* off the waters of Pulau Semakau.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Massive or encrusting colonies.  
All reef environments.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Population decline significant.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.



**Scientific Name:**

*Platygyra lamellina* (Ehrenberg, 1834)

**Common Name:**

Lesser valley coral

**Family:**

Merulinidae Milne Edwards & Haime, 1857

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Massive or encrusting colonies. All reef environments.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Regains normal pigmentation relatively quickly after bleaching from thermal stress.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.



*Platygyra lamellina* in waters off Kusu Island.

**Scientific Name:**

*Plerogyra sinuosa* (Dana, 1846)

**Common Name:**

Pearl bubble coral

**Family:**

Plerogyridae Rowlett, 2020

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Flabello-meandroid, submassive colonies. Sheltered reef environments.

**Distribution:** Widely distributed in the Indo-Pacific region.



*Plerogyra sinuosa* with grape-like vesicles in the waters off Pulau Subar Laut.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Population decline significant. Popular in the aquarium trade.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**  
*Scapophyllia cylindrica* Milne  
Edwards & Haime, 1849

**Common Name:**  
Columniform crust coral

**Family:**  
Merulinidae Milne Edwards &  
Haime, 1857

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Columnar, submassive or encrusting colonies. On reef crests.

**Distribution:** Tropical Central Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

Photo: Huang Danwei



Tall columns of *Scapophyllia cylindrica* at Pulau Satumu.

**Scientific Interest and Potential Value:** Population decline has been significant.

**Conservation Measures:** Under protection by maritime regulations such as those at Pulau Satumu.

**Scientific Name:**  
*Trachyphyllia geoffroyi*  
(Audouin, 1826)

**Common Name:**  
Open brain coral

**Family:**  
Merulinidae Milne Edwards &  
Haime, 1857

**National Status:** Endangered (EN)

**Habitat and Ecology:** Flabello-meandroid and fleshy colonies. Free-living and can be found on sandy or silty substrate.

Photo: Huang Danwei



Free-living *Trachyphyllia geoffroyi* on the patch reef of Terumbu Pempang Tengah

**Distribution:** Widely distributed in the Central Indo-Pacific region.

**Threats:** Habitat loss and modification, climate change.

**Scientific Interest and Potential Value:** It is one of the few free-living non-fungiid species and is therefore

evolutionarily important. This brightly coloured species is also highly popular in the aquarium trade. Can generally survive high sedimentation rates.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

**Scientific Name:**  
*Seriatopora hystrix* Dana, 1846

**Common Name:**  
Thin bird's nest coral

**Family:**  
Pocilloporidae Gray, 1840

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Branching colonies. Shallow reef environments.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change. While this species still persists in other parts of the region, it has not been detected in Singapore reefs for over half a century, suggesting that its disappearance is likely due to local environmental pressures.



*Seriatopora hystrix* on a reef at Anilao, the Philippines.

**Scientific Interest and Potential Value:** Its persistence in neighboring countries presents an opportunity to further investigate its disappearance from local waters and examine whether it can reestablish if conditions improve.

**Conservation Measures:** None known

**Scientific Name:**  
*Stylophora pistillata* (Esper, 1792)

**Common Name:**  
Smooth cauliflower coral

**Family:**  
Pocilloporidae Gray, 1840



*Stylophora pistillata* on the reef at Pulau Satumu in 2010.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Branching colonies. Shallow reef environments.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change. The last standing colony has perished since the mass bleaching event in 2010. However, given that it is still present in neighboring countries,

the possibility that it can return via immigration of propagules remains.

**Scientific Interest and Potential Value:** Its persistence in neighboring countries presents an opportunity to further investigate its disappearance from local waters and examine whether it can reestablish if conditions improve.

**Conservation Measures:** None known

**Scientific Name:**  
*Porites cylindrica* Dana, 1846

**Common Name:**  
Yellow finger coral

**Family:**  
Poritidae Gray, 1840

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Branching or encrusting colonies.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** While feeding can increase in turbid conditions, tissue biomass has also been observed to decrease.

**Conservation Measures:** None known

Photo: Huang Danwei



*Porites cylindrica* on the reef crest at Pulau Hantu.



**Scientific Name:**

*Psammocora nierstraszi* Van der Horst, 1921

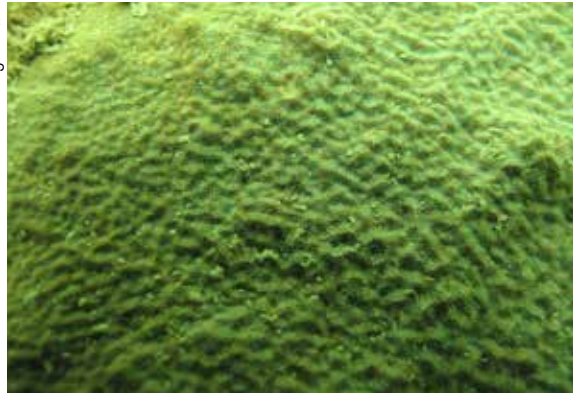
**Common Name:**

Boulder sandpaper coral

**Family:**

Psammocoridae Chevalier & L. Beauvais, 1987

Photo: Huang Danwei



Fine skeletal features of *Psammocora nierstraszi* on the reef off Pulau Semakau.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Submassive or encrusting colonies.

**Distribution:** Widely distributed in the Indo-Pacific region.

**Threats:** Habitat loss and modification, sedimentation, climate change.

**Scientific Interest and Potential Value:** Based on recent reef surveys between 2015 and 2019, this species makes up 0.07% of the total coral cover across sites in Singapore.

**Conservation Measures:** Under protection by maritime and conservation regulations such as those at Pulau Satumu and the Sisters' Islands Marine Park.

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# Polycladida – Flatworms

SAMANTHA J.W. TONG, RENE S.L. ONG

Marine flatworms are unsegmented worms from the phylum Platyhelminthes, *platy-* meaning 'flat' and *helminth-* meaning 'worm'. Many free-living marine flatworms found on Singapore's shores are from the order Polycladida. Polyclads can be found within coral reefs, rocky shores, mudflats, seagrass habitats and among seaweed patches. There is an estimated 128 species of polyclad flatworms recorded in Singapore so far. Despite this relatively high diversity, much information on the ecology of polyclads in Singapore is limited because of a general lack of regular, systematic surveys. This number is also clearly an underrepresentation of the actual polyclad diversity. Many species were sighted less than ten times over the past 20 years, and some were even possibly new to science. Polyclad sightings are largely dependent on the accessibility of the location (e.g. less likely to sample restricted areas or areas that require a permit to enter) and suitable low tides for intertidal sampling. More sampling would yield a better idea of polyclad distribution and abundance in the waters of Singapore.

The lack of continuous sampling efforts hinders building our knowledge on these beautiful marine flatworms. Singapore's shores face many challenges such as coastal developments, high rates of sedimentation and pollution. These may result in the degradation of marine habitats that puts marine lives, including the polyclads, at risk. Although polyclad diets are poorly studied, cotylean diversity is usually higher in areas with higher abundances of ascidians and sponges. Damage to marine habitats in general would also affect the food sources of polyclads. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles given the high rate of coastal urbanisation in Singapore.

**Scientific Name:**

*Pseudobiceros flowersi* Newman & Cannon, 1997

**Common Name:**

Olive flatworm

**Order/Family:**

Polycladida/Pseudocerotidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Subtidal region

**Distribution:** In Singapore, this species has only ever been recorded at Pulau Semakau. Sightings of this species so far are just that handful in Ong & Tong (2018).

**Threats:** Habitat loss, habitat modification, oil spills and warming are some typical threats to polyclad flatworms. Furthermore, Singapore's shores face many challenges such as coastal developments, high sedimentation and pollution. These may result in degradation of marine habitats that puts marine lives, including the polyclads, at risk.

Photo: Rene Ong



**Scientific Interest and Potential Value:** Although polyclad ecology and their diets are poorly studied, cotylean diversity is usually higher in areas with higher abundances of ascidians and sponges. It is reasonable to presume that they play key roles in regulating population dynamics and nutrient cycling.

**Conservation Measures:** Conservation measures should include area protection, species recovery programme, habitat restoration and habitat creation. Many species were sighted less than ten times over the past 20 years, and some could even be new to science. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles before they are lost to any anthropogenic harm

**Scientific Name:**

*Pseudoceros microcelis* Prudhoe, 1989

**Common Name:**

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**Order/Family:**

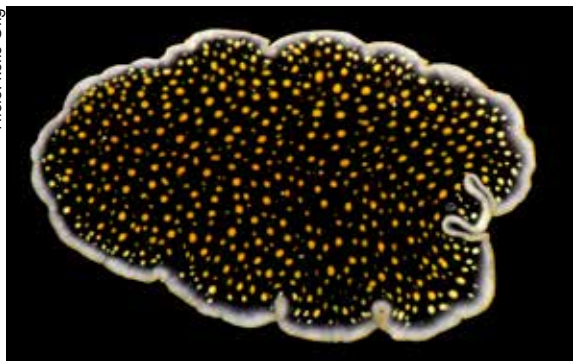
Polycladida/Pseudocerotidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Subtidal region

**Distribution:** In Singapore, this species has only been sighted at Big Sister's Island, Pulau Biola, Pulau Hantu, Pulau Tekukor and Pulau Jong.

Photo: Rene Ong



**Threats:** Habitat loss, habitat modification, oil spills and warming are some typical threats to polyclad flatworms. Furthermore, Singapore's shores face many challenges such as coastal developments, high sedimentation and pollution. These may result in degradation of marine habitats that puts marine lives, including the polyclads, at risk.

**Scientific Interest and Potential Value:** This species record in Singapore might be the first record from beyond the type locality at Inhaca Island, Mozambique (Ong et al., 2018). Despite the high diversity of an estimated 128 species of polyclad flatworms recorded in Singapore so far, this number is clearly an underrepresentation of the actual polyclad diversity. Much information on the ecology of polyclads in Singapore is limited because of a general lack of regular, systematic surveys. Polyclad sightings are also largely dependent on the accessibility of the location. More sampling will yield a better idea of polyclad distribution and abundance in our waters.

**Conservation Measures:** Conservation measures should include area protection, species recovery programme, habitat restoration and habitat creation. Many species were sighted less than ten times over the past 20 years, and some could even be new to science. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles before they are lost to any anthropogenic harm.

**Scientific Name:**

*Pseudoceros paralaticlavus* Newman & Cannon, 1994

**Common Name:**

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**Order/Family:**

Polycladida/Pseudocerotidae

Photo: Rene Ong



**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Only found at the subtidal zone in Singapore

**Distribution:** In Singapore, this species has only been sighted at Big Sister's Island and Terumbu Pempang Tengah.

**Threats:** Habitat loss, habitat modification, oil spills and warming are some typical threats to polyclad flatworms. Furthermore, Singapore's shores face many challenges such as coastal developments, high sedimentation and pollution. These may result in degradation of marine habitats that puts marine lives, including the polyclads, at risk.

**Scientific Interest and Potential Value:** Although polyclad ecology and their diets are poorly studied, cotylean diversity is usually higher in areas with higher abundances of ascidians and sponges. It is reasonable to presume that they play key roles in regulating population dynamics and nutrient cycling.

**Conservation Measures:** Conservation measures should include area protection, species recovery programme, habitat restoration and habitat creation. Many species were sighted less than ten times over the past 20 years, and some could even be new to science. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles before they are lost to any anthropogenic harm.

**Scientific Name:**

*Thysanozoon nigrum* Girard, 1851

**Common Name:**

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**Order/Family:**

Polycladida/Pseudocerotidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Subtidal region

**Distribution:** In Singapore, this species has only been sighted at Pulau Hantu, Pulau Salu, Pulau Semakau and Pulau Senang.

**Threats:** Habitat loss, habitat modification, oil spills and warming are some typical threats to polyclad flatworms. Furthermore, Singapore's shores face many challenges such as coastal developments, high sedimentation and pollution. These may result in degradation of marine habitats that puts marine lives, including the polyclads, at risk.

**Scientific Interest and Potential Value:** First record of this species in the Indo-Pacific (Ong et al., 2018). Despite the high diversity of an estimated 128 species

Photo: Rene Ong



of polyclad flatworms recorded in Singapore so far, this number is clearly an underrepresentation of the actual polyclad diversity. More sampling will yield a better idea of polyclad distribution and abundance in our waters, and even discover more new records.

**Conservation Measures:** Conservation measures should include area protection, species recovery programme, habitat restoration and habitat creation. Many species were sighted less than ten times over the past 20 years, and some could even be new to science. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles before they are lost to any anthropogenic harm.

**Scientific Name:**

*Pericelis byerleyana*  
(Collingwood, 1876)

**Common Name:**

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**Order/Family:**

Polycladida/Pericelidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Subtidal region, among corals

Photo: Rene Ong



**Distribution:** This species is rarely sighted in Singapore and was only recorded at Pulau Jong in Ong & Tong (2018). They were sighted once again in October 2020 at Raffles Lighthouse, Kusu Island and Sisters' Islands.



**Threats:** Habitat loss, habitat modification, oil spills and warming are some typical threats to polyclad flatworms. Furthermore, Singapore's shores face many challenges such as coastal developments, high sedimentation and pollution. These may result in degradation of marine habitats that puts marine lives, including the polyclads, at risk.

**Scientific Interest and Potential Value:** Although polyclad ecology and their diets are poorly studied, cotylean diversity is usually higher in areas with higher abundances of ascidians and sponges. It is reasonable

to presume that they play key roles in regulating population dynamics and nutrient cycling.

**Conservation Measures:** Conservation measures should include area protection, species recovery programme, habitat restoration and habitat creation. Many species were sighted less than ten times over the past 20 years, and some could even be new to science. There is an urgent need to protect these habitats, to describe new polyclad species, and to learn more about their biology and ecological roles before they are lost to any anthropogenic harm.

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# Marine Annelida – Segmented Worms

LEE YEN-LING, ANG HWEE PENG, CHUAR CHEAH HOAY,  
GAYATHRI D/O SIVANANTHAN

**Scientific Name:**

*Chaetopterus appendiculatus*

**Common Name:**

Fairy Tubeworm

**Order/Family:**

Annelida/Chaetopteridae

Photo: Tan Heek Hui



**National Status:** Near Threatened (NT)

**Habitat and Ecology:** The worm prefers shallow waters and muddy shores.

**Distribution:** In Singapore, this species has been found in the waters off Changi, at Chek Jawa and also from several islands in the Singapore Straits such as Semakau, St John's and Lazarus. It has an almost cosmopolitan distribution across the world.

**Threats:** The shallow water localities that they are found face hazards from boating activities, high sedimentation, and potential coastal development.

**Scientific Interest and Potential Value:** Previously, this worm was referred to as *C. variopedatus* and its "Endangered" status was given based on the species'

cosmopolitan distribution in the world but limited occurrence in Singapore. During the Comprehensive Marine Biodiversity Survey (conducted between 2010 till 2016) and other ad hoc sampling trips spanning 2008 till 2015, a number of specimens were obtained across several islands and reefs in the Singapore Straits particularly Semakau and also in the silt-covered shores at the eastern part of Singapore. It is likely that more individuals are present in the wild but due to the silty environment where they are usually found, they may be less visited intertidally or spotted in dives, resulting in sporadic encounters. They do not form dense aggregations and are estimated to have low numbers in the wild. It is now assessed as NT in this RDB3.

**Conservation Measures:** Key areas where the worm occurs in good numbers should be identified and steps taken to conserve them.

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# Mollusca – Molluscs

TAN SIONG KIAT, TAN KOH SIANG

**Scientific Name:**

*Limopsis excancellata* Sacco,  
1898

**Common Name:**

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**Order/Family:**

Bivalvia (Arcida): Limopsidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Presumably infaunal in muddy substrates subtidally. Shell small, usually less than 6 mm, but sizes of more than 1 cm have been reported for shells from elsewhere.

**Distribution:** Southeast Asia. In Singapore, this species has been collected from the Seletar area in 1933.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

Photo: Tan Siong Kiat



*Limopsis excancellata* from Seletar.

**Scientific Interest and Potential Value:** This species was first described from Singapore by Reeve (1843 as *Pectunculus cancellata* [non Michelotti, 1839]). *Limopsis excancellata* is a replacement name.

**Conservation Measures:** This species has not been documented in surveys carried out in the past few decades, thus it is presumed to be nationally extinct. Surveys are needed to determine if it still occurs at any sites, which would then need to be protected from urbanisation and disturbance.

**Scientific Name:**

*Amusium pleuronectes* (Linnaeus,  
1758)

**Common Name:**

Asian moon scallop, Sun and  
moon scallop

**Order/Family:**

Bivalvia (Pectinida): Pectinidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Subtidal on sand and mud sediments. Shell length up to around 8 cm.

**Distribution:** Indo-West Pacific. In Singapore, it has

Photo: Tan Siong Kiat



*Amusium pleuronectes* from Siglap.

only been found in the area around the present-day East Coast Park prior to the large-scale reclamation works in the 1970s.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Very common and commercially exploited in some countries. Often available in the markets of Southeast Asia.

**Conservation Measures:** This species has not been documented in surveys carried out in the past few

decades thus it is presumed nationally extinct. It is likely that this species was never common, and it was noted to be rare by Chuang (1973). Surveys are needed to determine any sites of occurrence, which would need to be protected from urbanisation and disturbance.

**Scientific Name:**

*Hippopus hippopus* (Linnaeus, 1758)

**Common Name:**

Horse's hoof clam, Bear paw clam,  
Siput lupat

**Order/Family:**

Bivalvia (Cardiida): Cardiidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Shell length often reaching around 20 cm, but large ones may attain lengths of more than 40 cm.

**Distribution:** Indo-Pacific. In Singapore, this species was recorded from several of the southern and western islands including, but not limited to, Pulau Pawai, Pulau Senang, and Pulau Satumu.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Collected for food, and/or the aquarium and shell trade in some countries.

**Conservation Measures:** This species has not been documented in surveys carried out in the past few decades thus it is presumed nationally extinct. It is likely that this species was never common. Surveys are needed to determine any sites of occurrence, which would need to be protected from urbanisation and disturbance.

Photo: Tan Siong Kiat



*Hippopus hippopus* from Pulau Senang.

**Scientific Name:**

*Tridacna crocea* Lamarck, 1819

**Common Name:**

Crocus giant clam, Boring giant clam

**Order/Family:**

Bivalvia (Cardiida): Cardiidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Boring in coral heads, coral rocks and boulders, on reef flats and coral reefs. Shell length reaching a maximum of around 15 cm.

**Distribution:** Indo-Pacific. In Singapore, this species has been recorded from many of the southern and western islands.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

Photo: Neo Mei Lin



*Tridacna crocea* at Pulau Semakau.

**Scientific Interest and Potential Value:** Collected for food, and/or the aquarium and shell trade in some countries.

**Conservation Measures:** This species has been observed sporadically in surveys over the last few decades although always in small numbers fewer than five individuals per occasion. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Tridacna gigas* (Linnaeus, 1758)

**Common Name:**

True giant clam

**Order/Family:**

Bivalvia (Cardiida): Cardiidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Usually free-living on either sand or hard reef substrata on coral reefs. May reach more than a metre in shell length, and massive ones are very thick and heavy.

**Distribution:** Indo-Pacific. Anecdotal reports are available but there are no verifiable records from Singapore.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

Photo: Neo Mei Lin



*Tridacna gigas* in the waters of Sipadan, Sabah, Malaysia.

**Scientific Interest and Potential Value:** Collected for food, and/or the aquarium and shell trade in some countries.

**Conservation Measures:** This species has not been documented in surveys carried out in the past few decades thus it is presumed nationally extinct. It is likely that this species was never common. Surveys are needed to determine any sites of occurrence, which would need to be protected from urbanisation and disturbance.

**Scientific Name:**

*Tridacna maxima* (Röding, 1798)

**Common Name:**

Elongate giant clam, Small giant clam

**Order/Family:**

Bivalvia (Cardiida): Cardiidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Usually nestled or partially embedded in and amongst coral heads, coral rocks and boulders on coral reefs. Shell length may reach more than 15 cm, but are usually smaller.

**Distribution:** Indo-Pacific. In Singapore, this species has only been recorded from Pulau Satumu and Terumbu Bemban.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food, and/or the aquarium and shell trade in some countries.

**Conservation Measures:** This species only has two confirmed sightings from surveys over the last few decades, suggesting that this species likely was never common. The species is assessed as critically endangered because of its rarity. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

Photo: Tan Siong Kiat



*Tridacna maxima* from the Philippines.

**Scientific Name:**

*Tridacna squamosa* Lamarck, 1819

**Common Name:**

Fluted giant clam, Scaly giant clam, Siput kima

**Order/Family:**

Bivalvia (Cardiida): Cardiidae

Photo: Tan Siong Kiat



*Tridacna squamosa* at Pulau Satumu.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Usually nestled amongst coral and rocks on coral reefs. Shell length may reach more than 40 cm.

**Distribution:** Indo-Pacific. In Singapore, this species has been recorded from many of the southern and western islands.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food, and/or the aquarium and shell trade in some countries.

**Conservation Measures:** This species has been observed sporadically in surveys over the last few decades although always in small numbers fewer than five individuals per occasion. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Dallitellina rostrata* (Linnaeus, 1758)

**Common Name:**

Rostrate tellin

**Order/Family:**

Bivalvia (Cardiida): Tellinidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Burrowing in soft sandy or muddy substrates, in which they frequently lie somewhat horizontally with the left valve on top. Shell length may reach more than 7 cm.

**Distribution:** Indo-West Pacific. In Singapore, it has thus far been recorded from Bedok, Changi, and Pulau Hantu, but is likely to be more widespread.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food and for its attractive shell in some countries.

Photo: Tan Siong Kiat



*Dallitellina rostrata* from Changi.

**Conservation Measures:** Although this species was reported from Singapore since the 1800s, there are very few records in the literature and in the LKCNHM. This species is assessed as vulnerable because of its apparent rarity. Conservation of sufficiently healthy coastal habitats will be beneficial.



**Scientific Name:**  
*Potamocorbula nimbosa*  
(Hanley, 1843)

**Common Name:**

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**Order/Family:**  
**Bivalvia (Myida): Corbulidae**

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Presumably in sand, mud and clay sediments of estuaries and mudflats from the intertidal to shallow subtidal zones. Shell length up to around 3 cm.

**Distribution:** South China Sea, Japan, and to the Cocos (Keeling) Islands in the eastern Indian Ocean.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:**  
This species was described from Singapore as *Corbula nimbosa* by Hanley (1843). Incidentally, the synonyms *Corbula ustulata* and *C. labiata* described by Reeve (1844 [in 1843–1844]) were also based on specimens from Singapore.

Photo: Tan Siong Kiat



*Potamocorbula nimbosa* from Singapore.

**Conservation Measures:** There have been no original records of this species from Singapore in the past century. It is thus presumed to be nationally extinct. Surveys are needed to determine any sites of occurrence, which would need to be protected from urbanisation and disturbances.

**Scientific Name:**  
*Barnea manilensis* (Philippi, 1847)

**Common Name:**  
**Manila piddock**

**Order/Family:**  
**Bivalvia (Myida): Pholadidae**

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Boring in clay and soft rocks, from the intertidal zone to depths of about 20 m. Shell length may reach more than 7 cm.

Photo: Tan Siong Kiat



*Barnea manilensis* from Tanjong Gul.

**Distribution:** Indo-Pacific. In Singapore, this species was recorded from Telok Ayer and Tanjong Gul, both since reclaimed.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food and sometimes offered in the markets of Southeast Asia.

**Conservation Measures:** Two lots of this species in the LKCNHM, collected from Telok Ayer in 1900 and Tanjong Gul in 1968, are the only examples we know of this species. It has not been subsequently collected nor reported from Singapore thus presumed to be nationally extinct. Surveys are needed to determine any sites of occurrence, which would need to be protected from urbanisation and disturbance.

**Scientific Name:**  
*Verpa penis* (Linnaeus, 1758)

**Common Name:**  
Common watering pot shell

**Order/Family:**  
*Bivalvia (Anomalodesmata):*  
*Penicillidae*

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** In muddy sand sediment, from areas exposed during the lowest spring tides to the shallow subtidal depths. Buried vertically with only the posterior part of its tube showing above the substrate. Jets of water forced periodically through the perforations of its anterior disc is thought to aid burrowing and the fringes of the disc could possibly serve to stabilise the shell to prevent dislodging. Shell length may reach more than 12 cm.

**Distribution:** Indo-West Pacific. In Singapore, most records are from the eastern coasts from Pasir Ris to East Coast Park.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.



Photo: Tan Siong Kiat

*Verpa penis* from Changi.

**Scientific Interest and Potential Value:** This species is generally regarded to be rare because of their cryptic habits. This species appears to be relatively common in Singapore where specimens were first collected by Hugh Cuming who was in Singapore in 1836 and from 1839–1840. Studies on its biology were also carried out by Purchon (1956; 1960) based on specimens collected here.

**Conservation Measures:** Previously presumed to be nationally extinct, live specimens have since been found around the eastern side of Singapore. It is assessed to be vulnerable because of its perceived rarity. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**  
*Tectus pyramis* (Born, 1778)

**Common Name:**  
Pyramid top, Pyram top

**Order/Family:**  
Gastropoda (Trochida): Tegulidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Amongst rocks on coral reefs and rocky shores. Shell length usually up to around 8 cm.

**Distribution:** Indo-Pacific. In Singapore, it has been recorded from Pulau Hantu, Pulau Subar Laut, and Pulau Satumu.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

Photo: Tan Siong Kiat



*Tectus pyramis* from Pulau Sakijang.

**Scientific Interest and Potential Value:** Collected for food and for its attractive shell in some countries. Shells often polished and used in shell craft.

**Conservation Measures:** Although there is no evidence to suggest that this species was abundant or even common in the past, there were records of this species on the reefs of the southern and western islands up to the mid-1960s. There have been no documented sightings in the past decades. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

**Scientific Name:**  
*Turbo petholatus* Linnaeus, 1758

**Common Name:**  
Tapestry turban

**Order/Family:**  
Gastropoda (Trochida): Turbinidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Coral reefs and rocky shores, subtidal. Shell length may reach more than 6cm.

**Distribution:** Indo-Pacific. In Singapore, this species has been recorded from Pulau Jong, Kusu, Pulau Hantu, Terumbu Pempang Tengah, and Pulau Satumu.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food and for its colourful shell in some countries.

Photo: Neo Mei Lin



*Turbo petholatus* at Pulau Satumu.

Its operculum is often used in shell craft and costume jewellery.

**Conservation Measures:** This species is assessed as vulnerable because of its rarity and apparent restriction to coral reef habitats. This species is only very rarely encountered during intertidal surveys, but it has been observed to be moderately common on the subtidal reefs at Pulau Satumu. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Cerithium nodulosum* Bruguière, 1792

**Common Name:**

Giant knobbed cerith

**Order/Family:**

Gastropoda (Caenogastropoda):  
Cerithiidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Sandy and rubbly areas of intertidal reef flats, and coral reefs. Shell length may reach more than 10 cm.

**Distribution:** Indo-Pacific. In Singapore, this species has thus far been recorded from Pulau Satumu, Pulau Pawai, and Pulau Hantu.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Commonly collected for food and shell trade in some countries.

Photo: Rene S.L. Ong



*Cerithium nodulosum* from Pulau Satumu.

**Conservation Measures:** This species is assessed as vulnerable because of its present rarity in Singapore and apparent restriction to coral reef habitats. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Rhinoclavis aspera* (Linnaeus, 1758)

**Common Name:**

Rough vertagus

**Order/Family:**

Gastropoda (Caenogastropoda):  
Cerithiidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** In sand of sand flats and sand pockets of coral reef areas, from the low intertidal to shallow subtidal depths. Shell length may reach more than 5 cm.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from Pulau Salu, Sentosa, Pulau Semakau, Cyrene Reef, and Terumbu Raya.

Photo: Rene S.L. Ong



*Rhinoclavis aspera* from Pulau Semakau.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Very common and often collected for shell craft in some countries.

**Conservation Measures:** This species can be locally abundant where found, but living specimens have not

been reported nor encountered in recent surveys in the past couple of decades. It is thus provisionally assessed to be endangered. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Rhinoclavis vertagus* (Linnaeus, 1767)

**Common Name:**

Common vertagus

**Order/Family:**

Gastropoda (Caenogastropoda):  
Cerithiidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** In sand and muddy sand substrates on reef flats, seagrass meadows, and coral reefs.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from Pulau Senang, Pulau Hantu, and Pulau Semakau. Shell length may reach more than 5 cm.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Very common, and often collected for the shell trade and occasionally as food in some countries.

**Conservation Measures:** This species is provisionally assessed to be endangered although there is no evidence to suggest that this species was ever common in Singapore. It can be locally abundant where found, but no living specimens have been reported or encountered in surveys carried out in the past few decades. Further surveys are needed to identify the sites of occurrence in Singapore for a reassessment in the future. Conservation of sufficiently healthy coastal habitats will be beneficial.

Photo: Rene S.L. Ong



*Rhinoclavis vertagus* from Pulau Semakau.

**Scientific Name:**

*Terebralia palustris* (Linnaeus, 1767)

**Common Name:**

Mud creeper, Mangrove whelk

**Order/Family:**

Gastropoda (Caenogastropoda):  
Potamididae

**National Status:** Endangered (EN)

**Habitat and Ecology:** On sandy mud and mud in and near mangroves and estuaries. Appears to prefer more open high energy mangroves and has thus far not been reported from the estuarine mangroves of the Johor Strait. Shell length may reach more than 15 cm.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from Pandan, Pulau Semakau, and Marina East.

**Threats:** Habitat loss, habitat modification, oil spills, overcollection.

**Scientific Interest and Potential Value:** Collected for food in many Southeast Asian countries and commonly available in markets.

Photo: Tan Siang Kiat



*Terebralia palustris* from Pulau Semakau.

**Conservation Measures:** This species was documented quite early in the history of Singapore although there is no evidence to suggest that it was ever common. It is assessed to be endangered because of its restricted distribution in Singapore. Currently, the only known site where a sizable population occurs is at Pulau Semakau. Surveys are needed to determine whether the species occurs in other areas, especially in the mangrove forests of the southern and western islands. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Cypraea tigris* Linnaeus, 1758

**Common Name:**

Tiger cowrie

**Order/Family:**

Gastropoda (Littorinimorpha):  
Cypraeidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** On sand, and on and amongst rocky rubble or corals in coral reef areas, intertidal to shallow subtidal depths. Shell length may reach more than 10 cm, but usually smaller.

Photo: Rene S.L. Ong



*Cypraea tigris* from Singapore.



**Distribution:** Indo-Pacific. In Singapore, it has been documented from several of the southern and western islands.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Collected for food and for its attractive shell in many countries. Largest member of its family in Singapore.

**Conservation Measures:** This species has been observed sporadically in surveys over the last few decades although always in small numbers fewer than five individuals per occasion. It is assessed to be vulnerable due to its apparent rarity in Singapore and restriction to coral reef habitats. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Monetaria annulus* (Linnaeus, 1758)

**Common Name:**

Gold-ring cowrie

**Order/Family:**

Gastropoda (Littorinimorpha):  
Cypraeidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Amongst rocks and rubble on reef flats and reef slope, intertidal to shallow subtidal depths. Shell length usually between 2 to 3 cm.

**Distribution:** Indo-Pacific. In Singapore, this species has been recorded from Lazarus Island.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Once used as currency, this species is very common in some countries and large numbers are collected for the shell trade, mainly for shell craft.

**Conservation Measures:** This species was documented quite early in the history of Singapore, but there is no evidence to suggest that it was ever common. It appears to be very rare in Singapore today and there has been no documented sightings in the past few decades. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

Photo: Rene S.L. Ong



*Monetaria annulus* from Lazarus Island.



**Scientific Name:**

*Monetaria moneta* (Linnaeus, 1758)

**Common Name:**

Money cowrie

**Order/Family:**

Gastropoda (Littorinimorpha):  
Cypraeidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Amongst rocks and rubble on reef flats and reef slope, intertidal to shallow subtidal depths. Shell length usually between 2 to 3 cm.

**Distribution:** Indo-Pacific. In Singapore, this species has been recently sighted at Lazarus Island and Cyrene Reef.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Once used as currency, this species is very common in some countries and large numbers are collected for the shell trade, mainly for shell craft.

Photo: Tan Siang Kiat



*Monetaria moneta* from Cyrene Reef.

**Conservation Measures:** This species was documented quite early in the history of Singapore although there is no evidence to suggest that it was ever common. There has been no documented sightings in the past few decades until quite recently, and it appears to be very rare in Singapore today. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

**Scientific Name:**

*Truncatella guerinii*  
A. Villa & J.B. Villa, 1841

**Common Name:**

-

**Order/Family:**

Gastropoda (Littorinimorpha):  
Truncatellidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** In vegetation, leaf litter, under rocks and debris at the supralittoral zone near beaches, coastal cliffs, coastal woodlands. Shell length typically around 7 to 8 mm.

Photo: Tan Siang Kiat



*Truncatella guerinii* from Changi.

**Distribution:** Indo-West Pacific. In Singapore, the only known living population was at Changi. Empty shells found amongst the debris along the strandline at beaches elsewhere.

**Threats:** Habitat loss, habitat modification.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** Provisionally assessed to be endangered, but further surveys are needed to determine the sites of occurrence and their abundance in Singapore for a future reassessment. This species is largely dependent on the availability of suitable coastal forest habitats. It has not been found alive since the only population known to us was extirpated in a location that was developed in 2007. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

**Scientific Name:**

*Volema myristica* Röding, 1798

**Common Name:**

Nutmeg melongena

**Order/Family:**

Gastropoda (Neogastropoda):  
Melongenidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Sand or muddy sand areas near mangroves, and in seagrass meadows and reef flats. Shell length usually around 5 to 6 cm and seldom exceeding 8 cm.

**Distribution:** Southeast Asia, Western Pacific. In Singapore, this species has been recorded from Tanah Merah, Pulau Hantu, Pulau Semakau, Pulau Pawai, and Pulau Senang.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

**Scientific Interest and Potential Value:** Collected for food in many parts of Southeast Asia.

Photo: Rene S.L. Ong



*Volema myristica* from Pulau Semakau.

**Conservation Measures:** An uncommon species assessed to be vulnerable because of its current low numbers. The number of historical records suggest that it was more common on the shores of Singapore in the past. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Murex ternispina* Lamarck, 1822

**Common Name:**

Black-spined murex

**Order/Family:**

Gastropoda (Littorinimorpha):

Cypraeidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Subtidal on soft, muddy to sandy sediments. Shell length usually to around 9 cm.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from Kusu, Pulau Pawai, Pulau Sudong, and the eastern and south-eastern coasts that have since been reclaimed.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

Photo: Tan Heek Hui



*Murex ternispina* from Pulau Sudong.

**Scientific Interest and Potential Value:** Collected for food and shell trade in some countries.

**Conservation Measures:** An uncommon species, it is assessed to be vulnerable because of its current low numbers. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

**Scientific Name:**

*Melo melo* [Lightfoot], 1786

**Common Name:**

Indian volute, Bailer shell

**Order/Family:**

Gastropoda (Neogastropoda):

Volutidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** On muddy sand sediments from the littoral to shallow sublittoral zones. Shell length commonly exceeding 20 cm.

**Distribution:** On muddy sand sediments from the littoral to shallow sublittoral zones.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills.

Photo: Tan Siong Kiat



*Melo melo* from Changi.

**Scientific Interest and Potential Value:** Collected for food in many Southeast Asian countries and commonly available in markets. Shells used as decorative items, or as scoops.

**Conservation Measures:** Although not particularly uncommon, this species is assessed to be vulnerable because of its perceived low numbers, and likelihood of exploitation for food. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**  
*Oliva miniacea* (Röding, 1798)

**Common Name:**  
Red-mouthed olive,  
Orange-mouthed olive

**Order/Family:**  
Gastropoda (Neogastropoda):  
Olividae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Burrowing in sand of sandy flats, and sandy areas in and near coral reefs from the intertidal to shallow subtidal zones. Shell length usually up to around 8 cm.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from Cyrene Reef, East Coast Park, Changi, Pulau Hantu, and Sisters Islands.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Collected both for its large, colourful shell, and for food in many

Photo: Tan Siang Kiat



*Oliva miniacea* from Changi.

**Conservation Measures:** An uncommon species that is assessed to be vulnerable because of its current low numbers. The populations on our shores appear to be episodic and relatively ephemeral. They may disappear for some time before reappearing again in some numbers. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**  
*Conus consors* G.B. Sowerby I, 1833

**Common Name:**  
Consort cone

**Order/Family:**  
Gastropoda (Neogastropoda):  
Conidae

Photo: Tan Siang Kiat



*Conus consors* from Cyrene Reef.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** In sand, and under and amongst stones and rocks in coral reef areas, intertidal to shallow sublittoral zones. Shell length usually up to around 7 or 8 cm and rarely exceeding 10.

**Distribution:** Indo-West Pacific. In Singapore, it has been documented from the southern and western islands, and recent sightings include, but are not limited to, Terumbu Pempang Laut, Terumbu Bemban, Pulau Jong, and St. John's Island.

**Threats:** Habitat loss, habitat modification, declining water quality, sedimentation, oil spills, overcollection.

**Scientific Interest and Potential Value:** Collected for the shell trade. Many larger species of the family, including this species, are occasionally collected for food in some countries.

**Conservation Measures:** An uncommon species assessed to be vulnerable because of its current low numbers. This species was reportedly very common prior to the 1970s, but encounters have become exceedingly rare until the past decade where there has been a marked increase in sightings and reports, which suggest that the species is re-establishing itself. Conservation of sufficiently healthy coastal habitats will be beneficial.

**Scientific Name:**

*Ellobium scheepmakeri* (Petit de la Saussaye, 1850)

**Common Name:**

Malchus' ear shell

**Order/Family:**

Gastropoda (Ellobiida): Ellobiidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Mangrove forests, amongst wood debris and on plants in the back mangroves. Shell length up to around 7 cm.

**Distribution:** Southeast Asia. In Singapore, Mandai is the only site where a healthy population has been documented.

**Threats:** Habitat loss, habitat modification, declining water quality, oil spills, overcollection.

**Scientific Interest and Potential Value:** This species often occurs sympatrically with the larger *Ellobium aurismidae* (Linnaeus, 1758), but may be naturally less common throughout most of its distributional range. Both species are sometimes collected for food in some countries. Broken shells around fire pits are sometimes encountered in the mangroves of Singapore.

Photo: Tan Siang Kiat



*Ellobium scheepmakeri* from Mandai.

**Conservation Measures:** This species was documented quite early in the history of Singapore although there is no evidence to suggest that it was common or widespread. It is assessed to be critically endangered because of its highly restricted distribution in Singapore. Suitable sites need to be designated as nature areas to be protected from urbanisation and disturbances.



**Scientific Name:**

*Pythia scarabaeus* (Linnaeus, 1758)

**Common Name:**

Common pythia, Scarab pythia

**Order/Family:**

Gastropoda (Ellobiida): Ellobiidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** In debris and leaf litter at the supralittoral zone of coastal forests and mangroves. Shell length usually around 2 cm or more.

**Distribution:** Indo-West Pacific. In Singapore, this species has been recorded from only Changi and Punggol.

**Threats:** Habitat loss, habitat modification.

**Scientific Interest and Potential Value:** Not known.

**Conservation Measures:** Provisionally assessed to be vulnerable, but further surveys are needed to determine the sites of occurrence and their abundance

Photo: Tan Siong Kiat



*Pythia scarabaeus* at Changi.

in Singapore for a future reassessment. This species is largely dependent on the availability of suitable coastal forest habitats of which very few are left in Singapore, and populations have not been found in recent surveys. Surveys are needed to determine the sites of occurrence, which need to be protected from urbanisation and disturbances.

**Scientific Name:**

*Amphidromus inversus* (Müller, 1774)

**Common Name:**

Inverse amphidromus,  
Brown tree snail

**Order/Family:**

Gastropoda (Stylommatophora):  
Camaenidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Largely arboreal, and rarely found on the ground. They have been observed to lay eggs in clusters under loose bark and in small cavities. Shell length up to around 5 cm.

Photo: Tan Siong Kiat



*Amphidromus inversus* at the Singapore Botanic Gardens.



**Distribution:** Southeast Asia. In Singapore, this species appears to be restricted to the Singapore Botanic Gardens (SBG) and its immediate vicinity.

**Threats:** Habitat loss, habitat modification, indiscriminate use of pesticides, introduction of alien predators.

**Scientific Interest and Potential Value:** Occasionally collected for the shell trade in some countries. Several recognisable subspecies and forms are known. Whether the SBG population is an

introduced or a remnant population remains unclear and will be an interesting topic for future research.

**Conservation Measures:** Although not exceedingly rare at the SBG, the small and restricted population may be easily affected by pesticides or inadvertent introduction of predators. However, the introduction of this species to existing forested areas where other native snails thrive should not be attempted without careful consideration. Continued conservation of the forested area in the SBG will be beneficial.

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# Blattodea – Termites and Cockroaches

FOO MAOSHENG

Termites and cockroaches tend to be viewed as pests due to the notoriety of the handful of globally invasive species such as the American cockroach (*Periplaneta americana*) and the Asian subterranean termite (*Coptotermes gestroi*). However, the pest species do not represent the majority of the species under Blattodea. In fact, both termites and cockroaches have major roles in the leaf litter ecosystem, with some cockroach species also known to assist in flower pollination.

There are at least 67 species of termites, and at least 50 species of cockroaches found in Singapore but most species are still poorly known, and some are still undescribed scientifically. Hence, the conservation status for most species cannot be determined without additional data. Most species inhabit old secondary or primary forests, with some species in back mangrove forests. The loss and fragmentation of habitats, altering or removal of the ground soil and usage of heavy machinery, can threaten their survival in general.

In this section, the focus will be on termites as they have a major role in decomposition, the carbon mineralisation process as well as in the nitrogen and phosphorous cycle. The activity of the termites does have an influence on both soil properties and structure, from which the trees and vegetation grow on. The following detailed writeup will look into the different feeding groups of termites namely: the fungus growers, epiphyte feeders and soil feeders.

**Scientific Name:**

*Macrotermes carbonarius*  
(Hagen, 1858)

**Common Name:**

-

**Order/Family:**

Blattodea / Termitidae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** They are found in old secondary forests and primary forests, and sometimes in maturing secondary forests or the back mangroves. The termite mounds are sometimes visible above ground level, going as high as 1.3m on Pulau Ubin. They are also a food source for the local Sunda Pangolin.

**Distribution:** Found throughout Southeast Asia

**Threats:** Development and degradation of forest habitats

**Scientific Interest and Potential Value:** It is one of the fungus-growing termites that have a symbiotic relationship with the fungus, *Termitomyces* spp., cultivated within the mounds. Moreover, termite mounds form a nutrient rich area due to the feeding and construction habits of the termite workers. These mounds are created by the deposition of organically rich faecal matter mixed with soil and their saliva, having higher levels of nitrogen and phosphorus (plant macronutrients). The subsequent erosion of such mounds leads to enrichment of the topsoil in surrounding areas. In addition, the constant foraging and construction activity of the termite workers significantly improves the soil physical properties such as better infiltration of water into the ground.

**Conservation Measures:** Conservation of our remaining forests will ensure their survival.

Photo: Foo Maosheng



*Macrotermes carbonarius*.

Photo: Foo Maosheng



*Macrotermes carbonarius alate*.

**Scientific Name:**

*Dicuspitermes nemorou*  
(Haviland, 1898)

**Common Name:**

-

**Order/Family:**

Blattodea / Termitidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Old-growth secondary forests and primary forests. Their nests tend to be found near or at the base of large trees. The termite mounds can be between 30 to 40cm in height.

**Distribution:** Found across Malaysia, Singapore, and Indonesia.

**Threats:** Development and degradation of forest habitats, compaction of ground soil.

**Scientific Interest and Potential Value:** Presence of this soil-humus feeding termites indicates the soil in the area has a high proportion of organic matter. The nutrient-rich topsoil provides better conditions for plants to grow on. Moreover, the feeding activity of these termites can further improve soil quality such as buffering

All Photos: Foo Maosheng



*Dicuspitermes nemorou* – queen



Left Image: Nest. Right image: soldier.

the pH level to optimise the nutrients availability for plants.

**Conservation Measures:** Due to the specificity of their habitat preference to larger trees in nutrient-rich topsoil area, their current distribution within Singapore is unknown and likely to be restricted to certain forest fragments within Bukit Timah and Central Catchment nature reserves.

**Scientific Name:**

*Hospitalitermes umbrinus*  
(Haviland, 1898)

**Common Name:**

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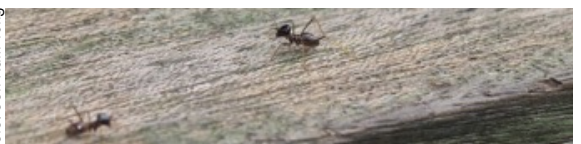
**Order/Family:**

Blattodea / Termitidae

Photo: Foo Maosheng



Photo: Soh Kam Yung



*Hospitalitermes umbrinus* soldier.

**National Status:** Least Concern (LC)

**Habitat and Ecology:** Found in regenerating secondary forests to primary forests. These termites are often seen on the forest floor, foraging in the open instead of under mud galleries or through dead wood, forming long foraging lines between the nest and foraging site. They are often mistaken as ants due to their black coloration. Their nests are usually black or dark in colour, at the base of large trees, and serve as an alternative food source for the Sunda Pangolin and other ground insectivores. At other times, the nest may be above ground, occupying a crevice in the tree.

**Distribution:** Found across Malaysia, Singapore, and Indonesia.

**Threats:** Development and degradation of forest habitats.

**Scientific Interest and Potential Value:** They are one of the few termite species that feed mainly on bryophytes and micro-epiphytes such as lichen, instead of dead wood, found on tree trunks and in the tree canopies. Their nest may be shared with other termites such as *Termes* spp. or termite inquilines such as staphylinid beetles (*Neotermitosocius* sp. and *Coptotermocola* sp.)

**Conservation Measures:** Increasing the awareness of the public to such a species, along with conserving our remaining forests will ensure the survival of this genus/species.

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# Coleoptera – Beetles

CHEONG LOONG FAH, WAN F.A. JUSOH, ONG XIN RUI, SEAN YAP

**Scientific Name:**  
*Parena nigrolineata*  
(Chaudoir, 1852)

**Common Name:**  
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**Order/Family:**  
Coleoptera: Carabidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Species of this genus (e. g. *P. perforata* (Hondo, 2003)) are reported as specialist predators of Tiger Moth at both the adult and larval stages and play an important role in regulating the Tiger Moth population. Similar associations might apply to this species.

**Distribution:** India, Sri Lanka, Burma, Vietnam, Japan, China, Andaman Islands, Singapore, Krakatoa. Found in the Bukit Timah Nature Reserve.

**Threats:** Coextinction risk might exist for this species, but without detailed knowledge of its ecology we can



Photo: Cheong Loong Fah

only assign the status as DD. So far, there is only a sole 2015 record for this species from the Bukit Timah Nature Reserve. There is no doubt the arboreal habit of this species contributes to the scarcity of its records.

**Scientific Interest and Potential Value:** *Parena* species could play important roles in regulating the Tiger Moth or other moths during years of peak population.

**Conservation Measures:** The known locality in Singapore is a protected area. Knowledge for the local *Parena* is poor but protection of the entire forest ecosystem should help.

**Scientific Name:**  
*Stenaptinus occipitalis* (Macleay, 1825)

**Common Name:**  
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**Order/Family:**  
Coleoptera: Carabidae



Photo: Cheong Loong Fah

*Stenaptinus occipitalis* specimen in LKCNHM.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known as the ‘Bombardier beetles’ as they release a defensive gland secretion which is extremely hot. *Stenaptinus* species are said to feed on mole crickets and their eggs (Frank et al., 2009), but they also may eat other crickets, other small insects, and worms. During the daytime they hide in earth cracks, in grass, under debris, and under stones.

**Distribution:** China, Japan, Taiwan, Sri Lanka, India, Myanmar, Malaysia, Indonesia, Borneo, Philippines, Singapore. Found in the Nee Soon Swamp Forest.

**Threats:** Only two records in Singapore. The first was a 1918 record from Katong, probably still a coastal area then. Despite extensive works in the coastal habitats by D.H. Murphy, there is no further record from the coastal areas. Its prey (various species of mole crickets) are

mostly under threat (pp 55-56, Tan, 2012) and this might have led to the disappearance of this species from the coastal habitats. The second *Stenaptinus occipitalis* specimen was collected from Nee Soon swamp forest around 1990.

**Scientific Interest and Potential Value:** It has potential as a charismatic flagship species, due to its infamous ability to synthesize and release rapid bursts of stinky, burning-hot liquid from their rear ends.

**Conservation Measures:** The only recent locality in Singapore is within a protected area. A predatory habit increases the extinction risk, which is consistent with the fact that, in general, predators are more imperiled than prey. In this case, protection of the prey mole crickets would probably help the survival of *Stenaptinus occipitalis*.

**Scientific Name:**

*Cryptocephalomorpha gaverei*  
Ritsema, 1875

**Common Name:**

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**Order/Family:**

**Coleoptera: Carabidae**

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Known larvae are physogastric due to their myrmecophilous habit. They dig holes in the ground around ant nests, and prey on ants in a similar manner to the larvae of Cicindelinae. Very few adult specimens of the majority of species in this genus have ever been captured, with most samples attracted to light. It is therefore not established where the species of this genus actually live and whether they are regularly tree-living or not. Similarly, their mode of reproduction is unknown.

**Distribution:** Laos, Singapore, Indonesia, Borneo, Philippines. In Singapore, it is known from Bukit Timah Nature Reserve and Central Catchment Nature Reserve.

**Threats:** Only two records in Singapore, both collected from lights: a 1967 record at Bukit Timah and a 1986

Photo: Cheong Loong Fah



*Cryptocephalomorpha gaverei* specimen in LKCNHM.

record at Central Catchment Nature Reserve. The scarcity of records is no doubt due to the fact that the identity of the host ant species is as yet unknown.

**Scientific Interest and Potential Value:** *Cryptocephalomorpha* species are characterized by a unique facies with an almost completely oval body, and are not recognizable as carabid beetles at first glance. Their morphology is assumed to be related to a myrmecophilous lifestyle, but little biological data exist to confirm their associations with ants, nor is much known about the degree of acceptance and integration in their host ant colony.

**Conservation Measures:** The two known localities are both within protected areas. We lack sufficient knowledge of the biology of *Cryptocephalomorpha gaverei* to be able to say anything concrete about the conservation of this species.

**Scientific Name:**

*Catascopus cupripennis* Thomson, 1858

**Common Name:**

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**Order/Family:**

Coleoptera: Carabidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** The species of the genus *Catascopus* are semi-nocturnal in their habits, never flying except at night. Most species and individuals from this genus are found under the decaying bark of fallen trees. Larger species like *Catascopus cupripennis* are usually seen coursing along the surface of some immense fallen trees.

**Distribution:** Malaysia, Singapore, Indonesia, Borneo.

**Threats:** With the loss of over-mature old trees, dead-wood development is restricted to the die-off of typically small diameter trees, producing less diverse dead wood. Decreasing quantity of fallen big tree trunks that provide long term habitat probably contributes to its demise.

**Scientific Interest and Potential Value:** The type locality is in Singapore; there is thus scientific interest



Photo: Cheong Loong Fah

in protecting the “typical place” from which the species was described.

**Conservation Measures:** Big forest trees provide potential habitat in the protected nature reserves. Dead trees should be left, as much as possible, in their original assorted conditions of standing and fallen states, subject to a range of different abiotic conditions. This will increase the diversity of available dead wood microhabitats and microclimates necessary to ensure the long-term stability and preservation of the saproxylic community. For big old trees that have fallen on or near forest trails, consider, wherever possible, rerouting the trail or even closing off access to the tree with fencing or other barriers. These big old dead trees are often referred to as “habitat trees” or “keystone structures,” which are particularly important as they contain slowly developing microhabitats, such as cavities.

**Scientific Name:**

*Therates fleutiauxi* Horn, 1898

**Common Name:**

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**Order/Family:**

Cicindelidae



Photo: Cheong Loong Fah

*Therates fleutiauxi* specimen in LKCNHM.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** *Therates* adults prefer moist, shady places at the edge of pristine forest streams. They hunt on low foliage, but also on the forest floor or on stones in the stream bed. Larval stages usually occur in a narrower range of microhabitats than adults and appear to tolerate less variation of many physical factors, especially soil moisture, soil composition and temperature.

**Distribution:** Malaysia, Singapore. In Singapore, found in Bukit Timah Nature Reserve.

**Threats:** Not only has there been an outright loss of habitat, but there has been substantial alteration in the microclimatic conditions of forest interior too. In particular, soil humidity decreases and air temperature increases with increasing fragmentation. Tiger beetle larvae are sensitive to these changes. The last recorded

location of this species is at Taban valley (in 1976), where the drying is particularly obvious on the outward facing slope of the valley. There might also be increased mortality due to widespread fumigation in the adjacent condominiums and predators like Tiger Beetles catch preys weakened by insecticides. A change in abundance of predators like Long-legged Flies in this sector of the reserve has also been reported (Grootaert, pers. comm.).

**Scientific Interest and Potential Value:** As *Therates* species are sensitive to environmental changes, they are well-suited as bioindicators of the riverine ecosystems. Tiger beetles are also popular with many amateurs and can be considered as flagship species.

**Conservation Measures:** The known locality in Singapore is within a legally protected nature reserve. Knowledge of *Therates* is poor but protection and restoration of riverine habitats in forest interior may help.

**Scientific Name:**

*Lophyra fuliginosa* (Dejean, 1826)

**Common Name:**

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**Order/Family:**

Coleoptera: Cicindelidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** They are found on sandy shores near ocean, and sandy areas bordering rivers. Attracted to lights.

**Distribution:** Sri Lanka, Burma, Thailand, Laos, Vietnam, Cambodia, Southern China, Malaysia, Singapore, Indonesia, Borneo. Found on the sandy shores of the southern islands in Singapore, but historically recorded from Changi coast (1916) and possibly from the sandy coasts of inland rivers too.

**Threats:** Though *L. fuliginosa* has been lost from some localities (e.g. Changi coast, the sandy coasts of inland

Photo: Cheong Loong Fah



rivers) in the past, there is no evidence of a continuing decline into the modern period. However, the long-term effects of climate change on the remaining sandy shore habitats in the southern islands cannot yet be foreseen and require careful monitoring.

**Scientific Interest and Potential Value:** This sand-dwelling species could be considered as a bioindicator to evaluate the quality of sandy shore ecosystems, in the face of threats such as climate change and further anthropogenic pressure.

**Conservation Measures:** This is a vulnerable species requiring robust protection of its remaining sites (the sandy shores of the southern islands) from development pressures and from coastal engineering (e.g. in response

to climate change), as well as ongoing sympathetic habitat management and management of recreational pressures.

**Scientific Name:**  
*Agrilus lancifer* Deyrolle, 1864

**Common Name:**  
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**Order/Family:**  
**Coleoptera: Buprestidae**

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Of the 3000+ species (worldwide) in the hyperdiverse genus *Agrilus*, only 22% have at least one host plant recorded, mostly for species in the Palearctic and Nearctic region (Jendek and Poláková, 2014). We are ignorant of the true causes of the *Agrilus* diversity. What we do know is that the vast majority of saproxylic beetles cannot digest lignin or cellulose, the main constituents of wood; they can only derive nutrition from wood after fungi have begun the decay process. In contrast, *Agrilus* species are able to steal a march on the fungi and feed on fresh wood, albeit they seem to be restricted to trunks or branches that are already stressed by drought, shading or physical damage.

**Distribution:** Borneo, Singapore.

**Threats:** Wallace collected a relatively large number of *Agrilus* species in a short two-month period in the



Photo: Cheong Loong Fah

*Agrilus lancifer* holotype in Muséum national d'Histoire naturelle (MNHN), Paris.

1850s, including 15 holotypes and 2 paratypes from Singapore; this suggests that the *Agrilus* species have been much more widespread in the past. The fact there are no subsequent records by C.F. Baker and C.J. Saunders in the 1920s and 1930s suggests that there is a substantial decline between the two periods and there is no reason to think that this decline is not continuing to the recent few decades. Of the 15 holotypes, 13 of them have not been recorded since the 1850s. It must mean that many formerly abundant *Agrilus* species are greatly reduced in number or even already extinct in Singapore due to the loss of forest habitat.

**Scientific Interest and Potential Value:** Type locality of the synonym *Agrilus dajakorum* Obenberger 1924 is Singapore.

**Conservation Measures:** We need to gather sufficient knowledge of these beetles' biology to determine exactly what measures will be most beneficial.

**Scientific Name:**  
*Endelus baumi* Obenberger, 1929

**Common Name:**  
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**Order/Family:**  
**Coleoptera: Buprestidae**



Photo: Cheong Loong Fah

*Endelus baumi* holotype in Prague Museum.



**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** There is a general impression, perhaps only anecdotal, that species of *Endelus* are associated with ferns. The author (CLF) has also collected various *Endelus* species from different fern hosts.

**Distribution:** Singapore.

**Threats:** The sole record is the specimen collected by J. Baum in 1929. With the loss of many shade-loving fern species due to the clearing of the original forests,

coextinction risk might be a cause for the demise of this *Endelus* species which depends on these shade-loving ferns.

**Scientific Interest and Potential Value:** The type locality for this species is Singapore.

**Conservation Measures:** We need to gather sufficient knowledge of these beetles' biology like their host association to determine exactly what measures will be most beneficial.

**Scientific Name:**

*Chrysobothris nigripennis* Deyrolle, 1864

**Common Name:**

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**Order/Family:**

**Coleoptera: Buprestidae**

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** *Chrysobothris* species are considered to be secondary attackers of trees that have been stressed by age, fire, and water and are often collected on recently cut or injured plants. Many *Chrysobothris* species as adults are rather elusive, very quick to escape, and probably most of the tropical forest species are usually arboreal unless when coming down to fallen trees for oviposition. Malaise and upper canopy traps have been shown to be good methods in collecting these large buprestids as *Chrysobothris* can be active at both the ground and upper canopy levels.

**Distribution:** Singapore, Indonesia, Malaysia.

**Threats:** While many *Chrysobothris* species are possibly arboreal, very quick to escape, and thus might have escaped detection by visual means, even substantial Malaise trap surveys in the post-2000 period failed to rediscover *Chrysobothris nigripennis*. Likely case of its demise is a long-term, continuing decline in quality of microhabitat due to fragmentation resulting in lower dead wood connectivity and drier microhabitat, loss of habitat and possibly its suitable tree hosts.

Photo: Cheong Loong Fah



*Chrysobothris nigripennis* specimen in Prague Museum.

**Scientific Interest and Potential Value:** Many *Chrysobothris* species are colourful and can be considered as flagship species.

**Conservation Measures:** Increased effort on targeted survey for these charismatic species is recommended, with optimally designed traps set up with the objective of capturing these Buprestids in mind.



**Scientific Name:**

*Anthaxia (Merocratus) miranda*  
Deyrolle, 1864

**Common Name:**

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**Order/Family:**

Coleoptera: Buprestidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Some *Anthaxia* species are inhabitants of canopy, while the rest are flower visitors. For the subgenus *Merocratus*, almost nothing is known about their bionomy; adults are flower-visitors often collected on flowers of *Castanopsis* (Fagaceae).

**Distribution:** Singapore, Malaysia, Borneo.

**Threats:** No further record in Singapore since the two specimens collected by Wallace. In the neighbouring countries, this species still seems to be occasionally collected in large number (Bily & Plachetka, 2019:

Photo: Cheong Loong Fah



*Anthaxia (Merocratus) miranda* holotype in Muséum national d'Histoire naturelle (MNHN), Paris.

9 specimens from Johor in 2001, 9 specimens from Kalimantan in 2018). Likely extirpated in Singapore, or at least in severe decline.

**Scientific Interest and Potential Value:** The type locality for this species is Singapore.

**Conservation Measures:** We need to gather sufficient knowledge of these beetles' biology to determine exactly what measures will be most beneficial.

**Scientific Name:**

*Megaloxantha hemixantha*  
(Vollenhoven, 1864)

**Common Name:**

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**Order/Family:**

Coleoptera: Buprestidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** There appears to be little published information on habitats used by this species. In Malaysia, it was commonly seen during the early months of the year (Tung, 1983). According to Baudon (1966), the imagines of the Laotian species *Megaloxantha mouhoti* (Saunders) are most frequently found very high on trees of *Bombax albicum* Gagn.

Photo: Cheong Loong Fah



*Megaloxantha hemixantha* specimens from the Milanowec collection, Poland.

and *B. cambodiense* P., being well-known to the local population and sought every year for food.

**Distribution:** Malay Peninsula, Sumatra, Nias, Bangka Is., Singapore.

**Threats:** The sole Singapore record was collected from Mandai area in 1912.

**Scientific Interest and Potential Value:** In this genus belongs the largest jewel beetle (females of *Megaloxantha bicolor gigantea*, approaching 80mm in length).

**Conservation Measures:** We need to gather sufficient knowledge of these beetles' biology to determine exactly what measures will be most beneficial.

**Scientific Name:**

*Glenea pulchella* Pascoe 1858

**Common Name:**

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**Order/Family:**

Coleoptera: Cerambycidae

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** *Glenea* species are diurnal; they need to undergo maturation feeding and to chew the host plant in preparation for oviposition.

**Distribution:** Malaysia, Singapore, Indonesia, Borneo, Philippines.

**Threats:** *Glenea* as a group has been in severe decline, based on these observations: (1) *Glenea* species must have been rather common in the 1850s, so much so that Wallace collected 21 *Glenea* species in a two-month period. Of the 24 *Glenea* species recorded in Singapore in the 19th century, only five have been recorded in the past few decades! (2) *Glenea* species are diurnal, mostly eye-catching with colorful pattern. Thus it is unlikely that so many of them would have been missed if still present. The main threat facing these saproxylic beetles is the loss of host tree species, in particular trees from the Dipterocarpaceae family, with the result that most native dipterocarp trees are critically

Photo: Cheong loong Fah



*Glenea pulchella* specimen in Muséum national d'Histoire naturelle (MNHN), Paris.

endangered (Chong et al., 2009). The resultant loss of habitat continuity and spatial dead-wood connectivity mean that the beetles are not able to find an alternative habitat within their reach at the right time.

**Scientific Interest and Potential Value:** Many *Glenea* species are colourful and can be considered as flagship species. Hopefully, the extant *Glenea* species can contribute to education of the public in the conservation process.

**Conservation Measures:** Dead trees should not be removed from the forest and should be left, as much as possible, in their original assorted conditions of standing and fallen states, with a range of different abiotic conditions such as different branch thickness (not sawn into small stockpiles). This will increase the diversity of available dead wood for the *Glenea* species.

**Scientific Name:**

***Aegolipton marginale* (Fabricius, 1775)**

**Common Name:**

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**Order/Family:**

**Coleoptera: Cerambycidae**



*Aegolipton marginale* specimen from FRIM, Malaysia.

**National Status:** Presumed Nationally Extinct (NEx)

**Habitat and Ecology:** Members of the Prioninae (prionines) are characteristically sedentary: newly emerged females need not disperse in search of food (because they do not feed) or to find males (because they can attract males with a pheromone). They are thus often disinclined to fly or even incapable of flight. As adults do not feed, their lifespan is not long, and the time available for dispersal may be short, further limiting their ability to disperse.

**Distribution:** India, Taiwan, China, Bangladesh, Indochina, Borneo, Singapore, Indonesia, Philippines.

**Threats:** While many saproxylic insect species are able to track dead wood, as they are naturally adapted to search for their ephemeral resources, there are specialized insect species with low mobility, such as some associated with tree hollows or those whose adult

stage does not feed, including many prionines. They might be sensitive to an interruption of habitat continuity because they are not able to find an alternative habitat within the reach in their distribution range in a timely manner. Furthermore, the large larvae may require very large host trees, and such trees are increasingly uncommon. Lastly, as some prionine adults are attracted to light, pervasive artificial lights at night constitute a further threat, acting as an ecological trap.

**Scientific Interest and Potential Value:** Due to their great size and popular appeal, the prionine species can be a tool to educate the public about the conservation process.

**Conservation Measures:** We need to gather sufficient knowledge of these beetles' biology to determine exactly what measures will be most beneficial. With knowledge of host associations, it may then become possible to "reintroduce" these beetles.

**Scientific Name:**

***Luciola singapura* Jusoh & Ballantyne, 2021**

**Common Name:**

**Singapore Firefly (Kunang-kunang Singapura)**

**Order/Family:**

**Coleoptera: Lampyridae**



*Luciola singapura*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Only known from the type locality – the Nee Soon Swamp Forest (NSSF), in Central Catchment Nature Reserve. The habitat is a freshwater swamp forest adjacent to the water pipeline system with dense vegetation, damp leaf litter, and high soil moisture. At night, a few adult fireflies of this species were observed flying around or perching on ferns.

**Distribution:** Possibly endemic to Singapore.

**Threats:** Habitat destruction and water pollution might threaten this rare and small population of *L. singapura* if the forest and water catchment are not maintained and managed well.

**Scientific Interest and Potential Value:** *Luciola singapura* was described in 2021 based on a handful of specimens collected from three different time series:

1989–90, 2008–9 and 2018–19. It was the first time since 1909 that a new species of luminous firefly was described from Singapore. The discovery emphasizes the significance of natural history collections. It also highlights the need for continued biodiversity research, even in small, relatively well-studied, and highly developed countries like Singapore.

**Conservation Measures:** *Luciola singapura* is a rare species that can be found only in the Nee Soon Swamp Forest (NSSF), the last remnant of Singapore's freshwater swamp forest. The population size and the habitat of *L. singapura* are constrained within a small area in NSSF. The legal status of NSSF within the nature reserve has directly protected the habitat from being encroached, thus allowing the species to thrive. However, this species' long-term protection still requires a deeper understanding of its ecology and distribution, particularly its immature life stage which is not yet known.

**Scientific Name:**

*Pteroptyx bearni* Olivier, 1909

**Common Name:**

The Comtesse's Bent-winged Firefly

**Order/Family:**

Coleoptera: Lampyridae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Estuarine mangrove zones. Adult fireflies of this species gather in a high number of individuals on selected mangrove plants at night and flash non-synchronously.

**Distribution:** Exclusive to mangrove estuaries in Peninsular Malaysia and Borneo. Singapore's record is based on museum specimens collected in 1908.

**Threats:** Habitat loss, light pollution

Photo: Wan F.A. Jusoh



*Pteroptyx bearni* specimen in Muséum national d'Histoire naturelle (MNHN), Paris.

**Scientific Interest and Potential Value:** A lectotype male and a non-type female specimen of *Pteroptyx bearni* from Singapore are deposited in Muséum National d'Histoire Naturelle (MNHN), Paris and they are the only known evidence of the presence of this species in Singapore. The specimens were collected from Singapore in 1908 by E. Cordier during an expedition funded by Comtesse de Béarn. Based on two nationwide surveys on fireflies in Singapore (2008–2009 and 2001–2022), the Comtesse's firefly is no longer sighted, which means that the last time this species was sighted was over 100 years ago.

**Conservation Measures:** *Pteroptyx bearni* was once a native species in Singapore. This species is still a common sight in many parts of the east coast of Malaysia, such as in Sg Pendas, Johor, which is just a few kilometres away from Singapore. Species re-

introduction might be an option to bring a population of the Comtesse's firefly back to Singapore. However, prior to that, it is more critical and urgent that future scientific studies focus on a deeper understanding of the habitat requirements of fireflies in mangrove forests.

**Scientific Name:**  
*Pteroptyx valida* Olivier, 1909

**Common Name:**  
Non-synchronous Bent-winged Firefly

**Order/Family:**  
Coleoptera: Lampyridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Commonly observed flashing non-synchronously while congregating on trees along mangrove intertidal zones and other trees in swampy areas such as *Ficus* sp. This firefly species can be easily recognised by the slower flash frequency (about a 6-second flash interval).

**Distribution:** This species has been reported to occur in Malaysia, Thailand, Indonesia, and Singapore.

**Threats:** Habitat loss, pesticide use, light pollution

Photo: Cheong Loong Fah



**Scientific Interest and Potential Value:** Based on recent field observations, the population of *P. valida* is not restricted to only mangrove habitats but can extend to other swampy areas in Singapore. Further studies should focus on understanding of life cycle and habitat requirement of each stage of this firefly species.

**Conservation Measures:** *Pteroptyx valida* is the only firefly species evaluated under the previous Red Data Book. The population is severely fragmented, and population reduction is suspected based on the apparent decrease in the number of individuals spotted in several sites using direct observations. Habitat enhancement and long-term monitoring are helpful to ensure the survival of this species in Singapore.

**Scientific Name:**  
*Catharsius renaudpauliani* Ochi & Kon, 1996

**Common Name:**  
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**Order/Family:**  
Coleoptera: Scarabaeidae

Photo: TEE Lab



*Catharsius renaudpauliani*, dorsal.

5 mm

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** *Catharsius* adults are classified as large nocturnal tunnellers under the common dung beetle functional clades that group species by time of activity and mode of dung removal. As tunnellers, they remove dung from the forest floor by burying dung directly below source dung pats. Males possess horns on the head and thorax that are used in male-male competition over access to mates. Females tunnel deep beneath the ground to construct brood chambers, where they deposit eggs in brood balls made from dung within which the larvae will hatch and develop, feeding upon the provisioned dung.

**Distribution:** Peninsular Malaysia, Borneo, Singapore.

**Threats:** This species is sensitive to habitat loss, as well as decreases in mammal abundance and diversity. Even though *Catharsius* appears to be a generalist in terms of dung preference, being attracted to omnivore and herbivore dung in local survey efforts, their relatively large size may make them more sensitive to dung abundance and the decrease of mammal biomass. In 2009, this species was thought to have been extirpated from Bukit Timah Nature Reserve (Lee et al., 2009), but subsequent survey efforts in 2013 (Ong et al., 2013) and 2018-present have found them in adjacent forests in decent numbers. Resurveys of BTNR have not been conducted at this time.

**Scientific Interest and Potential Value:** Dung beetles are sensitive to environmental changes and changes in the diversity and abundance of mammals, the source of dung that the beetles rely upon. For these reasons, they are commonly used as bioindicators of forest disturbance and as a proxy in mammal monitoring. *Catharsius renaudpauliani* has recently even been used as a model for mammalian DNA detection via iDNA (invertebrate-derived DNA) sequencing of dung beetle gut contents (Drinkwater et al., 2021), and currently similar trials are being conducted with *C. renaudpauliani* in Singapore. Even among Southeast Asian dung beetles, *Catharsius* beetles are known to contribute disproportionately to the dung removal process in tropical rainforests, being a potential keystone group with regards to this ecosystem service (Slade et al., 2011). Dung beetles are also popular with many amateurs due to their impressive horn morphology and interesting behaviour and can be considered as flagship species. In past literature, *Catharsius* individuals from Singapore have been identified as *Catharsius molossus*, but recent DNA barcoding evidence has confirmed that individuals from Singapore belong to the same species as *C. renaudpauliani* from Peninsular Malaysia and Borneo.

**Conservation Measures:** Protection of forest habitats and mammal diversity, especially larger mammal species, are likely to help protect this species.

**Scientific Name:**

***Onthophagus deliensis* Lansberge, 1885**

**Common Name:**

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**Order/Family:**

**Coleoptera: Scarabaeidae**

Photo: TEE Lab



*Onthophagus deliensis* dorsal.





**National Status:** Near Threatened (NT)

**Habitat and Ecology:** *Onthophagus* adults are classified as small diurnal tunnellers under the common dung beetle functional clades that group species by time of activity and mode of dung removal. As tunnellers, they remove dung from the forest floor by burying dung directly below source dung pats. While males of many *Onthophagus* species possess horns on the head and/or thorax that are used in male-male competition over access to mates, some species such as *O. deliensis* are monomorphic, with indistinguishable males and females. Females tunnel deep beneath the ground to construct brood chambers, where they deposit eggs in brood balls made from dung within which the larvae will hatch and develop, feeding upon the provisioned dung. In general, *Onthophagus* take about a month to develop from larvae to adult. *O. deliensis* differs from other local *Onthophagus* in its arboreal lifestyle. A recent study in Singapore examining the niche partitioning of local dung beetles between ground and canopy strata found that *O. deliensis* was a major contributor to the community level differences between strata, being the dominant species at the canopy level while rarely being found at the ground level (Abdul Rahman et al., 2021). Further analysis of their physical traits found that compared to other *Onthophagus*, *O. deliensis* had significantly larger wing loading, larger exposed eye area, and longer legs, traits associated with unique dung manipulation behaviour in arboreal dung beetle species (Davis et al. 1997). This evidence supports the notion that *O. deliensis* is an arboreal specialist dung beetle that may exploit dung resources in the canopy.

**Distribution:** Peninsular Malaysia, Borneo, Singapore.

**Threats:** This species is sensitive to habitat loss, as well as decreases in mammal abundance and diversity. In particular, this species may have a tighter correlation with arboreal mammal diversity and abundance, and the protection of arboreal mammal species is likely to be beneficial for *O. deliensis*. In 2009, this species was thought to have been extirpated from Bukit Timah Nature Reserve (Lee et al., 2009), but recent survey efforts have found them in decent numbers from canopy traps (Abdul Rahman et al., 2021), which Lee et al did not deploy in their study. It is likely that previous surveys have underestimated the abundance of this species due to the lack of canopy surveys. Resurveys of BTNR have not been conducted at this time.

**Scientific Interest and Potential Value:** Dung beetles are sensitive to environmental changes and changes in the diversity and abundance of mammals, the source of dung that the beetles rely upon. For these reasons, they are commonly used as bioindicators of forest disturbance and as a proxy in mammal monitoring. As the only arboreal specialist detected thus far in local dung beetle surveys, *O. deliensis* may play an important role in the dung removal, seed dispersal and nutrient recycling ecosystem functions especially pertaining to dung of arboreal mammals.

**Conservation Measures:** Bukit Timah Nature Reserve is legally protected.

**Scientific Name:**

***Paragymnopleurus maurus***  
(Sharp, 1875)

**Common Name:**

–

**Order/Family:**

**Coleoptera: Scarabaeidae**



Photo: Leong Yong Xu

*Paragymnopleurus maurus*, rolling a dung ball.

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** *Paragymnopleurus* adults are classified as diurnal rollers under the common dung beetle functional clades that group species by time of activity and mode of dung removal. As rollers, they remove dung from the forest floor by carving out balls of dung from dung pats and rolling them some distance away before eventually burying them. *Paragymnopleurus maurus* is the only “roller” dung beetle left in Singapore and appears to be restricted to the forests in the Central Catchment area.

**Distribution:** Peninsular Malaysia, Borneo, Singapore.

**Threats:** This species is sensitive to habitat loss, as well as decreases in mammal abundance and diversity. The rolling behaviour of this species may imply a larger foraging/dispersal range, and that larger continuous/connected forested areas may be important for the survival of this species.

**Scientific Interest and Potential Value:** Dung beetles are sensitive to environmental changes and changes in the diversity and abundance of mammals, the source of dung that the beetles rely upon. For these reasons, they are commonly used as bioindicators of forest disturbance and as a proxy in mammal monitoring. *Paragymnopleurus maurus* is the only “roller” dung beetle left in Singapore, since *Sisyphus thoracicus* is nationally extinct, with only known records from the time of Wallace. The persistence of *Paragymnopleurus*

Photo: TEE Lab



*Paragymnopleurus maurus*, dorsal.

in Singapore despite the extirpation of *Sisyphus* is interesting, since the latter is usually considered the more resilient genus, being present in many disturbed forests in Malaysia where *Paragymnopleurus* is often absent, while *Sisyphus* is often still detected in areas where *Paragymnopleurus* occur. The persistence of *P. maurus* in local mature forests may thus have implications for the importance of old growth forests as strongholds of diversity in Singapore. As a relatively large species (and the only local species) that exhibits the famous dung ball rolling behaviour associated with dung beetles in media that is often perceived as “cute”, *P. maurus* has good potential as a flagship species for insect conservation in the local context.

**Conservation Measures:** Protection of mature forest habitats and mammal diversity as can be found in the Central Catchment Nature Reserve are likely to help protect this species.

**Scientific Name:**  
*Chalcosoma atlas* (Linnaeus, 1758)

**Common Name:**  
Atlas Beetle

**Order/Family:**  
Coleoptera: Scarabaeidae

Photo: Sean Yap



*Chalcosoma atlas* specimen from LKCNHM, lateral.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** *Chalcosoma atlas* belongs to the rhinoceros beetle subfamily Dynastinae and is one of the most famous representatives of the group. Like most rhinoceros beetles, this species is strongly sexually dimorphic, with males possessing an impressive set of horns – one on the head and two on the thorax. These work together to create a grappling, pincer-like motion that males use in intrasexual competitions over access to females in the canopy. Males are also separated into two morphs – majors and minors, with major morph males possessing much longer horns than the minor males. The lifespan of this species lasts about a year. Adult Atlas Beetles are known to feed on tree sap, fruits and leaves, while the larvae feed on rotting wood and decaying plant material. Though mostly restricted to forested habitats, they are considered minor crop pests of oil palm in Indonesia (Pradana et al., 2020).

**Distribution:** Most of Southeast Asia.

**Threats:** This species is sensitive to habitat loss. Poaching may also play a large role in population declines of this species, as its charismatic appearance makes it popular among collectors and exotic pet breeders.

**Scientific Interest and Potential Value:** Apart from various accounts in oral history, the existence of this species in Singapore is only known from three

museum specimens. Two specimens collected by Ridley are housed in the London NHM, a female collected in 1899, and a male in 1904. The third specimen is housed in LKCNHM ZRC, from Murphy student collection 1981. However, the Murphy specimen lacks a collector name and specific location, the only location label being “Singapore”. Assuming the Murphy specimen was really collected in Singapore, no official records have been made since 1981 (40 years ago). Based on the technicality of IUCN definitions, this species is thus listed as “critically endangered” but is likely to be locally extinct. The likely extinction of this species makes *Xylotrupes gideon* the largest extant rhinoceros beetle in Singapore. *Chalcosoma atlas* and *X. gideon* are known to have similar behaviours, life history and host plants, often overlapping in the same habitats in Malaysia, so it is unclear why *C. atlas* has declined while *X. gideon* persists, though based on anecdotal accounts *X. gideon* is also less abundant now as compared to the past. The larger size of *C. atlas* may imply a larger suitable habitat area requirement, while also making it easier to be collected/poached. In terms of conservation interest/value, this species is famous worldwide and a good candidate as a flagship for insect conservation, and potentially for reintroduction efforts.

**Conservation Measures:** The Central Catchment Nature Reserve provides protected habitat, should the species recolonise.

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# Diptera – Flies

ANG YUCHEN

**Scientific Name:**

*Heligmonevra fuscinalonga*  
Tomasovic & Grootaert, 2008

**Common Name:**

Assassin fly

**Order/Family:**

Diptera: Asilidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This is a large, robust predator that actively hunts for prey in flight. It likely has specific ecological requirements to thrive, thus far less than 5 specimens have been found in the more undisturbed terrestrial forests in Singapore.

**Distribution:** This species is described from Singapore and has only been found in Nee Soon Swamp Forest and Bukit Timah Nature Reserve. Some specimens have also been collected in Cambodia at one locality.

**Threats:** Loss, scarcity and changes/degradation of our more pristine nature reserves, especially Nee Soon Swamp Forest (e.g., the general drying up of the

Photo: Maimon Hussin



habitat), where the majority of specimens have been found. Due to its large size, and as one of the (insect) apex predators, its survival is also dependent on a healthy insect ecosystem to support its population.

**Scientific Interest and Potential Value:** As an apex insect predator, it can be considered a keystone species that indicates the general health of the insect community in an area.

**Conservation Measures:** Conservation and monitoring of the remaining terrestrial forested areas will be important for the survival of this species.

**Scientific Name:**

*Allocanace gibba* Munari 2018

**Common Name:**

Gibba beach fly

**Order/Family:**

Diptera: Canacidae

Photo: Maimon Hussin



**National Status:** Endangered (EN)

**Habitat and Ecology:** First collected in 2012, this very rare monotypic species has only been found in old-growth mangroves (none found in newer mangroves), and likely an obligate mangrove habitat specialist, where larvae are likely microbial grazers in mangrove microhabitats.

**Distribution:** It has only been found in low numbers on Pulau Semakau's old mangroves and is endemic to Singapore. Extensive surveys on other mangroves in Singapore have not revealed this species.

**Threats:** Overall, loss and scarcity of the original mangrove habitats in Pulau Semakau. More specifically, while there are no immediate threats to the mangrove

site in Semakau, it is not under any legal protection to protect it from any potential future developments.

**Scientific Interest and Potential Value:** This species is described within a new monotypic genus, which is itself from another rare monotypic subtribe Canacina, previously only distributed from the Mediterranean and Northeastern Atlantic Coast. It has highly derived features which are not found in other canacids, which makes it even more valuable as a species for morphological and evolutionary research in this taxon.

**Conservation Measures:** Conservation and monitoring of the old mangrove sites on Pulau Semakau is crucial to this species, and some form of legal/official protection should be considered as well.

**Scientific Name:**  
*Sigaloethina phaia* Munari, 2004

**Common Name:**  
Phaia beach fly

**Order/Family:**  
Diptera: Canacidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** First collected in 2012, this very rare monotypic species has only been found in old-growth mangroves (none found in newer mangroves), and likely an obligate mangrove habitat specialist, where larvae are likely microbial grazers in mangrove microhabitats.

**Distribution:** This is a rare species was known to be limited to Australasia; it was more recently found specimen from Chek Jawa Mangroves (Pulau Ubin, Singapore) representing a new Oriental record. This species is not found in any other Singaporean mangrove despite extensive surveys.

**Threats:** Loss, scarcity and changes/degradation of mangrove habitats within Pulau Ubin.

Photo: Maimon Hussin



**Scientific Interest and Potential Value:** This species represents a new genus and species record to the Oriental region, having previously only been recorded in Australasia. It is of research interest for investigating biogeography patterns in mangrove/coastal insects.

**Conservation Measures:** Conservation of mangrove habitats is crucial for this and many other mangrove specialist species.



**Scientific Name:**

*Coelopa orientalis* Macquart,  
1843

**Common Name:**

Oriental kelp fly

**Order/Family:**

Diptera: Coelopidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Oriental kelp flies are large, hairy flies whose larvae breed exclusively on beach-stranded kelp (Phaeophyceae). Adults are cursorial and disinclined to fly, preferring to burrow into kelp wracks when disturbed. Life within decaying kelp is the likely reason for the robust and streamlined build of the adults. This allows ease to burrow into kelp and also resist strong winds to cling on to substrates.

**Distribution:** This is an Oriental species. In Singapore, they are only recorded very infrequently from small kelp wracks that have escaped the clearing by workers on beaches in Labrador Park and Pulau Semakau since the 2000s.

**Threats:** This species is extremely reliant on kelp wracks for feeding and breeding. As most beaches are regularly maintained, kelp wracks are constantly removed, thus resulting in the loss of the resources and habitat required for the survival of these flies.



Photo: Miteshravin S/O Ravindran

**Scientific Interest and Potential Value:** Kelp flies are important decomposers of kelp wracks and aid in nutrient cycling in the ecosystem; due to their large size, they are known to be important food sources for other animals such as birds and reptiles. They are also model organisms for sexual selection studies due to their large intraspecific size variability which is linked to a chromosomal inversion system, and their mating behaviour is well studied in a number of species.

**Conservation Measures:** Measures can be taken to preserve sections of beaches where kelp wracks are allowed to accumulate, albeit away from the general public. While they are not attracted to synanthropic trash and food sources and are not known and unlikely to be zoonotic vectors, they may on occasion be a nuisance to beach visitors by their presence.

**Scientific Name:**

*Corethrella calathicola*  
Edwards, 1930

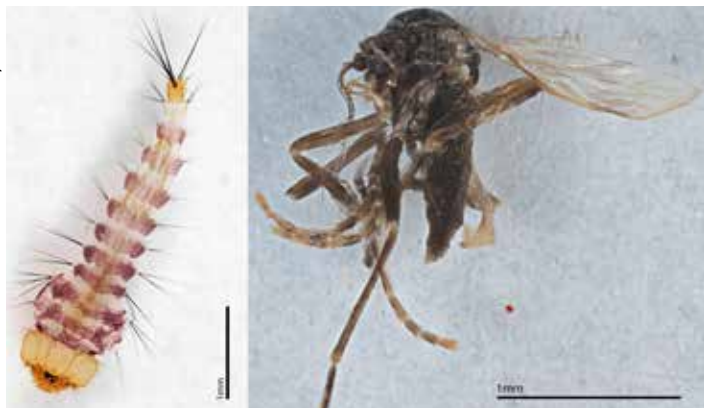
**Common Name:**

Frog-biting midge

**Order/Family:**

Diptera: Corethrellidae

Photo: Robyn JY Lim



Larva (left) and Adult Female (right) *Corethrella calathicola*.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species, like most corethrellids, are tiny midges with specific ecological niches. Larvae are aquatic inquiline predators in *Nepenthes* pitchers, largely preying on smaller-sized mites and other insect larvae. Adults require a blood meal to acquire enough protein from eggs, and specialise in feeding on anurans, locating them through their calls. They are largely found in more undisturbed mature forested areas where more *Nepenthes* and anurans can be found.

**Distribution:** This is an Oriental species. In Singapore, records are only from Nee Soon Swamp Forest and Kent Ridge.

**Threats:** This species is reliant on two other hosts for survival: *Nepenthes* for larval habitats and anurans for adult blood-feeding. Any harm to either host groups would result in a threat to the survival of this species in Singapore.

**Scientific Interest and Potential Value:** Being reliant on two host groups for survival, this species can function as a highly sensitive indicator to the general health of the forest ecosystem.

**Conservation Measures:** The continued monitoring and conservation of existing forest habitats in Singapore.

**Scientific Name:**

*Teleopsis dalmanni*  
(Wiedemann, 1830)

**Common Name:**

Malayan stalk-eyed fly

**Order/Family:**

Diptera: Diopsidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** These large, elegant flies are restricted to undisturbed forests, especially around forest streams, where they hang on root threads overhanging the streams or resting on low herbage. The eye-stalks are sexually-dimorphic. Males have much longer eye-stalks and they are used in mating competitions. They have a lekking system where a dominant male will defend a desirable root thread and females form harems around the male. Both adults and larvae are saprophagous.

**Distribution:** Widespread in Southeast Asia. In Singapore they are uncommon and are restricted to more undisturbed forest with moving waterbodies – these habitats are largely within and surrounding the Central Catchment area.

Photo: Su Yanle



**Threats:** This uncommon species requires more pristine forest habitats (specifically those with streams) and are sensitive and adversely affected by changes in the environment (e.g. drying of habitats).

**Scientific Interest and Potential Value:** This large and unique-looking species can be used as an indicator for the health of inland forests, and they are an important model organism for studies in sexual selection and sex-linked morphological evolution. Note that this species was inaccurately named as *Achias maculipennis* in the second edition Red Data Book (RDB2), which is an obsolete name for another species in the Peacock fly family (Tephritidae).

**Conservation Measures:** Continued monitoring and conservation of existing inland forest habitats.

**Scientific Name:**

*Ngirhaphium caeruleum* Evenhuis  
& Grootaert, 2002

**Common Name:**

Cerulean long-legged fly

**Order/Family:**

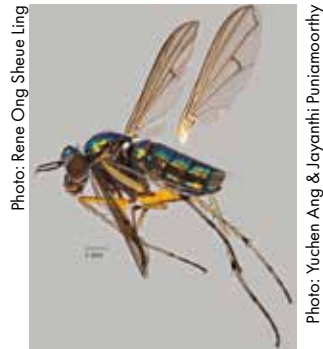
Diptera: Dolichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** An obligate mangrove habitat specialist, they are closely associated with the muddy substrate of mangrove floors and are often found perching on shoots and roots of mangrove trees at low tide to search for small invertebrate prey on the mangrove mud surface.

**Distribution:** This species has two allopatric populations of colour morphs: the normative 'blue' morph (which lends its name to '*caeruleum*') is found in abundance but only in the mangroves of Pulau Semakau. A small population of 'green' morphs were found in the mangroves of Pulau Ubin. Additional populations of the green morph have also been found in the mangroves of Brunei.

**Threats:** Loss, scarcity and changes/degradation of mangrove habitats, especially the reduction of muddy



Green morph



Blue morph

microhabitats in the mangroves. Furthermore, the blue morph is endemic to Pulau Semakau, which has no legal protection to protect this habitat from any potential future developments.

**Scientific Interest and Potential Value:** This large and charismatic species can be used as an indicator species for the health of mangrove habitats, specifically the muddy microhabitats. Its allopatric populations of different colour morphs are also of interest to research in biogeographical patterns and potential incipient speciation.

**Conservation Measures:** Conservation and monitoring of the mangrove habitats on Pulau Semakau and Pulau Ubin is crucial to this species, and some form of legal/official protection should be considered as well.

**Scientific Name:**

*Ngirhaphium murphyi* Evenhuis & Grootaert, 2002

**Common Name:**

Murphy's long-legged fly

**Order/Family:**

Diptera: Dolichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This rare species was first collected by Professor D.H. Murphy, from Mandai mangrove, in 1978. Subsequently, it was found in several mangroves along Singapore's northern coastline. An obligate mangrove habitat specialist, they are closely associated with the muddy substrate of mangrove floors and are often found perching on shoots and roots of mangrove trees at low tide to search for small invertebrate prey on the mangrove mud surface.

**Distribution:** This Singaporean-endemic species is only found in the mangroves of Singapore's northern coastline.

**Threats:** While it is found in several mangroves along Singapore's northern coastline, only one site (Sungei Buloh Wetland Reserve) is under legal protection from future developments. Furthermore, since its inclusion in the previous, second edition Red Data Book (then assessed with a category of threat status of Vulnerable), subsequent surveys show them turning up in declining numbers. This is likely due to changes in the mangrove habitats, especially the observed reduction of muddy microhabitats in Sungei Buloh, which is probably applying more pressure on this Singaporean endemic species.



Photo: Jayanthi Punitamoorthy & Yuchen Ang

**Scientific Interest and Potential Value:** This large and charismatic species can be used as an indicator species for the health of mangrove habitats, specifically the muddy microhabitats.

**Conservation Measures:** Conservation and monitoring of the mangrove habitats (especially the muddy microhabitats) Singapore's northern coastal mangroves. Legal protection from future developments should also be considered for the other mangroves on the northern coast other than those in Sungei Buloh.

**Scientific Name:**

*Thinophilus superbus* Grootaert,  
2018

**Common Name:**

Superb long-legged fly

**Order/Family:**

Diptera: Dolichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A relatively rare front mangrove specialist, where adults prowl the sandier mudflats during low tide for invertebrate prey. They are found in low numbers throughout the year.

**Distribution:** This relatively rare species was described from and is only recorded in the mangroves of Pulau Semakau within Singapore. It has subsequently been recorded in low numbers in Southern Thailand.

**Threats:** Loss, scarcity and changes/degradation of mangrove habitats on Pulau Semakau.

**Scientific Interest and Potential Value:** This large and charismatic species can be used as an indicator species for the health of front mangrove habitats. Given its beauty, this species has the potential to be

Photo: Jayanthi Puniamoorthy & Yuchen Ang



an ambassador for mangrove biodiversity for science communication purposes.

**Conservation Measures:** Conservation and monitoring of the mangroves on Pulau Semakau is crucial to this species, and some form of legal/official protection should be considered as well.

**Scientific Name:**

*Elaphropeza bakau* Grootaert &  
Shamshev 2015

**Common Name:**

Bakau dance fly

**Order/Family:**

Diptera: Hybotidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** These Singaporean-endemic species are tiny, active hunters than can be found prowling on the leaves and branches of mangrove trees hunting for other smaller invertebrate prey.

Photo: Igor Shamshev



**Distribution:** This relatively abundant species was described from and is only recorded within the mangroves of Pulau Semakau, Singapore.

**Threats:** While relatively abundant, this species is endemic to the mangroves of Pulau Semakau; extensive surveys in other mangroves failed to reveal this species. As such, the loss, scarcity and changes/degradation of mangrove habitats here could have drastic effects on the survival of this species.

**Scientific Interest and Potential Value:** While most *Elaphropeza* species have a strong preference for terrestrial habitats, a small group of species represented by *E. bakau* seem to be mangrove specialists. The comparative study of these species can yield important insights into habitat adaptations within a taxon.

**Conservation Measures:** Conservation and monitoring of the mangroves on Pulau Semakau is crucial to this species, and some form of legal/official protection should be considered as well.

**Scientific Name:**

*Xenoplatyura beaveri* Matile,  
1979

**Common Name:**

Nepenthes predatory fungus gnat

**Order/Family:**

Diptera: Keroplatidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** While most fungus gnats feed on fungi, this species is a specialised inquiline predator in *Nepenthes* pitchers. Larvae spin sticky webs over the entrance of a pitcher to trap other inquiline prey that emerge from pitcher fluid (usually, mosquitoes). Adults are likely reverting back to more stereotypical fungus-feeding behaviours.

**Distribution:** This species is known throughout Southeast Asia. Within Singapore, they are only found in *Nepenthes* pitchers within the Nee Soon Swamp Forest.

**Threats:** This species is reliant on *Nepenthes* for larval habitats, and it is likely that the adults require more pristine habitats for the fungi that they would feed on. Any damage to the host plant population as well as



(A: Larval web woven by *X. beaveri* larva within *Nepenthes ampullaria* pitcher, B: Larva, C: Pupa, D: Adult male)

changes in the locality habitat would result in a threat to the survival of this species in Singapore.

**Scientific Interest and Potential Value:** This species can likely be utilized as an easy indicator of ecosystem health, as larval webs on pitchers can be easily recorded. They also perform regulating ecosystem services in controlling mosquito populations that may breed within *Nepenthes* pitchers.

**Conservation Measures:** The continued monitoring and conservation of existing forest habitats in Singapore.



**Scientific Name:*****Sepsis silvicola* Iwasa 2011****Common Name:****Mangal sepsid fly****Order/Family:****Diptera: Sepsidae****National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species was first collected from Changi Mangrove in 1976, which has since been severely impacted; subsequent surveys failed to reveal any more specimens. However, this species has very recently been found in the mangroves of Pulau Ubin. They are closely associated to mangrove habitats, and they are likely feeding and breeding on wild boar and macaque dung.

**Distribution:** This species was previously collected from Changi Mangroves, but now can only be found in Pulau Ubin. It has also been recorded from the mangroves of Southern Vietnam.

**Threats:** Loss and degradation of mangrove habitats. The reduction in populations of macaques and wild boars can also reduce the quantity of dung which the species feeds/breeds on.

Photo: Maimon Hussin



**Scientific Interest and Potential Value:** This species was collected by Professor Murphy in 1976, who recognised it as a new species and genus, but did not publish its description. In 2011, this species was also found in Vietnam and described under an existing genus *Sepsis*. However, its morphology suggests it being an entirely new and monotypic genus (as recognised by Prof. Murphy), which will be revised subsequently. Morphological and molecular analysis of this species could then be important in resolving some phylogenetic instabilities in the systematics of Sepsidae.

**Conservation Measures:** Preservation and monitoring of mangrove sites in Pulau Ubin is important. Monitoring the populations of Eurasian wild boars and Long-tailed macaques will also be important for safeguarding the survival of this species.

**Scientific Name:*****Eosmallota singularis* (Walker, 1857)****Common Name:****Singular flower fly****Order/Family:****Diptera: Syrphidae**

Photo: Rene Ong Sheue Ling



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This extremely rare species was known from two female specimens from Singapore (1857) and Sabah (1913). They remained undetected until another specimen was collected from Bukit Timah Nature Reserve in 2019. Their life history is largely unknown, but they seem to be associated with more undisturbed lowland rainforests.

**Distribution:** This extremely rare species has thus only been found in Bukit Timah Nature Reserve. They have also been recorded in pristine forest plots in Sabah, Malaysia.

**Threats:** Lack of life-history data for this species makes it hard to determine what threats it faces, but changes

in habitats that the species might be reliant upon within Bukit Timah Nature Reserve might be a threat.

**Scientific Interest and Potential Value:** This species has been studied for its hornet mimicry. It is also a large, charismatic species that has been featured prominently on Singapore's national news media, which could play a role as an ambassador species for Singapore's insect biodiversity.

**Conservation Measures:** This extremely rare species is only known from Bukit Timah Nature Reserve, which is a lowland rainforest habitat for which it is very likely associated with. Other than habitat monitoring and preservation, more research into their life history is needed to determine what kind of specific conservation measures should be applied.

**Scientific Name:**

*Milesia vespoides* Walker 1857

**Common Name:**

Hornet-mimicking hover fly

**Order/Family:**

Diptera: Syrphidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species was first collected in Singapore by A.R. Wallace in the early 1850s and remained undetected in Singapore until 2019 when a second specimen was collected in Pulau Ubin. Subsequently, a few other specimens have been recorded in and around urban parks. It is unclear why specimens are only starting to turn up in observable numbers after >150 years of non-detection. While not much is known about their life history, these large flies are excellent mimics of the Greater Banded Hornet *Vespa tropica*.

**Distribution:** This rarely recorded species has thus far been found in and around urban parks in Sentosa, Admiralty, Bukit Batok and Bukit Timah. It is also rarely collected around the Oriental region, usually in forested areas.

**Threats:** This is a rare fly which was not found for >150 years but is now being recorded in urban parks.

Photo: Joseph Lim



However, due to its rarity and ephemerality, it would be prudent to assign it a Vulnerable category of threat status. More targeted life-history research can provide data for a more accurate assessment.

**Scientific Interest and Potential Value:** This species has been studied for its hornet mimicry. It is also a large, charismatic species that has been featured prominently on Singapore's national news media, which could play a role as an ambassador species for Singapore's insect biodiversity.

**Conservation Measures:** A puzzling question is why this species, that had apparently 'disappeared' for over a century, is now suddenly turning up again, in urban

parks. More research into their life history is needed to further determine its national status and what kind of conservation measures should be applied.

**Scientific Name:**  
*Themara ampla* Walker, 1857

**Common Name:**  
Hammerhead peacock fly

**Order/Family:**  
Diptera: Tephritidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** A few species of hammerhead peacock flies are known to occur in Singapore, most of them confined to dense, more undisturbed forest areas where they require fermenting logs to breed on. Males have enlarged 'hammerheads' which they use for displaying and fighting off other males from prime breeding spots on a rotting log. This species is easily distinguishable from the others by the absence of a clear spot near the tip of the wing (see *T. maculipennis*).

**Distribution:** This is an Oriental species. The lectotype of this species is a Singaporean specimen collected by naturalist Alfred Russell Wallace in the 1850s and remains the only known Singaporean specimen. It likely had a similar distribution pattern within Singapore i.e., in the forested regions of Singapore. Despite targeted samplings in modern times since 1960s, only specimens of other species (e.g., *T. maculipennis*) have been found. As such it is likely that this species is extirpated from Singapore.



Lectotype female *Themara ampla* specimen with associated labels.

**Threats:** It is likely that the loss of forest habitat and subsequent loss of suitable host species of tree (for breeding) to have caused its extirpation locally.

**Scientific Interest and Potential Value:** The mating behavioural ecology of hammerhead flies and other peacock flies are relatively well-studied, and some serve as models for investigating mating systems such as leks. Their specific requirements for breeding also means that they can function as an indicator for forest health.

**Conservation Measures:** More studies may need to be done to perhaps figure out the specific requirements (e.g., fermenting rot of a tree species) for breeding in this species, where a reintroduction of the putative host tree species may induce a revival of the species.

**Scientific Name:**  
*Themara maculipennis*  
(Westwood, 1847)

**Common Name:**  
Hammerhead peacock fly

**Order/Family:**  
Diptera: Tephritidae



Adult male *Themara maculipennis*, dorsal profile.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** A few species of hammerhead peacock flies occur in Singapore. Most are confined to dense forest where they require fermenting logs to breed on. Males have enlarged 'hammerheads' which they use for displaying and for fighting off other males from prime breeding spots on a log. This species is easily recognised by a clear wing spot near the tip of the wing.

**Distribution:** This is an Oriental species. In Singapore, records are only from the Bukit Timah and Central Catchment Nature Reserve. They are rarely collected in malaise traps. However, they can be found in relatively high numbers where there are rotting tree logs at a specific stage of fermentation.

**Threats:** Loss of forest habitat leading to the loss of suitable host tree species required for breeding.

**Scientific Interest and Potential Value:** The mating behavioural ecology of hammerhead flies and other peacock flies are relatively well-studied, and some serve as models for investigating mating systems such as leks. Their specific requirements for breeding means that they are very ephemeral and can function as indicators of forest health.

**Conservation Measures:** Continued conservation of forested areas.

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# Hemiptera – Freshwater Aquatic Bugs

TRAN ANH DUC, CHOO RUISHENG, MARC CHANG JIA JIN, HWANG WEI SONG

**Scientific Name:**

*Hebrus mangrovensis*

**Common Name:**

Mangrove velvet bug

**Order/Family:**

Hemiptera/Hebridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is known to inhabit logs in mangrove swamps, and likely to be adapted to be fully submerged during high tide.

**Distribution:** This species is only known from Kranji mangroves in Singapore and nowhere else in the world.

**Threats:** Coastal mangroves are one of the most threatened habitats in Singapore, with a fragmented and much reduced area coverage. Given its highly limited distribution and mangrove habitat requirements, this species is vulnerable from any perturbations to its local environment, especially since Kranji mangrove is not within a nature reserve.

**Scientific Interest and Potential Value:** This species belongs to the velvet bug family (Hebridae) which is one of the smallest types of aquatic bugs in the world. It is one of only four velvet bugs species that are known to occur in Singapore. It is also one of the first two velvet bug species that were recorded to inhabit mangrove swamps, instead of the usual freshwater or moist terrestrial habitats. Both males and females of this species have very reduced wings (micropterous), which means they are flightless, a rare phenomenon for this

Photo: Tran Anh Duc



Preserved specimen of *Hebrus mangrovensis*.

group of velvet bugs. Given its strong association to the mangrove ecosystem and limited dispersal ability, this is a potential bioindicator species for environmental assessments.

**Conservation Measures:** Information about this species is poor due to the general inaccessibility of its mangrove habitat, its cryptic microhabitat in rotting logs, and its tiny size. Species information is only so far derived from the original specimens collected between 1985 and 1986. No recent records of this species are available since then and an update is sorely needed to assess its current status.

**Scientific Name:**

***Ventidius malayensis***

**Common Name:**

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**Order/Family:**

**Hemiptera/Gerridae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is a semi-aquatic insect that skims on the water surface in freshwater streams. Its preferred habitat is slower-flowing streams in hilly or lowland areas. It is only recorded in Nee Soon Freshwater Swamp within Singapore. It is a predatory insect that hunts and scavenge small insects that fall onto the water surface.

**Distribution:** This species has a relatively widespread distribution that includes Thailand, Peninsular Malaysia, Singapore and Borneo.

**Threats:** Given its restricted range within Nee Soon Freshwater Swamp locally, this species is likely to be highly sensitive to microclimatic conditions such as water and food availability. Any habitat modification or loss will significantly impact the already limited local population further.

**Scientific Interest and Potential Value:** This species is one of three species of water striders from the genus *Ventidius* present in Singapore. Each species resides in a slightly different microhabitat in the local freshwater



Photo: Yang Chang Man

Preserved specimen of *Ventidius malayensis* (front legs obscured). Live colouration is black and green, turning yellow upon death.

ecosystem, with *Ventidius harrisoni* slightly overlapping with *Ventidius malayensis* within the Central Catchment Nature Reserve. Its preference for shaded forested water bodies such as lakes and streamlets suggest it can be a useful bioindicator species.

**Conservation Measures:** The last specimen record for this species dates back to 1984 and is in need of an update on its current status within the Nee Soon Freshwater Swamp forest.

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# Hemiptera (Reduviidae) – Assassin Bugs

HWANG WEI SONG, CHOO RUISENG, YEO HUIQING

**Scientific Name:**

*Acanthaspis signifera*

**Common Name:**

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**Order/Family:**

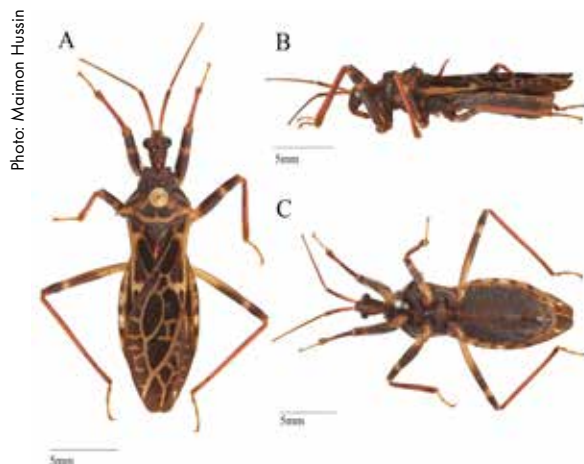
Hemiptera: Reduviidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is nocturnal and has a corticolous lifestyle (associated with tree-bark living). Any specific host plant association is unknown, but it is found only on large, mature trees with rough, scaly, or fissured bark where it can hide within crevices in the day. During the night, they can be seen hunting for prey on the tree trunk, which are most likely to be exclusively certain species of ants and termites. Immatures exhibit camouflaging behavior using debris and sometimes prey carcasses.

**Distribution:** Known to occur in Malacca, Malaysia and Java, Indonesia as well.

**Threats:** The species is only found in Central Catchment Nature Reserve within Singapore, where there are old growth primary rainforests or mature secondary forests. The species is likely restricted to mature forests based on its preferred microhabitat and specialized prey availability. Given its restricted diet and microhabitat requirements, the species is vulnerable from any perturbations to its environment. Being at a higher trophic level as an insect predator, their numbers are also relatively less abundant and more sensitive to disturbances.



**Scientific Interest and Potential Value:** Information about this species is practically unknown besides its formal scientific description. Ecological and behavioral information are limited and partially inferred by known attributes of close relatives, with slight variations to be expected. Given its strong association to a functional forest ecosystem, this is a potential bioindicator species for environmental assessments.

**Conservation Measures:** Given its known restriction within the Central Catchment Nature Reserve within Singapore, continued protection of the existing forests, and proper management towards forest recovery will help ensure its survival locally. Availability of suitable habitats outside of the Central Catchment Nature Reserve in time may allow expansion of the species range to other areas in Singapore.

**Scientific Name:**

*Acanthaspis signifera*

**Common Name:**

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**Order/Family:**

Hemiptera: Reduviidae

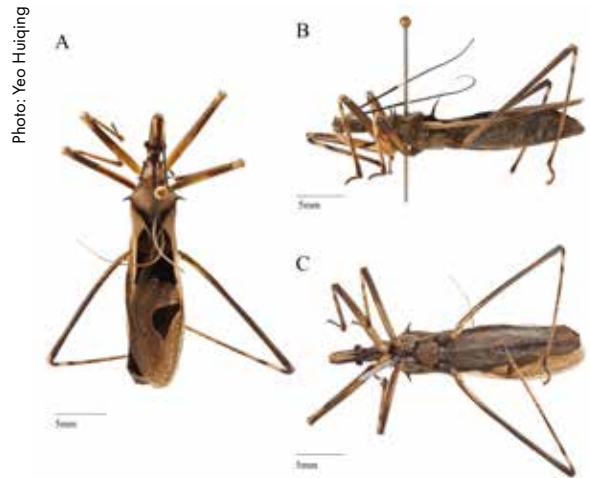
**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is nocturnal and found usually on low-lying vegetation in forested areas. Its specific habitat and ecology is not well-studied, but it is presumed to be a mature forest-specific species and a generalist predator that feeds on a variety of nocturnal arthropods. It has been documented to feed on various orthopterans (crickets and grasshoppers), and molecular gut analysis shows it feeds on spiders too.

**Distribution:** This species is recorded to occur in Peninsular Malaysia, Myanmar, and Northern India (Sikkim).

**Threats:** Given its restricted range within Central Catchment Nature Area locally, this species is likely to be highly sensitive to microclimatic conditions and prey availability. Any habitat modification or loss will significantly impact the already diminished local population further.

**Scientific Interest and Potential Value:** This species is the largest assassin bug species present in



Photoplate for *Canthesancus gulo*.

Singapore, and potentially plays a significant role as a micro-predator in a functional forest ecosystem. Given its relatively large size and ease of identification, it can potentially be a useful bioindicator species for forest monitoring purposes. The venom that it injects to subdue prey has never been studied and houses potential pharmaceutical value.

**Conservation Measures:** This species is only known to occur in the Central Catchment Nature Reserve within Singapore, which suggests this species may not survive in more fragmented forests and require a larger contiguous mature rainforest with sufficient prey availability. Any disturbances that might affect the microclimatic conditions and prey availability within the nature reserve is likely to impact the species rapidly.

**Scientific Name:**  
*Cosmolestes picticeps*

**Common Name:**  
-

**Order/Family:**  
Hemiptera: Reduviidae

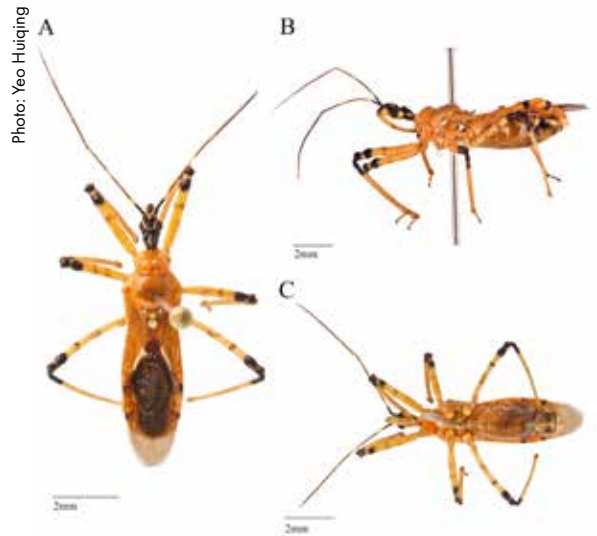
**National Status:** Least Concern (LC)

**Habitat and Ecology:** This species is usually found on low-lying vegetation with fair amount of sunlight exposure. They are generalist predators, that feeds on a variety of insect prey including beetles, wasps, flies and moths.

**Distribution:** This species is recorded to occur in Penang, Java, Borneo, and Sumatra.

**Threats:** This species appears to be adapting well to the urban environment, with sightings in both urban parks and nature reserves. It is still more commonly observed in forested areas so its adaptation to urban environments has its limits. Prey availability and suitable microhabitats for egg-laying and nymphal development are likely ecological determinants.

**Scientific Interest and Potential Value:** This species is likely to be the most conspicuous and most commonly



Photoplate for *Cosmolestes picticeps*.

encountered assassin bug in Singapore, given its diurnal nature on low-lying vegetation and its bright colouration. It's relatively common occurrence throughout the island suggests a suite of traits adapted for urban greenery living and may be a suitable candidate to consider as a native natural enemy for urban gardens/farming due to its appetite for lepidopteran prey.

**Conservation Measures:** This species appears to be doing relatively well in urban greenescapes. Further greening and natural corridors established is likely to help this species thrive locally.

**Scientific Name:**

***Gardena melinarthrum***

**Common Name:**

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**Order/Family:**

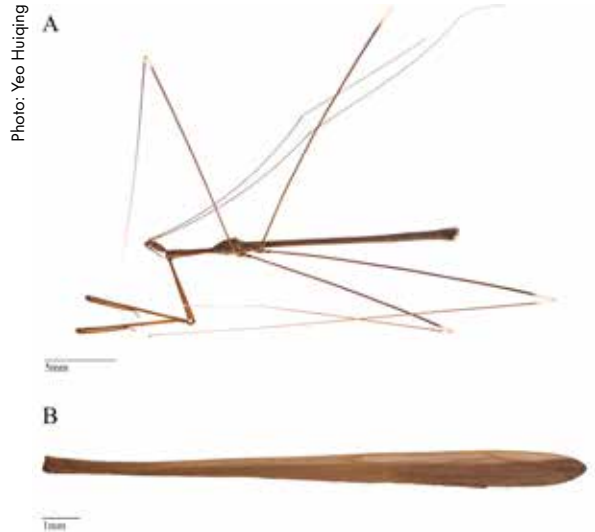
**Hemiptera: Reduviidae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is usually found on the forest floor, leaf litter, or on lower parts of tree trunks. It is found thus far only in Central Catchment Nature Reserve, Bukit Timah Nature Reserve and Dairy Farm Nature Park, suggesting that it requires primary or mature secondary rainforests to survive. It is nocturnal and specializes in hunting small spiders such as Pholcidae species, in leaf litter or on understorey vegetation.

**Distribution:** This species has a widespread distribution, recorded to be present in Sri Lanka, India, Philippines, Lombok island, Sumatra, Java, Formosa, China, Australia and Japan.

**Threats:** This species appears to be limited by the availability of suitable mature secondary forests locally, and likely present only in Central Catchment Nature Reserve, Bukit Timah Nature Reserve and the adjacent buffer parks. Microhabitat conditions and prey availability are likely to contribute to its limited range. More severe dry spells or greater exposure to sunlight that affect the understorey conditions in our nature reserves are likely to have a detrimental impact on the existing population. Insecticides that leave long-term residuals in the soil that doesn't breakdown naturally are likely to impact this and other leaf litter species long after cessation of application.



Photoplate for *Gardena melinarthrum*.

**Scientific Interest and Potential Value:** This species is the largest of the thread-legged assassin bugs subfamily in Singapore. This group of assassin bugs have evolved innovative, specialized spider hunting strategies that include aggressive mimicry and the ability to cut through spider webs undetected. It is not known how this species captures its prey and if different types of spiders require different strategies.

**Conservation Measures:** This species represents one of the key micropredators in the leaf litter community in our rainforests, an assemblage of species that is severely understudied. Measures that can help ensure the long-term maintenance of our forest ecosystem with minimal disturbance will contribute to its sustained survival locally.

**Scientific Name:**  
*Inara flavopicta*

**Common Name:**  
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**Order/Family:**  
**Hemiptera: Reduviidae**

**National Status:** Least Concern (LC)

**Habitat and Ecology:** The immature stage of this species is better known than the adult. The immatures are predominantly ant specialists, piling the ant carcasses on their backs after feeding, presumably as a form of camouflage against predators and also prey. The immatures feed mostly on *Dolichoderus* ants and are active at night. This species is most often found in forest understorey vegetation and appears to be doing well in urban forests outside of the nature reserves.

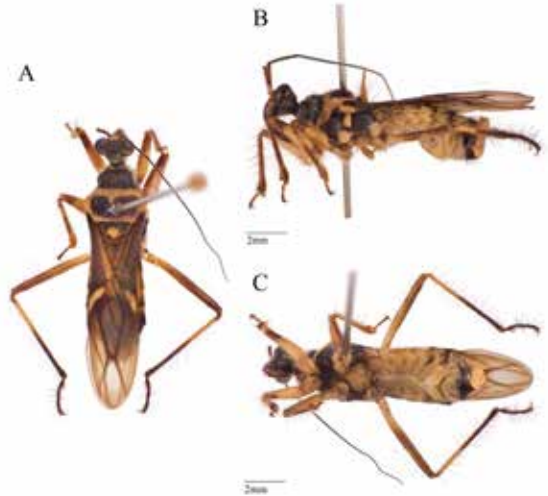
**Distribution:** This species is also recorded in Penang and Sarawak, Malaysia.

**Threats:** This species appears to be adapting well to urban forests environment, due to the availability of prey species and suitable microhabitats. Due to its prey specialization, any disturbances that can affect prey availability will have a knock-on effect on this species. One potential threat at forest fringes close to residential areas will be the application of insecticides with a long residual effect.

**Scientific Interest and Potential Value:** The immature of this species is known for its peculiar carcass-piling behavior that is almost exclusively ants. How the immature constructs the ant carcass pile is being studied, together with the potential of aggressive mimicry use to hunt for prey undetected. Given its reliance on a forest habitat, but with the ability to adapt to certain disturbances, it can be used as a bioindicator species as well.

**Conservation Measures:** This species appears to be adjusting well to urban forest environments. More efforts in creating green corridors and forest habitats will allow this species to expand its current range and promote better population connectivity.

Photo: Yeo Huiqing



Photoplate for *Inara flavopicta*.

Photo: Hwang Wei Song



*Inara flavopicta* nymph with ant carcass pile.

**Scientific Name:**

*Lisarda erecta*

**Common Name:**

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**Order/Family:**

Hemiptera: Reduviidae

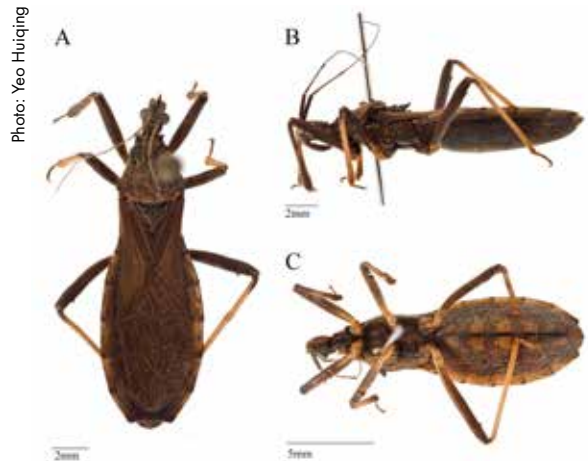
**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is found on the forest floor, on leaf litter, or low-lying vegetation in secondary regrowth forests. Feeds exclusively on termites. Only known in Singapore from Chek Jawa forest, Pulau Ubin.

**Distribution:** This species was originally described from Myanmar.

**Threats:** Habitat loss due to human development is the likely cause of this very restricted range.

**Scientific Interest and Potential Value:** This species and other congeners specializes on forest termite species. While other species are relatively abundant in mainland Singapore, this species has a very limited range on Pulau Ubin island and has so far not been



Photoplate for *Lisarda erecta*.

found on the main island. There is interest in the hunting behavior that this group of species performs to capture termite prey, given formidable termite defenses against predators. This includes the venom they inject, which may have potential applications.

**Conservation Measures:** While ongoing efforts to find additional populations of this species is ongoing, its only known range within the small Chek Jawa forest is vulnerable to any major disturbances.



**Scientific Name:**  
*Triatoma rubrofasciata*

**Common Name:**  
Kissing Bug

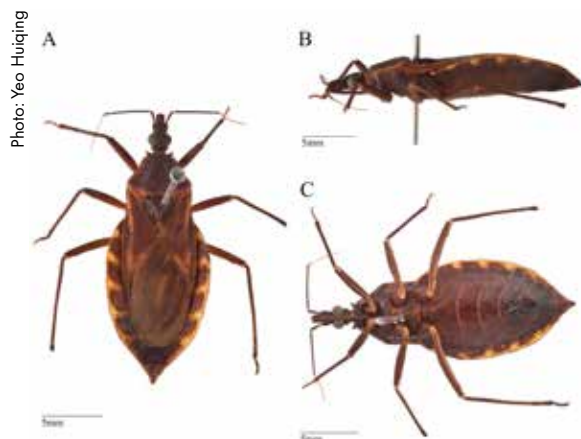
**Order/Family:**  
Hemiptera: Reduviidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** This is the only known blood-feeding Triatominae species known to occur in Singapore. Previously considered to be abundant in local settlements (kampung) and even built-up urban areas in the early 1970s, this species has apparently disappeared into obscurity. It is capable of feeding on different blood hosts, including peridomestic animals such as chickens, dogs and humans. Its preferred host is likely to be rats. They are usually found living near to their hosts, among piles of dead wood, or in tight crevices where they can shelter in the day and emerge at night to feed. They are attracted to artificial light when sourcing for new hosts.

**Distribution:** This species is tropicopolitan.

**Threats:** This human-associated species appears not as adaptive to highly built-up urban living environments, although the rat population is still highly abundant. Hence it is unknown whether the local population has drastically declined due to habitat loss or has adapted to a more reclusive lifestyle.



Photoplate for *Triatoma rubrofasciata*.

**Scientific Interest and Potential Value:** Although this species does not carry the protozoan parasite *Trypanosoma cruzi*, which causes Chagas Disease in the Americas, they can harbor other endemic trypanosomes that can cause sickness in other wildlife such as the long-tailed macaques.

**Conservation Measures:** Although not a significant player, this species should be part of our insect vector biosurveillance for any potential zoonotic disease spread. More data on its presence and distribution locally required before further recommendations can be put forth.

**Scientific Name:**  
*Velitra rubropicta*

**Common Name:**  
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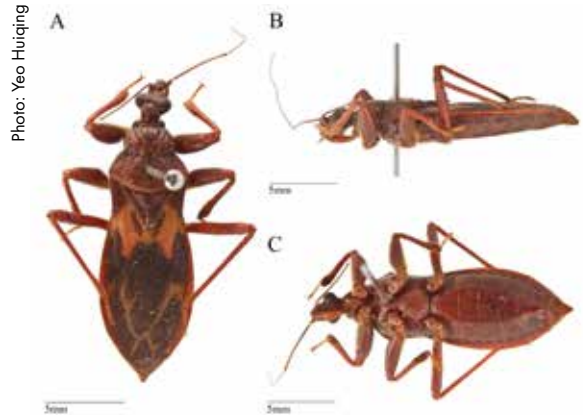
**Order/Family:**  
Hemiptera: Reduviidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is only found in mature secondary or primary forests where there are suitably large trees present for it to seek shelter under tree bark. Its cryptic lifestyle makes further study on this species challenging. It presumably feeds on other bark-living arthropods given it is rarely seen elsewhere. Museum records showed a wider distribution in the past, but now it is likely present only in the nature reserves in small numbers.

**Distribution:** This species is widespread in Southeast Asia and known to occur in Java, Sumatra, Borneo, Indochina, Malacca, Philippines and China.

**Threats:** This species requires a rare resource in our forests: mature old-growth trees with suitable tree bark for it to hide under. Lack of such trees locally due to historical clearing of local forests and logging activities has reduced the availability of this ecological niche.



Photoplate for *Velitra rubropicta*.

**Scientific Interest and Potential Value:** This species represents a unique clade of assassin bugs that are dorso-ventrally flattened and associated with tree bark-living. This group is predominantly found in South-east Asian forest ecosystems and serves as a useful bioindicator of old growth forests. Given its relatively large size for an assassin bug, its venom has research potential.

**Conservation Measures:** Further protection of existing old growth trees in the nature reserves will help with the continued survival of this species. It will take decades or centuries to significantly increase the number of old growth trees to a substantial amount that can further boost this species population, hence its fate remains precarious.

**Scientific Name:*****Vesbius purpureus*****Common Name:**

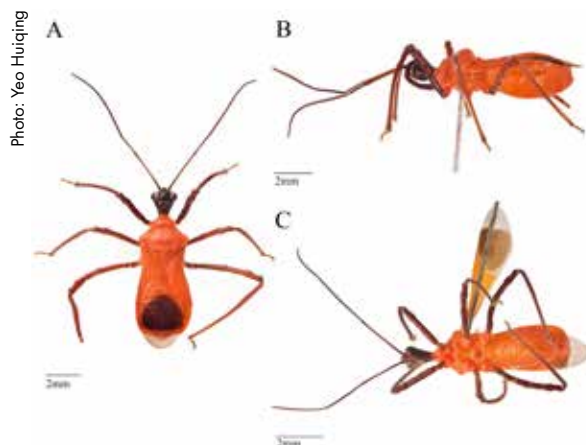
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**Order/Family:****Hemiptera: Reduviidae****National Status:** Data Deficient (DD)

**Habitat and Ecology:** This species is commonly found in village houses elsewhere in Southeast Asia, and presumably present in local kampungs before resettlement began. The village houses provide similar shelter that this species prefers, such as hollowed tree trunks, caves and cliff crevices, and similar types of prey. It is considered to be a generalist predator, capable of feeding on ants, small moths and flies. It has been found outside of nature reserves in Singapore in the past, but no recent records have been documented.

**Distribution:** This species is known to occur in Peninsular Malaysia, Papua New Guinea, Myanmar, Sri Lanka, Bangladesh and China.

**Threats:** This species is not uncommon in other countries, adapting well to human dwellings and urban

Photoplate for *Vesbius purpureus*.

environments, but do not appear to thrive as well in Singapore's built-up space. Further studies are needed to determine if there is a healthy population within the protected nature reserves or urban parks.

**Scientific Interest and Potential Value:** Given its adaptability to selected human environments, this species can serve as a useful biological control agent in plant nurseries, urban farms and gardens.

**Conservation Measures:** Further understanding of suitable local natural environment is needed.

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# Hymenoptera – Bees and Wasps

ZESTIN W.W. SOH, JOHN X.Q. LEE, JOHN S. ASCHER

Bees and wasps of the order Hymenoptera are diverse insects that play pivotal ecological functions in maintaining the health and stability of ecosystems. Bees are highly effective pollinators, and a high proportion of native Southeast Asian flora have co-evolved to rely on their visitation for reproduction and survival (Orr et al., 2021; Corlett, 2004; Kato et al., 1996; Momose et al. 1998). Wasps are major regulators of arthropod populations through predation and parasitism, and are also pollinators for particular plants (Brock et al., 2021; Corlett, 2004). Given the importance of bees and wasps and their ecological interactions in natural and managed ecosystems, it is imperative that there are efforts to monitor and conserve the native fauna by researchers and citizen scientists (Lim et al., 2024; Warrit et al., 2023). The bees of Singapore comprise about 142 species (including distinct morphospecies pending further integrative taxonomic review, and two recently detected exotic species) in four families. Their conservation statuses have been assessed and summarized in a country checklist (Ascher et al., 2022), which considered each taxon's habitat usage, distribution, and last verified record, compiled through surveys and citizen science databases (e.g. Ascher et al., 2019; Liow et al., 2001; Soh & Ngiam, 2013). The wasps, a paraphyletic group far exceeding bees in species diversity, are not as well understood in Singapore (Ascher & Lee, 2024). Work is underway to resolve the taxonomy of wasp families and assess their statuses, starting with the aculeate wasps, such as the social vespids and the thread-waisted wasps of family Sphecidae (Lee et al., 2023; Ascher et al., in press). In the following accounts, we highlight the species requiring the most attention for local conservation monitoring. In addition, we list a few key examples of species with inadequate data that may be concluded as threatened with further research.

**Scientific Name:**

*Lipotriches (Austronomia)*  
*goniognatha* (Cockerell, 1919)

**Common Name:**

Angle-jawed Austral-Nomia

**Family:**

Halictidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Solitary bee that putatively builds underground nests. Little is known about its ecology but it may be associated with freshwater marshland.

**Distribution:** Thai-Malay Peninsula, Singapore, Cambodia, Myanmar, Indonesia and Philippines.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** This species is only known from two records at Kranji in the last 50 years. C.F. Baker first recorded the visually distinctive male of this species in Singapore in 1918. It was later rediscovered in 2009 through malaise trapping in the Kranji area. After another gap in records, it was observed in 2023 at Kranji Coastal

Photo: Zestin Soh



Male *Lipotriches goniognatha* resting on a sedge in Kranji Coastal Nature Park, Singapore.

Nature Park foraging on wetland-associated sedges (Cyperaceae) along the fringe of a freshwater marshy pond, indicating a possible association with this specific habitat. We have provisionally listed it as Data Deficient as knowledge of this species locally remains limited and it may be overlooked.

**Conservation Measures:** Preservation and restoration of high-quality wetland habitat, particularly at Kranji, the only site where it is currently known to occur. Seek to establish information on population distribution and habitat usage through recording by researchers and citizen scientists.

**Scientific Name:**

*Lipotriches (Austronomia)* *takauensis*  
(Friese, 1910)

**Common Name:**

Takau Austral-Nomia

**Family:**

Halictidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Solitary bee that putatively builds underground nests. Found along edges of mature forests.

Photo: Zestin Soh



Female *Lipotriches takauensis* visiting *Uria crinita* at Dairy Farm Nature Park, Singapore.

**Distribution:** Thailand, Malay Peninsula, Singapore, Vietnam, South China (Hainan, Hong Kong), and Java.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** D.H. Murphy collected specimens of this species in 1961 at Changi Mangrove and in 1976 at Linden Drive. Recent records are from transitional habitats in the vicinity of

mature forests, such as Dairy Farm, Bukit Timah, Rifle Range, and Pulau Ubin.

**Conservation Measures:** Preservation and restoration of high-quality forest patches as well as adjacent transitional habitats, as they are likely used by this species for foraging and/or nesting. Restoration of native flora in degraded or urbanised habitats located near forests. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Nomia (Maculonomia) apicalis*  
Smith, 1857

**Common Name:**

Black-tipped Forest-Nomia

**Family:**

Halictidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests. Known to forage for pollen from *Melastoma malabathricum*.

**Distribution:** Malay Peninsula (Johor), Singapore, and Sumatra. Records from elsewhere including Thailand may pertain to other taxa in this complex.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** A.R. Wallace collected the male holotype of this species in Singapore around 1854. Subsequent observations in Singapore span until 1976, when recorded at Dairy Farm, and 1999 when last observed nationally at Nee Soon. All recent records from 2008 onward of

Photo: Zestin Soh



Female *Nomia apicalis* visiting *Melastoma malabathricum* in Johor, Malaysia.

bees bearing close resemblance pertain to a related, undescribed *Nomia (Maculonomia)* species. The true *Nomia apicalis* appears restricted to old-growth forests in the vicinity of the Central Catchment Nature Reserve and Bukit Timah, while the similar morphospecies exhibits broader habitat tolerances and is much more widespread locally.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around the Central Catchment Nature Reserve, where it occurs. Monitoring of extant populations by researchers and citizen scientists.



**Scientific Name:**

*Nomia (Maculonomia) fuscipennis*  
Smith, 1875

**Common Name:**

Dusky-winged Forest-Nomia

**Family:**

Halictidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests. Often found foraging from *Melastoma malabathricum*.

**Distribution:** Malay Peninsula, Singapore, Sumatra, Borneo, and Java.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** This species occurs in forested sites mainly in and around the Central Catchment Nature Reserve and Bukit Timah Nature Reserve. Where it occurs it can be a frequent visitor to *Melastoma malabathricum* and *Leea* spp.

Photo: Zestin Soh



Female *Nomia fuscipennis* visiting *Melastoma malabathricum*.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around the sites where it occurs, such as the Central Catchment Nature Reserve, Bukit Timah Nature Reserve, and their surrounding nature parks. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Nomia (Maculonomia) elegans*  
Smith, 1857

**Common Name:**

Elegant Forest-Nomia

**Family:**

Halictidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests.

**Distribution:** In Singapore, this species is reported from Seletar historically. Elsewhere it occurs in the Malay Peninsula, Java, and Borneo.

Photo: Zestin Soh



Male *Nomia fuscipennis* visiting *Asystasia gangetica* in Temburong District, Brunei.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** This species was first described from specimens collected by A.R. Wallace from Malacca, and subsequently redescribed from Singapore as *Nomia tuberculifrons* Cockerell, 1920, based on specimens of both sexes collected at Seletar in 1911. There are no subsequent country records.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve.

**Scientific Name:**  
*Nomia (Maculonomia) penangensis*  
Cockerell, 1920

**Common Name:**  
Penang Forest-Nomia

**Family:**  
Halictidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests. Recorded foraging from various Melastomataceae and Asteraceae in Malaysia.

**Distribution:** Thai-Malay Peninsula and Singapore to Indochina and Southern China including Hong Kong.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** The historical presence of this species in Singapore was recently established based on a male specimen collected by C.F. Baker, most likely around 1918, deposited in the entomological collection of the Smithsonian National Museum of Natural History. It has not been observed locally since.

Photo: Zeslin Soh



Female *Nomia penangensis* visiting *Asystasia gangetica* in Negeri Sembilan, Malaysia.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**  
*Ceylalictus (Ceylalictus)*  
*communis* (Blüthgen, 1934)

**Common Name:**  
Kuala Lumpur Steppe Bee

**Family:**  
Halictidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Solitary bee that builds underground nests in beach sand. Known to visit the native coastal shrub *Pluchea indica*, albeit infrequently.

**Distribution:** Thai-Malay Peninsula, Singapore.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** This diminutive species has been intermittently documented from 2015 to 2021. Nesting aggregations were recently discovered in manmade sand pits within parks at Katong and along the Southern Ridges, indicating a probable preference for natural sandy shores for nesting. Moreover, although large numbers of nesting



Photo: Zestin Soh  
Female *Ceylalictus communis* at a sandy nesting site in Kent Ridge Park, Singapore.

found at the sites, bees are very seldom observed at flowers, hence information on their foraging behaviour and ecology is limited. Focused surveys conducted in coastal habitats across Singapore could offer insights into its pollen hosts, preferred nesting sites, and current status.

**Conservation Measures:** Preservation of known nesting aggregations at Katong and the Southern Ridges. Seek to establish information on the species' natural history and population through monitoring and recording by researchers and citizen scientists.

**Scientific Name:**  
*Lasioglossum (Ctenonomia)*  
*halictoides* (Smith, 1858)

**Common Name:**  
Beach Combed-Sweat Bee

**Family:**  
Halictidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Solitary or primitively eusocial, ground-nesting bee. Found in coastal habitats in association with their preferred pollen source, the



Photo: Zestin Soh  
Female *Lasioglossum halictoides* visiting *Ipomoea pes-caprae* in Pulau Ubin, Singapore.

Beach Morning Glory (*Ipomoea pes-caprae*). Likely to nest in sandy substrate.

**Distribution:** Malay Peninsula, Taiwan, Philippines, Indonesia, Borneo, and Papua New Guinea.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** In Singapore this species is confined to coastal areas, including sandy beaches and coastal scrub, especially where its predominant native food plant *Ipomoea pes-caprae* occurs. It has been recorded on mainland

Singapore near Pasir Ris, as well as on offshore islands such as St John's, Lazarus, and Pulau Ubin.

**Conservation Measures:** Preservation and restoration of *Ipomoea pes-caprae*, *Melanthera biflora* and other native coastal flora at natural beaches and other coastal sites across Singapore. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Lasioglossum (Ctenonomia)*  
*semirussatum* (Cockerell, 1920)

**Common Name:**  
Singapore Combed-Sweat Bee

**Family:**  
Halictidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Solitary or primitively eusocial, ground-nesting bee. Known only from primary hill dipterocarp forest.

**Distribution:** Singapore (Bukit Timah)

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** This species is known globally only from Bukit Timah, Singapore. The male holotype from Singapore was collected around 1917-1918 by C.F. Baker. It was later rediscovered in 1976 at Bukit Timah by D. H. Murphy. There have been



Specimen of a male *Lasioglossum semirussatum* from Singapore, stored in the Smithsonian United States National Museum.

no subsequent records of this distinctively coloured bee from any location.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists at the Bukit Timah Nature Reserve and its surrounding nature parks. Preservation and restoration of high-quality forest patches and native flora in those sites.

**Scientific Name:**

*Patellapis (Pachyhalictus) intricata*  
(Vachal, 1895)

**Common Name:**

Vachal's Reticulate-Furrow Bee

**Family:**

Halictidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests. Known to forage for pollen from *Melastoma malabathricum*.

**Distribution:** Eastern India, Myanmar, Yunnan (China), Thailand, Malay Peninsula (Johor), Singapore, Java, and (reportedly) Sulawesi.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** D.H. Murphy last recorded this species in Singapore at Bukit Timah and Rifle Range Road in 1975 and 1976 respectively.

Photo: Zestin Soh



Female *Patellapis intricata* visiting *Melastoma malabathricum* in Johor, Malaysia.

It has a distinctively lamellate pronotum and is therefore readily identified. Notably, all recent specimens of *Patellapis (Pachyhalictus)* found in Singapore pertain to the locally common and widespread *P. murbanus*.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists at potential sites, such as the nature reserves. Preservation and restoration of high-quality forest patches and native flora in those sites.

**Scientific Name:**

*Anthidiellum (Pycnanthidium) smithii smithii*  
(Ritsema, 1874)

**Common Name:**

Smith's Rotund-Resin Bee

**Family:**

Megachilidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest with plant resin. Found in mature secondary forests and parks.

**Distribution:** Thailand, Malay Peninsula, Singapore, Borneo, and the Philippines (Palawan), with another subspecies occurring east in Indonesia to Ambon.

Photo: Zestin Soh



Female *Anthidiellum smithii smithii* constructing its nest with plant resin in a nesting block at HortPark, Singapore.



**Threats:** Habitat loss and associated declines in suitable nesting sites, resin sources and forage plants.

**Scientific Interest and Potential Value:** The sole representative of its genus in Singapore, this species was first documented locally in 2014 in forested areas at Dairy Farm and Bukit Timah. It was subsequently recorded in HortPark in 2019, where it uses the nesting blocks set up for solitary bees, and later found visiting

non-native *Pittosporum pentandrum* on Pulau Ubin in 2022. Its native host plants are unknown.

**Conservation Measures:** Preservation and restoration of quality forest patches across Singapore. Increasing availability of nesting sites in parks through setting up of artificial nesting blocks. Monitoring of extant populations and discovery of its native host plants by researchers and citizen scientists.

**Scientific Name:**

***Megachile (Aethomegachile) ramera***  
Cockerell, 1918

**Common Name:**

**Singapore Leafcutter**

**Family:**

**Megachilidae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest with pieces of leaves cut from particular plants. Found in mature secondary and primary forest. Known to forage from *Cratogeomys cochinchinense*.

**Distribution:** Malay Peninsula, Singapore, and possibly Borneo (identity uncertain).

**Threats:** Habitat loss and associated declines in suitable nesting sites, sources of nesting material, and forage plants.

**Scientific Interest and Potential Value:** The type specimen of this species was collected in Singapore by C.F. Baker around 1918. Presently, all documented

Photo: Zestin Soh



Female *Megachile ramera* from the Central Catchment Nature Reserve, Singapore.

records of this species are limited to forested sites within and around the Bukit Timah Nature Reserve and the Central Catchment Nature Reserve. While it has been observing nesting in a cavity in Thomson Nature Park in 2020, the species of plants that it relies on for nesting resources that it relies on are still unknown.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Bukit Timah Nature Reserve, the Central Catchment Nature Reserve, and their surrounding nature parks. Monitoring of extant populations and discovery of its nesting resources and poorly known male by researchers and citizen scientists.



**Scientific Name:**  
*Megachile (Callomegachile)*  
*indonesica* (Engel & Schwarz, 2011)

**Common Name:**  
 Indonesian Resin Bee

**Family:**  
 Megachilidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest with plant resin. Found in and around mature secondary forests.

**Distribution:** Singapore, Sumatra and Java.

**Threats:** Habitat loss and associated declines in suitable nesting sites, sources of nesting material, and forage plants.

**Scientific Interest and Potential Value:** This species was first documented in Singapore in 2014 during the widespread flowering of Tiger Orchids (*Grammatophyllum speciosum*) at sites within and near the Bukit Timah Nature Reserve and Central Catchment Nature Reserve. It potentially serves as a pollinator for these orchids as it has been observed carrying their pollinia. This species has subsequently been observed



Photo: Zestin Soh  
 Female *Megachile indonesica* carrying pollinia from a tiger orchid, *Grammatophyllum speciosum* in the vicinity of the Central Catchment Nature Reserve, Singapore.

in 2017 at the Singapore Botanic Gardens foraging for nectar from *Teijsmanniodendron pteropodum*, but its native pollen hosts are still unknown. This species belongs to a locally occurring mimicry ring that comprises at least five *Megachile* species that share similar coloration of black body and orange wings tipped with black.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Bukit Timah Nature Reserve, the Central Catchment Nature Reserve, and their surrounding nature parks. Monitoring of extant populations and discovery of its native host plants by researchers and citizen scientists.

**Scientific Name:**  
*Megachile (Callomegachile)*  
*ornata* Smith, 1853

**Common Name:**  
 Ornate Resin Bee

**Family:**  
 Megachilidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest with plant resin. Found in and around mature secondary forests.



Photo: Zestin Soh  
 Female *Megachile ornata* from the vicinity of the Central Catchment Nature Reserve, Singapore.

**Distribution:** Nepal, Thailand, Malay Peninsula, Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in suitable nesting sites, sources of nesting material, and forage plants.

**Scientific Interest and Potential Value:** This species has only been documented for Singapore once, in 2014, when it was found visiting flowering Tiger Orchids (*Grammatophyllum speciosum*) at sites within and near the Bukit Timah Nature Reserve and Central Catchment

Nature Reserve. Based on known records globally it appears that this species relies on high-quality forests, although its biology remains poorly understood. For example, its native pollen hosts are still unknown.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it likely occurs, such as the Bukit Timah Nature Reserve, the Central Catchment Nature Reserve, and their surrounding nature parks. Monitoring of extant populations and discovery of its native host plants by researchers and citizen scientists.

**Scientific Name:**  
*Megachile (Callomegachile s.l.) tuberculata* Smith, 1857

**Common Name:**  
Tuberculate Resin Bee

**Family:**  
Megachilidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest using resin gathered from plants. Found in and around mature secondary and primary forests. Known to forage from various Fabaceae.

**Distribution:** Malay Peninsula, Singapore, Sumatra, Borneo, and Java.

**Threats:** Habitat loss and associated declines in suitable nesting sites, sources of nesting material or forage plants.

**Scientific Interest and Potential Value:** Among the largest representatives of the family Megachilidae in the Sundaic region and distinctive with impressively long mandibles used for gathering resin. This species is associated with mature forest sites in and around the



Photo: Zestin Soh

Female *Megachile tuberculata* from the Southern Ridges, Singapore.

Bukit Timah Nature Reserve and Central Catchment Nature Reserve (including Nee Soon Swamp Forest), but recent findings have extended its presence to other sites. Notably, it has been observed in a community garden near Zhenghua Nature Park, and at HortPark, a semi-urban park along the Southern Ridges. These observations attest to its ability to forage on floral resources situated at considerable distances from forests. However, its native pollen hosts are still unknown.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it likely occurs, such as the Bukit Timah Nature Reserve, the Central Catchment Nature Reserve, and their surrounding nature parks. Monitoring of extant populations and discovery of its native host plants by researchers and citizen scientists.

**Scientific Name:**

*Megachile (Carinula) butteli*  
Friese, 1918

**Common Name:**

Buttel-Reepen's Resin Bee

**Family:**

Megachilidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Solitary, cavity-nesting bee that builds its nest using resin gathered from plants.

**Distribution:** Thai-Malay Peninsula, Singapore, Borneo (Sarawak).

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** Described from Perak, Malaysia, this is an enigmatic species that has been documented only twice in Singapore. The first

Photo: Zestlin Soh



Male *Megachile butteli* from the Central Catchment Nature Reserve, Singapore.

was a male foraging on *Cratoxylum cochinchinense* at Upper Peirce Reservoir Park in 2012. Subsequently, a specimen of the distinctive female was found at the Sungei Buloh Wetland Reserve in 2021. While it is likely associated with mature forests, additional observations of this diminutive species are necessary to confirm its distribution.

**Conservation Measures:** Preservation and restoration of high-quality forest patches. Seek to establish information on natural history and population distribution through monitoring and recording by researchers and citizen scientists.

**Scientific Name:**

*Xylocopa (Biluna) iridipennis*  
Lepeletier, 1841

**Common Name:**

Purple-winged Bamboo-Carpenter

**Family:**

Apidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Subsocial or solitary carpenter bee that excavates nests in dead bamboo. Found in forests with mature bamboo stands.

**Distribution:** Singapore (and potentially the broader Thai-Malay Peninsula).

Photo: Zestlin Soh



Male *Xylocopa iridipennis* from the Singapore Botanic Gardens.

**Threats:** Habitat loss and associated declines in bamboo stands that provide suitable nesting sites.

**Scientific Interest and Potential Value:** Species of the subgenus *Biluna* utilise bamboo internodes for nesting, entering from a hole they create with their mandibles. This species has been noted in the previous edition of the Red Data Book as the “Parasitic Carpenter Bee”, but this and all other *Xylocopa* are in fact non-parasitic pollen collectors. This bee has at least one historical record from Singapore in 1929, and has more recently been observed at Kent Ridge, one-north Park, the Singapore Botanic Gardens’ Eco Garden, and Pulau

Ubin, but sightings are rare. Targeted searches at and adjacent to bamboo patches in Singapore would clarify its status. *Xylocopa iridipennis* has been treated by most recent authors as a subspecies of *Xylocopa auripennis*, but considerable DNA sequence divergence between these forms suggests that these are specifically distinct.

**Conservation Measures:** Seek to establish detailed information on population distribution through monitoring by researchers and citizen scientists.

**Scientific Name:**

*Xylocopa (Zonohirsuta) dejeanii*  
*penangensis* Cockerell, 1918

**Common Name:**

Collared Carpenter

**Family:**

Apidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Solitary or subsocial carpenter bee that excavates its nests in dead wood, such as fallen logs. Found in mature secondary and primary forests. Known to forage for pollen from *Melastoma malabathricum* and *Dillenia suffruticosa*.

**Distribution:** Thai-Malay Peninsula and Singapore (ssp. *penangensis*), with other subspecies occurring from Eastern India, Indochina, and China south to the Philippines (Palawan), Sumatra, Borneo, and Java.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** Despite its notable size and distinctive appearance, recent field surveys in Singapore have not yielded any sightings of this bee. Earlier records of this species around 1918 by

Photo: Zestin Soh



Female *Xylocopa dejeanii* in Temburong District, Brunei.

C.F. Baker and a specimen collected by D.H. Murphy in 1962 from MacRitchie confirm its historical presence in Singapore. An online video taken in 2014 in Singapore (without specific location information) suggests that it may persist here, but if so it is likely to be highly localised.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it may still persist, such as the Central Catchment Nature Reserve. Seek to establish information on population distribution through monitoring by researchers and citizen scientists.

**Scientific Name:**

*Ceratina (Lioceratina) ridleyi*  
Cockerell, 1910

**Common Name:**

Ridley's Small Carpenter

**Family:**

Apidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary or subsocial bee that excavates its nest in a dead pithy stem. Found in mature secondary and primary forests, often in the semi-shaded understory. Known to forage from *Ophiorrhiza singapurens* (Rubiaceae).

**Distribution:** Thai-Malay Peninsula and Singapore.

**Threats:** Habitat loss and associated declines in suitable nest sites or forage plants.

**Scientific Interest and Potential Value:** The type specimen was collected in Singapore around 1895 by

Photo: Zestin Soh



Female *Ceratina ridleyi* visiting *Asystasia gangetica*.

H.N. Ridley, and named after him. This rare species has more recently been found visiting flowering shrubs in the shaded understory of MacRitchie Forest, Nee Soon Swamp Forest, and the Bukit Timah Nature Reserve.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Bukit Timah Nature Reserve and its surrounding nature parks. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Ceratina (Xanthoceratina) fuliginosa* Cockerell, 1916

**Common Name:**

Dusky-winged Small Carpenter

**Family:**

Apidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary or subsocial bee that excavates its nest in a dead pithy stem. Found in mature secondary and primary forests.

**Distribution:** Singapore, Thailand, Indochina, Philippines (Palawan), Java, Sumatra, and Borneo.

Photo: Zestin Soh



Female *Ceratina fuliginosa* visiting *Bidens* from the vicinity of Dairy Farm Nature Park, Singapore.



**Threats:** Habitat loss and associated declines in suitable nest sites or forage plants.

**Scientific Interest and Potential Value:** This species is locally known from sites located in and around the Bukit Timah Nature Reserve and the Central Catchment Nature Reserve. An uncommon form of this species displays a dark body with diminished yellow markings and a heart-shaped yellow blotch on its thorax.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Central Catchment Nature Reserve and its surrounding nature parks. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Ceratina (Xanthoceratina)*  
*metaria* Cockerell, 1920

**Common Name:**  
Bounded Small Carpenter

**Family:**  
Apidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Solitary or subsocial bee that excavates its nest in a dead pithy stem. Found in mature secondary and primary forests.

**Distribution:** Thai-Malay Peninsula, Singapore.

**Threats:** Habitat loss and associated declines in suitable nesting sites or forage plants.

**Scientific Interest and Potential Value:** First described from Penang, this distinctive small carpenter bee has been exclusively found locally in the Central



Photo: Zestin Soh

Female *Ceratina metaria* visiting starfruit, *Averrhoa carambola* in Pulau Ubin, Singapore.

Catchment Nature Reserve and Pulau Ubin, suggesting its likely association with mature forest habitats (which is typical of its subgenus). Its small size might result in potential oversight, leading to its classification as Data Deficient.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Central Catchment Nature Reserve and its surrounding nature parks, as well as on Pulau Ubin. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Nomada malayana* Cameron,  
1909

**Common Name:**  
Malay Nomad

**Family:**  
Apidae



Photo: Insect Diversity Lab, NUS

Female specimen of *Nomada malayana*.



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Nest cleptoparasite whose hosts are ground-nesting bees, putatively of the tribe Halictini. Found in mature forest habitat.

**Distribution:** Malay Peninsula, Singapore, Borneo (Sarawak).

**Threats:** Habitat loss and associated declines in populations of their hosts.

**Scientific Interest and Potential Value:** Described from Kuching in Borneo, this species is known for Singapore based on specimens collected from Bukit Timah in 1976 and from a remnant forest patch in Sentosa in 2014.

**Conservation Measures:** Preservation and restoration of high-quality forest patches across Singapore, and planting of native flora in degraded or urbanised habitats. Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists at potential sites.

**Scientific Name:**

***Nomada penangensis* Cockerell, 1920**

**Common Name:**

**Penang Nomad**

**Family:**

**Apidae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Nest cleptoparasite whose hosts are ground-nesting bees, putatively of the tribe Halictini. Found in mature forest habitat.

**Distribution:** Malay Peninsula (Penang) and Singapore.

**Threats:** Habitat loss and associated declines in populations of their hosts.

**Scientific Interest and Potential Value:** Described from Penang, this species has only been recorded in Singapore from the Alumni Car Park Garden of the old



Photo: Insect Diversity Lab, NUS

Female specimen of *Nomada penangensis*.

National University of Singapore Campus (near the Singapore Botanic Gardens) in 1975. This and other species of the *furva* group of *Nomada* are presumed to be cleptoparasites of *Lasioglossum*.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Bukit Timah Nature Reserve and its surrounding nature parks. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Nomada sandacana* Cockerell,  
1920

**Common Name:**

Sandakan Nomad

**Family:**

Apidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Nest cleptoparasite whose hosts are ground-nesting bees, putatively of the tribe Halictini. Found in mature forest habitat.

**Distribution:** Borneo (Sabah) and Singapore.

**Threats:** Habitat loss and associated declines in populations of their hosts.

**Scientific Interest and Potential Value:** This species was described from Sandakan in Sabah, Malaysian Borneo, and unreported in Singapore until specimens in LKCNHM were tentatively identified as this species.

Photo: Insect Diversity Lab, NUS



Female specimen of *Nomada sandacana*.

One specimen was collected in 1975, at the Alumni Car Park Garden of the old National University of Singapore Campus (near Singapore Botanic Gardens).

**Conservation Measures:** Preservation and restoration of high-quality forest patches across Singapore, and planting of native flora in degraded or urbanised habitats. Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists.

**Scientific Name:**

*Amegilla (Glossamegilla)*  
*insularis* (Smith, 1857)

**Common Name:**

Island Forest-Digger

**Family:**

Apidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary, ground-nesting bee found in mature secondary and primary forests, often in semi-shaded understorey. Known to forage from *Melastoma malabathricum* and other understorey shrubs.

Photo: Zestlin Soh



Male *Amegilla insularis* visiting *Alpina zerumbet* at Bukit Batok Nature Park, Singapore.

**Distribution:** Malay Peninsula, Myanmar, Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in suitable nest sites or forage plants.

**Scientific Interest and Potential Value:** This relatively large, swift-flying bee is found in forested sites in and around the Bukit Timah Nature Reserve, Central Catchment Nature Reserve, and at the Sungei Buloh Wetland Reserve. Existing records are scattered and typically single individuals, suggesting small population sizes. It is likely a pollinator of forest understorey shrubs with long floral tubes, including gingers. This species is

the most likely local host for the rare cuckoo bee *Thyreus abdominalis rostratus*.

**Conservation Measures:** Preservation of high-quality forest patches across Singapore. Restoration of native flora in degraded habitats or urbanised areas. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Thyreus abdominalis rostratus*  
(Friese, 1905)

**Common Name:**

Beaked Cloak-and-Dagger Bee

**Family:**

Apidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Nest cleptoparasite whose putative hosts are large digger bees, such as *Amegilla insularis*. Found in mature secondary and primary forests.

**Distribution:** Eastern India, Myanmar, Malay Peninsula, Singapore, Sumatra, and Borneo, with additional subspecies occurring in China and Indonesia (including Flores and Sumatra).

**Threats:** Habitat loss and associated declines in associated populations of their hosts.

**Scientific Interest and Potential Value:** The largest member of its genus in Singapore, this impressive species was recorded by H.N. Ridley in 1901, and at

Photo: Zestin Soh



*Thyreus abdominalis rostratus* visiting *Asystasia gangetica* in Johor, Malaysia.

Ulu Pandan in 1920 by an unknown collector. More recently, it was rediscovered in Singapore at Nee Soon Swamp Forest in 2015 using malaise traps. M.A. Lieftinck documented this bee as a probable cleptoparasite of the large digger bee *Amegilla elephas*, but as this particular host species is not found in Singapore, it is assumed that its host here is *Amegilla insularis*. The bright blue in the setae of this genus is a structural colour produced by the scattering of light.

**Conservation Measures:** Preservation and restoration of high-quality forest patches in and around forested sites where it occurs, such as the Central Catchment Nature Reserve. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Thyreus novaehollandiae signatus* (Meyer, 1921)

**Common Name:**

Diamond-waisted Cloak-and-dagger Bee

**Family:**

Apidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Nest cleptoparasite of digger bees (putatively *Amegilla* subgenus *Zonamegilla* spp.). Found in mature secondary and primary forests.

**Distribution:** Eastern India (West Bengal), Myanmar, Laos, Thai-Malay Peninsula, and Singapore (ssp. *signatus*). Other subspecies are widespread in Indonesia.

**Threats:** Habitat loss and associated declines in populations of their hosts.

**Scientific Interest and Potential Value:** This subspecies was recorded for Singapore by F.N. Chasen in November 1932, and by D.H. Murphy in 1976. There have been no further country records. The specific epithet for this species is misleading since

Photo: Ian Dugdale



*Thyreus novaehollandiae signatus* visiting a *Cosmos* in Phetchaburi, Thailand.

the type specimens were likely collected in the Lesser Sunda Islands of Indonesia, particularly Timor, rather than in Australia (the published incorrect location is "Nouvelle-Hollande"), where no verified records exist. Its local host is potentially the small-bodied *Amegilla korotonensis*, which is relatively uncommon here.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the nature reserves. Establishing the identity of its hosts through recording by researchers and citizen scientists in countries where the species still persists.

**Scientific Name:**

*Geniotrigona thoracica* (Smith, 1857)

**Common Name:**

Long-chinned Stingless Bee

**Family:**

Apidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive using plant resin within tree cavities. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

Photo: Zestin Soh



*Geniotrigona thoracica* visiting starfruit, *Averrhoa carambola* in Negeri Sembilan, Malaysia.

**Distribution:** Myanmar, Thailand, Malay Peninsula, Singapore, Sumatra, and Borneo.

**Threats:** Loss of habitat, including nesting sites or host plants for pollen and nectar. Potentially loss of resin sources for nest building.

**Scientific Interest and Potential Value:** A.R. Wallace collected the type worker of this species from Singapore around 1854. The most recent records of this species in Singapore date back to 1976 in Taban Valley at Bukit Timah. Given that it is the largest stingless bee in the region, with distinctive coloration and nest entrance structure, it seems improbable that it

would have been overlooked by researchers if it were still present here. Consequently, it is probable that this species has been locally extirpated. In the region, hives of this species are employed in meliponiculture for their honey and hive products.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**  
*Heterotrigona (Sundatrigona)*  
*moorei* (Schwarz, 1937)

**Common Name:**  
Moore's Stingless Bee

**Family:**  
Apidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Obligately myrmecophilous eusocial stingless bee that builds its hive within active arboreal carton nests of *Crematogaster* ants. Found in mature secondary and primary forests.

**Distribution:** Thai-Malay Peninsula and Singapore to Indochina and Southern China including Hong Kong.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** Known for Singapore based on the type of *Trigona (Tetragona) matsumurai* (Sakagami, 1959). There have been no subsequent local sightings.



Photo: Chui Shao Xiong

Specimen of *Heterotrigona moorei* (not from Singapore).

**Conservation Measures:** Seek rediscovery of extant populations and information on its local ant associations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve.



**Scientific Name:**

*Homotrigona (Homotrigona) fimbriata* (Smith, 1857)

**Common Name:**

**Bristle-faced Stingless Bee**

**Family:**

**Apidae**

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive within tree cavities using resin gathered from plants. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

**Distribution:** Continental Asia from Myanmar, Yunnan, China and Laos south through Thailand and the Malay Peninsula to Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** A.R. Wallace collected the type specimen of this species in Singapore, possibly near the Bukit Timah area, around 1854. There have been no subsequent local sightings. Considering its significant size and distinctive features, it appears unlikely that this species went unnoticed in

Photo: Zestlin Soh



*Homotrigona fimbriata* tending to a pot of resin in its nest in Negeri Sembilan, Malaysia.

subsequent studies of stingless bees in Singapore. Within the region, hives of this species are harvested from trees and used in meliponiculture for their honey and hive products.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**

*Homotrigona (Lophotrigona) canifrons* (Smith, 1857)

**Common Name:**

**Woolly Stingless Bee**

**Family:**

**Apidae**

Photo: Zestlin Soh



*Lophotrigona canifrons* visiting *Antigonon leptopus* in Negeri Sembilan, Malaysia.



**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive within tree cavities using resin gathered from plants. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

**Distribution:** Thai-Malay Peninsula, Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** This species was recorded in Singapore at Bukit Timah in 1911, likely

by C.F. Baker, but has not been recorded locally since. This stingless bee species is notably aggressive and has a tendency to bite intruders in the vicinity of its nest. Within the region, hives of this species are harvested from trees and used in meliponiculture for their honey and hive products.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**

*Homotrigona (Tetrigona) apicalis* (Smith, 1857)

**Common Name:**

**Milky-tipped Stingless Bee**

**Family:**

**Apidae**

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Eusocial stingless bee that builds its hives within tree cavities using resin gathered from plants. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

**Distribution:** Myanmar, Thailand, and Indochina south to Singapore, Sumatra, Borneo, and Java.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** This is the largest extant stingless bee in Singapore. It appears restricted to sites at and within the Bukit Timah Nature Reserve, the Central Catchment Nature Reserve, and the Singapore Botanic Gardens. It is potentially dependent on dipterocarps for resin. Like many stingless

Photo: Zestlin Soh



*Homotrigona apicalis* visiting *Baccaurea* in the Central Catchment Nature Reserve, Singapore.

bees, it relies on large, mature trees with cavities for nesting sites. Within the region, hives of this species are harvested from trees and used in meliponiculture for their honey and hive products.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs. Protection of known nests, which are long-lived, as well as large forest trees used for nesting and resin gathering. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Lepidotrigona latipes*  
(Friese, 1900)

**Common Name:**

Broad-legged Stingless Bee

**Family:**

Apidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive within tree cavities using resin gathered from plants. Found in mature forests.

**Distribution:** Singapore, Indonesia (Sumatra) and Peninsular Malaysia.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** Both the taxonomic status and the type locality of this species have been controversial, with authors such as Herbert F. Schwarz treating it as a synonym or subspecies of *Lepidotrigona nitidiventris* (Smith, 1857). Indeed the principal reported difference between the two species is in their coloration: *L. nitidiventris* having brown tegulae and black abdominal tergites, whereas they are yellowish and reddish brown, respectively, in *L. latipes*. Notwithstanding the need for further revisionary studies

Photo: Zestlin Soh



A nest of *Lepidotrigona nitidiventris* from Negeri Sembilan, Malaysia, a species closely related to *Lepidotrigona latipes* and differs mainly in colour of the tegulae and abdominal tergites.

for the *L. nitidiventris* species group, we interpret the collection locality of the type specimen (from 1890) to be from Singapore based on its label. No member of this species group has been recorded in Singapore since 1890. As photographs of the *L. latipes* type specimen are not available, an image of *L. nitidiventris* is featured below.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the nature reserves. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**

*Lepidotrigona terminata*  
(Smith, 1878)

**Common Name:**

Gold-margined Stingless Bee

**Family:**

Apidae

Photo: Zestlin Soh



*Lepidotrigona terminata* at their nest.

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive within tree cavities using resin gathered from plants. Found in mature forests, including mangroves.

**Distribution:** Myanmar, Thailand, Indochina, and Yunnan (China) south to Singapore, Sumatra, Java, and Borneo.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** This species is best known in Singapore from Chek Jawa, where

it was first recorded for Singapore in 2015 visiting the inflorescences of *Nypa fruticans*. Sightings have since extended to other areas of Pulau Ubin as well as on Pulau Tekong. A recent mainland occurrence in Sembawang in northern Singapore is considered to be from a translocated nest rather than a natural population.

**Conservation Measures:** Preservation and restoration of high-quality forest patches, including mangroves, in and around areas where it occurs, such as on Pulau Ubin. Protection of known nests, which are long-lived, and large forest trees used for nesting and resin gathering. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Tetragonula (Tetragonilla)*  
*atripes* (Smith, 1857)

**Common Name:**  
Orange-and-black Stingless Bee

**Family:**  
Apidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive at the base of trees using resin gathered from plants. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

**Distribution:** Thai-Malay Peninsula, southern Myanmar, Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** This species was last recorded in Singapore at Bukit Timah by D.H. Murphy in 1965, but has not been found locally since.



Photo: Zeslin Soh

*Tetragonula atripes* visiting a *Heliconia* in Penang, Malaysia.

This species is easily identifiable by its distinctive and striking coloration.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as the Central Catchment Nature Reserve and its nature parks. Protection of large forest trees used for nesting and resin gathering.

**Scientific Name:**

*Tetragonula (Tetragonula)*  
*geissleri* (Cockerell, 1918)

**Common Name:**

Geissler's Stingless Bee

**Family:**

Apidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Eusocial stingless bee that builds its hive at the base of trees and termite mounds, using resin gathered from plants. Found in mature secondary and primary forests.

**Distribution:** Thai-Malay Peninsula, Singapore, Sumatra, and Borneo.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** First recorded at Mandai in 1922, this species appears to be largely restricted to sites at and within the Bukit Timah Nature Reserve, the Central Catchment Nature

Photo: Zestlin Soh



*Tetragonula geissleri* at their nest entrance in the Singapore Botanic Gardens.

Reserve, and the Singapore Botanic Gardens. Hives are often constructed in active mounds of the termite *Hospitalitermes umbrinus* at the base of trees. Workers have been observed foraging from extrafloral nectaries of plants locally.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs. Protection of known nests and large forest trees used for nesting and resin gathering. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Tetragonula (Tetragonula)*  
*laeviceps* (Smith, 1857)

**Common Name:**

Smooth-headed Stingless Bee

**Family:**

Apidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Eusocial stingless bee that builds its nest in tree cavities using resin gathered from plants. Found in mature secondary and primary forests, and is likely dependent on particular trees (e.g. dipterocarps) for resin sources.

Photo: Zestlin Soh



*Tetragonula laeviceps*, alternatively known by its synonym *T. pagdeniformis*, visiting *Melastoma malabathricum* in the Central Catchment Nature Reserve.

**Distribution:** Thai-Malay Peninsula, Singapore, Borneo, and possibly Sumatra, Java, and Bali.

**Threats:** Habitat loss and associated declines in trees that provide suitable nesting sites and resin.

**Scientific Interest and Potential Value:** The type series and a neotype designated for this species was discovered by A.R. Wallace in Singapore. Currently all available country records are from forested sites within and around the Bukit Timah Nature Reserve and Central Catchment Nature Reserve. This species has a complicated taxonomic history and is alternatively known by its synonym *T. pagdeniformis* (Sakagami, 1978). Notably it should not be confused with *T. valdezi*, the most common stingless bee in Singapore, which is larger, has weaker thorax hair bands and a redder

abdomen, and has also previously been referred to by the same name.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Central Catchment Nature Reserve and its surrounding nature parks. Protection of large forest trees used for nesting and resin gathering. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Vespa multimaculata*  
Pérez, 1910

**Common Name:**  
Many-banded Hornet

**Family:**  
Vespidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Eusocial wasp that builds subterranean nests under the roots of trees. Found only in mature secondary and primary forests.

**Distribution:** Brunei, Laos, Malaysia (Peninsular Malaysia, Sabah, Sarawak), Thailand, Indonesia (Kalimantan, Sumatra), Singapore.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** As the smallest hornet recorded from Singapore, this species is readily identifiable by its size and distinctive coloration. Although it was documented by Dover in 1929,



Photo: Mike Hooper  
Female *Vespa multimaculata* visiting a palm inflorescence in Selangor, Malaysia.

there have been no subsequent sightings even after comprehensive surveys for Hymenoptera in likely areas and habitats, including the Bukit Timah Nature Reserve.

**Conservation Measures:** Seek rediscovery of extant populations through biodiversity monitoring by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around where extant populations would occur (if they exist), such as in the nature reserves. Protection of any rediscovered nests that do not pose a public safety risk.



**Scientific Name:**  
*Polistes meadeanus* (von  
Schulthess, 1913)

**Common Name:**  
Meade-Waldo's Paper Wasp

**Family:**  
Vespidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Eusocial wasp that builds its nest under a leaf. Found in mature forest habitat, typically observed in shaded understorey.

**Distribution:** Indonesia, Singapore, Malaysia, Vietnam and Borneo.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** In Singapore this species appears confined to the Central Catchment Nature Reserve and surrounding forested parks. Its cocoon caps are distinctively bright green and

Photo: Khew Sin Khoon



*Polistes meadeanus* at their nest in the Central Catchment Nature Reserve, Singapore.

gradually transition to a pale yellow as they mature. The species closely resembles *Polybioides raphigastria* in coloration and general body shape.

**Conservation Measures:** Preservation and restoration of high-quality forest patches at and around sites where it occurs, such as the Central Catchment Nature Reserve, Bukit Timah Nature Reserve and their surrounding nature parks. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Polistes tenebricosus*  
Lepeletier, 1836

**Common Name:**  
Dark-winged Paper Wasp

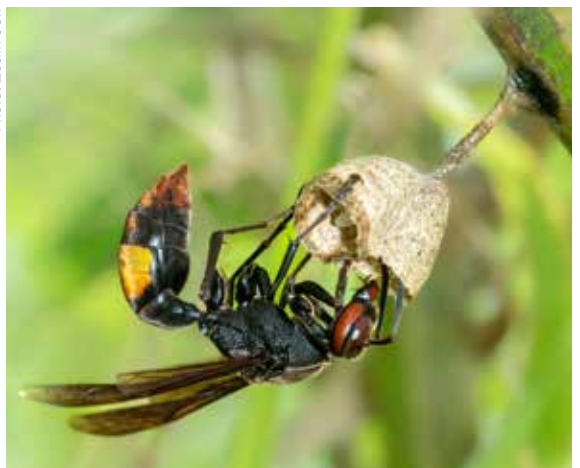
**Family:**  
Vespidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Eusocial wasp that builds its nest under leaves and sheltered areas. Prefers mature forest including mangroves.

**Distribution:** Singapore, Malaysia, Indonesia, Myanmar, Vietnam, Philippines, Taiwan.

Photo: Zeslin Soh



Female *Polistes tenebricosus* constructing a nest in Johor, Malaysia.

**Threats:** Habitat loss and associated declines in suitable nesting sites.



**Scientific Interest and Potential Value:** Apart from one isolated record in the Sungei Buloh Wetland Reserve, all recent records appear to be limited to Pulau Ubin. Where it does occur, it may nest within manmade structures.

**Conservation Measures:** Preservation and restoration of high-quality forest patches in and around areas where the species is known to occur. Refraining from removing nests that do not pose a risk to public safety. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Polybioides raphigastra* (de Saussure, 1854)

**Common Name:**  
Needle-tailed Paper Wasp

**Family:**  
Vespidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Eusocial wasp that builds a pear-shaped nest in the hollows of trees or in small caves, using plant materials. Found in and around mature forests.

**Distribution:** Malay Peninsula, Singapore, Borneo.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** This species was documented in Singapore in 1902 by P. Cameron at Bukit Timah (as *Icaria sulciscutis*), and subsequently



*Polybioides raphigastra* visiting *Melastoma malabathricum* in Johor, Malaysia.

from Geylang in 1980. There have been no local records since. Its diminutive size and well-camouflaged nests could contribute to the possibility of being overlooked, hence it is categorized as Data Deficient.

**Conservation Measures:** Seek to establish information on population distribution and habitat usage through recording by researchers and citizen scientists. Preservation and restoration of high-quality forest patches across Singapore. Refraining from removing nests that do not pose a risk to public safety.

**Scientific Name:**  
*Ropalidia flavopicta* (Smith 1857)

**Common Name:**  
Yellow-painted Paper Wasp

**Family:**  
Vespidae



A nest of *Ropalidia flavopicta* on a tree trunk in the Central Catchment Nature Reserve, Singapore.

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Eusocial wasp that gathers plant fibres to build nests that comprise combs covered by a flat envelope. Nests are built on a broad solid surface, such as tree bark or rock.

**Distribution:** Singapore, Vietnam, Malay Peninsula, Borneo, Sumatra.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** Recorded in sites in or around the Central Catchment Nature

Reserve and surrounding forested parks. Its small size and well-camouflaged nests could contribute to the possibility of being overlooked, hence it is categorized as Data Deficient.

**Conservation Measures:** Seek to establish information on population distribution and habitat usage through recording by researchers and citizen scientists. Preservation and restoration of high-quality forest patches in and around the Central Catchment Nature Reserve and surrounding nature parks. Refraining from removing nests that do not pose a risk to public safety.

**Scientific Name:**  
*Metischnogaster drewseni* (de Saussure, 1857)

**Common Name:**  
Drewsen's Hover Wasp

**Family:**  
Vespidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Primitively eusocial wasp which builds long nests suspended on aerial horsehair-like fungal rhizomorphs.

**Distribution:** Singapore, Malaysia (Peninsular, Sarawak), Indonesia, Philippines (Palawan).

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** Currently known from only two documented occurrences in



Photo: John XO Lee

A specimen of *Metischnogaster drewseni* from Singapore.

Singapore, specifically in Mandai and Bukit Kalang. It is likely to be restricted to mature forest.

**Conservation Measures:** Seek to establish information on population distribution and habitat usage through recording by researchers and citizen scientists. Preservation and restoration of high-quality patches of forest across Singapore. Refraining from removing nests that do not pose a risk to public safety.

**Scientific Name:**  
*Sphex argentatus*  
Fabricius, 1787

**Common Name:**  
Silver Digger Wasp

**Family:**  
Sphecidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary wasp that builds an underground nest. It specializes in hunting Orthoptera, typically katydids (Tettigoniidae), as provisions for its larvae. Occurs in coastal forests.

**Distribution:** Singapore, Indonesia, New Guinea, India, Japan, Taiwan, Philippines, China, Australia, Spain, Democratic Republic of Congo, Kenya, South Africa, Sudan.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** In Singapore this species seems to be associated with the coast, being recorded exclusively at Semakau and Changi. Due to its distinct visual characteristics, it is unlikely to be missed during observations.

Photo: Adrian Nebbett



*Sphex argentatus* visiting a *Celosia* in Malaysia.

**Conservation Measures:** Preservation and restoration of coastal forest and natural beach habitats in and around sites where it is known to occur. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Chlorion lobatum*  
(Fabricius, 1775)

**Common Name:**  
Emerald Cricket-Hunter

**Family:**  
Sphecidae

Photo: Bruce Swales



Female *Chlorion lobatum* at Coney Island, Singapore.

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Solitary wasp that builds an underground nest. It specializes in hunting Orthoptera, typically crickets (Gryllidae), as provisions for its larvae. Occurs in coastal forest.

**Distribution:** Singapore, Malaysia, Indonesia (Sumatra), Vietnam, China, India, Nepal, Bangladesh, Myanmar, West Indies.

**Threats:** Habitat loss and associated declines in suitable nesting sites.

**Scientific Interest and Potential Value:** This distinctive species is mainly associated with coastal forest sites, and in Singapore is largely known from Coney Island, Pulau Ubin and Changi Beach, although it may also occur at mature forests further inland such as at MacRitchie.

**Conservation Measures:** Preservation and restoration of high-quality coastal forest and natural beach habitats at and around areas where it is known to occur. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**  
*Bembix melancholica*  
Smith, 1858

**Common Name:**  
Melancholic Sand Wasp

**Family:**  
Crabronidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** : Solitary wasp that occurs in and around the sandy areas of mangroves and coastal forest. Specializes in hunting large flies (Diptera). Nectars from native flowering shrubs such as *Leea indica*.

**Distribution:** Thai-Malay Peninsula, Singapore, and Borneo.

**Threats:** Habitat loss and associated declines in suitable hosts.

**Scientific Interest and Potential Value:** In Singapore, this large and distinctively marked wasp is



Photo: Zestin Soh

Male *Bembix melancholica* from Chek Jawa, Pulau Ubin.

found predominantly at Pulau Ubin, such as at Chek Jawa, and on the nearby mainland including Coney Island.

**Conservation Measures:** Preservation and restoration of high-quality habitats, including mangroves and coastal forest, particularly at sites where it is known to occur. Monitoring of extant populations by researchers and citizen scientists.

**Scientific Name:**

*Megascolia procer procer*  
(Illiger, 1802)

**Common Name:**

Atlas Mammoth Wasp

**Family:**

Scoliidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Solitary wasp that digs in the ground or decaying wood in search of their hosts, the larvae of large scarab beetles. Mainly occurs in and around mature mangroves and forests. Nectars from native flowering shrubs such as *Premna serratifolia*.

**Distribution:** Thai-Malay Peninsula, Singapore, Sumatra and Borneo.

**Threats:** Habitat loss and associated declines in suitable hosts.

**Scientific Interest and Potential Value:** This wasp is the largest representative of its family and one of the largest wasps in the world. Despite its conspicuous size and markings, it is rarely observed locally. Country records are predominantly from the Sungei Buloh Wetland Reserve and Admiralty Park, but have also recently been extended to the Singapore Botanic

Photo: Meena Vathiyam



Male *Megascolia procer* in the vicinity of Admiralty Park, Singapore.

Gardens. Its occurrence is likely restricted by habitat association and the presence of suitable beetle hosts, one of which is reported to be the locally rare Atlas Beetle (*Chalcosoma atlas*).

**Conservation Measures:** Preservation and restoration of high-quality habitats, including mangroves and coastal forest, particularly at sites where it is known to occur. Monitoring of extant populations by researchers and citizen scientists.

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# Hymenoptera (Formicidae) – Ants

WENDY Y. WANG

**Scientific Name:**  
*Eurhopalothrix heliscata*  
Wilson & Brown, 1985

**Common Name:**  
–

**Order/Family:**  
Hymenoptera: Formicidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is associated with primary or old/mature secondary forests in Singapore. Nests are usually found in soil within or under rotting wood or fallen logs. The ants are known to be generalized termite feeders, though they have also been observed to hunt other insects occasionally. Unlike many more prominent ant species, *E. heliscata* are solitary huntresses that do not engage in mass hunting raids.

**Distribution:** Malaysia, Singapore, Thailand

**Threats:** Anthropogenic development and habitat conversion or destruction.



Full face of *Eurhopalothrix heliscata*.

**Scientific Interest and Potential Value:** The species was originally discovered in and described from Singapore. Their cryptic habits and reduced behavioural repertoire distinguish it from most other ants of the same subfamily. The ants are unique in their slow movements even while hunting, tendencies for prolonged periods of rest away from the brood, and atypical defensive strategies such as cryptic colouration and feigning death.

**Conservation Measures:** The Bukit Timah and Central Catchment Nature Reserves provides protected and managed habitat.

**Scientific Name:**  
*Harpegnathos venator*  
(Smith, 1858)

**Common Name:**  
–

**Order/Family:**  
Hymenoptera: Formicidae



Profile of *Harpegnathos venator*.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This species is associated with primary or mature secondary forests in Singapore, typically found in fringe forest or near forest edges. Individuals have been found foraging on the forest floor. Nests have been observed to be underground in soil with funnel entrances.

**Distribution:** Bangladesh, Borneo, China (southern), India, Indonesia, Laos, Malaysia (Peninsular), Myanmar, Singapore, Thailand.

**Threats:** Anthropogenic development and habitat conversion or destruction. Also human disturbance or poaching for the pet trade.

**Scientific Interest and Potential Value:** Nest structures of *H. venator* are known to be as unusually complex as are those of its sibling species *H. saltator*. For mature colonies of both species, the nest comprises stacked chambers that form a rounded structure, topped off with a thick vaulted roof, and kept apart from surrounding substrate by an empty space. This nest design has been postulated to be a countermeasure against periodic floods – the empty space may help divert or drain flood water from the nest (Peeters et al. 1994).

**Conservation Measures:** The Central Catchment Nature Reserve provides protected and managed habitat.

**Scientific Name:**

*Odontomachus litoralis* Wang,  
Yamada & Yamane, 2020

**Common Name:**

–

**Order/Family:**

Hymenoptera: Formicidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This large maritime trap-jaw ant is found exclusively in the mangroves. The ants usually nest in abandoned mud lobster (*Thalassina* sp.) mounds, which are either partially or fully submerged in seawater during high tides. Nests have also been reported from soil mounds among roots of uprooted trees. Workers of this species forage on mud and debris in and around mangrove back forests during low tide. The ants are believed to feed mostly on small invertebrates such as crabs and isopods that co-exist in the mangroves.

**Distribution:** Borneo, Peninsular Malaysia, Singapore.

**Threats:** Coastal habitat conversion and destruction.



Left image: Full face of *Odontomachus litoralis* – Worker. Right image: Full face of *Odontomachus litoralis* – Male.

**Scientific Interest and Potential Value:** This species was originally described from Singapore. The type series – comprising a colony of workers, queens, and males – of *O. litoralis* was collected from Sungei Buloh Wetland Reserve. *Odontomachus litoralis* is one of two known trap-jaw ant species in the world – the other being *O. malignus* Smith, 1859 – which nest in intertidal coastal zones. Both species have been recorded from Singapore, but they seem to occupy different niches. *Odontomachus malignus* has been found near coral rubble along coastlines, while *O. litoralis* appears to be predominant in local mangroves.

**Conservation Measures:** The continued protection and management of Sungei Buloh Wetland Reserve should provide protected and managed habitat.

**Scientific Name:*****Pheidole sexspinosa*****Mayr, 1870****Common Name:**

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**Order/Family:****Hymenoptera: Formicidae****National Status:** Vulnerable (VU)

**Habitat and Ecology:** In Singapore, this species appears associated exclusively with mangroves. The ants have been found nesting in abandoned mud lobster (*Thalassina* sp.) mounds, also in cable roots of mangrove trees such as *Excoecaria agallocha* L., and in decayed or living stems of *Rhizophora* above tide immersion levels. In other parts of the world, namely islands in Oceania, *P. sexspinosa* has been recorded from more inland forests.

**Distribution:** Singapore, Oceania (most major islands).

**Threats:** Coastal habitat conversion and destruction.

**Scientific Interest and Potential Value:** The first and currently the only record of this species in the Oriental region – outside of Oceania and Australasia – is from Singapore. The discovery of *P. sexspinosa* in Singapore

Photo: Aiki Yamada

Profile of *Pheidole sexspinosa* - Worker.

challenges the hypothesis that the species originated in New Guinea and colonized eastward to most of the remote Pacific, rather than westward to Sundaland (Economo et al. 2015, Wang et al. 2018). The unusually broad distribution of *P. sexspinosa* may have occurred by means of 1) human-mediated dispersal, or 2) dispersal via seasonal circulatory currents between the west Pacific Ocean and the South China and Java Seas. Viviparous seeds of *E. agallocha* – a mangrove tree species known to house *P. sexspinosa* colonies – can be transported over long distances by ocean currents.

**Conservation Measures:** The continued protection and management of Sungei Buloh Wetland Reserve should provide protected and managed habitat.

**Scientific Name:*****Rhopalomastix glabricephala*****Wang, Yong & Jaitrong, 2018****Common Name:**

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**Order/Family:****Hymenoptera: Formicidae**

Photo: Wendy Y. Wang

Profile of *Rhopalomastix glabricephala* - Worker.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The type series was found in mature native-dominated secondary forest – the ants were nesting in bark of a large Tembusu tree (*Cyrtophyllum fragrans*). Like other congeners, *R. glabricephala* live with armoured scale insects (Diaspididae) in bark tunnels/cavities. The ants provide the diaspidids with protection and shelter, in exchange for the waxy secretions of the latter – a protein-rich food source for the ants.

Nests of *Rhopalomastix* ants in general can usually be detected by the presence of “frass” on the external bark surface. Frass comprises trails of powdered wood debris or residue generated and “pushed” through bark fissures when the ants chew tunnels through inner bark layers.

**Distribution:** Singapore

**Threats:** Anthropogenic development and habitat conversion or destruction.

**Scientific Interest and Potential Value:** This species is only known from its type series collected from a single locality in Singapore. *Rhopalomastix glabricephala* resembles the more widespread (but still uncommon) *R. murphyi* but can be differentiated mainly by head shape and the presence of decumbent hairs on the anterior petiolar face (hairs absent in *R. murphyi*).

**Conservation Measures:** The type (and globally the only) locality for the species is close to Central Catchment Nature Reserve and may need additional protection.

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# Lepidoptera – Butterflies

KHEW SIN KHOON, HORACE TAN, TEA YI-KAI, AARON SOH, JONATHAN SOONG

**Scientific Name:**  
*Troides helena cerberus*  
(C. & R. Felder, 1865)

**Common Name:**  
Common Birdwing

**Family:**  
Papilionidae



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Common Birdwing survives in a variety of habitats but is essentially a forest species. It is more regularly observed where its caterpillar host plant, *Aristolochia acuminata*, can be found. The species has a large flight range and is usually seen flying at treetop level but often seen feeding at flowering plants in parks and gardens.

**Distribution:** The species is widely distributed from northern India to Hong Kong, through Thailand, Malaysia and Singapore to the Indonesian islands.

**Threats:** This species is listed in CITES Appendix II and is sought after by collectors. It is vulnerable as it depends on the availability of its caterpillar host plant, which is considered a non-native plant.

**Scientific Interest and Potential Value:** It is a large and attractive butterfly and easily noticeable as it flutters around in parks and gardens.

**Conservation Measures:** This species is highly dependent on the availability of its caterpillar host plant, *Aristolochia acuminata* for its survival in Singapore. The cultivation of its non-native host plant is key to the overall conservation strategy to maintaining a sustainable population of the Common Birdwing in Singapore.

**Scientific Name:**  
*Papilio demolition demolition*  
(Cramer, 1776)

**Common Name:**  
Banded Swallowtail

**Family:**  
Papilionidae



**National Status:** Endangered (EN)

**Habitat and Ecology:** The Banded Swallowtail is a fast-flying species that was previously widely distributed across urban and forested habitats in Singapore. In the past 10 years, its population has dwindled, and field sightings are limited to the western forest edges of Singapore. Although its caterpillars are polyphagous and one of the host plants is a common *Citrus* sp., the butterfly is becoming endangered locally.

**Distribution:** The species is distributed from Myanmar across Southeast Asia and Indonesia. In Singapore, sightings of this species are declining and limited to the western parts of Singapore.

**Threats:** Its declining status is cause for concern, although the threats to its existence are unknown.

**Scientific Interest and Potential Value:** Given its recent decline in population, and its potential extirpation in Singapore, this species is of significant conservation interest in species recovery programmes and conservation initiatives.

**Conservation Measures:** This species may benefit from the careful curation of nature corridors to aid its movements towards other areas of Singapore from its current limited range within the western forested areas.

**Scientific Name:**  
*Papilio memnon agenor*  
(Linnaeus, 1758)

**Common Name:**  
Great Mormon

**Family:**  
Papilionidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Great Mormon is a large butterfly and is a noteworthy species in that the females are polymorphic. The species is an excellent case study for mimicry as each form of the female mimics a distasteful counterpart.

**Distribution:** The species is widely distributed from south Japan to India and throughout the Sunda subregion.

**Threats:** Loss of habitat and caterpillar host plants. Its population has been declining since the publication of the Red Data Book 2008, hence its uplisting from Near Threatened to Vulnerable status. This may be because its preferred caterpillar host plant, the Pomelo (*Citrus grandis*) is no longer as commonly found as before.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** It is a large and noticeable butterfly and is remarkable for its polymorphism in the females.

**Conservation Measures:** Although the caterpillar of the Great Mormon is known to be able to feed on several species of *Citrus*, there is still a preference for the Pomelo. Conservation measures should include the cultivation of the Pomelo in our nature parks and park connectors to allow this species to thrive again in Singapore.



**Scientific Name:**

*Eurema brigitta senna* (C. & R. Felder, 1865)

**Common Name:**

No Brand Grass Yellow

**Family:**

Pieridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The No Brand Grass Yellow is one of six extant species of the genus *Eurema* found in Singapore. It was re-discovered in 2006 at a site cleared for development. Its caterpillars appear to only feed on a single host plant, *Cassia mimosoides* which tends to grow wild in open secondary forests or sites cleared for future development.

**Distribution:** The species is widely distributed from tropical Africa to South East Asia.

**Threats:** The species is highly dependent on the

Photo: Khew Sin Khoon



availability of its caterpillar host plant which is rare in Singapore.

**Scientific Interest and Potential Value:** When it was re-discovered in 2006, the No Brand Grass Yellow had not been seen for at least four decades, although it was listed as extant in Singapore in early references.

**Conservation Measures:** This species is highly dependent on the availability of its caterpillar host plant, *Cassia mimosoides*, for its survival. The cultivation, and long-term sustainable source of this host plant is critical to the survival of this species, without which it is likely to be tipped into extirpation in Singapore.

**Scientific Name:**

*Idea stollii logani* (Moore, 1883)

**Common Name:**

Common Tree Nymph

**Family:**

Nymphalidae (subfamily Danainae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Common Tree Nymph is a forest-dependent species which typically flies within Singapore's nature reserves. It was regularly seen, gliding gracefully at treetop level and feeding at flowering trees within the nature reserves.

**Distribution:** The species is distributed across south Thailand, Malaysia, Singapore and Indonesia.

Photo: Khew Sin Khoon



**Threats:** Reduction of its forest habitats and decline of its caterpillar host plant availability.

**Scientific Interest and Potential Value:** The Common Tree Nymph was previously classified as Near Threatened in the Red Data Book second edition (2008) but it was last observed in 2014 and has not been seen for nearly ten years. Its sudden and abrupt disappearance justifies its status elevation to Critically Endangered.

**Conservation Measures:** The Common Tree Nymph may potentially be extirpated from Singapore if its habitats and hitherto unknown caterpillar host plant

population declines. Whilst it was moderately common in the past two decades, it is now absent from our forests.

**Scientific Name:**

*Idea leuconoe chersonesia*  
(Fruhstorfer, 1898)

**Common Name:**

Mangrove Tree Nymph

**Family:**

Nymphalidae (subfamily Danainae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Mangrove Tree Nymph is a seashore species and inhabits mangrove areas. It flies in a very localized area on Pulau Tekong and very rarely, on Pulau Ubin.

**Distribution:** Widely distributed from Taiwan across Thailand, Southeast Asia and Indonesia.

**Threats:** Loss of mangrove habitats, including by coastal erosion, and depletion of its caterpillar host



Photo: Simon Sing

plant usually found within the mangrove and back-mangrove environments.

**Scientific Interest and Potential Value:** Of specific interest as a mangrove habitat– dependent species.

**Conservation Measures:** Conservation of mangrove habitats in Singapore, particularly at the source location on Pulau Tekong. Potential to be translocated to other mangrove habitats in Singapore if the caterpillar host plant is identified and cultivated at other locations.

**Scientific Name:**

*Euploea eyndhovii gardineri*  
(Fruhstorfer, 1898)

**Common Name:**

Striped Black Crow

**Family:**

Nymphalidae (subfamily Danainae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Striped Black Crow is usually observed singly at forest edges, park connectors and nature parks, usually looking for flowering plants to feed on.



Photo: Khew Sin Khoon

**Distribution:** The species is distributed from south Myanmar, south Vietnam, Thailand, Malaysia and Singapore to the Indonesian islands.

**Threats:** Loss of forest habitats and its caterpillar host plant.

**Scientific Interest and Potential Value:** It is the typical model for Batesian mimicry by the Malayan Eggfly (*Hypolimnys anomala anomala*).

**Conservation Measures:** As a forest-dependent species, the conservation of Singapore's forest habitats is critical to its survival. Its caterpillar host plant needs to be identified and conserved.

**Scientific Name:**

*Euploea radamanthus radamanthus*  
(Fabricius, 1793)

**Common Name:**

Magpie Crow

**Family:**

Nymphalidae (subfamily Danainae)

Photo: Khew Sin Khoon



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Magpie Crow is a forest-dependent species that is usually found along forest trails and foraging along the open forest-edge vegetation. It can also be observed puddling at muddy footpaths and streambanks.

**Distribution:** The species occurs from southern Thailand to Malaysia, Singapore and Indonesia.

**Threats:** Loss of forest habitats and its caterpillar host plant.

**Scientific Interest and Potential Value:** It is typical example of Batesian mimicry in which it is mimicked by the two female forms of the nymphaline Courtesan (*Euripus nyctelius eupleoides*). Female forms of the papilionid Great Blue Mime (*Papilio paradoxa aenigma*) also mimic the Magpie Crow.

**Conservation Measures:** Although the Magpie Crow was once moderately common in Singapore, its sudden and abrupt disappearance is also cause for concern. Conservation of pristine forests and its host plant is critical to its survival in Singapore.

**Scientific Name:**

*Euploea camaralzeman malayica*  
(Butler, 1878)

**Common Name:**

Malayan Crow

**Family:**

Nymphalidae (subfamily Danainae)

Photo: Khew Sin Khoon



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Malayan Crow is a forest-dependent species and usually seen singly within Singapore's forested nature reserves. It was last spotted in 2012 at the Dairy Farm Nature Park.

**Distribution:** The species occurs from Myanmar, Thailand, Malaysia and Singapore.

**Threats:** Loss of forest habitats and its caterpillar host plants (believed to be species of the Apocynaceae family).

**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and may already be potentially extirpated as it has not been seen for over ten years.

**Conservation Measures:** Conservation of forest habitats and cultivation of its documented caterpillar host plants in Singapore's buffer parks to the nature reserves.

**Scientific Name:**  
*Mycalesis orseis nautilus*  
(Butler, 1867)

**Common Name:**  
Purple Bush Brown

**Family:**  
Nymphalidae (subfamily Satyrinae)

Photo: Khew Sin Khoon



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Purple Bush Brown is the least commonly seen amongst the five extant species of the genus *Mycalesis* found in Singapore. It is a forest-dependent species and rarely strays out of the forested nature reserves in Singapore. It typically flies around shaded grassy areas along forest edges.

**Distribution:** The species is distributed from southern Thailand to Malaysia, Singapore and Indonesia.

**Threats:** Loss of shaded forest habitats and its caterpillar host plant, likely to be one of the grasses (Poaceae).

**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and its declining population should be studied and monitored for any further reduction.

**Conservation Measures:** Identification and conservation of the species' preferred forest habitats and conditions where it prefers. Ensuring that its caterpillar host plant is also available at such locations.

**Scientific Name:**  
*Ypthima pandocus corticaria*  
(Butler, 1879)

**Common Name:**  
Common Three Ring

**Family:**  
Nymphalidae (subfamily Satyrinae)

Photo: Khew Sin Khoon



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Common Three Ring flies in open grassy areas along forest edges within the nature reserves of Singapore. Ironically, contemporary literature puts it as “the commonest butterfly in the Malay Peninsula”. However, its existence in Singapore is severely threatened and its population has declined significantly over the years.

**Distribution:** The species is widely distributed from southern Thailand, Malaysia, Singapore, Indonesia and the Philippines.

**Threats:** Loss of forest habitats and reduction of its caterpillar host plant, *Ischaemum muticum* (Poaceae) in the vicinity of its preferred habitats.

**Scientific Interest and Potential Value:** It is part of Singapore’s biodiversity and natural heritage and its rapidly declining population should be studied and monitored for any further reduction.

**Conservation Measures:** Conservation of forest habitats and open grassy areas where the remaining colonies of this species are known to survive.

**Scientific Name:**

*Thaumantis noureddin* Nouredin  
(Westwood, 1851)

**Common Name:**

Dark Jungle Glory

**Family:**

Nymphalidae (subfamily Satyrinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Dark Jungle Glory was a re-discovery where a colony of the species exists on the western side of Singapore. It flies in heavily shaded forest understorey where palms, bamboos and rattans are abundant.

**Distribution:** The species is widely distributed from northern India through Thailand, Malaysia and Singapore to Indonesia.

**Threats:** Loss of habitats and host plants.

**Scientific Interest and Potential Value:** The Dark Jungle Glory is a good example of how a species can



Photo: Low Jian Kai

camouflage itself with its cryptic underside patterns. It frequents bamboo and rattan thickets and is a typical forest-dependent low-flying species.

**Conservation Measures:** This species requires heavily shaded forest habitats where palms, bamboos and rattans thrive and these conditions should be conserved in the locations where this species is known to survive. Nature corridor connectors should be planned such that this species can spread to other parts of Singapore.

**Scientific Name:**

*Discophora sondaica despoliata*  
(Stichel 1902)

**Common Name:**

Common Duffer

**Family:**

Nymphalidae (subfamily Satyrinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Common Duffer frequents heavily vegetated areas in the vicinity of bamboo thickets. A species of bamboo is the caterpillar host plant of this butterfly. It is crepuscular in habit and is usually active in the late hours of the day.

**Distribution:** The species is widely distributed from northern India to south China, through Thailand, Malaysia and Singapore to the Indonesian islands and the Philippines.

**Threats:** Loss of habitats and caterpillar host plants.



**Scientific Interest and Potential Value:** Of scientific interest as part of a small group of bamboo-feeding butterfly fauna. Part of Singapore's biodiversity and natural heritage.

**Conservation Measures:** The conservation of its habitats and preferred species of bamboo that its caterpillars feed on. Possibility of using nature corridors to allow the species to spread to alternative sites within the nature reserves.

**Scientific Name:**

*Cethosia hypsea hypsina*  
(C. & R. Felder 1865)

**Common Name:**

Malay Lacewing

**Family:**

Nymphalidae (subfamily Heliconiinae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Malay Lacewing is a forest-dependent species and usually flies within Singapore's nature reserves. It is also found on Pulau Ubin.

**Distribution:** The species is distributed from south Myanmar through Thailand, Malaysia and Singapore to the Indonesian islands.



**Threats:** This species status has been elevated to Critically Endangered as its population has experienced severe decline over the past decade. Whereas it was moderately common in the nature reserves, sightings of this species are few and far in between in the last five years.



**Scientific Interest and Potential Value:** The genus *Cethosia* which the Malay Lacewing belongs to, includes some of the most beautiful butterflies in the region. The delicate patterns and bright colours on the wings are attractive and is a welcome addition to Singapore's butterfly biodiversity.

**Conservation Measures:** It is critical to conserve its forest habitats and cultivation of its caterpillar host plant, *Adenia macrophylla* var. *singaporeana*, a species of Passifloraceae.

**Scientific Name:**  
*Cirrochroa orissa orissa*  
(C. & R. Felder 1860)

**Common Name:**  
Banded Yeoman

**Family:**  
Nymphalidae (subfamily Heliconiinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Banded Yeoman is a forest-dependent species that is found in a very local area within the Central Catchment Nature Reserves.

**Distribution:** The species occurs in South Myanmar, through South Thailand, Malaysia and Singapore to the Indonesian islands of Sumatra and Borneo.

**Threats:** Loss of forest habitats and availability of its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** A forest specialist, this species reflects the health of our forests and the diversity of plant species.

**Conservation Measures:** The species requires the conservation of Singapore's remaining pristine forested nature reserves and the cultivation of its rather uncommon caterpillar host plant, *Ryparosa scortechinii* (Achariaceae).

**Scientific Name:**  
*Cirrochroa emalea emalea*  
(Guérin-Ménéville, 1843)

**Common Name:**  
Malay Yeoman

**Family:**  
Nymphalidae (subfamily Heliconiinae)

Photo: Khew Sin Khoon



**National Status:** Endangered (EN)

**Habitat and Ecology:** The Malay Yeoman is closely related to the Banded Yeoman and frequents the forested areas in Singapore. However, it is more widely distributed within the Central Catchment Nature Reserves. It was only recently re-discovered in 2013 and sightings of this species has been more regular since then.

**Distribution:** The species is mainly restricted to South Thailand, Malaysia and Singapore.

**Threats:** Loss of forest habitats and its caterpillar host plant.

**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and its recent re-discovery in Singapore after many years of absence is a good justification to conserve this species amongst our butterfly fauna.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the species' caterpillar host plant for cultivation.

**Scientific Name:**

*Chersonesia peraka peraka*  
(Distant, 1884)

**Common Name:**

Little Maplet

**Family:**

Nymphalidae (subfamily Cyrestinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species frequents the forested areas within Singapore's nature reserves and is quite well distributed across the Central Catchment Nature Reserves. Its appearance is erratic and often seasonal.

**Distribution:** The species occurs in South Thailand, Malaysia and Singapore across to the Indonesian islands.

**Threats:** Loss of forest habitats and availability of its caterpillar host plant.

**Scientific Interest and Potential Value:** A forest specialist, this species reflects the health of our forests and the diversity of plant species.

Photo: Khew Sin Khoon



**Conservation Measures:** The species requires the conservation of Singapore's remaining pristine forested nature reserves and the cultivation of its caterpillar host plant, *Ficus punctata* (Moraceae).

**Scientific Name:**

*Euthalia merta merta* (Moore, 1859)

**Common Name:**

White Tipped Baron

**Family:**

Nymphalidae (subfamily Limetidineae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The White Tipped Baron is a forest-dependent species and is mainly observed in shaded forest understorey within the Central Catchment Nature Reserves. They prefer to forage amongst leaf litter and sometimes seen feeding on overripe fruits on the forest floor.

**Distribution:** South Thailand, Malaysia, Singapore to the Philippines.

**Threats:** Loss of forest habitats and its currently unknown caterpillar host plant.



Photo: Khew Sin Khoon

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** The conservation of its preferred forested habitats and discovery and cultivation of its hitherto unknown caterpillar host plant would be critical to this species' sustainable survival in Singapore.

**Scientific Name:**

*Euripus nyctelius euploeoides*  
(C. & R. Felder 1867)

**Common Name:**

Courtesan

**Family:**

Nymphalidae (subfamily Apaturinae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Courtesan is another forest-dependent species but has also been spotted at the Southern Ridges Parks before. After a short period in the Mandai Forest when it was relatively common for a few months in 2013, the species mysteriously disappeared and has not been seen since then.

**Distribution:** The species occurs throughout Thailand, Malaysia and Singapore to the Indonesian islands and Philippines.



Photo: Khew Sin Khoon

**Threats:** Loss of forest habitats and availability of its caterpillar host plants.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts. Of particular interest is that the two female forms of this species mimic the distasteful Magpie Crow for protection against predators.

**Conservation Measures:** The species requires the conservation of Singapore's remaining pristine forested nature reserves and the cultivation of its caterpillar

host plants, *Trema tomentosum* and *Trema cannabina* (Cannabaceae).

**Scientific Name:**  
*Taxila haquinus haquinus*  
(Fabricius, 1793)

**Common Name:**  
Harlequin

**Family:**  
Riodinidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Harlequin is a forest-dependent species and prefers heavily shaded forest understorey habitats. A small colony of the species was discovered in a forested patch at the Nanyang Avenue area. Efforts to translocate the species met with limited success until recently when a colony established itself at Sungei Buloh Wetland Reserve.

**Distribution:** The species is distributed from Assam to South Thailand, Malaysia and Singapore.

**Threats:** Loss of forest habitats and its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** The Harlequin is the target species of a Species Recovery Programme, where the butterfly and caterpillars were translocated to alternative habitats around Singapore to attempt to save the species from extirpation.

**Conservation Measures:** Conservation of Singapore's forested reserves and continued cultivation of its caterpillar host plant, *Ardisia elliptica* should be part of the management initiative to help sustain a population of this species in Singapore.

**Scientific Name:**  
*Poritia philota philota*  
(Hewitson, 1874)

**Common Name:**  
Malay Gem

**Family:**  
Lycaenidae (subfamily Poritinae)

Photo: Khew Sin Khoon



**National Status:** Endangered (EN)

**Habitat and Ecology:** The Malay Gem is a forest-dependent species that prefers the shady understorey of heavily shaded forest habitats. Its distribution is thus far limited to the Central Catchment Area in Singapore.

**Distribution:** Northeast India to Thailand, Malaysia, Singapore to the Philippines.

**Threats:** Loss of pristine forest habitats and availability of its currently unknown caterpillar host plant.

**Scientific Interest and Potential Value:** A forest specialist, this species is an indicator of the health of our forests and the diversity of plant species.

**Conservation Measures:** The species requires the conservation of Singapore's remaining pristine forested nature reserves and further research into its caterpillar host plant.

**Scientific Name:**

*Everes lacturnus rileyi* (Godfrey, 1916)

**Common Name:**

Indian Cupid

**Family:**

Lycaenidae (subfamily Polyommatainae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** This diminutive species is erratic in appearance and flies amongst open grassy areas at forest edges and sometimes in urban areas. However, there are some years when it is absent and not observed.

**Distribution:** The species is found throughout the Oriental Region and reaches Australia.

**Threats:** Loss of its preferred habitats and its caterpillar host plant, a species of *Trifolium* or *Desmodium* (Leguminosae).

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and its recent re-discovery in Singapore after many years of absence is a good justification to conserve this species amongst our butterfly fauna.

**Conservation Measures:** Further research is needed into its caterpillar host plant and the biology of the butterfly to understand why its occurrence in Singapore is sporadic and unpredictable.



**Scientific Name:**  
*Catochrysops strabo strabo*  
(Fabricius, 1793)

**Common Name:**  
Forget Me Not

**Family:**  
Lycaenidae (subfamily Polyommatainae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Forget Me Not prefers open grassy habitats and flies close to the ground. It is often confused with a similar looking species, the Silver Forget Me Not (*Catochrysops panormus exiguus*) which is more common.

**Distribution:** The species occurs in Sri Lanka and India through Southeast Asia and Indonesia.

**Threats:** Loss of forest habitats and availability of its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** The declining population of the Forget Me Not is of concern and of interest in establishing the habitats and conditions in which the species is able to sustain a population.

**Conservation Measures:** Further research into its caterpillar host plant, *Grona heterocarpus*, and the myrmecophilic relationship with ants is needed to improve the knowledge about this species and how to conserve it.

**Scientific Name:**  
*Jamides caeruleus caeruleus* (H Druce, 1873)

**Common Name:**  
Sky Blue

**Family:**  
Lycaenidae (subfamily Polyommatainae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Sky Blue is rarely observed but where it occurs, it flies erratically at low levels amongst shrubbery and usually in the shaded forest understorey.

**Distribution:** The species is mainly restricted to South Thailand, Malaysia and Singapore.

Photo: Khew Sin Khoon



**Threats:** Loss of its preferred habitats and its caterpillar host plant, the flowers of *Saraca cauliflora* (Fabaceae).

**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage.

**Conservation Measures:** Further research into its preferred habitats and understanding of its biology and its caterpillars' preference for the flowers of *Saraca cauliflora*.



**Scientific Name:**

*Nacaduba pavana singapura*  
(Butler, 1879)

**Common Name:**

Singapore Fourline Blue

**Family:**

Lycaenidae (subfamily Polyommatainae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Singapore Fourline Blue is regularly found in back-mangrove and mangrove habitats and can sometimes be locally common. It flies erratically and rapidly amongst shrubbery.

**Distribution:** The species is restricted to Malaysia and Singapore to Indonesia.

**Threats:** Loss of mangrove and back-mangrove habitats and availability of its caterpillar host plants.

Photo: Low Jian Kai



**Scientific Interest and Potential Value:** A mangrove specialist, this species has the distinction of carrying the "singapura" subspecies name and is reported as more commonly seen in Singapore than elsewhere.

**Conservation Measures:** The species requires the conservation of Singapore's mangrove habitats which it appears to prefer, and the cultivation of its caterpillar host plants, *Derris trifoliata* and *Andira inermis* (Fabaceae) and *Allophylus cobbe* (Sapindaceae).

**Scientific Name:**

*Arhopala muta maranda*  
(Guérin-Ménéville, 1843)

**Common Name:**

Mutal Oakblue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The genus *Arhopala* comprises over 100 distinct species, many of which are very similar and difficult to identify with confidence. These species prefer to lurk in heavily shaded forested areas and many are very rare.

**Distribution:** The species is distributed from south Myanmar to Neomalaya, Java and Nias.

**Threats:** Loss of pristine forest habitats and its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** The cryptic *Arhopala* species certainly requires extensive and in-depth research to establish their biology and ecological needs in Singapore. There is likely to be several more undiscovered species to be recorded in Singapore.

**Conservation Measures:** Conservation of Singapore's forested reserves and the species' caterpillar host plant, *Lithocarpus bennettii* (Fagaceae).

**Scientific Name:**

*Arhopala alitaeus pardenas*  
(Corbet, 1941)

**Common Name:**

Purple Broken-Band Oakblue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Purple Broken-Band Oakblue is found in heavily shaded forested areas like Bukit Timah Nature Reserve.

**Distribution:** The species is distributed from south Myanmar to Neomalaya, Philippines and Sulawesi.

**Threats:** Loss of pristine forests in the nature reserves of Singapore, and its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** One of the several rare *Arhopala* species which requires the forested nature reserves for its continued survival.

**Conservation Measures:** The species requires the conservation of Singapore's forested nature reserves which includes Central Catchment Nature Reserve and Bukit Timah Nature Reserve, and the continued availability of its caterpillar host plant, *Vatica pauciflora* (Dipterocarpaceae).

**Scientific Name:**

*Arhopala myrzala lammas*  
(Corbet, 1941)

**Common Name:**

Malayan Oakblue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Malayan Oakblue is another uncommon species that is restricted to the heavily shaded forests of the Central Catchment Nature Reserves. It displays a purple sheen on its wings when viewed in a side light.

**Distribution:** The species is distributed from Malaysia and Singapore to the Philippines.

**Threats:** Loss of pristine forest habitats and its hitherto unknown caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and further research into its biology and ecological preferences to aid its continued existence in Singapore.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the species' caterpillar host plant for cultivation.

**Scientific Name:**

*Arhopala silhensis adorea*  
(de Niceville, 1890)

**Common Name:**

Sylhet Oakblue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Sylhet Oakblue was re-discovered in 2008 and is restricted to a few local sites within the Central Catchment Nature Reserve. Its life history requires the symbiotic relationship with the ant species *Polyrhachis armata*.

**Distribution:** The species is found from Northeast India through Myanmar, Thailand and Southeast Asia to the Philippines.

Photo: Khew Sin Khoon



**Threats:** Loss of pristine forested areas and availability of its caterpillar host plants.

**Scientific Interest and Potential Value:** An interesting subject of study would be its caterpillars myrmecophilic relationship with the *Polyrhachis* ant species.

**Conservation Measures:** The species requires the conservation of Singapore's pristine forested nature reserves and the cultivation of its caterpillar host plant, a species of *Syzygium* (Myrtaceae).

**Scientific Name:**

*Arhopala aurea* (Hewitson, 1862)

**Common Name:**

Golden Green Oakblue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is another forest-dependent butterfly and is restricted to very local sites within the Central Catchment Nature Reserves. It prefers heavily shaded forest habitat. It is one of the few *Arhopala* species in which males have a bright iridescent green upperside.

**Distribution:** The species' distribution appears to be mainly restricted to Malaysia and Singapore.

**Threats:** Loss of forest habitats and its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage and its recent re-discovery in Singapore after many years of absence is a good justification to conserve this species amongst our butterfly fauna.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the species' caterpillar host plant for cultivation.

**Scientific Name:**  
*Arhopala trogon* (Distant, 1884)

**Common Name:**  
Green Suffused Oakblue

**Family:**  
Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Green Suffused Oakblue is a forest-dependent species and its distribution is restricted to the heavily-shaded forest habitats within the Central Catchment and Bukit Timah Nature Reserves.

**Distribution:** The species is restricted to Malaysia and Singapore to Indonesia.

Photo: Horace Tan



**Threats:** Loss of pristine forest habitats and its caterpillar host plant.

**Scientific Interest and Potential Value:** A rare forest-dependent species that should be conserved as part of Singapore's valuable natural heritage.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the species' caterpillar host plant for cultivation.

**Scientific Name:**  
*Arhopala ammon ammon*  
(Hewitson, 1862)

**Common Name:**  
Lesser Malayan Oakblue

**Family:**  
Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Lesser Malayan Oakblue prefers the deep shade of pristine forested habitats and is limited to a few sites within the nature reserves of Singapore.

**Distribution:** The species is mainly restricted to South Thailand, Malaysia and Singapore.

**Threats:** Loss of forest habitats and its caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage. The species' appearance is exceedingly erratic, although it has been spotted at the Labrador Nature Reserve and further research should be conducted to understand its preferred habitats.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the species' caterpillar host plant for cultivation.

**Scientific Name:**

*Drupadia rufotaenia rufotaenia*  
(Fruhstorfer, 1912)

**Common Name:**

Pygmy Posy

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Pygmy Posy is a small butterfly that is forest dependent. In Singapore, it is limited to certain locations in the Central Catchment Nature Reserves.

**Distribution:** The species is distributed from Myanmar through Thailand, Malaysia and Singapore to the Philippines.

**Threats:** Loss of pristine forest habitats and availability of its hitherto unknown caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** An attractive butterfly species, the Pygmy Posy is part of Singapore's biodiversity and natural heritage and should be carefully studied and conserved.

**Conservation Measures:** Conservation of Singapore's remaining forested nature reserves and further research to ascertain the unknown caterpillar host plant for this species.

**Scientific Name:**

*Drupadia theda thesmia*  
(Hewitson, 1863)

**Common Name:**

Dark Posy

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Dark Posy is usually seen in the shaded forest understorey of our nature reserves. It is quite widespread but remains within the sanctuary of the Central Catchment Nature Reserve and Bukit Timah Nature Reserve and surrounding nature parks.

**Distribution:** The species is distributed from south Myanmar across to Thailand, Malaysia, Singapore to the Philippines and Sulawesi.

Photo: Khew Sin Khoon



**Threats:** Loss of forest habitats and its caterpillar host plants, *Combretum sundaicum* (Combretaceae) and *Ixora congesta* (Rubiaceae).

**Scientific Interest and Potential Value:** The population decline of the Dark Posy over the past three decades should be of conservation interest and research should be done to ascertain this phenomenon.

**Conservation Measures:** Conservation of Singapore's forested reserves and further research to establish the habitats and conditions under which

this species is able to sustain a viable population in Singapore.

**Scientific Name:**  
*Horaga onyx sardonix*  
(Fruhstorfer, 1914)

**Common Name:**  
Common Onyx

**Family:**  
Lycaenidae (subfamily Theclinae)



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Common Onyx is seen most often along the nature parks of the Southern Ridges and on Pulau Ubin, but is often confused with the Ambon Onyx, which is the commoner of the two species. It flies in open areas amongst shrubbery and often seen at treetop level.

**Distribution:** The species is distributed from Sri Lanka to Taiwan and through Southeast Asia to New Guinea.

**Threats:** Loss of its' preferred habitats.

**Scientific Interest and Potential Value:** The Common Onyx is a recent re-discovery and is part of Singapore's biodiversity and natural heritage. It should be studied further for conservation interest.

**Conservation Measures:** The species has been bred on the young shoots of the common tree, the Saga (*Adenanthra pavonine*) (Leguminosae), and *Guioa pubersens* (Sapindaceae). Conservation of these host plants and its' preferred habitats should be studied further.

**Scientific Name:**  
*Horaga syrinx maenala*  
(Hewitson, 1869)

**Common Name:**  
Ambon Onyx

**Family:**  
Lycaenidae (subfamily Theclinae)



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Ambon Onyx is widely distributed across Singapore and has been observed from the Southern Ridges to the Central Catchment Nature Reserves.

**Distribution:** The species is distributed from Sikkim across Southeast Asia to New Guinea.

**Threats:** Loss of its preferred forest habitats and the caterpillars' host plants.



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Ambon Onyx is widely distributed across Singapore and has been observed from the Southern Ridges to the Central Catchment Nature Reserves.

**Distribution:** The species is distributed from Sikkim across Southeast Asia to New Guinea.

**Threats:** Loss of its preferred forest habitats and the caterpillars' host plants.

**Scientific Interest and Potential Value:** It is part of Singapore's biodiversity and natural heritage. Its population decline over the past decade is of particular concern and interest.

**Conservation Measures:** Conservation of the species' preferred habitats and caterpillar host plants, *Citrus* spp. (Rutaceae) and *Ixora javanica* (Rubiaceae).

**Scientific Name:**  
*Pratapa deva relata*  
(Distant, 1884)

**Common Name:**  
White Royal

**Family:**  
Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The White Royal is one of a number of Lycaenidae species that depend solely on the existence of parasitic and hemiparasitic host plants for its early stages. The species is seen across the island where its caterpillar host plants are found, but it is rare.

**Distribution:** The species is restricted to Malaysia and Singapore to Indonesia.

**Threats:** Loss of its preferred habitats and availability of its caterpillar host plant, *Scurrula ferruginea* (Loranthaceae).

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** A recent re-discovery in 2007, the White Royal is of scientific interest as one of several species of rare Lycaenidae whose caterpillars feed on Mistletoes.

**Conservation Measures:** This species' conservation is critically dependent on the availability of its parasitic caterpillar host plant, The Rusty Mistletoe (*Scurrula ferruginea*) (Loranthaceae). Parks management should be careful in not removing these parasitic plants from the vegetation within our parks, gardens and nature reserves.

**Scientific Name:**

*Rachana jalindra burbona*  
(Hewitson, 1878)

**Common Name:**

Banded Royal

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Banded Royal can be found across the island in both urban and forested habitats but is rare. It is another species of Lycaenidae that depends solely on the parasitic host plant for its survival.

**Distribution:** The species is distributed from India across to Thailand, Malaysia and Singapore to the Philippines.

**Threats:** Loss of its caterpillar host plant, a hemiparasitic plant, *Macrosolen cochinchinensis* (Loranthaceae).

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** Although widespread in distribution in Singapore, its decline and potential extirpation is critically dependent on the availability of its hemiparasitic caterpillar host plant. The ecology of this Mistletoe should be studied for better knowledge of how to maintain this 'unwanted' plant.

**Conservation Measures:** This species' conservation is critically dependent on the availability of its hemiparasitic caterpillar host plant, The Common Chinese Mistletoe (*Macrosolen cochinchinensis*) (Loranthaceae).

**Scientific Name:**

*Neocheritra amrita amrita*  
(C & R Felder, 1860)

**Common Name:**

Grand Imperial

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Grand Imperial is restricted in its distribution to very limited areas within the Central Catchment Nature Reserves and around the Nee Soon Swamp Forest. It is a forest-dependent species and stays within the nature reserves. A population has also been observed on Pulau Tekong in the early 2000's.

**Distribution:** The species is distributed from South Myanmar, South Thailand, Malaysia, Singapore and Borneo.

Photo: Khew Sin Khoon



**Threats:** Loss of pristine forest habitats and availability of its hitherto unknown caterpillar host plant.

**Scientific Interest and Potential Value:** A spectacular butterfly with long tails and attractive colours, the Grand Imperial is a part of Singapore's butterfly biodiversity and is of great scientific interest.

**Conservation Measures:** Conservation of Singapore's remaining forested nature reserves and further research to ascertain the unknown caterpillar host plant for this species.

**Scientific Name:**

*Pseudotajuria donatana donatana*  
(de Niceville, 1889)

**Common Name:**

Golden Royal

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Golden Royal is rare but widely distributed across forest habitats and also nature parks. In recent years, it has been regularly observed in the Southern Ridges Parks.

**Distribution:** The species is distributed from South Thailand, Malaysia and Singapore to the Philippines.

**Threats:** Loss of its caterpillar host plant, the Oval Leafed Mistletoe (*Viscum ovalifolium*) (Santalaceae).

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** Although widespread in distribution in Singapore, its decline and potential extirpation is critically dependent on the management of its parasitic caterpillar host plant.

**Conservation Measures:** This species' conservation is critically dependent on the sensitive management of its parasitic caterpillar host plant, Oval Leafed Mistletoe (*Viscum ovalifolium*) (Santalaceae).

**Scientific Name:**

*Ancema blanka blanka*  
(de Niceville, 1894)

**Common Name:**

Silver Royal

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Silver Royal is widely distributed across various habitats but is most often observed at the Southern Ridges Parks. It is largely a treetop dweller but descends to the forested areas to feed or oviposit on its caterpillar host plant.

**Distribution:** The species is distributed from India to Thailand, Malaysia, Singapore and Borneo.

Photo: Khew Sin Khoon



**Threats:** Loss of its caterpillar host plant, the Oval Leafed Mistletoe (*Viscum ovalifolium*) (Santalaceae).

**Scientific Interest and Potential Value:** Although widespread in distribution in Singapore, its decline and potential extirpation is critically dependent on the management of its parasitic caterpillar host plant.

**Conservation Measures:** This species' conservation is critically dependent on the sensitive management of its parasitic caterpillar host plant, Oval Leafed Mistletoe (*Viscum ovalifolium*) (Santalaceae).

**Scientific Name:**

*Virachola kessuma deliochus*  
(Hewitson, 1874)

**Common Name:**

Pitcher Blue

**Family:**

Lycaenidae (subfamily Theclinae)

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Pitcher Blue is widely distributed in Singapore from forested nature reserves to nature parks but requires the presence of pitcher plants for its sustainable existence.

**Distribution:** The species is distributed from South Thailand, Malaysia and Singapore to the Philippines.

**Threats:** Loss of its caterpillar host plant, the Pitcher Plants *Nepenthes gracilis* and *Nepenthes rafflesiana* (Nepenthaceae).

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** The species is of scientific interest in that its early stages depend on the seed pods of Pitcher Plants for its continued existence.

**Conservation Measures:** This species' conservation is critically dependent on the availability of its caterpillar host plants, *Nepenthes gracilis* and *Nepenthes rafflesiana* (Nepenthaceae).

**Scientific Name:**

*Celaenorrhinus asmara asmara*  
(Butler, 1879)

**Common Name:**

White Banded Flat

**Family:**

Hesperiidae (subfamily Pyrginae)

**National Status:** Critically Endangered (EN)

**Habitat and Ecology:** The White Banded Flat is a recent re-discovery and has been observed at a very local site on Pulau Ubin. Subsequent sightings of this species have also been only on Pulau Ubin thus far.

**Distribution:** The species is distributed from Thailand to Malaysia, Singapore and Indonesia.

Photo: Khew Sin Khoon



**Threats:** Loss of its caterpillar host plants, currently recorded beyond Singapore as *Clerodendron chinense* (Lamiaceae), *Justicia gendarussa* (Acanthaceae) and *Jasminum nervosum* (Oleaceae).

**Scientific Interest and Potential Value:** This species has been sighted only on Pulau Ubin and it is important to establish the viability of the colony and whether its caterpillar host plants are available for its continued existence in Singapore.

**Conservation Measures:** It is critical to conserve the area on Pulau Ubin which the species can be found with minimal development interventions. Its caterpillar host

plants, recorded from other countries, should also be ascertained and conserved on Pulau Ubin.

**Scientific Name:**  
*Halpe ormenes vilasina*  
(Fruhstorfer, 1911)

**Common Name:**  
Dark Banded Ace

**Family:**  
Hesperiidae (subfamily Hesperinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Dark Banded Ace frequents forested habitats in the nature reserves of Singapore. It prefers to stay close to bamboo thickets and where its caterpillar host plants are found.

**Distribution:** The species is distributed from Myanmar, Thailand, Malaysia, Singapore, Sumatra, Java, Borneo and Palawan.

**Threats:** Loss of pristine forest habitats and availability of its caterpillar host plant, *Bambusa vulgaris* 'Wamin' (Poaceae).



**Scientific Interest and Potential Value:** This species, whose caterpillars feed on various species of bamboo is of particular interest and further research should be conducted to ascertain the species' continued survival in Singapore.

**Conservation Measures:** Conservation of forested areas within the nature reserves and nature parks and the cultivation of its preferred bamboo species that its caterpillars feed on.

**Scientific Name:**  
*Plastingia pellationia*  
(Fruhstorfer, 1909)

**Common Name:**  
Yellow Chequered Lancer

**Family:**  
Hesperiidae (subfamily Hesperinae)



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is a forest-dependent butterfly that prefers heavily-shaded forested areas within the Central Catchment and Bukit Timah Nature Reserves.

**Distribution:** The species is distributed from Northeast India to Thailand, Malaysia, Singapore to Indonesia, the Philippines and Sulawesi.

**Threats:** Loss of pristine forest habitats and its hitherto unknown caterpillar host plant.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to researchers and nature enthusiasts.

**Conservation Measures:** The conservation of Singapore's pristine forests and its caterpillar host plant should be ascertained for cultivation in its preferred habitats.

**Scientific Name:**

*Pemara pugnans* (de Niceville, 1891)

**Common Name:**

Pugnacious Lancer

**Family:**

Hesperiidae (subfamily Hesperinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Pugnacious Lancer frequents the forested nature reserves and the forest edges of Singapore's nature parks.

**Distribution:** The species is distributed from South Myanmar to Thailand, Malaysia and Singapore.

**Threats:** Loss of pristine forest habitats and its hitherto unknown caterpillar host plant.

Photo: Khew Sin Khoon



**Scientific Interest and Potential Value:** The species is part of Singapore's indigenous biological heritage and of general educational value and interest to researchers and nature enthusiasts.

**Conservation Measures:** The conservation of Singapore's pristine forests and its caterpillar host plant should be ascertained for cultivation in its preferred habitats.

**Scientific Name:**

*Gangara lebadea lebadea*  
(Hewitson, 1868)

**Common Name:**

Banded Redeye

**Family:**

Hesperiidae (subfamily Hesperinae)

Photo: Low Jian Kai





**National Status:** Endangered (EN)

**Habitat and Ecology:** The Banded Redeye is a forest-dependent species that is restricted to the shaded forest understorey of the Central Catchment and Bukit Timah Nature Reserves.

**Distribution:** The species is distributed from India and Sri Lanka to Thailand, Malaysia, Singapore and the Philippines and Sulawesi.

**Threats:** Loss of pristine forest habitats and its hitherto unknown caterpillar host plant.

**Scientific Interest and Potential Value:** Although it is limited in its range within Singapore's forested nature reserves, its decline and potential extirpation is critically dependent on the discovery and management of its caterpillar host plant.

**Conservation Measures:** The conservation of Singapore's pristine forests and its caterpillar host plant should be ascertained for cultivation in its preferred habitats.

**Scientific Name:**

*Taractrocera ardonia lamia*  
(Evans, 1934)

**Common Name:**

Spotted Grass Dart

**Family:**

Hesperiidae (subfamily Hesperinae)

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The Spotted Grass Dart is a tiny skipper butterfly and was a recent re-discovery in Singapore. It is very restricted to a few sites within the Central Catchment Nature Reserves.

**Distribution:** The species is distributed from Malaysia, Singapore to Borneo and Sulawesi.

**Threats:** Loss of pristine forest habitats and its hitherto unknown caterpillar host plant.

**Scientific Interest and Potential Value:** Its rediscovery and recent decline in population in its preferred sites is of concern. Further research to establish its caterpillar host plant should be carried out to ensure the species' continued existence in Singapore.

**Conservation Measures:** The conservation of Singapore's pristine forests and its caterpillar host plant should be ascertained for cultivation in its preferred habitats.

Photo: Khew Sin Khoo



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# Lepidoptera – Moths

ANUJ JAIN, JEROME CHUA, GAN CHEONG WEEI

**Scientific Name:**

*Avitta guttulosa*

**Common Name:**

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**Order/Family:**

Lepidoptera: Erebiidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Records of this species are restricted to the Central and Western Catchments and areas abutting it. The genus heavily utilises Menispermaceae. With the type species *A. subsignans* being reared on plants of genus *Stephania* and *Cyclea* and the locality habits of *A. guttulosa* taken into account, it is reasonable to assume that *A. guttulosa* also utilises *Stephania capitata* and *Cyclea laxiflora*, both of which are native and critically endangered (Lindsay et al. 2022) in Singapore. So far, these plant species are only known from Bukit Timah and Nee Soon forests. However, the occurrence of the moth in Western Catchment alludes to the potential existence of the above host plant species here as well.

Photo: Jerome Chua



**Distribution:** Indonesia, Malaysia, Singapore.

**Threats:** Likely rare due to rarity of the larval host plants that may have suffered from early deforestation prior to the 1950s. Increasing light pollution due to urban development also likely impacts the species.

**Scientific Interest and Potential Value:** Not yet ascertained.

**Conservation Measures:** Bukit Timah and Central Catchment Nature Reserves are legally protected. The species would benefit from targeted planting of larval host plants in restoration programs around the island.

**Scientific Name:**

*Borbotana nivifascia*

**Common Name:**

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**Order/Family:**

Lepidoptera: Noctuidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Ecology poorly understood but the distribution in Singapore seems to be close to fresh and/or saltwater bodies.

Photo: Alexey Yakovlev



**Distribution:** The species is widely distributed globally from the North-East Himalayas to Sundaland.

**Threats:** Rare and occurring in managed and only partially protected areas. Substantial loss of water-dependent and riparian habitat in the past.

**Scientific Interest and Potential Value:** Under the precondition of quality habitat, Noctuids usually represent the bulk of Noctuoidea biodiversity at light sampling activities. Conversely, they are usually the first to take statistical drops by course of human development, experiencing untimely expirations at

a rate which far exceeds their reproduction ability. Species that manage to adapt become adapted to background light pollution, rendering light sampling as a means of monitoring biodiversity and population density ineffective in the long run.

**Conservation Measures:** Water bodies have largely been kept pollution free which should benefit the larval host plants and the herbivores dependent on it. Protection of other water bodies, and to ensure the native riparian vegetation is accorded protection as well. Additionally, there is a harrowing need for light control.

**Scientific Name:**  
*Chrysocraspeda phlogaea*

**Common Name:**  
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**Order/Family:**  
**Lepidoptera: Geometridae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Young secondary and old growth forest; known to feed on Combretaceae, Myrtaceae - *Syzygium*, *Terminalia*. Highly polyphagous genus.

**Distribution:** In Singapore it is known from the central forested area and from some unprotected localities in western Singapore.

**Threats:** Likely rare due to the rarity of the larval host plant that may have suffered from early deforestation prior to 1950s. Increasing light pollution due to urban development also likely impacts the species.

**Scientific Interest and Potential Value:** This hyper diverse genus is relatively well represented in Singapore, with at least 17 species recorded. At least half of these are moderately frequent in lowland biotopes. Several



Photo: Albert Kang

species appear to tolerate heavy background light pollution. A number of these species are suspected either to be more loyal to specific hosts or to have a lower tolerance to light.

**Conservation Measures:** No targeted interventions known. At the habitat level, site protection in Upper Seletar has led to safeguarding of populations at least at one site. Protection of unprotected sites in Mandai and Bukit Batok area. Species will benefit from life history documentation and targeted planting of larval host plants in restoration programs around the island.

**Scientific Name:**  
*Cultripalpa lunulifera*

**Common Name:**  
-

**Order/Family:**  
**Lepidoptera: Erebiidae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Old growth forest; host plant in Singapore unknown. In Borneo, it is known from old growth forest, coastal and secondary forest.

**Distribution:** This species ranges from India to Australia but is rare across its range.

**Threats:** This species is infrequent at light throughout its range. Likely rare due to the rarity of the larval host plant that may have suffered from early deforestation prior to 1950s. Distribution includes one partially protected site



which is subject to potential risk of clearing, leading to habitat loss.

**Scientific Interest and Potential Value:** Not yet ascertained.

**Conservation Measures:** No species-targeted interventions have been undertaken. Species will benefit from life history documentation and planting of larval host plants in restoration programs around the island. Targeted moth surveys may find that the species may be known from more localities particularly in Bukit Batok and Bukit Timah areas.

**Scientific Name:**  
*Cultripalpa partita*

**Common Name:**  
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**Order/Family:**  
**Lepidoptera: Erebiidae**

**National Status:** Endangered (EN)

**Habitat and Ecology:** Closely associated with coastal and mangrove forests where they may appear to be locally abundant; occasionally individuals can be observed congregating around taller isolated treelets by the dozens at night.

**Distribution:** The Sunda region.

**Threats:** Likely rare due to habitat preference towards coastal and mangrove habitats and rarity of host plant in that habitat. Distribution includes two clusters



(western Singapore and Pulau Ubin), and it is found in two partially protected or unprotected sites that are at the risk of clearing, leading to habitat loss and with it the loss of larval host plants.

**Scientific Interest and Potential Value:** Not yet ascertained.

**Conservation Measures:** Protection of mangrove habitat at the sites. The species will benefit from life history documentation and targeted planting of larval host plants in restoration programs at other mangrove

sites in Singapore. surveys may find that the species may be known from more localities particularly in Sungei Buloh and Pasir Ris areas.

**Scientific Name:**  
*Elibia dolichus*

**Common Name:**  
**Large Banded Hawkmoth**

**Order/Family:**  
**Lepidoptera: Sphingidae**

**National Status:** Endangered (EN)

**Habitat and Ecology:** Coastal and mangrove habitats.

**Distribution:** The species has a wide distribution in Asia from southern China to southeast Asia including Sundaland. Given the limited distribution in Singapore, it is hypothesized that the species is associated with mangroves or associated vegetation.

**Threats:** Likely rare due to habitat preference towards coastal and mangrove habitats and rarity of host plant in that habitat. Increasing light pollution due to urban development also likely impacts the species. In Singapore it is only known from Pulau Ubin, which is currently managed as a natural area.

**Scientific Interest and Potential Value:** First found in Singapore by A.R. Wallace in 1854. Across its range, the larvae are known to feed on plants of the family Vitaceae (*Leea*, *Cayratia*, *Tetrastigma*) but the exact larval host plants in Singapore remain unknown.



Photo: Lena Chow

Four species of *Cayratia* are known from Singapore – all threatened. Similarly, four species of *Tetrastigma* are known from Singapore – all listed as Critically Endangered. Four species of *Leea* occur in Singapore – 2 threatened, 1 common and another (*Leea indica*) commonly planted in landscaping around Singapore. It appears unlikely that the moths use these *Leea* species as host plants in Singapore, despite various instances of the larvae utilising *L. indica* in Malaysia.

**Conservation Measures:** Species will benefit from life history documentation and targeted planting of larval host plants in restoration programs at other mangrove sites in Singapore. Surveys may find that the species occurs in more localities particularly other coastal/mangrove habitats in Singapore.



**Scientific Name:**  
*Eublemma ignefusa*

**Common Name:**

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**Order/Family:**  
**Lepidoptera: Erebidae**

**National Status:** Endangered (EN)

**Habitat and Ecology:** In Singapore, only known from selected secondary forest patches; local larval host plant remains unknown. It is unclear why the species is missing from the Bukit Timah and Central Catchment forests.

**Distribution:** The species is known from east India to Thailand, Sumatra, Peninsular Malaysia, Singapore, Borneo. Sightings include mature and secondary forested habitats, forest edges.

**Threats:** Likely rare due to rarity of the larval host plant that may have suffered from early deforestation prior



Photo: Can Cheong Weei

to 1950s. Large scale habitat loss has ceased, but part of the current habitat is in an unprotected or partially protected site. Its clearance can lead to further declines. Increasing light pollution due to urban development also likely impacts the species.

**Scientific Interest and Potential Value:** Singapore is the type locality, from which it was described in 1910.

**Conservation Measures:** Species will benefit from life history documentation and the planting of larval host plants (once these are identified) in restoration programs around the island. Surveys might find the species in more localities, particularly in protected areas.

**Scientific Name:**  
*Nothomiza xanthocolona*

**Common Name:**

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**Order/Family:**  
**Lepidoptera: Geometridae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Lowland mature and secondary forest. In Borneo, the species has been infrequently recorded in lowland kerangas forest and in lower montane forest of Gunung Mulu and Gunung Api.

**Distribution:** The Sunda region.

**Threats:** Precise threats are unknown, but members of the tribe are highly susceptible to light pollution. Another reason could be the rarity of a larval host plant that



Photo: Jerome Chua

may have suffered from early deforestation prior to the 1950s.

**Scientific Interest and Potential Value:** This species is rarely taken at lights; most individuals are taken opportunistically under mid-canopy. Outside Singapore, the closely related species *N. formosa* has been successfully reared on several species of *Ilex*, though it may use host plants beyond Aquifoliaceae for congeneric taxa. Adults are known to visit the inflorescences of *Syzygium formosum* (syn. *pseudoformosum*), *S. paraiense* (syn. *filiforme*) and *S. singaporense*.

**Conservation Measures:** In Singapore it is known from Mandai, Bukit Timah Nature Reserve and environs of Bukit Panjang. The species would benefit from the protection of sites, life history documentation and, once

the host plant can be identified, targeted planting of larval host plants in restoration programs around the island.

**Scientific Name:**  
*Psaphis camadeva*

**Common Name:**  
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**Order/Family:**  
**Lepidoptera: Zygaenidae**

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Primary forests, with a preference for hill dipterocarp forests. Members of this genus are hilly canopy dwellers, rarely descending to the understorey.

**Distribution:** Distributed through Sundaland in Indonesia, Malaysia and Singapore. Locally known only from Bukit Timah Nature Reserve where it was last recorded in 2007.

**Threats:** Likely rare due to affinity to old growth forest which significantly declined from early deforestation prior to 1950s. Large scale loss of old growth forest has ceased but these patches continue to be disturbed through anthropogenic pressure from trails, surrounding urban development and highways that bring light and sound.

**Scientific Interest and Potential Value:** In Singapore, first collected by A.R. Wallace.

Photo: Cheong Weng Chun



**Conservation Measures:** Disturbance to the nature reserve should be minimized. Surveys may find that the species may be known from more localities (such as the primary forest patches in the Central Catchment). The species would benefit from life history documentation and possibly from planting of larval host plants if these can be identified.

**Scientific Name:*****Tamba basiscripta*****Common Name:**

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**Order/Family:****Lepidoptera: Erebiidae**

Photo: Gan Cheong Weei

**National Status:** Vulnerable (VU)**Habitat and Ecology:** Known from lowland forests, maturing secondary forest, dry forest as well as coastal forest.**Distribution:** Cambodia, Indonesia, Philippines, Singapore and Thailand. In Singapore known only from Pulau Ubin and the vicinity of the Central Catchment.**Threats:** Species of the genus *Tamba* are known from a variety of habitats, so direct habitat loss does not appear to be a key factor of decline. The species is likely rare due to rarity of the larval host plant, whatever it may be, that has likely suffered from early deforestation. Increasing light pollution due to urban development also likely impacts the species but most *Tamba* species appear to be accustomed to heavy background light pollution.**Scientific Interest and Potential Value:** The genus is relatively well represented in Singapore with

ten known species, at least half of them moderately frequent in lowland biotopes. *Tamba* is known outside Singapore to be a polyphagous genus, with congeners utilising *Barringtonia* (Lecythidaceae), *Aporosa* (Phyllanthaceae), *Sandoricum* (Meliaceae) and *Symphorema* (Lamiaceae). Larval host plants for *Tamba basiscripta* are not known from Singapore but are hypothesized to be rare. Except for *Barringtonia* species that are planted in parks for landscaping purposes, all other plant species in genus *Barringtonia*, *Aporosa*, *Sandoricum* and *Symphorema* are threatened.

**Conservation Measures:** Recorded from Pulau Ubin (Outward Bound Singapore area) which is managed as a nature area, Bukit Timah Nature Reserve which is legally protected, and surrounding unprotected locations in Bukit Panjang. Surveys may find that the species occurs in more localities. The species would benefit from life history documentation and targeted planting of larval host plants in restoration programs around the island.

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# Odonata – Dragonflies and Damselflies

ROBIN NGIAM WEN JIANG, MARCUS F.C. NG

**Scientific Name:**

*Agriocnemis nana* (Laidlaw, 1914)

**Common Name:**

Dwarf Wisp

**Order/Family:**

Odonata: Coenagrionidae



Photo: Robin Ngiang Wen Jiang

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found around small streams, shallow, weedy ponds and open grassy marshes close to forests. May occur in disturbed habitats. Minuscule damselfly that is possibly overlooked due to its inconspicuous size and habits. Perches very low amid dense waterside vegetation.

**Distribution:** Western end of MacRitchie Reservoir in Central Catchment Nature Reserve, but also recorded in the Singapore Botanic Gardens in 2011.

**Threats:** Restricted and Very Rare. Habitat disturbance from overzealous removal of marsh-edge vegetation.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Continued protection of CCNR and appropriate habitat management whereby grassy vegetation along the reservoir is pruned sparingly.

**Scientific Name:**

*Archibasis rebecca* Kemp, 1989

**Common Name:**

Rebecca's Sprite

**Order/Family:**

Odonata: Coenagrionidae



Photo: Marcus F.C. Ng

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs at small, shaded forest streams with bottoms of fine sand and silt. When active, it usually flies low along the stream bank. At rest, typically perches at leaf tips in sunlit spots whereby it will fly rapidly upwards to a higher perch when disturbed.

**Distribution:** Found only in Central Catchment Nature Reserve.

**Threats:** Restricted distribution and very rare. Hydrological change in streams resulting from climate change and developments outside protected areas which may adversely impact the waterways.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Continued protection of Central Catchment Nature Reserve and waterways in buffer parks.

**Scientific Name:**  
*Ceriagrion chaoi* Schmidt, 1964

**Common Name:**  
Fiery Coraltail

**Order/Family:**  
Odonata: Coenagrionidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in ponds and slow flowing streams with rich aquatic submerged plants and dense vegetation surrounding the water body. Males are very conspicuous with fiery red abdomen, including appendages. Can be abundant where it occurs. During the hottest part of the day, females with males in tandem, may oviposit en masse into submerged plants.

**Distribution:** Known only from a few localities, including MacRitchie Reservoir, Windsor Nature Park, Ulu Sembawang and past records from a pond in Dover Forest. Stronghold population is in a forest off Turf Club Avenue. Previously recorded in Bishan-Ang Mo Kio Park, but the population has been extirpated following a change in its pond-management regime.

Photo: Zick Soh



**Threats:** Restricted distribution, and rare. Although its preferred habitat of weedy ponds and open streams are not uncommon in Singapore, it appears to be highly sensitive to habitat change brought about by human intervention.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Conservation of known sites with minimal human disturbance, example over-zealous removal to aquatic and waterside vegetation.

**Scientific Name:**  
*Mortonagrion aborense* (Laidlaw, 1914)

**Common Name:**  
Blue Midget

**Order/Family:**  
Odonata: Coenagrionidae

Photo: Marcus F.C. Ng





**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found at shady pools in swampy forest, forages along sunny trails and clearings around midday whereby they actively glean prey from leaves. Has a habit of perching low in undergrowth inconspicuously. Retreats into dense vegetation or towards the canopy when disturbed. Females oviposit into floating vegetation like leaves or root mass.

**Distribution:** Currently known from a single site in the southern part of the island.

**Threats:** Restricted distribution within which it is rare. The site is not protected as a conservation area

hence it is vulnerable to development pressures and human disturbance.

**Scientific Interest and Potential Value:** Currently it appears there are two morphospecies in the region that are treated as *M. aborensis*. This requires further investigation in addition to a review of the taxonomic relationship between the genera *Mortonagrion*, *Agriocnemis* and *Argiocnemis*.

**Conservation Measures:** Accord protected status to its only known site and implement habitat conservation management.

**Scientific Name:**

*Mortonagrion arthuri* Fraser, 1942

**Common Name:**

Arthur's Midget

**Order/Family:**

Odonata: Coenagrionidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in mangrove forests and creeks. Highly stenotopic species restricted to sheltered pools and rivulets in the landward zones of mangroves as well as nearby freshwater pools. Inconspicuous due to slim build and muted colours, but adults can be found perched low on tip of pneumatophores of mangrove trees that rise from the mud. Males, which are more visible due to their blue 'tail-lights', guard tiny muddy pools that are subject to tidal influence.

**Distribution:** Recorded in back mangrove habitats in Admiralty Park, Loyang Mangroves, Pulau Semakau, Pulau Tekong, Pulau Pawai and Pulau Ubin.

Photo: Robin Ngiam Wen Jiang



**Threats:** Restricted distribution within which it is rare. Habitat loss due to projected sea level rise from climate change.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Continued protection and climate change mitigations for the last few mangrove habitats in Singapore.

**Scientific Name:**

*Pseudagrion pruinosum* (Burmeister, 1839)

**Common Name:**

Grey Sprite

**Order/Family:**

Odonata: Coenagrionidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found at fast-flowing streams and slower channels with grassy banks in open areas near forests. A stream dependent, open-country species that is fairly common in the region but less so in Singapore, where rural habitats are now scarce. Where present, it can be abundant. Males perch very close to the water and are conspicuous by their pruinosed colour as they dart about after prey or rivals. After copulation, pairs in tandem perch above the water and slowly crawl backwards to a depth of about 10cm. Male often remains in tandem as female oviposits by inserting eggs into aquatic vegetation.

**Distribution:** Recorded in suitable stream from Mandai, Bukit Brown, Nee Soon Swamp Forest, Tuas (an old record) and a few locations in the Central Catchment Nature Reserve.

Photo: Robin Ngiam Wen Jiang



**Threats:** Restricted distribution within which it is common. Loss of habitat from climate change related prolonged drought, and human intervention when natural streams are concretised into drains.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Protection of natural and naturalised streams in rural, open areas with appropriate riparian buffers. May be introduced into more urban areas with naturalisation of drains and vegetation restoration along stream banks.

**Scientific Name:**

*Tetracanthagyna plagiata* (Waterhouse, 1877)

**Common Name:**

Giant Hawker

**Order/Family:**

Odonata: Aeshnidae

Photo: Dillen Ng



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found at forest streams and swampy forests. Forages at dawn or dusk high up in the canopy; perches in the shade of trees and shrubs by day. Females may be active throughout the day, seeking out suitable branches and logs overhanging or beside forest streams. When a suitable site is found, female uses her ventral spines to probe and pierce the wood before inserting an egg, repeating this action along the length of the branch. Larva is nocturnal and semiterrestrial. Older larvae emerging at night to cling to a twig just above the water from which they ambush prey. Faeces are projected forcefully out of water. When threatened, larva exhibits thanatosis (feigning death).

**Distribution:** Mostly recorded in the Central Catchment Nature Reserve. Occasionally occurring in buffer parks like Thomson and Rifle Range Nature Parks.

**Threats:** Restricted distribution within which it is uncommon. Hydrological change in forest streams resulting from climate change may cause habitat loss.

**Scientific Interest and Potential Value:** Adult female is one of the world's largest living true dragonflies by wingspan and weight. Larva was first described from Singapore.

**Conservation Measures:** Continued protection of conservations areas with appropriate climate change mitigation measures.

**Scientific Name:**

*Vestalis gracilis* (Rambur, 1842)

**Common Name:**

Plain Flashwing

**Order/Family:**

Odonata: Calopterygidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits clear, shaded and sluggish forest streams with ample bankside vegetation. Can be locally abundant. Males establish and defend territories by perching at leaves or branches overhanging suitable stream habitats. Individuals, especially females, can be found foraging along forest trails some distance away from streams.

**Distribution:** Recorded at a single and publicly restricted site in the northern part of the island, where it was first recorded in 2012 and is locally abundant.

**Threats:** Restricted distribution but within which it is common. Stream degradation due to potential developments in the surrounding environment.

Photo: Robin Ngiam Wen Jiang



**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Stream protection with riparian buffer along the entire watercourse, with stringent oversight on potential developments in the vicinity.

**Scientific Name:**

*Libellago aurantiaca* (Selys, 1859)

**Common Name:**

Fiery Gem

**Order/Family:**

Odonata: Chlorocyphidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found at sluggish streams with sandy or silty substrate, or quieter sections of swift, clear streams, in shaded forests. Males establish small territories and engage in spectacular aerial displays in sunlit spots whereby they display their iridescent apical wingspots but without making physical contact. During courtship, male flies before a female with his abdomen arched upwards to display his colours, while extending and shaking his legs to show off the pruinescent surfaces. Female oviposits on partially submerged branches and leaves, while the male guards against other males.

**Distribution:** Found only in Nee Soon Swamp Forest.

Photo: Robin Ngiam Wen Jiang



**Threats:** Restricted distribution within which it is common. Hydrological change in Nee Soon Swamp Forest resulting from climate change.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Continued protection of Nee Soon Swamp Forest with climate change mitigation.

**Scientific Name:**

*Devadatta argyroides* (Selys, 1859)

**Common Name:**

Malayan Grisette

**Order/Family:**

Odonata: Devadattidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found at well-shaded streams in dense, often hilly forests. Inconspicuous and usually perched very low. Males guard small cascading portions of forest streams, keeping very close to the water and mainly avoiding sunlit spots. Both sexes may also forage by gleaning passing prey at shaded parts of trails or around large fallen trunks not far from streams. Seldom flies far when disturbed, and often holds wings open for a short while right after landing.

Photo: Marcus F.C. Ng



**Distribution:** Recorded mainly in Bukit Timah Nature Reserve and Dairy Farm Nature Park. Also found from Rifle Range and Windsor Nature Parks.

**Threats:** Prolonged droughts or wet season from climate change may drastically affect the hydrology of hill streams in Bukit Timah Nature Reserve.

**Scientific Interest and Potential Value:** Type specimens were collected in Singapore by Alfred Wallace.

**Conservation Measures:** Continued protection of conservation areas with climate change mitigation measures.

**Scientific Name:**  
*Leptogomphus risi* Laidlaw, 1932

**Common Name:**  
Ris' Clubtail

**Order/Family:**  
Odonata: Gomphidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurs at forest streams. Adults are canopy dwelling, coming down to breeding sites very briefly on sunny days. On rare occasions can be encountered at sunlit spots along forest trails or in clearings but will fly straight up to canopy when disturbed. Larva lives buried quite deep in a substrate of sand and leaf litter, usually at swifter flowing sections of streams.

**Distribution:** Recorded in the Bukit Timah and Central Catchment Nature Reserves; also Dairy Farm Nature Park.

**Threats:** Restricted distribution within which it is rare. Soil erosion along waterways would degrade breeding sites with heavy sedimentation.



Photo: Cheong loong Fah

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Habitat rehabilitation of eroded streams. Stringent environmental and monitoring of developments in the vicinity of conservation areas to prevent sedimentation in forest streams.

**Scientific Name:**  
*Paragomphus capricornis* (Förster, 1914)

**Common Name:**  
Banded Hooktail

**Order/Family:**  
Odonata: Gomphidae



Photo: Marcus F.C. Ng



**National Status:** Endangered (EN)

**Habitat and Ecology:** Found around clear, shallow, low-gradient streams with sandy or gravelly bottoms in semi-open country near forests. Also in denser forests with some open canopies if suitable streams exist. Towards midday, males come down to streams, resting on gravel beds or low rocks next to the water where their larvae are known to breed buried in sand. When not at breeding sites, forages from the canopy of nearby forest trees and occasionally lower at forest clearings.

**Distribution:** Recorded in the Bukit Timah and Central Catchment Nature Reserves, and the forest off Mandai Road.

**Threats:** Restricted distribution within which it is rare. Habitat degradation due to soil erosion arising from improper management or developments near waterways. Heavy sedimentation of stream is severely detrimental to larval survival.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Establish riparian buffers. Stringent stream management regime, and environmental management and monitoring of developments near waterways to prevent soil erosion.

**Scientific Name:**

*Brachygonia oculata* (Brauer, 1878)

**Common Name:**

Pixie

**Order/Family:**

Odonata: Libellulidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found around shaded or semi-shaded pools and very sluggish streams in swampy forests or forest edges. Males guard small territories at pools filled with leaf litter and other detritus, perching for long periods. Both sexes may also feed by forest trails near swampy areas.

**Distribution:** Currently known from two populations in the Western Catchment. Single vagrant male was recorded from swampy forested areas in Admiralty Park in 2015 and again in 2023.

**Threats:** Restricted distribution and uncommon. Lack of conservation oversight of known populations in Western Catchment may lead to unintended habitat loss.

Photo: Robin Ngiam Wen Jiang



**Scientific Interest and Potential Value:** If translocation project (see below) is successful, the best practices may be scalable to other threatened species. Larva of this genus is first described from Singapore.

**Conservation Measures:** Conservation of swamp habitats in Western Catchment. Species is part of NParks Species Recovery Programme to improve its threatened status by introducing the dragonfly to suitable locations that have protection status. Its appearance in Admiralty Park indicates the potential for successful translocation outside of its stronghold in Western Catchment.



**Scientific Name:**

*Indothemis carnatica* (Fabricius 1798)

**Common Name:**

White-tipped Demon

**Order/Family:**

Odonata: Libellulidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs at well-vegetated ponds, lakes and marshes in open country or near forests. Males active at breeding sites towards noon, flying rapidly over the water in pursuit of rivals, or perching on waterside vegetation. Females can be found foraging some distance away from water.

**Distribution:** First recorded on Pulau Ubin in 2018 but has since spread to a few other locations (see below) on mainland Singapore.

**Threats:** Restricted distribution, within which it is rare. Poor management of wetlands which may lead to habitat degradation or loss.

Photo: Robin Ngiam Wen Jiang



**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** Assessed as critically endangered due to single location in Pulau Ubin. However, in late 2022 it rapidly established populations in East Coast Park and Rifle Range Nature Park. This species exemplifies how ecologically sensitive wetland creation and habitat management are crucial to the conservation of threatened species that are more adaptable to urban environment. Conservation of urban wetlands would greatly benefit species like White-tipped Demon.

**Scientific Name:**

*Lyriothemis cleis* Brauer, 1868

**Common Name:**

Bombardier

**Order/Family:**

Odonata: Libellulidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Occurs in mature secondary and dipterocarp forests. Breeds in phytotelmata such as large bamboo stumps and buttress pans and cavities of large trees. Males guard such breeding sites religiously and mate with visiting females. Both sexes may be seen along forest trails close to areas with mature trees or bamboo groves.

Photo: Robin Ngiam Wen Jiang



**Distribution:** Bukit Timah and Central Catchment Nature Reserves, and adjacent nature parks such as Dairy Farm and Windsor Nature Parks.

**Threats:** Restricted distribution within which it is rare. As a stenotopic species which requires very specific breeding conditions, habitat loss is the most existential threat. For example, severe drought from climate change may vastly reduce the availability of phytotelmata.

**Scientific Interest and Potential Value:** It is a good candidate for applied research in the use of artificial phytotelmata.

**Conservation Measures:** Protection of big trees in nature reserves for water cavities. Also non-removal

of fallen trees or large branches to allow formation of natural water receptacles. Provision of artificial phytotelmata which has been successful (albeit serendipitously) for another cavity breeding dragonfly, *Cratilla metallica*.

**Scientific Name:**  
*Risioephlebia dohrni* (Krüger, 1902)

**Common Name:**  
Pot-bellied Elf

**Order/Family:**  
Odonata: Libellulidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits very dense inundated swampy forests where males guard small pools for long period under a dense canopy, illuminated by narrow shafts of sunlight. Females oviposit in these sites, guarded by males. Generally perches very low and due to small size, inconspicuously, on emergent vegetation. May occasionally bask at edges of swampy forests.

**Distribution:** Recorded regularly in Nee Soon Swamp Forest only. A single male sighting at Thomson Nature Park in 2016.

**Threats:** Restricted distribution within which it is rare. Prolonged drought in Nee Soon Swamp Forest resulting from climate change will cause loss of breeding habitats.

Photo: Robin Ngiam Wen Jiang



**Scientific Interest and Potential Value:** Larva of genus is still unknown to science. With sustained searching, it could be discovered in the known locality.

**Conservation Measures:** Continued protection of Nee Soon Swamp Forest with climate change mitigation. Conservation of swampy habitats in buffer parks may facilitate range extension so that the species is more widely distributed.

**Scientific Name:**  
*Macromia cincta* Rambur, 1842

**Common Name:**  
Stream Cruiser

**Order/Family:**  
Odonata: Macromiidae

Photo: Marcus F.C. Ng



**National Status:** Endangered (EN)

**Habitat and Ecology:** Occurs at slow-flowing streams in swampy forests. Males patrol streams and shaded portions of trails and may also dart about over the canopy at high speeds, chasing rivals. During overcast weather both sexes may descend to perch sedentarily on lower vegetation. Individuals may hunt along shaded trails near swamps, flying in a regular loop. Females oviposit alone in shaded streams in swampy forests, hovering near the streambank while repeatedly stabbing the abdomen into the water to release batches of eggs. Larva is benthic and found amid decaying vegetation.

**Distribution:** Recorded in the Central Catchment Nature Reserve, Windsor and Dairy Farm Nature Parks.

**Threats:** Restricted distribution within which it is rare. Soil erosion along waterways would degrade breeding sites with heavy sedimentation.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

**Conservation Measures:** : Habitat rehabilitation of eroded streams. Stringent environmental and monitoring of developments in the vicinity of conservation areas to prevent sedimentation in forest streams.

**Scientific Name:**

*Copera vittata* (Selys, 1863)

**Common Name:**

Variable Featherlegs

**Order/Family:**

Odonata: Platycnemididae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found at sluggish channels and shallow pools in swampy forests. Younger 'ghost' forms may forage in undergrowth further from the water. Perches very low and keeps to the shade. Larvae live among detritus at bottom of swampy pools.

**Distribution:** Rare and local in Singapore. Recorded from swampy forests in the Western Catchment, Admiralty Park, Nee Soon Swamp Forest, Pulau Ubin and Pulau Tekong and a scattering of small remnant forests slated for development.

**Threats:** Restricted distribution, and rare. Development of unprotected remnant forests will result in habitat loss.

**Scientific Interest and Potential Value:** It is part of Singapore's indigenous biological heritage and of general educational value and interest to the public and nature enthusiasts.

Photo: Robin Ngiam Wen Jiang



**Conservation Measures:** Conservation and habitat rehabilitation of swampy forests in green spaces as part of development planning and design.

**Scientific Name:**

*Prodasineura interrupta* (Selys, 1860)

**Common Name:**

Interrupted Threadtail

**Order/Family:**

Odonata: Platycnemididae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found at sluggish streams and rivulets in shaded swampy forests where the stream substrate is a mix of mud/sand with ample packs of leaf litter and detritus. Males guard small territories in sunlit spots. The females are very seldom encountered.

**Distribution:** Only in Nee Soon Swamp Forest where they are very localised.

**Threats:** Restricted distribution within which it is uncommon. Hydrological change in Nee Soon Swamp Forest resulting from climate change which may cause habitat disruption.

Photo: Robin Ngiam Wen Jiang



**Scientific Interest and Potential Value:** Type specimens collected by Alfred Wallace in Singapore, supposedly from Bukit Timah where it is no longer found.

**Conservation Measures:** Continued protection of Nee Soon Swamp Forest with climate change mitigation.

**Scientific Name:**

*Drepanosticta quadrata* (Selys, 1860)

**Common Name:**

Singapore Shadowdamsel

**Order/Family:**

Odonata: Platystictidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found at deeply shaded streams mainly in hilly forests but also swamp forests. As the name implies, prefers very dim spots by small streams and seepages, where it is inconspicuous except for the blue 'tail-light' on the abdomen. Perches very low, and when disturbed, hovers briefly before settling on vegetation nearby. Females have been observed ovipositing on twigs above fast-flowing, shaded streams. Larva found among plant debris or under stones in well-shaded small streams and seepages.

Photo: Robin Ngiam Wen Jiang



**Distribution:** Recorded in Bukit Timah and Central Catchment Nature Reserves, Dairy Farm and Windsor Nature Parks.

**Threats:** It has a restricted distribution within which it is common. Prolonged droughts or wet season from climate change may drastically affect the hydrology of hill streams in Bukit Timah Nature Reserve where the species is most commonly found.

**Scientific Interest and Potential Value:** Type specimens were collected in Singapore by Alfred Wallace. IUCN global red list status is Vulnerable as its recorded with certainty only from Singapore and Johor, Peninsula Malaysia.

**Conservation Measures:** Continued protection of conservation areas with climate change mitigation measures.

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# Orthoptera – Crickets and Katydid

TAN MING KAI

**Scientific Name:**

*Asiophlugis temasek* Gorochov & Tan, 2011

**Common Name:**

Temasek Crystal Predatory Katydid

**Order/Family:**

Orthoptera: Tettigoniidae



**National Status:** Endangered (EN)

**Habitat and Ecology:** Recorded from lowland forest.

**Distribution:** Apparent endemic to Singapore. Found in the Bukit Timah Nature Reserve (BTNR), Dairy Farm Nature Park as well as the Central Catchment forest.

**Threats:** Loss of habitat and a restricted distribution.

**Scientific Interest and Potential Value:** This species was mentioned in the 2<sup>nd</sup> edition of the Singapore Red Data Book as the common relative of Missing Marvellous Katydid *Asiophlugis thaumasia* (Davison et al., 2008), but it remained undescribed until 2011 (Gorochov & Tan, 2011; Tan, 2011). The males produce ultrasonic sounds reaching 57 kHz (Tan et al., 2018).

**Conservation Measures:** Forest conservation whereby damage to forest and loss of habitats is ceased will help.

**Scientific Name:**

*Svistella chekjawa* Tan & Robillard, 2013

**Common Name:**

Chek Jawa's Mangrove Sword-tailed Cricket

**Order/Family:**

Orthoptera: Trigonidiidae



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Recorded only from the canopy of mangrove forest.

**Distribution:** Apparent endemic to Singapore. Recorded from mangrove forests around Singapore.

**Threats:** Loss of habitat and a restricted distribution.

**Scientific Interest and Potential Value:** This species is an obligatory mangrove species and appears to favour the leaves and stems of *Bruguiera cylindrica* (Tan, 2013).

**Conservation Measures:** Forest conservation whereby intact forest is protected as well as poaching prevention would be helpful.



**Scientific Name:**  
*Gryllotalpa fulvipes*  
(Saussure, 1877)

**Common Name:**  
Yellow-legged Mole Cricket

**Order/Family:**  
Orthoptera: Gryllotalpidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** A soil burrower, recorded from and believed to be confined to primary forest. Specimens collected in 2011 at Dairy Farm Loop provided evidence that they also occur in secondary forest.

**Distribution:** Recorded from Peninsular Malaysia and Singapore. Found at Bukit Timah Nature Reserve (BTNR) as well as in the Central Catchment forest.

**Threats:** Habitat degradation.



Photo: Tan Ming Kai

**Scientific Interest and Potential Value:** This species was mentioned in the 2nd edition of the Singapore Red Data Book. The males, while hidden under ground, produce a low-frequency call to attract females only during a short period of time around dusk (and/or dawn) (Tan, 2012a; Tan & Kamaruddin, 2016). Human disturbance during this period may hinder mating opportunities and reproductive behaviours.

**Conservation Measures:** Forest conservation whereby intact forest is protected as well as poaching prevention would be helpful.

**Scientific Name:**  
*Singapuriola separata* Gorochov  
& Tan 2012

**Common Name:**  
Singapore's Feather-winged  
Cricket

**Order/Family:**  
Orthoptera: Gryllidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in primary and secondary forest.

**Distribution:** Endemic from Singapore. Found in the Bukit Timah Nature Reserve (BTNR) and also from the Central Catchment forest.



Photo: Tan Ming Kai

**Threats:** Loss of habitat and a restricted distribution.

**Scientific Interest and Potential Value:** This monotypic genus is endemic to and named after Singapore. Males hide among dead leaves or hollow branches and call for females.

**Conservation Measures:** Forest conservation whereby damage to forest and loss of habitats is halted will help.

**Scientific Name:**

*Glenophisis singapura* Tan, 2012

**Common Name:**

Spectacular Spider-legged Katydid

**Order/Family:**

Orthoptera: Tettigoniidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found in primary and secondary lowland forest.

**Distribution:** Endemic to Singapore, recorded only from a few locations within the Central Catchment forest.

**Threats:** Loss of habitat and a restricted distribution.

**Scientific Interest and Potential Value:** This brightly coloured, endemic predatory species is very rarely encountered, with fewer than 10 specimens in

Photo: Tan Ming Kai



the LKCNHM (Tan, 2012b). There are only five species from this genus, all of them are found within a small distributional range of Indochina, Malay Peninsula, Sumatra and Borneo (Tan, 2012).

**Conservation Measures:** Forest conservation whereby damage to forest and loss of habitats is halted will help. Being charismatic, this katydid may be subject to disturbance by overzealous night macro-photographers.

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# Phasmida – Stick Insects

FRANCIS SEOW-CHOEN

There is an urgent need to implement conservation measures in Singapore for the smaller less “loveable” or less charismatic creatures. Conservation measures can start by first understanding the ecology of these animals.

Tay and Seow-Choen (1996, pp. 181–190) were the first to discuss the relationships of plant families and stick-insects in Peninsular Malaysia and Singapore. This enabled the captive breeding and made possible the detailed observations of many species of stick-insects. The extinction of insect species carries consequences to humans. Insects are needed for the continued presence of a multitude of plant and animal species.

Even as the people in Singapore learn to live in harmony together and to work and play together for the common good, humans must learn to live in harmony with nature too. Our continued transformation into a City in Nature depends on the continued survival of insects as well.

Four books and numerous papers have been published on the stick insects of Singapore and Peninsular Malaysia to date (Brock 1999, Seow-Choen 2000, Seow-Choen 2005). Seow-Choen published two books (1997, 2017a) on stick insects of Singapore. Seow-Choen, Brock and Seow-En (1994) and Seow-Choen (1997a, 2011, 2012, 2019) published species lists or general write-ups on stick insects of Singapore.

Seow-Choen (2008) published a list of rare and threatened phasmids for Singapore in the second edition of the Singapore Red Data Book. It was stated in the introduction to the chapter that habitat destruction was a more severe threat to the survival of insects than that posed through collecting by hobbyists or even commercial collecting. The disturbance of primary forests, felling of trees, damming and concretisation of rivers as well as the introduction of alien invasive species such as rats have been well documented as major threats to phasmids and other wildlife.

Phasmids tend to be elusive and well-hidden even when they are abundant. Many species are nocturnal and are almost impossible to find during the day. Some species which are very specialised feeders on only a few plant species are rare because their host plants are also rare. Other phasmid species are rare as they are canopy dwellers or leaf-litter species and are therefore difficult to find unless they are actively searched for. The abundance or rarity of insects such as phasmids cannot be determined in the same way as for mammals or birds. The lifespan of all phasmid species is very short and is measured in terms of months. Some so-called common phasmid species in Singapore are sighted at most two or three times a year in some years and yet can appear in higher numbers in other years. Rare species may be seen as frequently as once in several years. Some species which have not been seen for at least 30 years are listed as presumed nationally extinct and brief mention has been made of these species below. For all practical purposes, most stick insects are rarely seen and there are only a few species which can be clearly listed as common. Some of the species which were listed as threatened by Seow-Choen (2008) have since been found to be more common and not threatened when their preferred habitats were uncovered. These common species are not dealt with in this chapter which is for threatened species.

As for presumed Nationally Extinct (NEx) stick insects, a recent review of the collection in the Sarawak Museum Department revealed a female of *Anarchodes annulipes* (Gray, 1835) labelled as having been collected in Singapore in May 1905. This beautiful species is common in the lowlands as well as the mid-montane regions of Peninsular Malaysia. *Calvisia* (*Calvisia*) *sangarius* (Westwood 1859) is only known from historical records. It is a very specialized feeder eating only the leaves of *Scorodocarpus borneensis*, a tree which is native to Singapore but is now Critically Endangered (this volume).

Seow-Choen (1997) published the finding of the first and only specimen of *Diacanthoidea diacanthos* (Haan 1842) in Singapore. No other individual has been seen or specimen collected since that time. A female *Diacanthoidea*

*malaccensis* (Kirby 1904), found at Ulu Pandan on 5 August 1920, is in the Naturalis Biodiversity Centre Netherlands (NBCN), Leiden. This species has not been recorded in Singapore since that time. In 1920 there would have been significant areas of swamp forest near Ulu Pandan but it now has only a remnant wooded regenerated forest called Clementi Woods.

There are two males of *Marmessoidea rosea* (Fabricius 1793) collected in Singapore deposited in the Natural History Museum, United Kingdom (NHMUK), London. The foodplant of this phasmid is plentiful in Singapore. The species therefore has potential to be successfully re-introduced back into Singapore.

The author has only ever seen two specimens of *Phobaeticus serratipes* (Gray 1835) in Singapore. A pilot experiment with NParks to re-introduce this species into the forests at Bukit Timah Hill did not meet with success as Long-tailed Macaques were observed to predate on the re-introduced individuals. No progeny was ever observed. Two specimens of the large and impressive *Heteropteryx dilatata* (Parkinson 1798) caught in Singapore were deposited in the Natural History Museum in Vienna. Seow-Choen (2017) suggested that they might have been feral. In any case this species is now thought to be extirpated in Singapore. Seow-Choen (2008), however, noted that photographs were taken subsequently of an adult male around MacRitchie Reservoir. No other sightings have been recorded since.

**Scientific Name:**

*Baculofractum insigne* (Brunner 1907)

**Common Name:**

Broken Twig

**Order/Family:**

Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** The main threat must surely be the restriction of host-plants of this species and the degradation of their natural habitat. This species feeds on *Ixora* in captivity. This species is unusual because it is the only example in the subfamily Lonchodinae where the male possesses wings. All other genera within Lonchodinae lack wings in both sexes.

**Distribution:** Only a few specimens of this species have so far been found in a small patch of forest around the live-firing area of Mandai Track 7.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Commercial breeding as pets.

Photo: Francis Seow-Choen



Mating pair of *Baculofractum insigne*.

**Conservation Measures:** Habitat restoration is required.

**Scientific Name:**

*Calvisia (Conocalvisia) virbius virbius* (Westwood 1859)

**Common Name:**

Green Knob-Neck

**Order/Family:**

Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** The original host plant of this species is unknown. In captivity, this species feeds on *Mangifera indica*.

Photo: Francis Seow-Choen



Mating pair of *Calvisia (Conocalvisia) virbius virbius*.

**Distribution:** Two female individuals recorded at Mandai Track 7. Males have not been found so far.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** This beautiful species is plentiful in the Tapah Hills, Perak, but rare in Singapore. Its ecology needs to be better elucidated.

**Conservation Measures:** Habitat restoration.

**Scientific Name:**  
*Diardia battak* Redtenbacher  
1908

**Common Name:**  
Thin-Spine Neck Stick

**Order/Family:**  
Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** The original host plant of this species is unknown. This species feeds on *Stachytarpheta indica* in captivity.

**Distribution:** Only a few female specimens had been sighted in 2011 near the life firing range of Nee Soon Swamp Forest. No males have been found so far in Singapore.



Adult female *Diardia battak*.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** This beautiful species is common in Peninsular Malaysia and Sumatra but is rare in Singapore. Its ecology needs to be better elucidated.

**Conservation Measures:** Habitat restoration.

**Scientific Name:**  
*Lobonecrosia subflava* Brock &  
Seow-Choen 2000

**Common Name:**  
Lobe-legged Stick

**Order/Family:**  
Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** Feeds on Rengas and therefore the survival of this species depends on the survival of this plant.

**Distribution:** Only a few specimens of this species had, so far, been found in a small patch of forests around the live-firing area of Mandai Track 7 as well as along MacRitchie Trail.



Mating pair of *Lobonecrosia subflava*.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Currently, almost nothing is known of its ecology.

**Conservation Measures:** Habitat restoration.



**Scientific Name:**

*Phaenopharos struthioneus*  
(Westwood 1859)

**Common Name:**

Small-Red-Wings

**Order/Family:**

Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** Threats to this species is not known but the degradation of their natural habitat is thought to be important. This species is common in Peninsular Malaysia. In captivity, this species feeds on *Psidium guajava*, *Mangifera indica* and *Rubus moluccanus*.

**Distribution:** Only a few specimens have been encountered at Terentang Trail and at Mandai Track 7. The first specimen was rediscovered in 2015.

Photo: Francis Seow-Choen



Adult female *Phaenopharos struthioneus*.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Commercial breeding as pets.

**Conservation Measures:** Habitat restoration.

**Scientific Name:**

*Planososibia tommykohi* Seow-Choen 2017

**Common Name:**

Tommy's Sosibia

**Order/Family:**

Phasmida / Lonchodidae

**National Status:** Critically Endangered

**Habitat and Ecology:** Only the female holotype and a male paratype of this species had ever been found.

**Distribution:** The female specimen was found in Nee Soon Swamp Forest. The male specimen was found in Upper Peirce Reservoir Road, next to Nee Soon Swamp Forest.

**Threats:** Habitat loss.

Photo: Francis Seow-Choen



Adult female *Planososibia tommykohi*.

**Scientific Interest and Potential Value:** Nothing of its ecology is known currently.

**Conservation Measures:** Habitat restoration and research into this species.

**Scientific Name:**

*Kerabistus (Kerabistus) murphyi*  
Seow-Choen 2017

**Common Name:**

Murphy's Kerabistus

**Order/Family:**

Phasmida / Aschiphasmatidae

**National Status:** Critically Endangered

**Habitat and Ecology:** Nothing is currently known of its ecology.

**Distribution:** Only a few individuals of this species have so far been found in Bukit Timah and the Upper Peirce area.

**Threats:** Habitat loss.



Photo: Francis Seow-Choen  
Mounted specimen of female *Kerabistus (Kerabistus) murphyi*.

**Scientific Interest and Potential Value:** Nothing of its ecology is known.

**Conservation Measures:** Habitat restoration and research into this species.

**Scientific Name:**

*Haaniella mecheli macroptera*  
Hennemann, Conle, Brock &  
Seow-Choen 2016

**Common Name:**

Spiny Brown Stick

**Order/Family:**

Phasmida / Heteropterygidae

**National Status:** Critically Endangered

**Habitat and Ecology:** This bulky and spiny species lays eggs which the female pushes into damp soil. *Haaniella* species are very popular as pets in Europe and in the USA due to their very attractive spines and behaviour.

**Distribution:** This species is only found in and around Nee Soon Swamp Forest.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** This species was first described as *Haaniella macroptera* Hennemann, Conle, Brock & Seow-Choen 2016.



Photo: Francis Seow-Choen  
A pair of *Haaniella mecheli macroptera*.

Seow-Choen (2020) showed that it is a subspecies of *Haaniella mecheli* (Redtenbacher 1906). Further study of its ecology is needed. This species has potential as a pet.

**Conservation Measures:** Habitat restoration.

**Scientific Name:**

*Planispectrum bengalense*  
(Redtenbacher 1906)

**Common Name:**

Pygmy Stick

**Order/Family:**

Phasmida / Heteropterygidae

**National Status:** Vulnerable

**Habitat and Ecology:** Hardly anything is known about this species. It is currently thought that this species feeds on decaying leaves but this is still unconfirmed.

**Distribution:** Widely distributed from Peninsular Malaysia, Sumatra and Java.

**Threats:** Habitat loss.

Photo: Francis Seow-Choen



Parthenogenic female *Planispectrum bengalense*.

**Scientific Interest and Potential Value:** This seems to be a parthenogenetic species and males have never been found. Research into why and how this came about may help with understanding the issues that single sex species face.

**Conservation Measures:** Research into species ecology and on its rearing.

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# Arachnida – Spiders

DAVID J. COURT

**Scientific Name:**

*Agorius* sp. A

**Common Name:**

Peanut Long-patella  
Jumping Spider

**Order/Family:**

Araneae: Salticidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Known from swamp forest, in the foliage and leaf litter. In Singapore this habitat exists in only small areas, though collecting has not been sufficient to demonstrate whether it is exclusive to a single forest type.

**Distribution:** So far, known only from Singapore.

**Threats:** Loss of primary forest in the past might have been responsible for its rarity. Any further reduction in forest, particularly freshwater swamp forest, could be a threat.

Photo: W.P. Maddison



**Scientific Interest and Potential Value:** Part of the freshwater swamp forest animal community, but the extent to which it uses dryland forest is unknown. Singapore is the only known locality to date.

**Conservation Measures:** Its key habitat within the Central Catchment Nature Reserve is fully protected.

**Scientific Name:**

*Argiope mangal* Koh, 1991

**Common Name:**

Mangrove Silver-faced Spider

**Order/Family:**

Araneae: Araneidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Confined to mangrove forest.

**Distribution:** Malaysia (Selangor, Perak), Brunei, and Singapore (Lim Chu Kang, Sungei Buloh, Pulau Ubin).

Photo: Chris Ang



**Threats:** Any further reduction of, or fogging of, mangrove areas would constitute threats.

**Scientific Interest and Potential Value:** A mangrove specialist.

**Conservation Measures:** One known locality is within a nature reserve and other localities are within mangroves managed for conservation. It would be

good to reserve as much additional mangrove as is available and possible.

**Scientific Name:**

***Boagrius pumilus* Simon, 1893**

**Common Name:**

**Dwarf Palp-footed Spider**

**Order/Family:**

**Araneae: Palpimanidae**

Drawing: M. Roberts in M&M 2000, Malaysian Nature Journal



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** It is found in deep, moist leaf litter in forest.

**Distribution:** Peninsular Malaysia and Singapore.

**Threats:** No known direct threat other than the possible loss of forest or degradation of forest quality.

**Scientific Interest and Potential Value:** The genus *Boagrius* is restricted to Southeast Asia and is seldom seen or collected. The *Boagrius* in Singapore need further taxonomic study in order to clarify the number of species present.

**Conservation Measures:** Suitable habitat is protected within the Bukit Timah Nature Reserve and Central Catchment Nature Reserve.

**Scientific Name:**

***Boagrius* sp.**

**Common Name:**

**Goldfish Palp-footed Spider**

**Order/Family:**

**Araneae: Palpimanidae**

Photo: James W.B. Koh



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in deep, moist forest leaf litter in lowland forest.

**Distribution:** So far, only observed within Singapore.

**Threats:** No known direct threat other than the possible loss of forest, or degradation in forest quality.

**Scientific Interest and Potential Value:** Recorded as *Boagrius pumilus* in Koh & Court 2017 but based on morphological details it is unlikely to be of that species.

**Conservation Measures:** Its known locality in Bukit Timah Nature Reserve is legally protected.



**Scientific Name:**  
*Calommata sundaica*  
(Doleschall, 1859)

**Common Name:**  
Sunda Calommata

**Order/Family:**  
Araneae: Atypidae

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Inhabits burrows amongst buttress roots of roadside trees. Burrows are reported to be vertical and lined with elastic, closely woven silk. Entrance surrounded by a sill of 1-2 mm., usually concealed by fallen leaves and closed by cottonwool-like silk. Abraham 1924 provided a figure of a burrow and its side branch (leading to the surface).

**Distribution:** Indonesia (Java, Sumatra) and Singapore.

**Threats:** Not known, but might include loss of microhabitat, and introduced predators such as centipedes, flatworms.

**Scientific Interest and Potential Value:** This species belongs to the Atypidae, an ancient family of the mygalomorph spiders. All species of this family are of particular phylogenetic interest. Calommata is a remarkably cryptic genus. It is renowned by arachnologists for being exceedingly difficult to detect in the field. It may well still exist in Singapore without being detected. If sufficient specimens are found the Southeast Asian species of this genus should undergo



Photo: Siti Maimon

*Calommata sundaica* specimen from Lee Kong Chian Natural History Museum.

a modern taxonomic review (to allow comparison with recently revised Calommata, e.g., Levy 2007 and later workers).

**Conservation Measures:** Suitable habitat is protected within the Bukit Timah Nature Reserve and Central Catchment Nature Reserve.

**Scientific Name:**  
*Colopea malayana* Lehtinen,  
1982

**Common Name:**  
Peninsular Diamond Carapace  
Spider

**Order/Family:**  
Araneae: Stenochilidae



Photo: Paul Ng

**National Status:** Endangered (EN)

**Habitat and Ecology:** In Singapore it is confined to primary forest within the Bukit Timah Nature Reserve.

**Distribution:** Southern Thailand (the type locality), Peninsular Malaysia (Selangor) and Singapore.

**Threats:** Forest loss or degradation would threaten the species.

**Scientific Interest and Potential Value:** If sufficient *Colopea* specimens are found the species of this genus should undergo a modern taxonomic review.

**Conservation Measures:** Its only known locality within Singapore is legally protected.

**Scientific Name:**  
*Copocrossa* sp.

**Common Name:**  
Cigar Jumper

**Order/Family:**  
Araneae: Salticidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurring on foliage in forests including secondary forests. Little else is known.

**Distribution:** Singapore (Admiralty Park, Thomson Nature Park, Windsor Park).

**Threats:** Currently unknown.

**Scientific Interest and Potential Value:** A rarely observed species, as yet undescribed and formally named. To date, all the mature examples observed have been males.

**Conservation Measures:** All the localities known so far are under the management of the National Parks Board as publicly accessible nature parks.

Photo: Melynn Yeo



**Scientific Name:**  
*"Coremiocnemis" sp. A*

**Common Name:**  
 Singapore Feather-duster  
 Tarantula

**Order/Family:**  
 Araneae: Theraphosidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Occurs under rocks in moist parts of primary rain forest.

**Distribution:** So far only known from Singapore.

**Threats:** Collection for the pet trade is a potential threat.

**Scientific Interest and Potential Value:** Even the genus of this undescribed species is uncertain, and it is included here as an example of the challenges of conserving species whose basic characteristics are unknown.

**Conservation Measures:** The known locality is legally protected.

Photo: Zeslin W.W. Soh



**Scientific Name:**  
*"Coremiocnemis" sp. B*

**Common Name:**  
 Brown Feather-duster  
 Tarantula

**Order/Family:**  
 Araneae: Theraphosidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Ground level in primary and maturing secondary forests.

**Distribution:** So far known from Singapore, but because of taxonomic uncertainty its complete distribution is not known.

Photo: Chris Ang



**Threats:** Loss of forest in the past could have reduced the population. Collection for the pet trade is a potential threat.

**Scientific Interest and Potential Value:** The second edition of the Singapore Red Data Book listed this as *Coremiocnemis valida*.

**Conservation Measures:** It has been recorded close to but not within legally protected areas.

**Scientific Name:**  
*Cyrtarachne conica* (O. Pickard  
Cambridge, 1901)

**Common Name:**  
Conical Spider

**Order/Family:**  
Araneae: Araneidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in low-growing shrubs at the edges of forest.

**Distribution:** Indonesia (Sumatra), Brunei and Singapore.

**Threats:** Habitat loss or degradation.

**Scientific Interest and Potential Value:** Of particular biological interest. Constructs a modified orb-web amongst low-lying shrubs or herbage at the edges of rainforests. The abdomen resembles the shell of a snail.

Photo: Joseph K.H. Koh



**Conservation Measures:** Most known localities are within the legally protected nature reserves. In the second edition of the Singapore Red Data Book, it was listed as Endangered, but a few individuals have been recorded since, justifying a downgrading of its threat status.

**Scientific Name:**  
*Desis martensi* L. Koch, 1872

**Common Name:**  
Von Martens' Reef Spider

**Order/Family:**  
Araneae: Desidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Known from fewer than five localities, found between tidemarks and surviving immersion by remaining within a water-tight cocoon that is lodged in a crevice in the rocks or coral.

Photo: Chris Ang





**Distribution:** Peninsular Malaysia and Singapore.

**Threats:** There has been some reduction in coastal habitat caused by reclamation projects. Marine pollution by oil spill or other chemical release (e.g. toxic antifouling chemicals, detergents) could occur. This could be caused by accident near petrochemical facilities, or collision between, or illegal discharge by, ships in the Malacca and Johor Straits.

**Scientific Interest and Potential Value:** One of the four intertidal spider species in Singapore. During low

tide, especially at night, the spiders leave their retreats to hunt for amphipods, small crabs, or marine scale worms and seize them in their powerful projecting mouthparts.

**Conservation Measures:** At least one of its known localities is within a legally protected nature reserve. Protection of natural intertidal habitats will be challenging in the face of sea level rise. Vigilance regarding coastal water quality; rapid clean-up task forces available on call; enforcement of anti-pollution laws as necessary.

**Scientific Name:**  
*Diplocanthopoda marina*  
Abraham, 1925

**Common Name:**  
Marine Jumper

**Order/Family:**  
Araneae: Salticidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Among rocks, coral rubble and oyster and barnacle beds.

**Distribution:** Peninsular Malaysia and Singapore.

**Threats:** There has been reduction of habitat through reclamation projects. Marine pollution by oil spill or other chemical release (e.g. toxic antifouling chemicals, detergents) could occur. This could be caused by accident near petrochemical facilities, or collision between, or illegal discharge by, ships in the Malacca and Johor Straits. Possible reclamation schemes might load water with sediment which then interferes with intertidal organisms.

**Scientific Interest and Potential Value:** One of the four intertidal spider species in Singapore. The spiders can sit, run, and even hop on the water surface. They forage for marine creatures (including intertidal flies) and hide in an underwater chamber sealed by thick silk during high tide. The chamber may be built between rock crevices, within dead barnacle shells or between

Photo: Chris Ang



the valves of dead oysters. Eggs are laid in the chamber which also acts as a nursery for the spiderlings before they disperse.

**Conservation Measures:** A few of its known localities are within legally protected or managed nature areas. The spider would be threatened by insensitive development (such as building a sea wall) to protect shorelines against sea level rise. Vigilance regarding coastal water quality; rapid clean-up task forces available on call; enforcement of anti-pollution laws as necessary.

**Scientific Name:**  
*Dolomedes* sp. C

**Common Name:**  
Wide-belted Fishing Spider

**Order/Family:**  
Araneae: Pisauridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** On aquatic plants or banks in open areas along the edges of reservoirs and natural water bodies.

**Distribution:** Peninsular Malaysia and Singapore.

**Threats:** A possible threat would, in some areas, include fogging for mosquitoes or other nuisance insects.

**Scientific Interest and Potential Value:** Not seen in Singapore since 1982. Taxonomic uncertainty in the genus *Dolomedes* limits current knowledge of habits, habitat and distribution.

Photo: Joseph K.H. Koh



**Conservation Measures:** The conservation of natural or semi-natural vegetation along water margins is likely to benefit the species. Several reservoirs are surrounded by legally protected nature reserves.

**Scientific Name:**  
*Epidius* sp. A

**Common Name:**  
Singapore Long-palped Crab Spider

**Order/Family:**  
Araneae: Thomisidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Lowland forest, and possibly shrubs and trees in adjacent parkland.

**Distribution:** Because of taxonomic uncertainty, so far it is confirmed only from Singapore.

**Threats:** Loss of forest would have been a historical threat.

Photo: Chris Ang





**Scientific Interest and Potential Value:** Known from only one female specimen at one locality in Singapore.

**Conservation Measures:** The known locality is legally protected as a nature reserve, but other forested nature reserves may also provide suitable habitat.

**Scientific Name:**

*Epidius* sp. B

**Common Name:**

Masked Long-palped  
Crab Spider

**Order/Family:**

Araneae: Thomisidae

Photo: David J. Court



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** The known specimen was found in low growing vegetation near the margin of a secondary forest.

**Distribution:** Because of taxonomic uncertainty, so far it is confirmed only from Singapore.

**Threats:** Loss of forest would have been an historical threat.

**Scientific Interest and Potential Value:** Known from only one female specimen at one locality in Singapore. An effort should be made to recollect the species, especially the male, and increase our knowledge about the species. The possibility that *Epidius* sp. A and sp. B are conspecific needs to be investigated.

**Conservation Measures:** The known locality is legally protected as a nature reserve, but other forested nature reserves may also provide suitable habitat.

**Scientific Name:**

*Henriksenia nepenthicola* (Fage, 1928)

**Common Name:**

Singapore Pitcher-plant Crab Spider

**Order/Family:**

Araneae: Thomisidae

Photo: David J. Court



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurring within seral communities (swamps, vacant land, developing belukar forest) where suitable for growth of the pitcher plant *Nepenthes gracilis*. These are typically regrowth after clearance or landslides on steep, degraded, nutrient poor soils.

**Distribution:** Indonesia, Peninsular Malaysia and Singapore.

**Threats:** Land development might cause further reduction of seral communities (swamps, vacant land, developing belukar forest) suitable for *Nepenthes gracilis*. This would be deleterious for *H. nepenthicola*. After 30 to 50 years, belukar itself will become less suitable for *Nepenthes* (and hence for *H. nepenthicola*). Some swampy areas may be fogged for mosquito control.

**Scientific Interest and Potential Value:** As an obligate commensal, *H. nepenthicola* dwells inside either *Nepenthes gracilis* pitchers (*Nepenthes*

*tobaica* in Sumatra) or, much less often, in *Nepenthes rafflesiana* or *rafflesiana* X *gracilis* hybrids, growing in seral communities with poor nutrients, waterlogged or eroded soils. The spiders are remarkable for their ability to dive into and move about in the pitcher's enzyme-rich digestive fluid without coming to harm. A survey of *Nepenthes* pitchers throughout Singapore could obtain more data on the distribution and fecundity of both *Henriksenia nepenthicola* and *Thomisus nepenthophilus*.

**Conservation Measures:** Two known sites in Singapore are reserved, but they are elongated so that their margin/area ratio is high. *Nepenthes*-containing areas within the sites are relatively small.

**Scientific Name:**

*Hitobia* sp. D

**Common Name:**

Strong-armed Tapir  
Ground Spider

**Order/Family:**

Araneae: Gnaphosidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Forest undergrowth

**Distribution:** So far known only from one site in Singapore.

**Threats:** Small remaining area of suitable habitat, and potential loss or degradation of forest.

**Scientific Interest and Potential Value:** Nothing is known about this species other than the fact that it, the female at least, has extraordinarily stout first pair of

Photo: David J. Court



legs. The pose it can take and actions that it makes are suggestive of an ant species. Within the Gnaphosidae, no other species has been described with such modified forelegs.

**Conservation Measures:** The single known locality is legally protected within a nature reserve.

**Scientific Name:**

*Idioctis littoralis* Abraham,  
1924

**Common Name:**

Intertidal Brush-footed  
Spider

**Order/Family:**

Araneae: Barychelidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Intertidal zone, mainly in mangroves. It lives in a tube retreat, often on the wall of mud lobster mounds, sometimes in mud between mangrove roots.

**Distribution:** Peninsular Malaysia, Singapore.

**Threats:** There has been historical reduction of habitat through reclamation projects. Marine pollution by oil spill or other chemical release (e.g. toxic antifouling chemicals, detergents) could occur. This could be caused by accident near petrochemical facilities, or collision between, or illegal discharge by, ships in the Malacca and Johor Straits. Possible reclamation schemes might load water with sediment which then interferes with intertidal organisms.



Photo: David J. Court

**Scientific Interest and Potential Value:** One of the four intertidal spider species in Singapore. The entrance of each burrow is made watertight with a wafer-like door made of fine debris bound together within by silk. Passing prey (small insects and crustaceans) alerts the spider, and it rapidly emerges to seize the prey directly. When disturbed the spider may hold tightly to the inside of its door or tube and keep it closed.

**Conservation Measures:** Its limited sites of occurrence are largely within protected and managed areas. Permanent protection of all mangroves that include mud lobsters (*Thalassina anomala*) would be beneficial. Vigilance is needed regarding coastal water quality. Rapid clean-up task forces available on call, and enforcement of anti-pollution laws as necessary.

**Scientific Name:**

*Leucauge celebesiana*  
(Walckenaer, 1841)

**Common Name:**

Celebes Silver Orb  
Weaver

**Order/Family:**

Araneae: Tetragnathidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Damp places such as edges of waterfalls, but occasionally among grasses in open areas fringing forests.



Photo: Joseph K.H. Koh

**Distribution:** Malaysia (Peninsula, Sabah), Singapore, Indonesia (Sulawesi - the type locality, West Papua, Sumatra), Brunei, Laos, the Philippines, parts of China, Japan and India.

**Threats:** Reduction of habitat area, especially of sheltered damp places.

**Scientific Interest and Potential Value:** In other countries this large *Leucauge* species is associated with lowland waterfalls as well as with misty habitats at altitudes above 1,000 metres. By comparison, in Singapore, such high humidity habitats are scarce and

this may limit the local population of *L. celebesiana*. If this is substantiated a population decline could indicate a relative drying of the forest ecosystem.

**Conservation Measures:** It occurs in the already legally protected nature reserves. Some currently unprotected damp areas might be enhanced and protected.

**Scientific Name:**  
*Leviaraneus noegeatus* (Thorell, 1895)

**Common Name:**  
Banner Orb Weaver

**Order/Family:**  
Araneae: Araneidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurs in forest edges.

**Distribution:** Myanmar and Singapore.

**Threats:** The decline of this species might have been related to the past reduction in forest areas. Potential threats include further degradation or loss of forest and continued fogging.

**Scientific Interest and Potential Value:** Appears to be mostly an edge species, found on the fringes of forest.

**Conservation Measures:** The nature reserves are legally protected. Continuation of the management and maintenance of the Nature Reserves will be needed.

Photo: Joseph K.H. Koh



**Scientific Name:**  
*Macracantha arcuata*  
(Fabricius, 1793)

**Common Name:**  
Longhorn Spiny Spider

**Order/Family:**  
Araneae: Araneidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Shadier fringes of primary and secondary forest.

**Distribution:** Malaysia (Peninsula, Sabah, Sarawak), Singapore, Indonesia (Sumatra, Java, Maluku), Brunei, Thailand, Laos, Myanmar, the Philippines, and parts of China and India.

**Threats:** Previously it was listed as Vulnerable (VU). Its current status is likely due to the historical reduction in forest cover. The small size of the remaining forest, and the possibility of further reduction or degradation, are continuing threats.

Photo: Chris Ang



**Scientific Interest and Potential Value:** The female builds a large web up to a metre in diameter with an open hub between tall trees above eye level or among shrubs a metre or so above the ground. The spider hangs on the underside of the slightly inclined web with the median spines pointing downward.

**Conservation Measures:** Its known localities are legally protected within Bukit Timah and Central Catchment Nature Reserves.

**Scientific Name:**  
*Milonia obtusa* Thorell, 1892

**Common Name:**  
Obtuse Leaf-rolling Orb Weaver

**Order/Family:**  
Araneae: Araneidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Foliage in forests.

**Distribution:** Singapore and nearby parts of Malaysia (Johor) and Indonesia (Batam).

Photo: Chris Ang





**Threats:** Loss of primary forest in the past might have been responsible for its rarity. The small size of the remaining forest, and the possibility of further reduction or degradation, are continuing threats.

**Scientific Interest and Potential Value:** As in *Acusilas*, the female constructs a partial orb-web and hides in a rolled leaf retreat suspended in the web.

**Conservation Measures:** Some of its known known localities are legally protected within Bukit Timah and Central Catchment Nature Reserves.

**Scientific Name:**  
*Monodontium bukittimah*  
Raven, 2008

**Common Name:**  
Bukit Timah Brush-footed  
Trapdoor Spider

**Order/Family:**  
Araneae: Barychelidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Lowland rain forest

**Distribution:** Currently known only from Singapore.

**Threats:** Loss of primary forest in the past might have been responsible for its rarity, and further forest loss or degradation would threaten the species.

**Scientific Interest and Potential Value:** As in each of the four other *Monodontium* species in the region, it possesses biseriate claws. This apparent plesiomorphic trait hints that *Monodontium* is a phylogenetically relict taxon at the base of the Barychelidae.

**Conservation Measures:** The habitat in which individuals of this species are found is legally protected as a Nature Reserve.

Photo: David J. Court





**Scientific Name:**  
*Omothymus violaceopes*  
 (Abraham, 1924)

**Common Name:**  
 Singapore Blue Tarantula

**Order/Family:**  
 Araneae: Theraphosidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** On mature trees within lowland forest, where it is arboreal. It has been reported from holes and deep recesses in tree trunks in back mangroves (*Xylocarpus moluccensis*). Recently reported from secondary forests, less frequently from primary forest. Large specimens appear capable of catching and consuming large insects, smaller tree frogs and lizards, and perhaps even nestling birds.

**Distribution:** Singapore, with similar but possibly genetically distinct populations in neighbouring parts of Peninsular Malaysia and Indonesia (Sumatra). Until molecular evidence indicates the contrary, the Singaporean, Malaysian and Indonesian populations should be considered as distinct from one another.

**Threats:** Deforestation of both mangrove and dry land during land reclamation schemes. In addition, at least one of the spider's host tree species was extensively used for timber to construct houses and boats. Unsustainable poaching by pet traders and amateur collectors. The species has been offered for sale via on-line portals at high prices and it is likely that specimens are freshly caught from the wild. The species is arboreal and is threatened by any loss of suitable forest habitat, in particular the loss of trees bearing crevices suitable for the spiders' retreats (Young trees without crevices are completely unsuitable). The possible introduction of exotic crevice inhabiting organisms that would deter or out-compete *O. violaceopes* as well as spider-eating animals e.g., birds such as hornbills.



Photo: Lim Swee Cheng

**Scientific Interest and Potential Value:** This is one of the most charismatic spider species in Singapore and the world. Pet traders and their customers, attracted to this species because of its brilliant violet-blue colour and "temperamental attitude", report online that the life span for females in captivity is 13-15 years and for males, 3 to 7 years. These are likely only estimates. The life span of wild specimens may be significantly different.

**Conservation Measures:** Suitable policing patrols by park rangers to detect/deter poaching (both physically and by on-line monitoring), and appropriate public education. Special protection of old growth forest trees both in nature reserves and in other forested land and parks. Execute a research programme where the basic aspects of this spider's biology are studied including its natural prey, enemies, life cycle. This might include the setting up of artificial retreats in known *O. violaceopes* inhabited areas in the wild, to see if dispersing spiderlings can make use of them as "nest boxes" or permanent retreats. If successful, a captive breeding population could possibly be established.

**Scientific Name:**  
*Paraplectana* sp. C

**Common Name:**  
White-eyed Ladybird Spider

**Order/Family:**  
Araneae: Araneidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Foliage in primary and secondary forests. No other data.

**Distribution:** Known from Singapore, and this or closely similar forms have been recorded from neighbouring countries in Southeast Asia.

**Threats:** Loss of primary forest in the past might have been responsible for its rarity. Additional forest loss or habitat degradation might threaten it further.

Photo: Chris Ang



**Scientific Interest and Potential Value:** It is either conspecific with or closely related to one or some of a few species already reported in several other Southeast Asian countries.

**Conservation Measures:** The single known locality in Singapore is within a legally protected nature reserve.

**Scientific Name:**  
*Paratheuma armata*  
(Marples, 1964)

**Common Name:**  
Can-opener Marine Spider

**Order/Family:**  
Araneae: Dictynidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Coral rubble, shells of dead barnacles and other encrustations.

**Distribution:** *Paratheuma armata* ranges 9000km between Singapore and American Samoa in the Pacific (where Swains Is. is the type locality). In Singapore it has been recorded from one of the Southern Islands and may occur on others.

Photo: Chris Ang



**Threats:** Marine pollution by oil spill or other chemical release (e.g. toxic antifouling chemicals, detergents) could occur. This could be caused by accident near petrochemical facilities, or collision between, or illegal discharge by, ships in the Malacca and Johor Straits. Possible reclamation schemes might load water with sediment which then interferes with intertidal organisms.

**Scientific Interest and Potential Value:** One of the four intertidal spider species in Singapore. It constructs a small funnel-like silk retreat that is submerged at high tide and within which the spider survives immersion in a water-tight cocoon. During low tide it emerges and roams about in search of prey.

**Conservation Measures:** : Limited marine areas in Singapore are conserved, e.g. Sungei Buloh Wetland Reserve, Mandai, Chek Jawa Wetlands, but it is uncertain whether the species occurs there. Vigilance regarding coastal water quality; rapid clean-up task forces available on call; enforcement of anti-pollution laws as necessary.

**Scientific Name:**

**Peng sp.**

**Common Name:**

**Box-headed Black Ant Mimic**

**Order/Family:**

**Araneae: Corinnidae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Foliage in secondary forests.

**Distribution:** The Singapore male is not yet known, therefore the species is unidentified and its distribution uncertain. Named *Peng* species are known from Malaysia (Sabah, Sarawak); Myanmar; Sri Lanka.

**Threats:** Reduced habitat and hence, reduced population may be restricting the species' population (reduced fecundity).

**Scientific Interest and Potential Value:** This species is of great biological interest; it is one of the best ant

Photo: Joseph K.H. Koh



mimics among all Southeast Asian spiders. The deception is achieved by a constriction of the cephalothorax, mimicking the division between the head and thorax of a large black ant.

**Conservation Measures:** Continuation of the management and maintenance of the nature reserves and parks.

**Scientific Name:**

***"Philoponella" quadrituberculata***  
(Thorell, 1892)

**Common Name:**

**Mexican Hat Spider**

**Order/Family:**

**Araneae: Uloboridae**

Photo: Joseph K.H. Koh



**National Status:** Endangered (EN)

**Habitat and Ecology:** On shrubs in open and sunny areas. The spider builds a web that resembles an upside-down Mexican hat: a horizontal orb web which is attached to a downward-pointing conical structure (a modified orb web with the hub at the apex of the cone).

**Distribution:** It has been recorded from the neighbouring countries of Malaysia (Johor), Indonesia (Central Java, Sulawesi), Brunei.

**Threats:** It is not understood why it has not been found recently in what would appear to be suitable habitat.

**Scientific Interest and Potential Value:** Workman (1896) claimed that this species was "not uncommon in Singapore", in association with pineapple plants. No recently collected specimens or recently taken images have been confirmed as belonging to this species.

**Conservation Measures:** The status EN has been applied rather than NEx because there are candidate specimens in the Singapore collections which have not been examined in detail. No conservation measures can be undertaken unless it can be re-located.

**Scientific Name:**  
*Phoroncidia lygeana*  
(Walckenaer, 1841)

**Common Name:**  
Spiny Phoroncidia

**Order/Family:**  
Araneae: Theridiidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Foliage in the understorey of forest.

**Distribution:** Indonesia (Java, Batam), Brunei and Singapore.

**Threats:** Loss of primary forest in the past might have been responsible for its rarity. In future any further forest reduction or degradation in quality would increase risk to the already reduced population.

**Scientific Interest and Potential Value:** Appears to be a mimic of a spiky and unpalatable caterpillar suspended on a silk strand.

Photo: Joseph K.H. Koh



**Conservation Measures:** The habitat in which individuals of this species are found is legally protected. To minimise further impact from the reduced area of forest habitat in Singapore, it is essential to maintain the integrity of the ecosystems in the Bukit Timah and Central Catchment Nature Reserves.



**Scientific Name:**

*Piranthus api* Maddison, 2020

**Common Name:**

Orange Strong-armed Jumper

**Order/Family:**

Araneae: Salticidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Near mangroves, deep amongst tall grasses overhanging a moist ditch.

**Distribution:** So far known only from Singapore.

**Threats:** Loss of mangroves or other wetlands in the past might have been responsible for its rarity. The currently protected sites are fragmented and form only a small total area of habitat. Loss of mangrove and its moist inland edge would further threaten the species.

**Scientific Interest and Potential Value:** First collected in 2019 and described in the following year, the species is limited to two known localities at Sungei Buloh and Jalan Bahar. Two other species of *Piranthus* have recently been found in Singapore. *P. mandai* Maddison 2020, like *P. api*, is a rare endemic and considered Vulnerable (VU). The other, *P. kohi* Maddison 2020, is found in Singapore, Malaysia and Brunei and is considered to be of Least Concern (LC).

Photo: W.P. Maddison



**Conservation Measures:** One of the two known localities is legally protected as a nature reserve, while the other is not protected. The protection of other mangrove locations in Singapore including their landward fringes, and any other localities recorded for the species in future, would be beneficial.

**Scientific Name:**

*Platythomisus octomaculatus*  
(C.L. Koch, 1845)

**Common Name:**

Eight-spotted Crab Spider

**Order/Family:**

Araneae: Thomisidae

Photo: Joseph K.H. Koh



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Mostly associated with and known from low or mid-level mangrove vegetation, although occasionally found in forest further inland. Constructs retreats by fastening 2-3 leaves together, often of the Sea hibiscus, *Hibiscus tiliaceus* L.

**Distribution:** Brunei, Indonesia, Malaysia and Singapore. In Singapore most of the known localities (e.g., Sungei Buloh, Mandai, Chek Jawa, Pulau Ubin) are coastal, in or near mangroves but it has also been found in abandoned rubber plantation.

**Threats:** Loss of primary forest in the past might have been responsible for its rarity. Any further reduction of mangrove and forest habitat, fogging against mosquitoes, or poaching for the pet trade (in which it occasionally appears) might represent additional threats.

**Scientific Interest and Potential Value:** Has been observed consuming large and dangerous prey such

as a mantid and a large wasp. Possesses some unusual body posturing and leg-shivering behaviour that would be worthy of study. May be a Mullerian mimic, that is, one that gains enhanced protection from would-be predators by possessing a colour pattern or other visually recognisable trait also exhibited by one or more other species, both, or all of which are venomous, toxic or otherwise noxious. Abraham was the first to notice that the colour pattern of *C. octomaculatus* matches with the pentatomid bug *Catacanthus incarnatus* of the Family Scutelleridae. The scutellarids *Cantao ocellatus* and *Calliphara nobilis* are also similar. These bugs are all found in "octomaculatus territory" and all can produce a toxic spray (likely derived from toxins in the sap of the plants upon which they feed).

**Conservation Measures:** Maintain the protection afforded by the reserves in which it is found, as well as to increase the protection status of ecologically similar but currently unreserved areas.

**Scientific Name:**

*Platythomisus* sp.

**Common Name:**

Three-spotted Crab Spider

**Order/Family:**

Araneae: Thomisidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** On understorey leaves in freshwater swamp forest.

**Distribution:** Singapore, and possibly Sarawak.

**Threats:** Loss of swamp forest during the last century may have led to its current rarity. Deterioration in forest quality is a potential threat.

Photo: David J. Court



Female *Platythomisus* sp.



**Scientific Interest and Potential Value:** It is only known from a single example collected in 2013. The discovery of this species, smaller than the better-known *P. octomaculatus*, was a surprise. It is likely to be a new and undescribed species. A similar if not identical species has been recently (2021) observed and photographed in Sarawak, Malaysia.

**Conservation Measures:** The single known locality is protected within the Central Catchment Nature Reserve. It would be excellent if staff of the reserve or spider enthusiasts with access keep an eye out for further records of this visually distinctive spider so as to confirm its persistence.

**Scientific Name:**

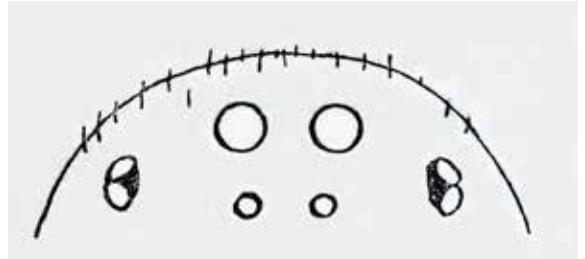
*Sarascelis raffrayi* Simon, 1893

**Common Name:**

Raffray's Palp-footed Spider

**Order/Family:**

Araneae: Palpimanidae



*Sarascelis* sp. dorsal. Drawing: Simon, 1893 fig. 363

**National Status:** Nationally Extinct (NEx)

**Habitat and Ecology:** Most recently collected from leaf litter on the ground in primary lowland forest.

**Distribution:** Singapore, India

**Threats:** Loss of primary forest in the past might have been responsible for its rarity.

**Scientific Interest and Potential Value:** *Sarascelis raffrayi* is listed from Singapore and India. As reported by Simon, *Sarascelis* spp. are similar to *Boagrius*

spp. (also in the Palpimanidae) but are considerably larger. Simon considered a distinguishing character for *Sarascelis* to be the eye arrangement in dorsal view (see picture above, adapted from Simon's 1893 sketch). Other *Sarascelis* spp. are found in Africa and India.

**Conservation Measures:** The last record for Singapore was from Bukit Timah Nature Reserve in 1988. It is assumed to be a valid taxon, conceivably still existing in Singapore, but without being recently detected. Field workers are encouraged to be on alert for the possible re-discovery of this species so that appropriate conservation measures can be taken.

**Scientific Name:**

*Selenocosmia* sp.

**Common Name:**

Singapore Black Tarantula

**Order/Family:**

Araneae: Theraphosidae



Photo: Joseph K.H. Koh

**National Status:** Endangered (EN)

**Habitat and Ecology:** Occurring on the ground in lowland forest, occasionally extending into adjacent forest fringe habitats.

**Distribution:** Singapore. [A similar but not necessarily identical species has been seen in Malaysia (Johor)].

**Threats:** Loss of forest in the past might have been responsible for its rarity. If so, further clearing of forest would be an additional threat. Poaching for the pet trade or individually by amateur collectors. Introduction of invasive predator species of flatworms, centipedes or wasps.

**Scientific Interest and Potential Value:** A large selenocosmiine tarantula. This species is likely to be undescribed, with a range that may or may not extend beyond Singapore. Specimens from Singapore have previously been identified as *Selenocosmia javanensis* but do not match *Selenocosmia* species from Java, which is the type locality of *S. javanensis*. Predominantly lives in silk-lined burrows in moist ground near tree roots, sometimes also in nearby grassy patches. Likely to prey upon larger forest floor invertebrates, possibly small frogs and lizards. Males when mature leave their retreat to search for females. Females have been seen roaming the forest floor whilst carrying their egg sac.

**Conservation Measures:** The forest habitat in which individuals of this species are found is protected as nature reserves or managed in adjacent parks.

**Scientific Name:**

***Stephanopis* sp.**

**Common Name:**

**Thorny Crab Spider**

**Order/Family:**

**Araneae: Thomisidae**

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Little known. On dead fronds of climbing ferns and leaves of other plants in the denser undergrowth of primary and secondary forests. It is well camouflaged: the body can become encrusted with soil particles and leaf-litter fragments, the legs and body carry numerous tiny warts, minute spines, and setae bearing microscopic Velcro-like hooks, all of which help to trap and hold the debris. Once photographed feeding upon a spider.

**Distribution:** Brunei, Malaysia (Sabah) and Singapore

**Threats:** Loss of primary forest in the past might have been responsible for its rarity. Current threats are not understood. Specimens have been found sporadically during beating or shaking of undergrowth. However,

Photo: David J. Court



it is often missing from apparently suitable habitat. Long term viability of *Stephanopis* populations may be dependent upon sufficient understorey ferns and climbers.

**Scientific Interest and Potential Value:** Other *Stephanopis* species are in two poorly defined groups with a less-usual geographic distribution: Group (A) occurring in Australasia and Southeast Asia to southern China; Group (B) in South America.

**Conservation Measures:** The habitat(s?) in which individuals of this species are found are largely protected as a Nature Reserve.

**Scientific Name:**  
*"Tarrocanus" sp.*

**Common Name:**  
 Cone-eyed Crab Spider

**Order/Family:**  
 Araneae: Thomisidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Mangrove vegetation. Nothing further is known about this unique "cone-eyed" species.

**Distribution:** Singapore. Only a single specimen has been found, in 2016.

**Threats:** Loss of forest in the past, particularly of mangroves, might have been responsible for its rarity.

**Scientific Interest and Potential Value:** This undescribed species, superficially with similarities to the genus *Tarrocanus* from Sri Lanka, appears to belong to

Photo: Joseph K.H. Koh



an undescribed genus. Hence the name given above is placed in inverted commas.

**Conservation Measures:** The known habitat is in the established Pasir Ris Park. If sufficient living examples could be found, captive breeding and/or translocation to additional sites might be attempted.

**Scientific Name:**  
*Tetragnatha josephi*  
 Okuma, 1988

**Common Name:**  
 Mangrove Long-jawed Spider

**Order/Family:**  
 Araneae: Tetragnathidae

**National Status:** : Vulnerable (VU)

**Habitat and Ecology:** Confined to mangroves

**Distribution:** Singapore, Brunei

**Threats:** Loss of mangrove forest in the past might have been responsible for its rarity. Additional losses of mangroves, whether to development or alteration of the coastline in response to sea level rise, represent further

Photo: Paul Ng



potential threats as well as accidental fogging (intended against mosquitoes) and marine pollution.

**Scientific Interest and Potential Value:** Lim Chu Kang mangroves represent the type locality and only known site, where it was first found in 1976. The time is now ripe for a research project into the detailed biology of this and other mangrove-inhabiting spider species, with attention to prey, life cycle etc.

**Conservation Measures:** It is present at a single site, Lim Chu Kang, which is now under management by the National Parks Board as parkland for conservation purposes, contiguous with the Sungei Buloh Wetland

Reserve. Prevention of fogging programmes and the enforcement of anti-marine pollution laws would be significant steps towards its long-term conservation.

**Scientific Name:**  
*Thomisus nepenthophilus*  
Fage, 1930

**Common Name:**  
Pitcher-plant Horned  
Crab Spider

**Order/Family:**  
Araneae: Thomisidae

**National Status:** : Vulnerable (VU)

**Habitat and Ecology:** Likely to be an obligate commensal inside *Nepenthes gracilis* pitchers (*Nepenthes tobaica* in Sumatra) in seral communities such as "belukar", characterised with poor nutrients, waterlogging or eroded terrain.

**Distribution:** Indonesia (North Sumatra) and Singapore.

**Threats:** This species is much rarer than *Henriksenia nepenthicola* and occurs only in large patches of *Nepenthes*. There are not many such sites left in Singapore, and those that remain are threatened by development. Some swampy areas may be fogged for mosquito control. These same threats were present in the past and may still continue. There seems to be a time-lag, between when *Nepenthes* first establishes in

an area, and when the spider is able to colonise the pitchers. The fewer the pitchers are available, the longer the time lag is likely to be.

**Scientific Interest and Potential Value:** Unlike *Henriksenia nepenthicola*, they do not dive into and move about in the pitcher fluid. A survey of *Nepenthes* pitchers throughout Singapore should ascertain the distribution and fecundity of *Thomisus nepenthophilus* (and *Henriksenia nepenthicola*).

**Conservation Measures:** We would suggest a species recovery programme for this species: in large patches where this species can be found, the *Nepenthes* plants along with their spider inhabitants can be transplanted to certain parts of Pulau Ubin where their preferred habitats still exist.

Photo: Joseph K.H. Koh



**Scientific Name:**

*Thomisus perspicillatus*  
(Thorell, 1890)

**Common Name:**

Buffalo Horn Crab Spider

**Order/Family:**

Araneae: Thomisidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Foliage on roadside and secondary forest.

**Distribution:** Singapore, Malaysia ("Borneo", Sabah, Sarawak)

**Threats:** This subtly coloured species would appear to require a particular kind of vegetation from which to prey (e.g., leaf colour, texture). The adventive plant

Photo: Marcus F.C. Ng



Female *Thomisus perspicillatus* on a leaf at a Nature Park.

species now tending to invade forest margins may be less suitable than those that are indigenous.

**Scientific Interest and Potential Value:** Fewer than ten specimens recorded by nature photographers in recent years. Specimens from Singapore not known in collections.

**Conservation Measures:** The locality in which this species has been observed is protected.

**Scientific Name:**

*Xyphinus hystrix* Simon,  
1893

**Common Name:**

Porcupine Goblin Spider

**Order/Family:**

Araneae: Oonopidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** In leaf litter in primary forest.

**Distribution:** Peninsular Malaysia (Pahang - Pulau Tioman) and Singapore.

**Threats:** Loss of forest cover over the last century could have caused its present rarity. As it is limited to a single site, Bukit Timah Nature Reserve, stochastic events as well as long-term decline in forest quality are potential threats to a small population.

Photo: David J. Court



**Scientific Interest and Potential Value:** An oonopid with a "charismatic" spiny appearance (both male and female exhibit four carapacial spines).

**Conservation Measures:** The habitats like those in which this species have been found are largely protected as nature reserves. Continued protection of the nature reserves is required.

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# Miscellaneous Arthropoda and Onychophora

HWANG WEI SONG

The second edition Red Data Book listed a total of 27 species (excluding the Odonata) under the chapter of “Springtails, Peripatus and insects (to moths): Arthropoda”. Some taxa to which a few of the 27 species belong to have since had scientists embark on studies resulting in an increase in the breadth and depth of species that could be assessed for a category of threat status in this edition of the Red Data Book. The taxa that have benefitted from increased study and assessment are the Diptera (Flies), Coleoptera (Beetles), Hymenoptera: Vespidae (Wasps), Hymenoptera: Formicidae (Ants), Lepidoptera: Pyralidae & Gracilariidae (Moths), Orthoptera (Katyids & Crickets) and Isoptera (Termites). Thirteen of the twenty seven species are now listed under their respective taxa chapter in this book. Of the fourteen species remaining, the *Eoperipatus sumatranus* is no longer considered an Arthropod, but is now classified in its own phylum, Onychophora. A detailed writeup has been provided for it here as well as a species (*Dysdercus decussatus*) that has since been upgraded from Endangered in the second edition to Least Concern.

**Scientific Name:*****Dysdercus decussatus*****Common Name:**

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**Order/Family:****Hemiptera/Pyrrhocoridae****National Status:** Least Concern (LC)

**Habitat and Ecology:** This species is known to feed exclusively on the seeds of Sea hibiscus (*Hibiscus tiliaceus*) and Portia tree (*Thespesia populnea*). Both adults and immatures aggregate in large numbers when the trees produce fruits and seeds.

**Distribution:** This species is found throughout the Oriental Region, including Singapore, from Sri Lanka to Papua New Guinea, as well as the Solomon Islands, Ryukyu islands, Taiwan island and Northern Australia.

**Threats:** The close association of this species with their preferred host plants means that their fate is directly affected by the prevalence and availability of their host plants. Currently the Sea hibiscus is much more widespread than the Portia tree in Singapore, which has a more limited distribution locally. The associated colour morphs of the cotton stainer bugs are currently skewed in representation in accordance to the host plant abundance. Ensuring the survival of the host plants will indirectly provide the long-term survival of this species in Singapore.

**Scientific Interest and Potential Value:** This species was previously assessed in the second edition of this book under the name *Dysdercus simon* (Taeuber, 1927), with an Endangered status assigned due to its host plant specificity to the Portia tree found only in back mangrove areas. This was done despite the taxonomic synonymy of *Dysdercus simon* to *Dysdercus decussatus* by Freeman in 1946, who regarded both (and a few others) to be the same species with intermediate forms across its wide-spanning native range. Suspicion that *Dysdercus simon* may be a distinct species due to non-overlapping host plants, lack of intermediate forms present in Singapore, and observed morphological differences, the previous assessors made the decision to recognize *Dysdercus simon* as a distinct species to

Photo: Dennis Murphy (from 2nd edition Singapore Red Data Book)



be featured in the second edition. Since then, there has been no formal taxonomic act published to resurrect the *Dysdercus simon* as a valid species nor new evidence presented. Therefore, we consider this taxonomic issue as unresolved at the moment, and we follow the valid species name *Dysdercus decussatus* for the combined populations that feed on both host plants, with the recognition that two distinct colour morphs exist (black headed vs. red headed), with possibly non-overlapping host plant preferences. Since the combined populations of the two colour morphs occur over a more widespread area within Singapore, due to the ubiquity of the Sea hibiscus plant that supports the red-headed cotton stainer bug more abundant in numbers, the Least Concern conservation status is assigned to reflect this updated condition.

**Conservation Measures:** Due to the host-plant specificity of this species, its long-term survivability is highly dependent on the availability of its host plant species.

**Scientific Name:*****Eoperipatus* sp.****Common Name:****Velvet worm****Order/Family:****Onychophora/Peripatidae**Photo: Leong Tzi Ming  
(from 2nd edition Singapore Red Data Book)**National Status:** Endangered (EN)

**Habitat and Ecology:** This species is entirely restricted to primary and secondary rainforest, where it lives in the leaf litter and forest understorey. It is a nocturnal predator that captures other terrestrial arthropods by secreting a sticky substance to ensnare them. The females are known to give birth to live young. Its cryptic lifestyle and sparse population density makes it a difficult organism to study

**Distribution:** This species distribution is currently unknown due to its uncertain taxonomic status.

**Threats:** The species is only found in Bukit Timah, Central Catchment Nature Reserve and Pulau Ubin within Singapore. The species is restricted to forest habitats with suitable prey availability. This species is vulnerable from any perturbations to its environment.

Being at a higher trophic level as a predator, their numbers are also relatively less abundant and more sensitive to disturbances.

**Scientific Interest and Potential Value:** Velvet worms represent a very ancient lineage of terrestrial arthropods, with the genus *Eoperipatus* only present in Southeast Asia, with relatively low diversity of four known species so far. The previous identity of the *Eoperipatus* as *Eoperipatus sumatranus* in Singapore is no longer a valid name and the true species identity of the local species remains to be determined.

**Conservation Measures:** Due to the specificity of this species to forested areas especially old growth, mature rainforests, its long-term survivability is highly dependent on the protection of these habitats.

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# Arthropoda – Tanaidacean Crustaceans

CHIM CHEE KONG

**Scientific Name:**

*Phoxokalliapseudes singaporensis*  
Drumm & Heard, 2011

**Common Name:**

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**Order/Family:**

Tanaidacea / Kalliapseudidae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** This suspension feeder is one of the most common tanaids in shallow subtidal soft bottom habitats (12–54 m depths) along the Singapore Strait (pers. obs.). Sites of occurrence include southeast of Pulau Tekong, Eastern Bunkering, southwest of Bedok Jetty, east of Lazarus Island Beach and southwest of Jurong Island. The biology of this local species is unknown but other species of kalliapseudids were found to feed on diatoms and crustaceans in Florida, U.S.A. (Drumm, 2005) and were prey for many benthic fishes in Brazil (Contente et al., 2009a, 2009b, 2012).

Photo: Chim Chee Kong



**Distribution:** Only known from Singapore, including the unknown shallow subtidal type locality where it was first collected in 1905–1907 (Drumm & Heard, 2011).

**Threats:** Unknown but possibly marine trash.

**Scientific Interest and Potential Value:** N.A.

**Conservation Measures:** Unpublished long-term quantitative data (2009 to 2020) showed that this species is quite common in at least two localities along the Singapore Strait with no obvious decline in numbers. Main conservation measures should include enforcing laws against illegal dumping of trash into the sea.

**Scientific Name:**

*Xenosinelobus balanocolus*  
Chim & Tong, 2019

**Common Name:**

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**Order/Family:**

Tanaidacea/Tanaididae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** This small tanaid appears to be confined to the inside of the empty shells of the volcano barnacle *Tetraclita*, which traps rainwater to

Photo: Chim Chee Kong



create a hyposaline environment (Chim et al., 2016). Other members of the subfamily Sinelobinae were also found in habitats with freshwater influx such as rivers and mangroves (Chim & Tong, 2019).

**Distribution:** Only known from the intertidal rocky shores and seawalls at Lazarus and St. John's Islands, Singapore, where it was originally described based on material collected in 2014. Even though no systematic survey has been conducted since then, a recent ad hoc sampling of about 100 *Tetraclita* shells in 2022 failed to collect any tanaids.

**Threats:** Loss and degradation of rocky shores in Singapore.

**Scientific Interest and Potential Value:** N.A.

**Conservation Measures:** Protection of existing rocky shores.

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# Arthropoda – Freshwater Decapod Crustaceans

YIXIONG CAI, DANIEL J.J. NG, LYDIA X. GAN, ELSIA X.P. TOH, DARREN C.J. YEO

The conservation status of the freshwater decapod fauna of Singapore is updated here based on the results of comprehensive freshwater habitat surveys conducted in the past 15 years. Twenty-five species were appraised, including six shrimp species that were assessed as Nationally Extinct, viz., *Macrobrachium rosenbergii*, *M. scabriculum*, *M. neglectum*, *M. idae*, *Caridina sumatrensis*, and *C. bruneiana*, representing 24% of the total native freshwater decapod fauna. All six species are amphidromous, producing numerous, small eggs and having pelagic larval stages that undergo development in downstream tidally influenced estuaries and/or coastal areas to complete their life cycles. Conversion of earthen streams to concrete storm drains together with barraging of river mouths to create reservoir impoundments in the last five decades could be a key factor in their loss. Of the 19 extant freshwater decapod species, six are crabs and 13 are shrimps. Three species of primary freshwater crabs, *Johora singaporensis*, *Parathelphusa reticulata* and *Irmengardia johnsoni*, are endemic to Singapore, with the first two assessed as nationally Endangered, being restricted to very small areas, and the third as nationally Vulnerable, having a relatively larger range. Of the 13 extant species of shrimps, two (*Macrobrachium platycheles* and *Caridina gracilipes*) are nationally Critically Endangered, and seven (*Macrobrachium equidens*, *M. pilimanus*, *Caridina gracilirostris*, *C. peninsularis*, *C. temasek*, *C. malayensis*, and *Potamalpheops amnicus*) are nationally Endangered. Singapore is highly urbanised, and freshwater habitats that support native freshwater decapods are relatively rare, especially for those with tidal influence to support amphidromous species. Conservation and research efforts, however, have been key in ensuring the persistence and survival of freshwater decapods, for example, research focus on the rare and endemic Singapore freshwater crab *J. singaporensis* has contributed significantly to understanding and protection of equally rare hill stream habitats. Updates in this third edition of the Singapore Red Data Book provide impetus and reference for further environmental attention and public feedback for supporting and informing conservation management of aquatic biodiversity.



**Scientific Name:**

*Johora singaporensis* Ng 1986

**Common Name:**

Singapore freshwater crab

**Order/Family:**

Decapoda: Potamidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Relatively undisturbed forest hill streams, often found under rocks or leaf litter on the stream bed. Has semi-terrestrial habits and will go on land to scavenge for food opportunistically and is largely active nocturnally.

**Distribution:** Known only from Bukit Timah Nature Reserve, and small populations in hill streams around Bukit Gombak and Bukit Batok.

**Threats:** Loss or degradation of habitat, water acidification.

**Scientific Interest and Potential Value:** Endemic to Singapore, this species was initially assumed to be an allied species *J. johorensis*. Since its discovery in 1986, the species has grown to become an icon of conservation in Singapore; highlighting how the highly urbanized

Photo: Daniel Ng



city-state can still harbour unique biodiversity not found anywhere else, and the importance of conservation of our existing natural environment. The species' stenotopic habits, however, also equate to a highly restricted distribution locally; for example, extirpation of the species at one locality, Jungle Fall Valley, meant a significant loss of the already small population.

**Conservation Measures:** A dedicated conservation strategy was established for *J. singaporensis* in 2015, aiming to further biological knowledge and ensure the conservation of the species through coherent and complementary efforts among multiple stakeholders, such as long-term monitoring and research, in-situ conservation of hill streams, and ex-situ breeding programmes. Continued protection of Bukit Timah Nature Reserve and hill stream habitats are essential for the survival of this stenotopic and rare species.

**Scientific Name:**

*Parathelphusa reticulata* Ng 1990

**Common Name:**

Swamp forest crab

**Order/Family:**

Decapoda: Gecarcinucidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Largely aquatic in habit. Found in well-shaded freshwater swamp forest with shallow water of low pH (5.0–5.5). Digs burrows by the side of muddy banks. Very secretive and only active

Photo: Daniel Ng



nocturnally. Feeds largely on plant matter and leaf litter but will scavenge for animal matter opportunistically.

**Distribution:** Only known from Nee Soon Swamp Forest. The species is endemic to Singapore.

**Threats:** Loss or degradation of habitat

**Scientific Interest and Potential Value:** One of three freshwater crab species endemic to Singapore, the species was discovered relatively recently in 1990. Previously confused with the more common *Parathelphusa maculata*, closer examination of specimens revealed key morphological differences and a distinctive, reticulated colour pattern in *P. reticulata*.

**Conservation Measures:** Since its discovery in 1990, the species has been known mostly from a 55-hectare area within Nee Soon Swamp forest, but it has been reported in drains and streams near the edge of the swamp forest. As Nee Soon Swamp Forest is the last substantial patch of freshwater swamp forest in Singapore, and the only habitat suitable for the species, continued protection of the swamp forest and surrounding buffer areas is essential. In addition, an ex-situ breeding programme for the species has been established.

**Scientific Name:**

***Geosesarma nemesi* Ng 1986**

**Common Name:**

**Little land crab**

**Order/Family:**

**Decapoda: Sesarmidae**

**National Status:** Endangered (EN)

**Habitat and Ecology:** Semi-terrestrial habits and digs shallow burrows under rocks and vegetation next to small freshwater streams in well-shaded forests. Primarily herbivorous but will scavenge for animal matter opportunistically.

**Distribution:** In Singapore, found mainly in Bukit Timah Nature Reserve and in several streams in Bukit Batok and Bukit Gombak. Also occurs in southern Peninsular Malaysia.

**Threats:** Forest clearance and water pollution. The species used to be common at Bukit Timah Hill but the only intact populations now live on the reserve, and surprisingly, in several small streams across Upper Bukit Timah Road in the Bukit Batok and Bukit Gombak. Most other peripheral populations have been exterminated by indiscriminate use of chemical pesticides used to exterminate mosquito larvae. Such pesticides, which are often indiscriminately sprayed even on flowing streams and clean waters with small fishes where mosquito larvae are absent, are very harmful to freshwater life, and can exterminate whole communities of stream invertebrates.

Photo: Daniel Ng



**Scientific Interest and Potential Value:** This species was first described from Bukit Timah Hill in Singapore in 1986 after having long been mistaken for another species, *G. ocypoda*, originally described from Sumatra. This highland species can be tricky to differentiate superficially from its lowland counterpart in Singapore, *G. perracae*.

**Conservation Measures:** Conservation of good primary and late secondary forests. Properly and carefully planned and thought-out use of insecticides and other anti-mosquito measures near freshwater habitats.

**Scientific Name:**  
*Caridina gracilirostris*  
De Man 1892

**Common Name:**  
Needlenose caridina

**Order/Family:**  
Decapoda: Atyidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Only found in lower reaches of rivers and streams with tidal influence. Diet includes small animals, organic detritus and plankton. Produces numerous, small eggs that undergo typically prolonged larval development.

**Distribution:** In Singapore, found in coastal, tidal-influenced streams such as streams at Sembawang and Sungei Sim pang. Has a widespread distribution across Southeast Asia and the Indo-West Pacific, including Malaysia, Indonesia, Thailand, Cambodia, Taiwan, Japan, Palau, the Philippines, Fiji, India and Madagascar.

Photo: W. Klotz



**Threats:** Loss or degradation of habitat, impoundment of estuarine areas.

**Scientific Interest and Potential Value:** This species is popular within the aquarium trade, favoured for its unique and elongated red rostrum. In 2007, a taxonomic revision of *C. gracilirostris* led to the recognition of a new species group.

**Conservation Measures:** *Caridina gracilirostris* is rare in Singapore, probably due to the widespread impoundment and degradation of estuarine areas, limiting its access to coastal waters for completion of its life cycle. Preservation and careful management of such areas that remain is essential to ensuring that the species can continue to thrive in Singapore's waters.

**Scientific Name:**  
*Macrobrachium pilimanus*  
(De Man 1879)

**Common Name:**  
Muff river prawn

**Order/Family:**  
Decapoda: Palaemonidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Occurs in fast-flowing, rocky hill streams. Omnivorous diet, but prefers animal matter and can actively prey on other aquatic organisms. Produces relatively few large eggs that undergoes abbreviated larval development.

Photo: Cai Yixiang



**Distribution:** In Singapore, only found in two hill streams, in the Bukit Gombak and Bukit Batok area. Also occurs in similar habitats in Malaysia, Indonesia, Brunei and Thailand.

**Threats:** Loss or degradation of habitat. Currently restricted to two streams in Singapore, making the population highly vulnerable to stochastic events that could impact the hill streams.

**Scientific Interest and Potential Value:** *Macrobrachium pilimanus* recorded from Singapore in 1961 proved to be a misidentification. Close examination of the specimen, collected in 1956 from unexpected freshwater swamp habitat of Nee Soon Swamp Forest (but within an unusually fast-flowing portion), revealed it to belong to an allied but hitherto

undescribed species, *M. platycheles*, which was described in 1995. Nevertheless, the real *M. pilimanus* was discovered eventually in 2013, in Bukit Gombak in an isolated hill stream, a habitat type that is typical for the species.

**Conservation Measures:** Pilot efforts include managed translocation of *M. pilimanus* to evaluate its suitability for a species-targeted conservation strategy. The species was formally included as part of the National Parks Board's Species Recovery Programme in 2021.

**Scientific Name:**  
*Potamalpheops amnicus*  
Yeo & Ng 1997

**Common Name:**  
Riverine alpheid shrimp

**Order/Family:**  
Decapoda: Alpheidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found in forest streams. Often found clinging to root mats, submerged vegetation and overhangs near stream banks. The eggs are relatively few and large with larvae undergoing abbreviated development.

**Distribution:** In Singapore, occurs in Central Catchment Nature Reserve. Also occurs in Peninsular Malaysia, and Pulau Bintan (Indonesia).

**Threats:** Loss or degradation of habitat.

**Scientific Interest and Potential Value:** The description in 1997 of *P. amnicus* represents the first

Photo: Cai Yixiong



record in Singapore of a freshwater snapping shrimp, although this primitive species lacks the distinctive snapping claws of its more advanced marine counterparts. Previously recorded from a single stream in the Central Catchment Nature Reserve, the species have since been found in more localities around Singapore, albeit in low numbers. This could be due to its cryptic behaviour.

**Conservation Measures:** Continued protection of the Central Catchment Nature Reserve will be necessary for the long-term survival of the species. There is also a heritage significance since the species was described first from Singapore.

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# Horseshoe Crabs and Marine Decapod Crustaceans

JOSE CHRISTOPHER E. MENDOZA, BEE YAN LEE, PETER K.L. NG, DARREN C.J. YEO

**Scientific Name:**

*Tachypleus gigas*  
(Müller, 1785)

**Common Name:**

Coastal horseshoe crab

**Order/Family:**

Xiphosurida/Limulidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Typically encountered in sandy to muddy shores near reefs, seagrass beds, and mangroves, when they come up from deeper water to breed; in Singapore they are usually seen singly or in mating pairs (amplexus) on the edge of the shore. Relatively more dispersive (not localised) and adapted to open-sea conditions, compared to the other species of horseshoe crab found in Singapore (viz. Tang et al., 2021). They feed on bottom-dwelling invertebrates, also scavenge on organic debris. They produce large numbers of eggs in the spawning season, which can be a valuable food source for shore birds and other animals.

**Distribution:** Throughout Indo-West Pacific region.

**Threats:** Loss of suitable sandy/muddy shore habitats from coastal reclamation, development, and pollution; also, mortality from accidental entanglement in abandoned fishing gear (ghost fishing).

**Scientific Interest and Potential Value:** Horseshoe crabs represent an ancient lineage of arthropods with high phylogenetic uniqueness. Studies also suggest

Photo: CMBS



that they are essential elements of the coastal and benthic food webs. They are of biomedical importance as their blood (hemolymph) is harvested and used to detect bacterial contamination in drugs and other pharmaceutical products and equipment. Elsewhere in Asia, they are sometimes consumed as food (gravid females) or may be dry-preserved and sold as curios or decorative items.

**Conservation Measures:** This species was previously listed as Endangered (EN) in RDB2 (Yeo et al., 2008). While still uncommon to rare in Singapore, there have been increased sightings in recent years since 2008. Recent population genetics studies suggest that local populations are panmictic and that Singapore has high potential for recolonisation from adjacent populations. Main conservation measures should include habitat protection and restoration as well as monitoring of populations.



**Scientific Name:**

*Carcinoscorpius rotundicauda*  
(Latreille, 1802)

**Common Name:**

Mangrove horseshoe crab

**Order/Family:**

Xiphosurida/Limulidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found only in mudflats and mangroves, where it feeds on benthic invertebrates, such as molluscs and polychaete worms. Significant numbers of juveniles have been observed seasonally, and studies have shown that there are patterns of high and low periods in breeding activity despite the horseshoe crabs breeding year-round.

**Distribution:** Throughout Indo-West Pacific region.

**Threats:** Loss of suitable mangrove and muddy shore habitats from coastal reclamation, development, and pollution; also, mortality from accidental entanglement in abandoned fishing gear (ghost fishing).

**Scientific Interest and Potential Value:** Horseshoe crabs represent an ancient lineage of arthropods with high phylogenetic uniqueness. Studies also suggest that they are essential elements of the coastal and benthic food webs. They are of biomedical importance as their blood (hemolymph) is harvested and used to

Photo: CMBS



detect bacterial contamination in drugs and other pharmaceutical products and equipment. Elsewhere in Asia, they are sometimes consumed as food (gravid females) or may be dry-preserved and sold as curios or decorative items.

**Conservation Measures:** Although usually more commonly observed in Singapore than *Tachypleus gigas*, one study (Tang et al., 2021) has shown that local populations of *C. rotundicauda* are less dispersed in the region and have a lower genetic diversity, probably making them more vulnerable to extinction. Main conservation measures should include protection and restoration of mangrove and mudflat habitats, as well as monitoring of populations.

**Scientific Name:**

*Salmonus singaporensis* Anker, 2003

**Common Name:**

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**Order/Family:**

Decapoda/Alpheidae

Line Drawing: From Anker (2003), RBZ



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs in mudflats, usually with soft and soggy mud, and possibly associated with burrows of other alpheid shrimps, such as *Alpheus rapacida* De Man, 1908; infaunal, occurring in the intertidal and also possibly subtidal.

**Distribution:** Presently known only from Singapore, and possibly also from Indonesia (Anker & De Grave, 2016).

**Threats:** Loss of suitable mudflat habitats, particularly soft and soggy mud substrates due to coastal reclamation and modification.

**Scientific Interest and Potential Value:** A rare and poorly known species, only known from the holotype

specimen, collected from intertidal mudflats of Tanjong Penjuru (now a reclaimed area in the Jurong district). It has not been found in Singapore since it was first collected in 1959, despite several surveys in similar localities. It was considered likely to be locally extinct by Anker & De Grave (2016) in their checklist of Singapore Caridea.

**Conservation Measures:** Protection and restoration of substantial mudflat areas, particularly those that can harbour burrowing or infaunal crustaceans and other animals, should be undertaken. Targeted surveys must also be undertaken to confirm the presence of this species in Singapore or elsewhere. Likewise, more research must be done to understand its biology, which would help guide conservation efforts.

**Scientific Name:**  
*Synalpheus stimpsoni*  
(De Man, 1888)

**Common Name:**  
Crinoid snapping shrimp

**Order/Family:**  
Decapoda/Alpheidae

Photo: CMBS/A. Anker



**National Status:** Endangered (EN)

**Habitat and Ecology:** In coral reefs and similar rocky habitats with many crevices and attachments for crinoids; found always associated with crinoid feather stars, mainly of the family Comatulidae. Occurring in shallow subtidal depths to as deep as 155 m. The shrimp feeds on trapped food particles and mucus on the arms of its host. It avoids detection by predators through camouflage, matching the host's colouration; with an enlarged claw capable of producing powerful shockwaves for added protection.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable reef habitats for comatulid crinoids due to reclamation or habitat modification; also, sedimentation and declining water quality due to pollution.

**Scientific Interest and Potential Value:** The shrimp is an obligate symbiont of feather stars, and this pairing is of interest for research in evolution and behavioural biology. It may also likely be a species-complex, further taxonomic studies will be required to elucidate this matter. The presence of complex symbiotic relationships in reef ecosystems is usually an indicator of reef health, their absence usually indicating stress in these ecosystems.

**Conservation Measures:** Conservation of these shrimps is dependent on the continued survival of its host feather star, which in turn depends on maintaining healthy reef habitats. Main conservation efforts should involve protection and restoration of coral reefs, and the maintenance of good water quality crucial for filter-feeding feather stars.

**Scientific Name:**  
*Cristimenes cristimanus*  
(Bruce, 1965)

**Common Name:**  
Black urchin shrimp

**Order/Family:**  
Decapoda/Palaemonidae

Photo: CMBS/A. Anker



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurs in coral reefs as an obligate symbiont of diadematid sea urchins, particularly *Diadema setosum* (Leske, 1778), and also, sometimes, *Echinothrix calamaris* (Pallas, 1774). It is usually observed clinging to the sea urchin's spines, and its colouration tends to match and blend in with these spines making it hard to detect. The biology of this shrimp is poorly known.

**Distribution:** Western Pacific region.

**Threats:** Loss of suitable reef habitats for the host sea urchins due to habitat destruction or modification; also sedimentation and deteriorating water quality due to pollution.

**Scientific Interest and Potential Value:** The shrimp is an obligate symbiont of diadematid sea urchins, which makes it an interesting subject for evolutionary and behavioural studies. The presence of complex symbiotic relationships in reef ecosystems is usually an indicator of reef health, their absence usually indicating stress in these ecosystems.

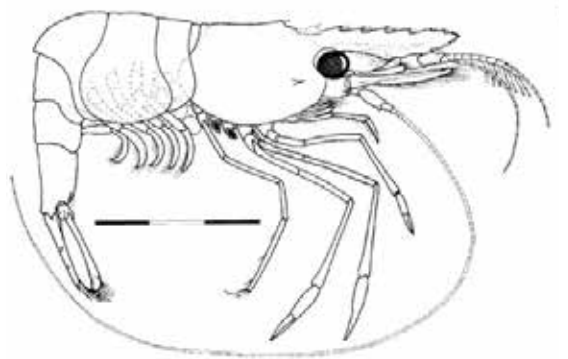
**Conservation Measures:** Conservation of these shrimps is dependent on the continued survival of its host sea urchins, which in turn depends on maintaining healthy reef habitats. Main conservation efforts should involve protection and restoration of coral reefs, and the maintenance of good water quality.

**Scientific Name:**  
*Cuapetes johnsoni* (Bruce, 1987)

**Common Name:**  
Seagrass shrimp

**Order/Family:**  
Decapoda/Palaemonidae

Line Drawing: From Bruce (1987),  
Indo-Malayan Zoology



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found in mangrove channels and seagrass beds. Very little else is known about this species.

**Distribution:** Singapore only

**Threats:** Loss of suitable habitat, such as mangrove channels and seagrass (*Enhalus*) beds, due to coastal reclamation and development.

**Scientific Interest and Potential Value:** Reportedly abundant in the 1960's in Jurong and in Jurong Strait, but these sites have been extensively modified via reclamation or construction of the Tuas Link since then. This species is now rare and poorly known as it has not been seen nor collected from the wild since 1966; this despite intensive collection efforts in or near the type locality and similar habitats around Singapore by the CMBS (2010–2015). It was considered likely to be locally extinct by Anker & De Grave (2016) in their checklist of Singapore Caridea.

**Conservation Measures:** Protection and restoration of mangroves, especially in a manner that promotes formation of channels; and seagrass beds, especially containing *Enhalus* species. This species may also likely occur in similar habitats in adjacent areas outside of Singapore. Restoration of such habitats may encourage re-colonisation.

**Scientific Name:**

*Thalassina anomala* (Herbst, 1804) *sensu lato*

**Common Name:**

Mud lobster

**Order/Family:**

Decapoda/Thalassinidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found in mangroves where it builds large mounds. Adults highly tolerant of the anoxic/hypoxic conditions in the mud; extensive and deep burrowers, extracting organic matter from ingested mud. Burrowing activity and mound building brings organic matter to the surface contributing to nutrient cycling, and mounds also provide habitats for other mangrove species.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable mangrove habitats from coastal reclamation, development, and pollution.

**Scientific Interest and Potential Value:** *Thalassina anomala* is a mangrove keystone species due to its important ecological roles. The genus *Thalassina* was revised by Ngoc-Ho & de Saint Laurent (2009), and five species were recorded from Singapore, i.e., *Thalassina anomala* (Herbst, 1804), *T. gracilis* Dana, 1852, *T. krempfi* Ngoc-Ho & de Saint Laurent, 2009, *T. spinirostris* Ngoc-Ho & de Saint Laurent, 2009 and *T. squamifera* De Man, 1915. A sixth species *T. kelanang* Moh & Chong, 2009, has also been reported. Many of

these species are not well studied and, with the possible exception of *T. gracilis*, may have been confused with *T. anomala* in museum and historical records.

**Conservation Measures:** The survival of the mud lobsters is important for a healthy mangrove, as many other mangrove species are closely associated with and dependent on them. Main conservation methods should include protection and restoration of mangrove habitats.

Photo: Marcus Ng



Photo: Ria Tan



**Scientific Name:**  
*Porcellanella triloba*  
White, 1851

**Common Name:**  
Painted porcelain crab

**Order/Family:**  
Decapoda/Porcellanidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found in lower intertidal to subtidal depths in open estuaries, on sandy to muddy substrates. This porcelain crab is always found associated with pennatulid sea pens such as *Pteroeides* Herklots, 1858. One sea pen can harbour one to several individuals at once, with the porcelain crabs nestled among the wide branches, probably feeding on trapped food particles and mucus. Not much else is known about the biology of this species.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable deep intertidal to sublittoral sandy-muddy habitats suitable for the host sea pens; also deteriorating water quality due to sedimentation and pollution.

Photo: A. Anker



**Scientific Interest and Potential Value:** This species has also been referred to in the scientific literature as *Porcellanella picta* Stimpson, 1858 (junior synonym). The biology of this species is poorly known and needs more detailed study. As an obligate symbiont of sea pens, it would make an interesting subject for evolutionary, behavioural, and ecological studies.

**Conservation Measures:** Protection and restoration of sandy-muddy sublittoral habitats suitable for the cnidarian hosts will be necessary for the survival of this uncommon porcelain crab. Also important would be the maintenance of good water quality necessary for the survival of the filter-feeding hosts.

**Scientific Name:**  
*Pseudoporcellanella*  
*manoliensis* Sankarankutty,  
1961

**Common Name:**  
False porcelain crab

**Order/Family:**  
Decapoda/Porcellanidae

Photo: Yeo et al. (2008) RDB2





**National Status:** Endangered (EN)

**Habitat and Ecology:** Found in lower intertidal to subtidal waters of open estuaries, on soft muddy substrates. The first record from Singapore (Johnson, 1967) indicated that it was an obligate symbiont of the virgulid sea pen, *Scytalium* sp., although it has subsequently been observed on soft corals and sea whips. Little else is known about the biology of this species.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable deep intertidal to subtidal habitats harbouring the cnidarian hosts of this porcelain crab due to coastal reclamation and development, and also, degradation of water quality due to pollution.

**Scientific Interest and Potential Value:** This is a rare species of porcelain crab and very little is known of its biology, and this warrants further study of thriving populations in Singapore. As an obligate symbiont of certain octocorallian cnidarians such as sea whips, it will be an interesting subject for evolutionary, behavioral, and ecological studies.

Photo: Johnson (1967) J. Zool.



**Conservation Measures:** Previously listed as Vulnerable (VU) in RDB2 (Yeo et al., 2008), it is uplisted here to Endangered (EN) due to its rarity in museum collections. Protection and restoration of muddy benthic habitats suitable for the cnidarian hosts will be necessary for the survival of this rare porcelain crab. Also important would be the maintenance of good water quality necessary for the survival of the filter-feeding hosts.

**Scientific Name:**  
*Coenobita lila* Rahayu,  
Shih & Ng, 2016

**Common Name:**  
Land hermit crab

**Order/Family:**  
Decapoda/Coenobitidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** This hermit crab can be found mostly on the upper intertidal zone of sandy beaches and rocky shores, extending up to 100 m inland, where it forages for food consisting of plant and animal matter. It sometimes forms large groups in supralittoral grassy patches or under rocks during the day. It is typically found near reef habitats but may also occur at the edge of mangroves and estuaries. Unlike its aquatic relatives,

Photo: CMBS



it is well suited for terrestrial life, foremost among its adaptations being its modified gill chambers that allow it to breathe air.

**Distribution:** Singapore, Malaysia, and Indonesia.



**Threats:** Loss of suitable supralittoral habitats due to reclamation and coastal development and deforestation. Also, excessive beach clean-ups for aesthetic purposes may deprive this hermit crab of organic debris which it can use as food or shelter. Land hermit crabs have become popular as pets, and this species may be targeted for the pet trade as well.

**Scientific Interest and Potential Value:** This species was recently described by Rahayu et al. (2016) from Singapore and adjacent areas in Malaysia and Indonesia, and distinguished from the similar *C. cavipes* Stimpson, 1858 and *C. violascens* Heller, 1862 using morphological and DNA characters. They also clarified that *C. lila* is the only species of land hermit crab known from Singapore currently, so previous records of other *Coenobita* spp. Should be referred to this species. The biology of this hermit crab is not well known.

Photo: CMBS



**Conservation Measures:** Protection of suitable stretches of coastal habitat (beaches and rocky shores) and keeping them in a natural state. Practice selective beach clean-ups targeting plastics and other anthropogenic debris only.

**Scientific Name:**  
*Elamena globosa*  
Chuang & Ng, 1991

**Common Name:**  
False spider crab

**Order/Family:**  
Decapoda/Hymenosomatidae

**National Status:** Critically Endangered (CR)

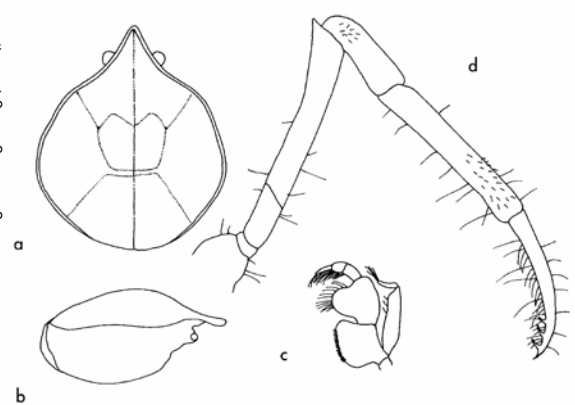
**Habitat and Ecology:** Occurs in gravelly to sandy habitats in shallow subtidal depths, on or near reefs.

**Distribution:** Singapore only.

**Threats:** Loss of suitable subtidal habitats due to coastal reclamation, development, and pollution.

**Scientific Interest and Potential Value:** *Elamena globosa* was described in 1991 based on one male specimen, which was collected from southern Singapore in 1986. It has not been recorded since. Little else is known about this species.

Line Drawing: Chuang & Ng (1991), RBZ



**Conservation Measures:** This species was previously listed as Vulnerable (VU) in RDB2 (Yeo et al., 2008). It is, however, quite rare and currently known only from Singapore. The type locality, Pulau Ayer Chawan, has undergone extensive reclamation works and has been incorporated into the larger Jurong Island. The crab may still occur in other similar habitats in Singapore and adjacent areas. Conservation measures should include protection and restoration of suitable subtidal habitats.

**Scientific Name:**  
*Neorhynchoplax venusta*  
Ng, 2015

**Common Name:**  
False spider crab

**Order/Family:**  
Decapoda/Hymenosomatidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This species occurs in the intertidal zone, in seagrass beds with sandy-muddy substrate and some stones, inside burrows. Two other hymenosomatid crab species found in similar habitat types are, *Crustaenia palawanensis* (Serène, 1971) and *Halicarcinus coralicola* (Rathbun, 1909). *Neorhynchoplax venusta* is morphologically closely related to *N. mangalis* (Ng, 1988), but the latter is only known from mangroves.

**Distribution:** Singapore only.

**Threats:** Loss of suitable habitats (intertidal seagrass

Photo: JCE Mendoza



beds) from coastal reclamation, development, and pollution.

**Scientific Interest and Potential Value:** This species was described in 2015 based on one female specimen, collected from Pulau Sekudu, off Pulau Ubin, northern Singapore. Little else is known of this species.

**Conservation Measures:** This species has not been previously evaluated. Although known from only one female specimen, its cryptic infaunal habits suggest that it is just under-collected. Main conservation measures should include protection and restoration of suitable seagrass habitats.

**Scientific Name:**  
*Favus granulatus* Lanchester, 1900

**Common Name:**  
Rubble crab/Singapore rubble crab

**Order/Family:**  
Decapoda/Leucosiidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found in intertidal and sublittoral coral rubble and gravel; its appearance mimics the abundant coral rubble in its habitat, serving as protective camouflage.

**Distribution:** Singapore only.

Photo: PKL Ng



**Threats:** Loss of intertidal coral reefs and rubble zones and associated sublittoral habitats due to coastal development, sedimentation, and pollution.

**Scientific Interest and Potential Value:** This species was discovered in 1900 and described as a new genus and new species, and it is, thus far, only known from Singapore. As such, it has high heritage value. This species is a coral rubble mimic, where its morphology resembles pieces of dead and eroded coral, similar to two other leucosiids species that had been previously reported from Singapore, *Alox somphos* Tan & Ng,

1995, and *Nursia tohae* Ng & Komatsu, 2016. Both species face similar conservation problems as *Favus granulatus*.

**Conservation Measures:** Protection and restoration of sufficient tracts of coral reef and associated rubble zones.

**Scientific Name:**

*Paranursia abbreviata* (Bell, 1855)

**Common Name:**

Pebble crab

**Order/Family:**

Decapoda/Leucosiidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Found in mangrove habitats, typically buried in mud.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of mangrove habitats from coastal reclamation, development, and pollution.

**Scientific Interest and Potential Value:** *Paranursia abbreviata* was recorded for the first time in Singapore only in 2014, despite intensive collecting efforts in

Photo: BY Lee



mangroves since the late 1980s. This suggests that collecting methods must include techniques that target species with cryptic behaviours and unusual microhabitats. Little else is known about this species.

**Conservation Measures:** Previously listed as Not Evaluated (NE) in RDB2 (Yeo et al., 2008). Main conservation measures should include protection and restoration of mangroves and adjacent mudflats.

**Scientific Name:**

*Daldofia horrida* (Linnaeus, 1758)

**Common Name:**

Horrid elbow crab

**Order/Family:**

Decapoda/Parthenopidae

Photo: CMBS/R. Ong



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This species occurs subtidally in reefs, among large rocks and boulders, where there is an abundance of hard substrate and crevices in which to hide; it will also venture out onto the sandy or silty seabed in search for food. The morphology of its large asymmetric chelipeds suggests a diet of gastropod molluscs. It has a cryptic form and colouration, helping it blend better into its rocky environment. Reports indicate that it may be mildly toxic probably as a result of its diet.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable reef habitat due to reclamation and coastal development.

**Scientific Interest and Potential Value:** This species was first reported from Singapore in 1912, and would not be recorded in the following century, so much so that it was listed as Presumed Nationally Extinct (NEx) in the RDB2 (Yeo et al., 2008). The subsequent rediscovery of a large, mature female from Kusu Island in 2013 confirms its survival in Singapore, although it is quite rare. The presence of such large crabs indicates that local reef habitats are healthy enough to support them.

**Conservation Measures:** Protection and restoration of large areas of suitable reef habitat, especially those with a mixture of large rocks and sandy-silty substrate.

**Scientific Name:**  
*Harrovia longipes* Lanchester, 1900

**Common Name:**  
Feather star crab

**Order/Family:**  
Decapoda/Pilumnidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This crab is found in coral reefs and is an obligate symbiont of crinoid feather stars, and in Singapore particularly on commatulids such as *Phanogenia gracilis* (Hartlaub, 1890) and *Comaster multifidus* (Müller, 1841). The crab is typically found on the oral disc of these filter-feeding echinoderms, where it probably feeds on trapped food particles and mucus. Sometimes, a breeding pair may be found on one feather star. Little else is known about the biology of this crab.

**Distribution:** Southeast Asia, Australia, New Caledonia, and Papua New Guinea.

**Threats:** Loss of suitable reef habitat for the host feather stars, due to coastal development, sedimentation, and pollution.

Photo: CMBS/R. Ong



**Scientific Interest and Potential Value:** *Harrovia longipes* was first discovered and described from Singapore in 1900. Its biology is still poorly known, and its being in a symbiotic relationship with comatulid feather stars (as with the shrimp, *Synalpheus stimpsoni*) makes it an interesting subject for evolutionary, behavioural, and ecological studies.

**Conservation Measures:** This species was previously listed as Critically Endangered (CR) in RDB2 (Yeo et al., 2008). Recent surveys and museum holdings, however, show that they are more abundant than previously thought, although still quite uncommon. Nonetheless, effort must be put in ensuring the long-term viability of coral reef habitats and the quality of the surrounding waters that will be capable of supporting healthy populations of the host feather stars.

**Scientific Name:**

*Lupocyclus rotundatus* Adams  
& White, 1849

**Common Name:**

Swimming crab

**Order/Family:**

Decapoda/Portunidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Subtidal, more saline waters, on sand or rubble substrate with some mud. Active swimmer and predator of invertebrates and small fishes. May sometimes be seen associated with sea anemones. Little else is known about the biology of this crab.

**Distribution:** Indo-West Pacific region.

**Threats:** Loss of suitable sublittoral habitats with sandy to silty substrate due to coastal development and sedimentation.

**Scientific Interest and Potential Value:** The biology of this swimming crab is poorly known and warrants further study. The genus is in need of a taxonomic revision, and more species may be recognised.

**Conservation Measures:** This species was listed as Presumed Nationally Extinct (NEx) in RDB2 (Yeo et al., 2008). Recent surveys (CMBS), however, have found

Photo: CMBS



a few specimens in the southern islands of Singapore, although this species is still considered rare. Conservation measures should include the protection and restoration of sublittoral habitats in southern Singapore with sandy to muddy substrate.

**Scientific Name:**

*Palapedia valentini* Ng, 1993

**Common Name:**

Rock crab

**Order/Family:**

Decapoda/Xanthidae

Photo: JCE Mendoza





**National Status:** Endangered (EN)

**Habitat and Ecology:** Intertidal to subtidal, on coral reef habitats with rubble, rocks and sand. Often found underneath large rocks. They have been observed to rapidly burrow backwards at an angle into the sand using the upcurved tips of their legs to push the sand forward and over the narrow carapace. Very little is known about the biology of this crab.

**Distribution:** Singapore only.

**Threats:** Loss of suitable coral reef habitats, with coral rubble and sand, due to coastal development, sedimentation, and pollution.

**Scientific Interest and Potential Value:** *Palapedia valentini* was first described from Singapore in 1993 and is also the type species of its genus. It is rare in Singapore and has not yet been reported elsewhere. It has only been found in three southern localities so far. Its cryptic habits may be partly responsible for its rarity.

**Conservation Measures:** This species was listed as Vulnerable (VU) in RDB2 (Yeo et al., 2008). It was first collected in 1933 and last seen in the wild in 1992, since then it has not been observed even during intensive surveys. Conservation measures should include protection and restoration of coral reef habitats and their rubble zones.

**Scientific Name:**

*Tuerkayana hirtipes* (Dana, 1852)

**Common Name:**

Hairy-legged land crab

**Order/Family:**

Decapoda/Gecarcinidae

Photo: HH Tan



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Terrestrial crab, frequenting forested coastal areas with limestone karst formations. It digs burrows for shelter in the soft ground around or between the harder limestone outcrops, and forages for food usually at night. It is herbivorous, feeding on fallen leaves and other plant matter. Its gill chambers have been modified for air-breathing. Females return to sea to spawn.

**Distribution:** Western Pacific region

**Threats:** Habitat loss due to coastal development.

**Scientific Interest and Potential Value:** This species of land crab was first recorded in Singapore in 1938 (from Paya Lebar), and again only recently (from St. John's Island), there have been no other records. Ng & Ng (2021) opine that the presence of scattered limestone areas on the coast of St. John's Island may enable this species to become established there and in nearby similar areas.

**Conservation Measures:** This land crab is quite rare in Singapore, with only two specimens recorded since 1938. The absence of extensive karst areas in Singapore may explain their rarity. Nevertheless, conservation measures should include protection of coastal limestone areas that can serve as suitable habitat for these crabs.



**Scientific Name:**  
*Sesarmoides borneensis*  
 (Tweedie, 1950)

**Common Name:**

–

**Order/Family:**  
 Decapoda/Sesarmidae

Photo: CMBS



**National Status:** Endangered (EN)

**Habitat and Ecology:** Usually found in mangroves and estuaries. This crab's long legs are adapted to climbing and scampering over tree trunks and branches. Not much else is known about the biology of this crab.

**Distribution:** Southeast Asia and northern Australia.

**Threats:** Habitat loss from destruction and deforestation of mangroves.

**Scientific Interest and Potential Value:** This crab was first described in 1950 using specimens from Labuan and Singapore. As the biology of this crab is still not well understood, it will be a good subject for various studies, particularly those concerning mangrove-dependent species.

**Conservation Measures:** This species is rare in Singapore, having been recorded in only two localities thus far. Conservation measures should involve protection and restoration of mangroves, to provide suitable habitats for this crab.

The contributors for the Horseshoe Crabs and Marine Decapod Crustaceans chapter wish to thank the following for their assistance: Martyn E.Y. Low, Muhammad Dzaki bin Safaruan & Tashfia Raquib.

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# Arthropoda – Marine Insects

MARC CHANG JIA JIN, LANNA CHENG, TRAN ANH DUC, HWANG WEI SONG

**Scientific Name:**

*Pontomyia pacifica* Tokunaga,  
1932

**Common Name:**

Marine midge

**Order/Family:**

Diptera: Chironomidae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** This suspension feeder is one of the most common tanaids in shallow subtidal soft bottom habitats (12–54 m depths) along the Singapore Strait (pers. obs.). Sites of occurrence include southeast of Pulau Tekong, Eastern Bunkering, southwest of Bedok Jetty, east of Lazarus Island Beach and southwest of Jurong Island. The biology of this local species is unknown but other species of kalliapseudids were found to feed on diatoms and crustaceans in Florida, U.S.A. (Drumm, 2005) and were prey for many benthic fishes in Brazil (Contente et al., 2009a, 2009b, 2012).

**Distribution:** Only known from Singapore, including the unknown shallow subtidal type locality where it was first collected in 1905–1907 (Drumm & Heard, 2011).

**Threats:** Unknown but possibly marine trash.

**Scientific Interest and Potential Value:** N.A.

Photo: Danwei Huang



**Conservation Measures:** Unpublished long-term quantitative data (2009 to 2020) showed that this species is quite common in at least two localities along the Singapore Strait with no obvious decline in numbers. Main conservation measures should include enforcing laws against illegal dumping of trash into the sea.

**Scientific Name:**

*Hermatobates singaporensis*  
Cheng, 1976

**Common Name:**

Coral treader

**Order/Family:**

Hemiptera: Hermatobatidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** These wingless insects live in air-filled crevices in boulders or rocks around coral reefs or stony seawalls. They emerge to feed during low tides and return to hide in the crevices as the tide rises. If trapped and unable to return to their crevices, they can survive at the sea surface. They are rarely sighted. The adults measure about 4 mm in body length with short legs but are fast moving.

**Distribution:** Described originally from the Siglap Coast of Singapore, this species was recently caught from St. John's Island and also from Malaysia.

Photo: Lanna Cheng  
(Cheng et al., 2001, fig. 97)



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**Threats:** Coastal reclamation of the Siglap Coast has led to loss of their original habitat. Water pollution might threaten its last remaining known habitat.

**Scientific Interest and Potential Value:** The family Hermatobatidae is the oldest living lineage of marine insects and are thus one of the first insect groups to have evolved adaptations to live in coastal waters.

**Conservation Measures:** Continued habitat protection of St. John's Island as part of the Sisters' Islands Marine Park. As the last known collection was made in 2010, it is timely to determine if the species is still present at the locality and to update the population status of this species.

**Scientific Name:**

*Halobates hayanus* White,  
1883

**Common Name:**

Sea skater

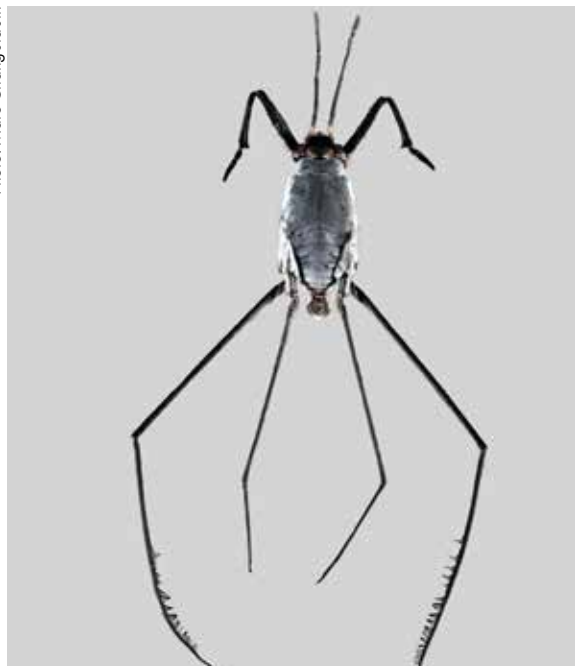
**Order/Family:**

Hemiptera: Gerridae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** The species occurs in coastal habitats including coral reef flats with marine algae, seagrass meadows, or overhanging mangroves. Adults measure ~5 mm in length, with long legs. They are carnivorous and known to prey on their own young.

Photo: Marc Chang Jia Jin



**Distribution:** This species is found at Berlayer Creek, Changi Beach, Chek Jawa Wetlands, Pulau Semakau and Pulau Subar Laut. It has a transoceanic distribution stretching from the Red Sea, across the Indian Ocean to Southeast Asia and all the way to Australia and Papua New Guinea in the Pacific Ocean.

**Threats:** Potential land reclamation at Changi and Pulau Ubin poses great threats that will reduce their habitable area in Singapore.

**Scientific Interest and Potential Value:** This species belongs to the only insect genus with five species that has conquered and survived completely on the open

ocean surface, thousands of kilometres away from land. There is great scientific interest in how they evolved to adapt to life on the sea surface (water-proofing, heat and ultraviolet resistance), and how these might be applied to benefit society.

**Conservation Measures:** Continued habitat protection of Pulau Subar Laut as part of Sisters' Islands Marine Park will ensure this species' persistence. Efforts are needed however, to preserve the Changi and Pulau Ubin habitats, as genetic data suggests that the insects found there could be of a different species, and they have insofar been only recorded at those two sites.

**Scientific Name:**  
*Xenobates singaporensis*  
Andersen, 2000

**Common Name:**  
Mangrove bug

**Order/Family:**  
Hemiptera: Veliidae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** Mangrove tidal streams and pools, often in concert with other marine skaters. They are some of the smallest marine bugs, with adults measuring ~1.5 mm in length. They may be seen at low tide but are easily overlooked due to their small size. Very little is known about their ecology.

**Distribution:** This species has been found at Mandai mangrove, Pulau Ubin and Sungei Buloh Wetland Reserve in Singapore. It has been recorded recently in Thailand.

**Threats:** Mangrove degradation and habitat loss from potential land reclamation works in the Pulau Ubin area.

**Scientific Interest and Potential Value:** Amongst the numerous insect families that have evolved to living on the sea surface, *Xenobates* remains one of the more poorly studied groups. This is likely due to their small



size (~1 mm) and cryptic nature making them easy to miss if one was not out consciously searching for them.

**Conservation Measures:** Continued protection and expansion of the Mandai Mangrove and Sungei Buloh Wetland Reserve will ensure persistence of the insect's habitat. Sustained effort into protecting the mangroves from habitat degradation will also be helpful.

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# Echinodermata – Sea Stars, Feather Stars, Brittle Stars, Sea Cucumbers and Sea Urchins

IFFAH IESA, DAVID J.W. LANE, HELEN P.-S. WONG, TERESA STEPHANIE TAY

**Scientific Name:**

*Iconaster longimanus* (Möbius, 1859)

**Common Name:**

Icon star

**Order/Family:**

Asteroidea: Goniasteridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found on lower reef slopes and coral rubble/sediment of the adjacent seabed, usually deeper than 30m in clear ocean waters but in the more turbid waters of Singapore and the nearby Riau Archipelago at depths of 5–20+ m. Feeds on epilithic growth. Some individuals are infested with the gastropod parasite *Thyca*, as illustrated here.

**Distribution:** A tropical, central Indo-Pacific sea star commonly found sub-tidally on and around many reefs fringing the Southern Islands, as well as the adjacent islands of the Riau Archipelago. In Singapore it is considered vulnerable for reasons given below.

**Threats:** Living on and near the slopes of fringing reefs, it is directly threatened by reclamation activities and by enhanced sedimentation that reclamation causes. Additionally, this species is listed on marine aquaria

Photo: David J.W. Lane



websites and its attractive appearance may lead to over-collection as live aquarium specimens or as dried curios.

**Scientific Interest and Potential Value:** The female produces large eggs which show abbreviated development, omitting the planktonic bipinnaria stage. Eggs possess some kind of chemical defence against predation. As a locally abundant and long-lived sea star this species is an important ecological component of the marine benthic community in Singapore waters.

**Conservation Measures:** Incorporation of prime Southern Islands *Iconaster* sites into a Marine Protected Area network. Minimising siltation through best dredging practices. Eco-education for SCUBA divers as even casual collection of this attractive, long-lived species – as curios – could result in significant population losses.

**Scientific Name:**  
*Fromia monilis* (Perrier, 1869)

**Common Name:**  
Peppermint seastar

**Order/Family:**  
Asteroidea: Goniasteridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A species discovered in Singapore waters in 1992 on offshore reef slope rocky substrata.

**Distribution:** A species typical of open ocean Indo-West Pacific coral reefs. Found locally only on offshore reefs such as Sultan Shoal.

**Threats:** One local reef site (Sultan Shoal) has been impacted by nearby port reclamation activity. Other offshore reefs where this species occurs have restricted access, but low numbers put it at risk of local extinction. Consequently, its status is revised from Vulnerable to Endangered.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** Recently transferred to the Goniasteridae, this species is typical of oceanic reef systems in the Indo-West Pacific and locally it is restricted to offshore reefs with better water quality.

**Conservation Measures:** Restricted access at some sites affords a measure of protection but conservation objectives would be enhanced by inclusion of offshore Southern Islands sites within Singapore's Marine Protected Area network.

**Scientific Name:**  
*Protoreaster nodosus* (Linnaeus, 1758)

**Common Name:**  
Giant knobbly seastar

**Order/Family:**  
Asteroidea: Oreasteridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This massive, variably-coloured sea star typically occurs on intertidal shores and seagrass habitats around Singapore. An extra-oral feeder, but little is known of its biology.

Photo: David J.W. Lane



**Distribution:** On reef flat sea-grass beds and other intertidal areas in the Southern Islands and the Johore Straits. In recent years (2000-2020) naturalists have reported it on post-reclamation shorelines, e.g. East Coast Park. Juveniles are regularly seen in sea-grass habitats, notably on Cyrene Reef adjacent to the Pasir Panjang container terminal.

**Threats:** Extirpation due to reclamation of coastal shorelines and patch reefs remains a threat to the viability of populations. Illegal collection of these conspicuous, attractive sea stars for aquaria or as curio— a trade which occurs at scale in some other countries— is a potential threat locally.

**Scientific Interest and Potential Value:** Little is known of its biology but large size and a potential long-

life span indicates that this species may be an important part of the reef ecosystem and a useful bioindicator species for monitoring reef health.

**Conservation Measures:** Persistence in Singapore is unlikely unless its refuge habitats are protected (e.g. as MPAs) and remain free from degradation, inappropriate development or curio collection.

**Scientific Name:**

*Pentaceraster mammillatus*  
(Audouin, 1826)

**Common Name:**

Mammillated pentaceraster

**Order/Family:**

Asteroidea: Oreasteridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** A recent addition (2008) to the Singapore fauna this massive, spectacular sea star occurs on sea-grass beds and feeds by everting its stomach over epibenthic biota, micro-organisms and surface organic matter.

**Distribution:** An Indian Ocean species now known in Singapore waters on sandy sea-grass beds, principally on Cyrene Reef, a large patch reef close to the Pasir Panjang container terminal within the Port of Singapore. Small individuals of this species have also been found there in recent years.

**Threats:** Rare in Singapore and at severe risk of local extirpation in the event of further land reclamation and expansion of the Port of Singapore. Potentially at risk from collection as a curio.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** This large sea star appears to be a recent recruit to the Singapore marine fauna, having never been recorded historically even during intensive Echinoderm surveys in the 1990s, and testifies to the present quality of the marine environment close to port infrastructure.

**Conservation Measures:** Inclusion of patch reef/ sea-grass habitats of this sea star within the Marine Protected Area network of Singapore. Protection from casual or trade curio collectors.

**Scientific Name:**

*Anthenea aspera* Döderlein, 1915

**Common Name:**

Cake star

**Order/Family:**

Asteroidea: Oreasteridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Little is known of its biology or ecology but small individuals tend to be found on seagrass beds which may serve as an important recruiting ground and nursery for this species.

**Distribution:** First found by dredging off Pulau Ubin and the Southern Islands in the 1990s, this large sea star has subsequently been found intertidally on coral rubble or seagrass meadows around Singapore but it is never abundant.

**Threats:** Potentially threatened by land reclamation of intertidal areas.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** A massive but rare species known only from North Australia, southern Japan, China, Indonesia and Singapore. In Singapore individuals are very varied in colour and patterning.

**Conservation Measures:** Temporary protection of the designated Chek Jawa wetlands area at the eastern end of Pulau Ubin may need to be established more permanently for conservation of this sea star to be effective.

**Scientific Name:**

*Cryptasterina pentagona* (Müller & Troschel, 1840)

**Common Name:**

Cryptic seastar

**Order/Family:**

Asteroidea: Asterinidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** These small, blunt-armed, almost pentagonal sea stars live limpet-like on the underside of undisturbed rocks and stones on the upper to mid-shore level. Reported to feed on epilithic growth and biofilms.

**Distribution:** West Pacific. First identified in Singapore in the 1990s. Found in small numbers under rocks and

Photo: David J.W. Lane



stones intertidally on natural shores of the Southern Islands and recently at a remnant mainland site (Berlayer Creek) on southern Singapore. Whether or not this species has managed to colonise the hidden sides of (immovable) boulders that form extensive rock bund sea defenses around much of Singapore remains undetermined.

**Threats:** The few remaining habitats of mid to upper intertidal, natural rocky/ stony shores are potentially under threat from reclamation, coastal development and/ or human disturbance.

**Scientific Interest and Potential Value:** Unlike many egg-brooding asterinids in this kind of habitat, this species is a broadcast spawner with larvae developing in the plankton.

**Conservation Measures:** The few remaining natural, rocky, intertidal localities where these sea stars occur need to be protected from development (by inclusion within Marine Protected Areas) if this locally rare species is to survive in Singapore.

**Scientific Name:**

*Echinaster callosus* Marenzeller,  
1895

**Common Name:**

Warty seastar

**Order/Family:**

Asteroidea: Echinasteridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found on shallow coral reefs or soft substrata and presumed to feed on epibiota or biofilms. The aboral surface sometimes has epi-symbiotic associates, including the comb jelly, *Coeloplana astericola*.

**Distribution:** A shallow tropical West Indo-Pacific species of coral reefs. Locally it has been found only once, in the 1990s, subtidally on coral rubble substrata between the Southern Islands of Pulau Hantu and Pulau Semakau.

**Threats:** A locally rare subtidal species that may be threatened with local extinction by SCUBA diver

collection. The location where this species has been recorded is used intensively for open water dive training. Further seabed reclamation in the Southern Islands area is an additional threat.

**Scientific Interest and Potential Value:** The specimen in the Museum (LKCNHM) collection has single dorsal callosities, unlike the transverse fused callosities more typical of Indo-Pacific forms. This may point to the Singapore form being a separate sub-species.

**Conservation Measures:** This species may not survive in Singapore waters unless its habitat is given Marine Protected Area status.

Photo: David J.W. Lane





**Scientific Name:**

*Luidia maculata* (Müller & Troschel, 1842)

**Common Name:**

Eight-armed seastar

**Order/Family:**

Asteroidea: Luidiidae

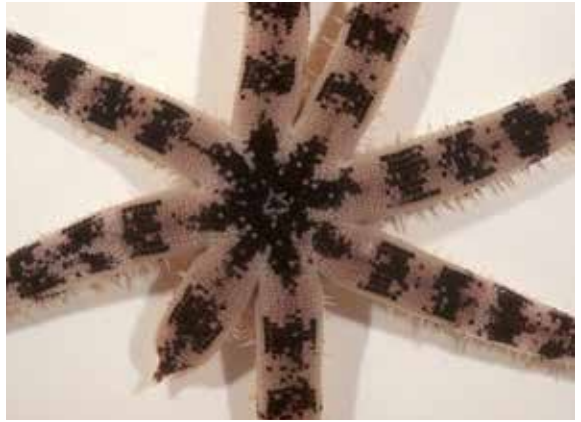
**National Status:** Endangered (EN)

**Habitat and Ecology:** Arm number, usually 8 in Singapore specimens, can vary from 6 to 9. A large predatory sea star living in and on soft intertidal and subtidal sediments. Also found on seagrass beds. Nocturnally active. Feeds on molluscs, other echinoderms and a variety of other infaunal invertebrates by engulfing them whole.

**Distribution:** Indo-west Pacific. Found intertidally all-around Singapore, particularly on northern shores, some of the Southern Islands and on the man-made reclaimed shorelines of East Coast Park.

**Threats:** Loss of habitat due to further land reclamation. Low salinity mortalities due to high rainfall episodes sometimes affect these and other echinoderms at the

Photo: David J.W. Lane



eastern end of the Johore Straits. Such events may become more frequent if there are climate-change-driven increases in monsoonal rainfall intensities.

**Scientific Interest and Potential Value:** This very large sea star is important as a component of Singapore's marine invertebrate 'megafaunal' biodiversity.

**Conservation Measures:** Dredging and coastal land reclamation in the latter part of the 20th century obliterated much of the habitat for this sea star but shorelines newly created by reclamation (e.g. East Coast Park and adjacent area) have, in time, become colonized by *Luidia* sea stars. Protection of both remnant natural habitats and newly created ones is desirable.

**Scientific Name:**

*Himerometra robustipinna* (Carpenter, 1881)

**Common Name:**

Red feather star

**Order/Family:**

Crinoidea: Himerometridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species lives in both intertidal and subtidal habitats. It is often found fully exposed, perched on corals, rocks or sponges, with its arms curled inwards.

Photo: Comprehensive Marine Biodiversity Survey (CMBS)



*Himerometra robustipinna* from waters of Lazarus Island.



**Distribution:** This species is found throughout Indo-Pacific region and is one of the more commonly seen species in Singapore.

**Threats:** Changes in habitat due to human activities.

**Scientific Interest and Potential Value:** Changes in habitat due to human activities.

**Conservation Measures:** Designating more marine protected areas can help in the conservation of this species and feather stars in general.

Photo: Teresa Tay



*Himerometra robustipinna* from waters of Lazarus Island.

**Scientific Name:**  
*Pontometra andersoni*  
(Carpenter, 1889)

**Common Name:**  
Feather star

**Order/Family:**  
Crinoidea: Colobometridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** This species is easily recognisable by its large size and many arms arranged in a parabolic fan. It has a tendency to shed its arms when stressed.

**Distribution:** This species is found throughout Indo-Pacific region, but despite being easily identified, there are few official records of this species in Singapore.

**Threats:** Environmental changes and human disturbances.

Photo: Comprehensive Marine Biodiversity Survey (CMBS)



**Scientific Interest and Potential Value:** Has the potential to be a bio-indicator due to its reaction to stress and disturbance.

**Conservation Measures:** Designating more marine protected areas can help in the conservation of this species and feather stars in general.

**Scientific Name:**  
*Prionocidaris baculosa*  
(Lamarck, 1816)

**Common Name:**  
Thorny sea urchin

**Order/Family:**  
Echinoidea: Cidaridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Feeds by grazing like all regular sea urchins but members of the Cidaridae family are also reported to be scavengers, feeding on dead animal material. Thorny primary spines are often covered with attached organisms and other fouling debris.

**Distribution:** Tropical Indo-west Pacific. In Singapore found intertidally at the eastern end of the Johore Straits as well as subtidally there and in the Southern Islands area.

Photo: David J.W. Lane



**Threats:** Further land reclamation off eastern Singapore and in the Southern Islands area.

**Scientific Interest and Potential Value:** The biology of this species is little known, but it is of intrinsic value as a component of Singapore's echinoid biodiversity.

**Conservation Measures:** Continued inclusion of intertidal Pulau Ubin areas within a designated marine wetland protection zone.

**Scientific Name:**  
*Chaetodiadema granulatum*  
Mortensen, 1903

**Common Name:**  
-

**Order/Family:**  
Echinoidea: Diadematidae

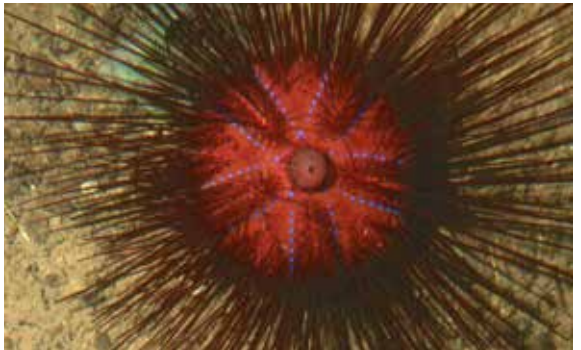
**National Status:** Endangered (EN)

**Habitat and Ecology:** A rare sea urchin found on soft sediments below the reef slope.

**Distribution:** Tropical Indo-west Pacific. In Singapore found thus far only in the Southern Islands area.

**Threats:** Status not evaluated globally but considered endangered locally as further land reclamation extending into deeper water in the Southern Islands area would lead to habitat loss.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** Throughout its Indo-west Pacific range this sea urchin is generally found at depths greater than 45 m but in Singapore it has been found at 15 m.

**Conservation Measures:** Encountered just once in waters off Pulau Semakau in the 1990s and again in the Southern Islands during the 2013 Comprehensive Marine Biological Survey, this species is rare in Singapore and its conservation probably requires inclusion of its localities within Singapore's Marine Protected Area network.

**Scientific Name:**

*Asthenosoma varium* Grube,  
1868

**Common Name:**

Fire urchin

**Order/Family:**

Echinoidea: Echinothuriidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This large sea urchin occurs on coarse soft sediments near reefs. Co-occurrence with gorgonian sea fans in Singapore indicates preference for an environment with good water flow. Several kinds of organisms, including commensal shrimps, live in association and presumably benefit from the protection of the urchin's venomous spines. Feeds on biofilms, detritus, and encrusting organisms.

**Distribution:** From the eastern Indian Ocean to New Caledonia. In Singapore this sea urchin is found only in the Southern Islands.

**Threats:** Reclamation of seabed habitat. The only known location for this sea urchin, off Sultan Shoal, is now partially enclosed by southward extending arms of land reclamation from Tuas and Jurong Island. This



Photo: David J.W. Lane

has likely altered the tidal flow and water quality regime; thus, the threat level is raised from Vulnerable to Endangered. Further sea floor reclamation in the area could render it locally extinct.

**Scientific Interest and Potential Value:** As a venomous marine organism *A. varium* is of particular interest to anyone likely to encounter it, as well as to scientists interested in the biochemical nature of the venom. This colourful urchin harbors equally colourful shrimp associates.

**Conservation Measures:** Potentially on the verge of local extinction as its only known location in Singapore, Sultan Shoal, has been radically impacted by nearby reclamation and port expansion. This species is in urgent need of re-assessment and protection measures need to be put in place for any remaining populations.

**Scientific Name:**

*Mespilia globulus* (Linnaeus,  
1758)

**Common Name:**

Globe urchin

**Order/Family:**

Echinoidea: Temnopleuridae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Occurs on shallow reefs and coral rubble and tends to cover itself with debris.

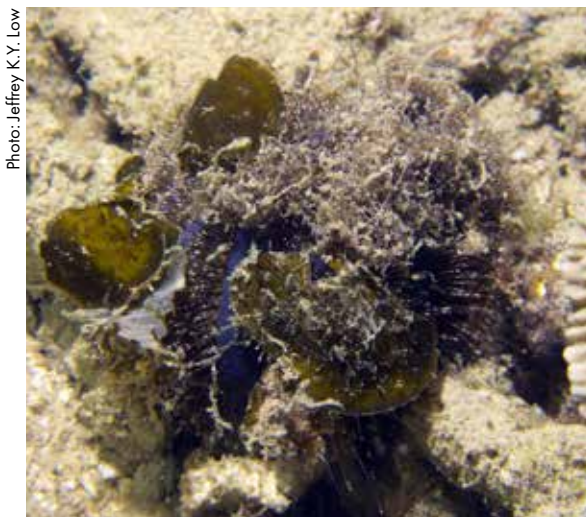


Photo: Jeffrey K.Y. Low

*Mespilia globulus* at Pulau Satumu, Singapore.



**Distribution:** A tropical Indo-west Pacific urchin and a relatively new discovery for Singapore. Found on the fringing reef of the southernmost of the Southern Islands, Pulau Satumu, in 2015.

**Threats:** A rare sea urchin in Singapore and thus vulnerable to illegal collection as an attractive aquarium trade species. Also threatened by further land reclamation in the Southern Islands.

**Scientific Interest and Potential Value:** The exceptional size of the Singapore specimen (about 8 cm diameter) indicates that this is a long-lived individual.

**Conservation Measures:** Found only on the furthest offshore reef. Inclusion of this fringing reef and nearby submerged ones in Singapore's Marine Protected Area network would be highly desirable.

Photo: David J.W. Lane



*Mespilia globulus* at Pulau Manukan, Sabah, Malaysia.

**Scientific Name:**

*Toxopneustes pileosus* (Lamarck, 1816)

**Common Name:**

Flower urchin

**Order/Family:**

Echinoidea: Toxopneustidae

Photo: Wayne Thean Kang Wei



*Toxopneustes pileosus* from Pulau Hantu, Singapore.

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Reef associated, generally found on coral rubble, often covering itself with sea floor debris, possibly as camouflage and/or protection against UV radiation. Reported to feed by grazing on epilithic organisms and detritus.

**Distribution:** Commonly encountered on Indo-west Pacific coral reefs and seagrass beds but rare in Singapore waters. An aggregation of 3 of these venomous urchins, found on coral rubble at Pulau Hantu in the Southern Islands in 2016, was a new record for Singapore.

**Threats:** Habitat loss due to further land reclamation in the Southern Islands region.

Photo: David J.W. Lane



*Toxopneustes pileosus* from Pulau Rawa, Malaysia.

**Scientific Interest and Potential Value:** Stings from the tiny fang-like jaws of the flower-like globiferous pedicellariae are highly dangerous; the venom interferes with nerve signal transmission and causes haemagglutination. Fatalities have been recorded thus gloves are essential when handling live specimens.

**Conservation Measures:** Inclusion of Pulau Hantu - and/or other sites where this sea urchin may be discovered - within the Marine Protected Area network.

**Scientific Name:**  
*Echinodiscus truncatus*  
(L. Agassiz, 1841)

**Common Name:**  
Key-hole sand dollar

**Order/Family:**  
Echinoidea: Astriclypeidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Intertidal sandy/silty shores and seagrass beds. Using its velvet-like covering of small, short spines it burrows just beneath the sediment surface.

**Distribution:** Indo-west Pacific from East Africa to New Caledonia. In Singapore known from a few sites in the Pulau Ubin / Pulau Tekong / Changi area.

**Threats:** An uncommon species it is under threat from coastal development in the Changi /Pulau Ubin /Pulau Tekong area.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** Various explanations for the adaptive value of the lunules have been put forward. One theory is that the lunule spines assist in burrowing while another idea is that the holes have a hydrodynamic function in reducing lift in strong currents, thus preventing dislodgment.

**Conservation Measures:** Currently protected, temporarily, at the Chek Jawa wetlands area at the eastern end of Pulau Ubin. Long-term conservation hinges on inclusion of this and/or neighboring habitats within Singapore's Marine Protected Area network.

**Scientific Name:**  
*Holothuria (Metriatyla) scabra*  
Jaeger, 1833

**Common Name:**  
Sandfish sea cucumber

**Order/Family:**  
Holothuroidea: Holothuriidae

Photo: David J.W. Lane



**National Status:** Endangered (EN)

**Habitat and Ecology:** Found at the low tide mark on sandy beaches, reef flats and seagrass beds, often partially or completely buried. Feeds on the organic matter ingested with sediments. Known to harbour symbiotic crabs within the ventilatory cloacal chamber.

**Distribution:** A widespread tropical Indo-west pacific sea cucumber. Locally it is found near the low tide mark at Chek Jawa (Pulau Ubin), the mainland shores of Changi, the West coast, and on some of the Southern Islands' patch reefs and seagrass beds.

**Threats:** Harvesting of this valuable bêche de mer species is widespread in the Indo-west Pacific. The numbers in Singapore are too low to support a viable fishery but casual collection for food would threaten populations. The main potential threat would be further land reclamation in the Changi area and of the Southern Islands' fringing and patch reefs.

**Scientific Interest and Potential Value:** *H. scabra* is a high-value commercial bêche de mer species and is one of the few that have been successfully reared for aquaculture. Singapore, one of the major trading centres for imported bêche de mer product, could profitably focus efforts towards intensive mariculture of this and other sea cucumber species, with local populations providing spawning broodstock.

**Conservation Measures:** The major factor affecting the continued survival of this species in Singapore waters is, apparently, not collection for food but the threat of further land reclamation, particularly in the Changi and Southern Islands regions. Effective local conservation would require inclusion of intertidal sand and seagrass habitats of this species within an expanded Marine Protected Area network.

**Scientific Name:**

*Stichopus herrmanni* Semper,  
1868

**Common Name:**

Curryfish sea cucumber

**Order/Family:**

Holothuroidea: Stichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found infrequently on shallow reef slopes of the Southern Islands. Feeds on organic material ingested with sediments.

**Distribution:** An Indo-west Pacific tropical species found locally only in the Southern Islands area.

**Threats:** Overexploited by the bêche de mer trade throughout its world distribution range and consequently listed by IUCN as Vulnerable. For Singapore the threat category is raised to Endangered because of the small numbers and restricted distribution range here.

Photo: David J.W. Lane



**Scientific Interest and Potential Value:** A medium-value Indo-west Pacific species in the bêche de mer sea food trade.

**Conservation Measures:** Effective local conservation would require inclusion of Southern Islands subtidal and seagrass habitats of this species within an expanded Marine Protected Area network.



**Scientific Name:**

*Stichopus vastus* Sluiter, 1887

**Common Name:**

Zebrafish sea cucumber

**Order/Family:**

Holothuroidea: Stichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found on coral rubble of reef slopes and soft sediments. Feeds on sediment and derives nutrition from the associated organic matter.

**Distribution:** A central Indo-west Pacific tropical species that is found in small numbers on reef slopes and seagrass beds of the Southern Islands.

**Threats:** Exploited by the bêche de mer trade throughout its world distribution range but the IUCN threat level is listed as Least Concern globally. For Singapore the threat category is raised to Endangered because of the small numbers and restricted distribution range here.

Photo: David J.W. Lane



*Stichopus vastus* in the waters of Pulau Semakau, Singapore.

**Scientific Interest and Potential Value:** A bêche de mer fishery species that is exploited throughout its range.

**Conservation Measures:** Effective local conservation would require inclusion of Southern Islands subtidal and seagrass habitats of this species within an expanded Marine Protected Area network.

**Scientific Name:**

*Stichopus ocellatus* Massin, Zulfigar, Hwai & Boss, 2002

**Common Name:**

Ocellated sea cucumber

**Order/Family:**

Holothuroidea: Stichopodidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found on coral rubble of reef slopes and soft sediments. Feeds on sediment and derives nutrition from the associated organic matter.

**Distribution:** South China Sea, South-west Sulawesi, Papua New Guinea in addition to Singapore. First

Photo: David J.W. Lane



described and named from Malaysian waters in 2002 but known on Singapore's Southern Islands' reef slopes since the mid-1980s.

**Threats:** Continued land reclamation around the Southern Islands threatens to obliterate the remaining habitat of this uncommon species.

**Scientific Interest and Potential Value:** This species is undoubtedly exploited by the sea cucumber trade in the West Pacific but, until recently at least, it was not recognised as a distinct species and had been grouped with other similar stichopodid sea cucumbers in fishery trade data.

**Conservation Measures:** Inclusion of habitat localities within an expanded Southern Islands Marine Protected Area network would help to conserve this species.

**Scientific Name:**  
*Pseudocolochirus violaceus*  
(Théel, 1886)

**Common Name:**  
Sea-apple sea cucumber

**Order/Family:**  
Holothuroidea: Cucumariidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Found intertidally in the Changi/ Pulau Ubin area and in greater numbers in offshore dredge hauls in the same region. Also seen, infrequently, on reef slopes around the Southern Islands (where this photo was taken). Expanded branching tentacles, coated in mucus and held in the water column, are retracted one at time and stuffed into the central mouth to ingest trapped suspended organic particulates and plankton.

**Distribution:** A tropical sea cucumber with a central Indo-west Pacific distribution. In Singapore it is found in the Changi/ Ubin/ Tekong area and around the Southern Islands.

**Threats:** This multicoloured sea cucumber is harvested in the Pacific region as an aquarium trade species and



it is possible that casual collection by beachcombers could present a threat to local populations. Further land reclamation, particularly in the Changi/ Pulau Ubin/ Pulau Tekong area would be a threat to local populations.

**Scientific Interest and Potential Value:** The bright colouration of the Sea-apple sea cucumber is attractive to the aquarist but in nature, it probably serves as a warning colouration, signaling the presence of toxic chemicals that deter potential predators.

**Conservation Measures:** Prevention of habitat loss and major population losses of this species requires long-term protection of intertidal sites at the Chek Jawa Wetland Reserve as well as adjacent subtidal habitats between Changi, Pulau Ubin and Pulau Tekong.

**Scientific Name:**

*Euryale aspera*

Lamarck, 1816

**Common Name:**

Basket star

**Order/Family:**

Euryalida: Euryalidae

**National Status:** Data Deficient (DD)

**Habitat and Ecology:** This species stays hidden within crevices on the reef during the day. At night, it emerges to seek for its food in the form of plankton by extending its arms in a basket-like posture. Juveniles have been found on Sea fans.

**Distribution:** Indo-west Pacific, typically at depths from 2 to 60m. In Singapore, its presence was first based on a single record from the 19th century when it was collected at a depth of 40m off St John's Island in the Southern Islands. Subsequently, over the past fifteen years, it has been recorded in the east Johore Straits, off Changi and at Pulau Hantu in the Southern Islands.

**Threats:** In the past, the dumping of dredge spoils in the Singapore Deepes off St John's Island may have adversely

Photo: David J.W. Lane



impacted this species. The true status of this nocturnal species is still relatively unknown since night diving surveys are not often carried out on Singapore reefs.

**Scientific Interest and Potential Value:** In the second edition Singapore Red Data Book, it was not known whether this species had already been extirpated. It has since been confirmed to be present at a number of sites including off the coast of Changi and in the waters around the Southern Islands.

**Conservation Measures:** More night dives are needed to better understand the distribution as well as ecology of this species.

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# FAUNA : VERTEBRATES

## Freshwater Fishes

LOW BI WEI, TAN HEOK HUI, JEFFREY T.B. KWIK, ZENG YIWEN, DARREN C.J. YEO

The ten species highlighted in this chapter exemplify an assortment of the challenges facing native freshwater fish conservation in Singapore. In total, 45 species of native freshwater fishes have been recorded from Singapore, of which 36 are currently extant and nine presumably Nationally Extinct. Owing to threats such as habitat degradation and invasive species, about half of the extant native freshwater fishes (19 species or 53%) fall within a threatened category.

The majority of the fishes (24 species) occur only in natural streams or freshwater swamp within forests or along forest edges, which are characterized by cool, acidic waters. A few species, such as the saddle barb *Barbodes sellifer* or the harlequin rasbora *Trigonostigma heteromorpha*, may be sighted more frequently in nature areas by those with a keen eye, but are nonetheless considered nationally threatened due to their narrow habitat requirements and restricted distributions. Their small numbers and fragmented populations make them highly vulnerable to anthropogenic and natural stressors such as habitat modification, poaching and extreme weather events. This highlights the importance of preserving and monitoring protected forested areas, such as the nature reserves, for their long-term survival.

The remaining 12 species are generally found in exposed habitats in rural to urban areas, such as open-canopy streams, freshwater marshes, ponds, and reservoirs. While these species are adapted to exposed habitat conditions, their close proximity to anthropogenic activities and disturbances poses a different set of challenges. For instance, the threat posed by non-native species introductions is greater in disturbed habitats. Examples of invasives negatively impacting native counterparts include the introduced barcheek goby *Rhinogobius similis*, believed to have caused extirpations of native gobies *Eugnathogobius siamensis* and *Pseudogobiopsis oligactis*, as well as the African sharptooth catfish *Clarias gariepinus* displacing the once-common native walking catfish *Clarias batrachus* from urban water bodies.

Despite Singapore's small size and numerous anthropogenic pressures on freshwater ecosystems, there have been numerous significant scientific discoveries. For example, the spotted eel-loach *Pangio muraeniformis*, harlequin rasbora *Trigonostigma heteromorpha*, longnose little warty catfish *Parakysis longirostris* and saddle barb *Barbodes sellifer* were all formally described from Singapore, the latter of which as recently as 2021. In 2022, a population of the bladefin catfish *Encheloclarias kelioides*, an extremely rare species not seen since its original description from Malaysia in the early 1990s and once thought to be globally extinct, was discovered from a few streams in the Central Catchment Nature Reserve.

**Scientific Name:**  
*Barbodes sellifer* Kottelat  
& Lim, 2021

**Common Name:**  
Saddle barb

**Order/Family:**  
Cypriniformes: Cyprinidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Gregarious, omnivorous species that frequents the middle and lower parts of the water column, usually occurring in large, loose shoals. Typically inhabits forest streams and freshwater swamps.

**Distribution:** In Singapore, known from the Central Catchment Nature Reserve, Bukit Timah Nature Reserve, Western Catchment forests and Pulau Tekong. Distributed in the Malay Peninsula, Sumatra, Riau islands, Natuna islands and Anambas islands.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. An introduced congener, *B. rhombeus*, is present in Singapore although it generally occupies a different habitat niche, occurring in disturbed, open-canopy streams at forest

Photo: Tan Heok Hui



edges and open country habitats. Nonetheless, it is unknown if competition had occurred between both species in the past.

**Scientific Interest and Potential Value:** This species was described recently in 2021 based on specimens collected from Singapore. Previously identified as *Puntius binotatus* (Valenciennes, in Cuvier & Valenciennes, 1842) and later (1996 onwards) as *Puntius*, *Systemus* or *Barbodes banksi* (Herre, 1940). However recent studies have shown that *B. banksi* is restricted to western Borneo, whereas other populations represent a distinct species and should be referred to as *B. sellifer*.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts.

**Scientific Name:**  
*Boraras maculatus*  
(Duncker, 1904)

**Common Name:**  
Pygmy rasbora

**Order/Family:**  
Cypriniformes: Cyprinidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Gregarious species that appears to be restricted to shallow forest streams and freshwater swamps with slow-flowing, acidic waters.

Photo: Tan Heok Hui



**Distribution:** In Singapore, known only from a small number of locations in the Central Catchment Nature Reserve. Distributed in the Malay Peninsula, Sumatra and Riau islands.



**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. Appears to be relatively sensitive to anthropogenic impacts; a sharp population decline was observed at one location between 2013 and 2015 following stream modification (that led to increased sedimentation and altered flow patterns). Does not appear to be collected in any substantial numbers for the aquarium trade locally, although its occurrence in only a few locations (and in

small numbers) means that any illegal collection may still pose a threat.

**Scientific Interest and Potential Value:** This brightly-coloured species is a popular aquarium fish.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts.

**Scientific Name:**

*Trigonostigma heteromorpha*  
(Duncker, 1904)

**Common Name:**

Harlequin rasbora

**Order/Family:**

Cypriniformes: Cyprinidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Gregarious species that frequents the upper and middle parts of the water column, mainly feeding on insects. Restricted to forest streams and freshwater swamps with acidic waters.

**Distribution:** In Singapore, known from the Central Catchment Nature Reserve, Bukit Timah Nature Reserve, Western Catchment forests and Pulau Tekong. Distributed in the Malay Peninsula, Sumatra, Riau islands, Natuna islands and Anambas islands.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. Does not

Photo: Tan Heek Hui



appear to be collected in any substantial numbers for the aquarium trade locally, although sporadic illegal collection may still pose a threat.

**Scientific Interest and Potential Value:** This popular aquarium fish was described in 1904 based on specimens collected from Kuala Lumpur and the Singapore Botanic Gardens. This species was one of seven native fishes featured on an iconic Singapore stamp series issued in 1962 (as *Rasbora heteromorpha*).

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts, as well as policing against illegal collection.

**Scientific Name:**  
*Pangio muraeniformis*  
(de Beaufort, 1933)

**Common Name:**  
Spotted eel-loach

**Order/Family:**  
Cypriniformes: Cobitidae

Photo: Tan Heok Hui



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Bottom-dwelling omnivorous species that is restricted to forest streams and freshwater swamps with acidic waters. Typically hidden amongst dense submerged vegetation and leaf litter.

**Distribution:** In Singapore, known only from one small area of the Central Catchment Nature Reserve. Distributed in the Malay Peninsula and Riau islands.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. It occurs only in a single patch of forest, where it is uncommon.

**Scientific Interest and Potential Value:** This species was described in 1933 based on specimens collected from Singapore.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts.

**Scientific Name:**  
*Parakysis longirostris*  
Ng & Lim, 1995

**Common Name:**  
Longnose little warty catfish

**Order/Family:**  
Siluriformes: Akysidae

Photo: Tan Heok Hui



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Bottom-dwelling species that inhabits fast-flowing sections of swamp-forest streams with acidic waters and dense growths of submerged vegetation and/or leaf litter. A highly secretive species that feeds on small invertebrates and uses its paired fins to move about on the stream bed.

**Distribution:** In Singapore, known only from one small area of the Central Catchment Nature Reserve. Distributed in the southern Malay Peninsula and Riau islands.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. It occurs only in a single patch of forest, where it is rare. Occurs mostly in faster-flowing stream sections, which suggests it may be vulnerable to hydrological perturbations.

**Scientific Interest and Potential Value:** This species was described in 1995 based on specimens collected from Singapore.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts.

**Scientific Name:**  
*Encheloclarias kelioides*  
Ng & Lim, 1993

**Common Name:**  
Bladefin catfish

**Order/Family:**  
Siluriformes: Clariidae



Photo: Tan Heok Hui

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Highly secretive bottom-dwelling species that is restricted to acidic swamps, where it hides amongst submerged vegetation or burrows into the substratum.

**Distribution:** In Singapore, known so far from only a single location within the Central Catchment Nature Reserve. Distributed in the southern Malay Peninsula.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. It has an extremely restricted local distribution, occurring only in the upper reaches of a few streams, and in very small numbers, within a single patch of forest.

**Scientific Interest and Potential Value:** Recently discovered in Singapore in 2022. Prior to this, the species was only known from two individuals collected from Johor and Pahang in the early 1990s, with no other specimens known to have been collected since. In 2019, the IUCN Red List noted that the species may already be extinct, given that the only previous known locations (in Johor and Pahang) have become highly degraded, and extensive surveys in Peninsular Malaysia failed to detect the species. The discovery of a population from Singapore is therefore of potential global significance as it could provide assurances for the long-term survival of the species, given its possible extirpation elsewhere.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts.

**Scientific Name:**  
*Eugnathogobius siamensis*  
(Fowler, 1934)

**Common Name:**  
Roundhead stream goby

**Order/Family:**  
Gobiiformes: Gobiinellidae



Photo: Tan Heok Hui

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Bottom-dwelling, diurnal carnivore that inhabits rural open-canopy streams with flowing water and sandy/clay bottoms.

**Distribution:** In Singapore, known only from one semi-urban stream in the Thomson area. Widely distributed from southern China to Indonesia.

**Threats:** Displacement by invasive species and habitat degradation. The species was recorded from multiple locations in central, northeastern and western Singapore in the 1930s to 1960s, although since 2005, it is only known from a single location within the Kallang river basin. Observed declines have been largely attributed to competition and displacement by the introduced *Rhinogobius similis* (previously identified as *R. giurinus*). Its last remaining location lies within a semi-urban residential area and is unprotected, which further increases the risk of extirpation from anthropogenic factors (e.g., pollution, channelization). It is also unknown if the completion of the Marina Barrage in 2008 has impacted the species, given that it requires

access to the sea to complete its life cycle (the larvae have an obligate phase in saline waters).

**Scientific Interest and Potential Value:** This species is very occasionally seen in the aquarium trade.

**Conservation Measures:** The local status of this species requires urgent verification; it was last recorded in 2005, and there are concerns it may already be extirpated. If still extant, it requires immediate protection of its remaining habitat(s) from human impacts, and, if numbers allow, a potential translocation to waterways that continue to have connection with the sea.

**Scientific Name:**

*Nandus nebulosus* (Gray, 1835)

**Common Name:**

Sunda leaf fish

**Order/Family:**

Perciformes: Nandidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Solitary, cryptic carnivore that is restricted to slow-flowing forest streams. Resembles a dead leaf and uses its camouflage to avoid predation as well as to sneak up to or ambush small fishes and crustaceans.

**Distribution:** In Singapore, known only from a small number of locations in the Central Catchment Nature Reserve and Bukit Timah Nature Reserve. Distributed in the Malay Peninsula, Sumatra and Borneo.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. It is generally

Photo: Tan Heok Hui



rare at known locations. Does not appear to be collected in any substantial numbers for the aquarium trade locally, though its occurrences in only a few locations (and in small numbers) means that any illegal collection may still pose a threat.

**Scientific Interest and Potential Value:** This species is sometimes sold as an aquarium fish.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts, as well as policing against illegal collection.

**Scientific Name:**

*Betta imbellis* Ladiges, 1975

**Common Name:**

Crescent betta

**Order/Family:**

Perciformes: Osphronemidae

Photo: Tan Heek Hui



**National Status:** Endangered (EN)

**Habitat and Ecology:** Air-breathing species that frequents the upper parts of the water column, mainly feeding on small arthropods. Typically inhabits slow-flowing, rural open-canopy streams, ponds, and swamps with dense aquatic vegetation. Males are highly territorial and usually solitary. Exhibits paternal care; the male builds a bubble nest amongst floating or emergent vegetation, where eggs and fry will be tended to until free-swimming.

**Distribution:** In Singapore, known from a few small areas in the Central Catchment Nature Reserve and rural parts of northwestern Singapore. Distributed in the Malay Peninsula and northern Sumatra.

**Threats:** Mainly habitat degradation. While the species is relatively common at one location, it is extremely rare

at other areas where (presumably small) populations may be highly vulnerable to disturbances. Does not appear to be collected in any substantial numbers for the aquarium trade locally, though its occurrences in only a few locations (and in small numbers) means that any illegal collection may still pose a threat.

**Scientific Interest and Potential Value:** A popular aquarium fish. In southern Thailand, this species is selectively bred for aggression and used for fish-fighting (similar to its close relative the Siamese fighting fish, *B. splendens*).

**Conservation Measures:** Continued protection of its natural habitat (typically rural open-canopy streams and ponds) from human impacts, as well as policing against illegal collection.

**Scientific Name:**

*Channa limbata* (Cuvier, in Cuvier & Valenciennes, 1831)

**Common Name:**

Dwarf snakehead

**Order/Family:**

Perciformes: Channidae

Photo: Tan Heek Hui



**National Status:** Endangered (EN)

**Habitat and Ecology:** Solitary, air-breathing carnivore that is restricted to shallow forest streams

and acidic swamps, feeding on small fish, insects, and crustaceans. Exhibits intensive parental care; the male broods the eggs and fry in his mouth, and both parents guard the free-swimming fry aggressively.

**Distribution:** In Singapore, known only from a small number of locations in the Central Catchment Nature Reserve and Bukit Timah Nature Reserve. Widely distributed from southern China to Indonesia.

**Threats:** Mainly habitat degradation, given that this species is restricted to forested habitats. It is generally uncommon in known locations. Reported as extinct in 1966 but was later rediscovered in 1989. Does not appear to be collected in any substantial numbers for the aquarium trade locally, though its occurrences in only a few locations (and in small numbers) means that any illegal collection may still pose a threat.

**Scientific Interest and Potential Value:** This species is sometimes sold as an aquarium fish. Previously identified as *C. gachua* (Hamilton, 1822), but recent genetic studies have shown that *C. gachua* is restricted to the Indian subcontinent, whereas populations east of the Indo-Burman ranges (southern China, most of Indochina, Sundaic Southeast Asia) including those in Singapore represent a distinct species that should be referred to as *C. limbata*.

**Conservation Measures:** Continued protection of its natural habitat (forest streams and freshwater swamps) from human impacts, as well as policing against illegal collection.

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# Marine Fishes

ZEEHAN JAAFAR, JEFFREY K.Y. LOW, KELVIN K.P. LIM

**Scientific Name:**

*Aetobatus ocellatus* (Kuhl, 1823)

**Common Name:**

Ocellated eagle-ray

**Family:**

Aetobatidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Ocellated eagle-ray occurs in shallow coastal areas to depths of up to 60m. In Singapore, this species has been observed in areas with fringing coral reefs, as well as lagoons and embayments. This species feeds on fishes as well as small invertebrates such as molluscs and crustaceans. Fecundity in this species is low; females do not bear young annually, and gestation for each litter has been reported to be about twelve months.

**Distribution:** The Ocellated eagle-ray can be found in the tropical and warmer temperate coastal reefs of the Indo-West and Central Pacific regions. This species was first reported from Singapore in 1849 and is extant at both Singapore and Johor Straits.

**Threats:** Habitat loss, habitat modification, recreational angling, extraction for consumption.

**Scientific Interest and Potential Value:** Global populations of this species are classified as Vulnerable to Extinction by IUCN's Red List of Threatened Species. The meat of this species is consumed, and skin is used for leather goods. Throughout its distribution, most population sizes are on the decline given its susceptibility to anthropogenic activities coupled with its low fecundity. In Singapore, this species is considered highly desirable, and targeted by recreational anglers.

**Conservation Measures:** Presently, there are no conservation measures specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

Photo: Khalid El Quazghi



*Aetobatus ocellatus* off Sentosa, Singapore.

**Scientific Name:**  
*Rhynchobatus australiae*  
(Whitley, 1939)

**Common Name:**  
White-spotted wedgefish

**Family:**  
Rhinidae



*Rhynchobatus australiae* in the waters of Thailand.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** One of the largest wedgefish species, the White-spotted wedgefish can grow to 3m in total length. This species can be found throughout the Indo-Pacific region, from shallow coastal waters to 60m deep. The White-spotted wedgefish feeds on small invertebrates such as molluscs and crustaceans. This species is viviparous, and females bear litter sizes of up to 19 pups.

**Distribution:** The White-spotted wedgefish can be found in the tropical and warmer temperate coastal reefs of the Indo-West Pacific regions. In Singapore, this species was first reported in 1999; and has since been primarily encountered when caught by recreational anglers at nearshore areas with sandy-silt substrate.

**Threats:** Habitat loss, habitat modification, recreational angling.

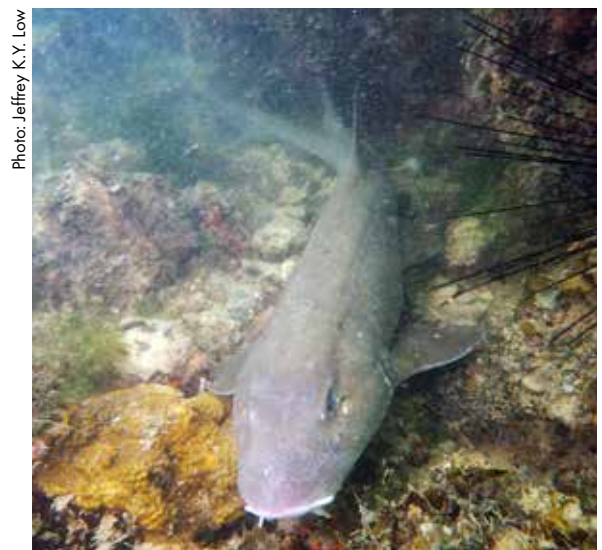
**Scientific Interest and Potential Value:** Global populations of this species are classified as Critically Endangered by IUCN's Red List of Threatened Species due to targeted and intense fishing pressure in areas where they occur. The fins of this species are prized, as are the snout. The meat is also consumed although often sold at a fraction of the price of the fins and snout. In Singapore, this species is considered highly desirable, and targeted by recreational anglers.

**Conservation Measures:** Presently, there are no conservation measures specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**  
*Nebrius ferrugineus*  
(Lesson, 1831)

**Common Name:**  
Tawny nurse shark

**Family:**  
Ginglymostomatidae



*Nebrius ferrugineus* in waters off Pulau Biola, Singapore.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Tawny nurse shark is a docile, nocturnal species that is naturally distributed throughout the Indo-Pacific region. This viviparous species is most commonly observed over continental shelf areas shallower than 70m. The Tawny nurse shark feeds on cephalopods, crustaceans, corals, echinoderms, and small fishes.

**Distribution:** The Tawny nurse shark is widely distributed in the tropical and warmer temperate coastal reefs of the Indo-West Pacific regions. In Singapore, this species was first reported in 1852; and is at present occasionally observed in the coral reef areas within the Singapore Strait.

**Threats:** Habitat loss, habitat modification.

**Scientific Interest and Potential Value:** Global populations of this species are classified as Vulnerable by IUCN's Red List of Threatened Species due to targeted and intense fishing pressure in areas where they occur. The meat of this species is consumed fresh, dried, or salted, and the skin is used for leather goods. In Singapore, this species is considered highly desirable by recreational anglers.

**Conservation Measures:** At present, there are no conservation measures specific for this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**

*Hippocampus comes* Cantor  
1849

**Common Name:**

Tiger tail seahorse

**Family:**

Syngnathidae

Photo: Jeffrey K.Y. Low



*Hippocampus comes* at 3m water depth off Pulau Hantu, Singapore.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Tiger tail seahorse is a cryptic species typically observed in shallow coastal areas. In Singapore, this species is closely associated with coral reefs and coral-associated seagrass meadows. The upper and lower jaws of seahorses are fused and tubular resulting in a highly specialised feeding mechanism. The prey items of seahorses constitute mostly of small zooplankton organisms. Similar to males of other seahorse species, the males of the Tiger tail seahorse possess a brood pouch into which females deposit eggs. Males tend to the clutch of eggs until they hatch.

**Distribution:** First described from Penang Island, Peninsular Malaysia, this species is now reported to be distributed along coastal areas of Eastern Indian and Western Pacific Oceans. In Singapore, this species was

first reported in 1861; and has been reported at sites within Singapore and Johor Straits.

**Threats:** Habitat loss, habitat modification, declining water quality, targeted extraction.

**Scientific Interest and Potential Value:** Global populations of the Tiger tail seahorse are assessed as Vulnerable by IUCN's Red List of Threatened Species. The primary drivers of threat include targeted extraction of this species, along with other seahorses and pipefishes as these are sought after for the curio trade and traditional remedies market. Live seahorses are also captured for the aquaria trade.

**Conservation Measures:** There are no conservation measures in place specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**

*Lutjanus sebae*  
(Cuvier, 1816)

**Common Name:**

Red emperor snapper

**Family:**

Lutjanidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Red emperor snapper is a reef-associated species although adults can occur in deeper areas with sandy-silt substrate. This species feeds on small fishes, crustaceans, and cephalopods. Sub-adults possess characteristic dark red bands that are lost in adult individuals; the latter are uniformly red or pink.

**Distribution:** This species is widely distributed at tropical nearshore areas across the Indo-west Pacific, from the southern Red Sea and East Africa, east to Australia and southern Japan. First reported from Singapore in 1865, this species is encountered—by divers or recreational anglers—within the Straits of Singapore.

Photo: Jeffrey K.Y. Low



*Lutjanus sebae* at 12m water depth at Terumbu Pempang Laut, Singapore.

**Threats:** Habitat loss, habitat modification, declining water quality, targeted extraction.

**Scientific Interest and Potential Value:** Global populations of the Red emperor snapper are assessed as Least Concern by IUCN's Red List of Threatened Species. This is a commercially important species and is prized by recreational anglers in Singapore.

**Conservation Measures:** There are no conservation measures in place specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**

*Pomacentrus alexanderae*  
Evermann & Seale 1907

**Common Name:**

Alexander's damselfish

**Family:**

Pomacentridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Alexander's damselfish is a reef-obligate species that is solitary or occur in pairs. This species feeds on algae and small invertebrate organisms such as crustaceans and gastropods. This oviparous species practices parental care—males guard and aerate eggs, that are laid on hard substrate, until they hatch.

Photo: Jeffrey K.Y. Low



*Pomacentrus alexanderae* at Sisters' Islands, Singapore.

**Distribution:** This species is widely distributed at tropical coral reef areas across the Western Pacific. First reported from Singapore in 1990, this species is encountered at only a few sites within the Straits of Singapore where live coral cover is higher.



**Threats:** Habitat loss, habitat modification, declining water quality.

**Scientific Interest and Potential Value:** Global populations of Alexander's damselfish have not yet been evaluated by IUCN's Red List of Threatened Species. This species is occasionally observed in the aquaria trade.

**Conservation Measures:** There are no conservation measures in place specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**  
*Halichoeres melanochir*  
Fowler & Bean 1928

**Common Name:**  
Orangefin wrasse

**Family:**  
Labridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Orangefin wrasse occurs in coral reefs and shallow rocky areas either singly or in small groups. This species feeds on small invertebrate organisms and form distinct pairs during mating. Little else is known of their ecology.

**Distribution:** This species is widely distributed across the Western Pacific. First reported from Singapore in 1990, this species is now encountered at only a few sites within the Straits of Singapore.

**Threats:** Habitat loss, habitat modification, declining water quality.

**Scientific Interest and Potential Value:** : Global populations of Orangefin wrasse are evaluated as Least Concern by IUCN's Red List of Threatened Species. This species is occasionally observed in the aquaria trade.

**Conservation Measures:** There are no conservation measures in place specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

Photo: Jeffrey K.Y. Low



*Halichoeres melanochir* in waters off Pulau Satumu, Singapore.



**Scientific Name:**  
*Thalassoma lunare*  
(Linnaeus 1758)

**Common Name:**  
Moon wrasse

**Family:**  
Labridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** The Moon wrasse inhabits coral reefs and shallow rocky areas either singly or in small groups. This species feeds on small invertebrate organisms and occasionally, small fishes. The Moon wrasse has been reported to engage in cleaning behaviour, where they pick on ectoparasites off other fishes that they then consume.

**Distribution:** This species is widely distributed across the Western Pacific. First reported from Singapore in 1860, this species is now only rarely observed at a few sites within the Straits of Singapore.

Photo: Jeffrey K.Y. Low



*Thalassoma lunare* in waters of Boracay, Philippines.

**Threats:** Habitat loss, habitat modification, declining water quality.

**Scientific Interest and Potential Value:** Global populations of Moon wrasse are evaluated as Least Concern by IUCN's Red List of Threatened Species. This species is occasionally observed in the aquarium trade.

**Conservation Measures:** There are no conservation measures in place specific to this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

# Amphibians

NOEL J. THOMAS, LAW ING SIND

**Scientific Name:**  
*Ichthyophis paucisulcus*

**Common Name:**  
Asian Striped Caecilian

**Order/Family:**  
Gymnophiona: Ichthyophidae

Photo: Noel Thomas



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits mature forest, burrowing in soil and leaf litter along forest streams. Probably feeds on worms and other soil-dwelling animals. Larvae are aquatic and live in streams among submerged leaf litter.

**Distribution:** Known from the Bukit Timah Nature Reserve and observed in a single location at the Central Catchment Nature Reserve. Otherwise, it is known only from Sumatra.

**Threats:** Habitat degradation and climate change.

**Scientific Interest and Potential Value:** The identification is tentative. The true identity of the species is uncertain as species identification can only be based on adult specimens, and adults have not been found recently. Allied species in the genus are sometimes collected for the pet trade in other parts of Southeast Asia.

**Conservation Measures:** Continued habitat protection in Bukit Timah and Central Catchment Nature Reserves where it is known to occur, and to protect streams against siltation.

**Scientific Name:**  
*Ingerophrynus quadriporcatus*

**Common Name:**  
Four-ridged Toad

**Order/Family:**  
Anura: Bufonidae

Photo: Law Ing Sind



**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Adults congregate near clear stagnant puddles in primary and secondary swampy forests, where they breed. Larvae are free swimming and live in the puddles.

**Distribution:** Peninsular Malaysia, Singapore, Borneo and Sumatra. In Singapore it is restricted to the Bukit Timah and Central Catchment Nature Reserves.

**Threats:** Habitat degradation and climate change.

**Scientific Interest and Potential Value:** Striking red colour may be attractive to poachers for the commercial pet trade.

**Conservation Measures:** Continued habitat protection of available habitats, all of which are currently protected.

**Scientific Name:**  
*Pelophryne ingeri*

**Common Name:**  
Inger's Cross Toadlet

**Order/Family:**  
Anura: Bufonidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from a small patch of primary forest in Bukit Timah Nature Reserve where the humidity is very high, and breeds in water filled tree holes. Tadpoles are free swimming but do not have functional mouthparts and quickly develop into toadlets.

**Distribution:** Peninsular Malaysia, Singapore and parts of Sumatra. Locally known only from a small patch of primary forest in Bukit Timah Nature Reserve.

**Threats:** Habitat degradation, potentially the drying up of Bukit Timah Forest.

Photo: Nick Baker



**Scientific Interest and Potential Value:** Biology and ecology are poorly known. Small size and bright colours might make it attractive to poachers for the commercial pet trade.

**Conservation Measures:** Continued protection of Bukit Timah Nature Reserve and control of recreational human activities at the specific site where this species occurs. The design and creation of artificial 'tree-holes' for the species to utilise could be considered. Continued population monitoring is needed. A captive breeding program is recommended to further protect this species.

**Scientific Name:**  
*Pelobatrachus nasutus*

**Common Name:**  
Malayan Horned Frog

**Order/Family:**  
Anura: Megophryidae

Photo: Noel Thomas



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from small patches of primary forest in Bukit Timah Nature Reserve and the Central Catchment Nature Reserve. This species breeds in flowing clear rocky or sandy bottom streams.

**Distribution:** Has a wide regional distribution, from Peninsular Malaysia, Indonesia, Thailand, Borneo and Singapore.

**Threats:** Habitat degradation, fouling of streams and poaching.

**Scientific Interest and Potential Value:** This species is highly sought after in the pet trade.

**Conservation Measures:** Continued protection of sites where it occurs at and conservation of forest streams from human use.

**Scientific Name:**

*Leptobrachium nigrops*

**Common Name:**

Black-eyed Litter Frog

**Order/Family:**

Anura: Megophryidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Species occurs in deep leaf litter in primary and mature secondary forests. Tadpoles can be found in puddles or slow flowing streams.

**Distribution:** Peninsular Malaysia, Singapore and Sumatra. Locally it is restricted to Bukit Timah and Central Catchment Nature Reserves.

**Threats:** Habitat degradation, fouling of breeding pools, and climate change.

**Scientific Interest and Potential Value:** Described from Singapore, extinction at type locality will be an issue for future taxonomic work.

**Conservation Measures:** Continued protection of sites where it occurs.

Photo: Noel Thomas



**Scientific Name:**

*Limnonectes paramacrodon*

**Common Name:**

Lesser Swamp Frog

**Order/Family:**

Anura: Dicroglossidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from a single patch of swamp forest on mainland Singapore and also from Pulau Tekong. Little else is known about the ecology of the species, but it presumably breeds in freshwater swamp forests.

**Distribution:** Peninsular Malaysia, Borneo, Thailand, Indonesia, Singapore.

Photo: Low Ing Sind



**Threats:** Degradation of swamp forest.

**Scientific Interest and Potential Value:** The tadpoles are undescribed.

**Conservation Measures:** Continued protection of forest reserves.

**Scientific Name:**

*Limnonectes plicatellus*

**Common Name:**

Rhinoceros Frog

**Order/Family:**

Anura: Dicroglossidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs in primary and mature secondary forests of Bukit Timah Nature Reserve and Central Catchment Nature Reserve. This species breeds in streams and puddles that form after heavy rain. Males are often heard calling from the vicinity of water bodies.

**Distribution:** Peninsular Malaysia, Borneo, Thailand, Indonesia, Singapore.

Photo: Nick Baker



**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** It is a potential indicator of the quality of freshwater bodies.

**Conservation Measures:** Continued protection of the nature reserves is required.



**Scientific Name:**

*Leptomantis cyanopunctatus*

**Common Name:**

Blue-legged Bush Frog

**Order/Family:**

Anura: Rhacophoridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known from primary forest from a single patch of swamp forest in mainland Singapore. Little else is known about the ecology of the species, but it presumably breeds in freshwater swamp forest streams.

**Distribution:** Peninsular Malaysia, Borneo, Thailand, Indonesia, Singapore.

Photo: Low Ing Sind



**Threats:** Degradation of swamp forest.

**Scientific Interest and Potential Value:** Study of its ecology is imperative.

**Conservation Measures:** Continued protection of the nature reserves. A captive breeding program is recommended to further protect this species.

**Scientific Name:**

*Theloderma horridum*

**Common Name:**

Thorny Bush Frog

**Order/Family:**

Anura: Rhacophoridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from a handful of records from primary forests in Bukit Timah Nature Reserve, and a single record from Nee Soon swamp forest. Little is known about the ecology of the species, except that it breeds in wet tree-holes.

**Distribution:** Peninsular Malaysia, Borneo, Thailand, Indonesia, Singapore.

Photo: Low Ing Sind



**Threats:** Degradation of swamp forest.

**Scientific Interest and Potential Value:** Studies on its reproduction and ecology are imperative.

**Conservation Measures:** Continued protection of the nature reserves is needed. A captive breeding program is recommended to further protect this species.



**Scientific Name:**

***Micryletta subaraji***

**Common Name:**

**Subaraj's Paddy Frog**

**Order/Family:**

**Anura: Microhylidae**

Photo: Law Ing Sind



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from Kranji marshes and potentially a population may exist in the Central Catchment Nature Reserve. It is known to breed in puddles of water after heavy rain.

**Distribution:** Currently only known from Singapore where it was recently described.

**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** Studies on population, ecology and reproduction is necessary. Described from Singapore and currently known only as an endemic species, extinction at the type locality will be an issue for future taxonomic work.

**Conservation Measures:** Continued protection of Kranji marshes, which are currently managed as a nature park. A captive breeding program is recommended to further protect this species.

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# Reptiles

NOEL J. THOMAS, LAW ING SIND

**Scientific Name:**  
*Cyclemys dentata*

**Common Name:**  
Asian Leaf Turtle

**Order/Family:**  
Testudines: Geoemydidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Only four published records of this rare turtle are known, from the Western Catchment and the Central Catchment Nature Reserve. It is usually found in streams.

**Distribution:** Widespread throughout Malaysia, Indonesia, and Thailand.

**Threats:** Poaching for the pet trade and for food, habitat degradation plays a part in the decline of this species.



Photo: Law Ing Sind

**Scientific Interest and Potential Value:** Low population sizes in Singapore raise concern for the future of the species.

**Conservation Measures:** Captive breeding and further surveys to determine the current size of the population in Singapore. Continued habitat protection is needed.

**Scientific Name:**  
*Heosemys spinosa*

**Common Name:**  
Spiny Hill Turtle

**Order/Family:**  
Testudines: Geoemydidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Found quite widely within Bukit Timah and the Central Catchment Nature Reserves, usually found around streams and swamps. This species feeds mainly on fallen fruits and rotting carcasses.

**Distribution:** Found in Indonesia, Malaysia, Thailand and Singapore.



Photo: Serin Subaraj

**Threats:** Poaching and habitat degradation.

**Scientific Interest and Potential Value:** This beautiful species is highly sought after in the pet trade.

**Conservation Measures:** Increased population surveys to identify important habitats for conservation. Continued habitat protection in the Nature Reserves and prevention of poaching are required.

**Scientific Name:**  
*Crocodylus porosus*

**Common Name:**  
Estuarine Crocodile

**Order/Family:**  
Crocodylia: Crocodylidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found mainly in Sungei Buloh Wetland Reserve, but scattered individuals have been known from Pasir Ris, Pulau Ubin, and Changi.

**Distribution:** Widespread across South East Asia, and into Australia.

**Threats:** Widely hunted for meat and leather; Persecuted by humans across its range.

**Scientific Interest and Potential Value:** Valued for leather and meat products, but undisturbed wild individuals are a major tourist attraction.

Photo: Noel Thomas



**Conservation Measures:** Population surveys are carried out to understand the carrying capacity of this large reptile in Singapore. Continued habitat protection, and safe distancing to minimise the possibility of human-wildlife conflict.

**Scientific Name:**  
*Cyrtodactylus consobrinus*

**Common Name:**  
Peter's Bent-toed Gecko

**Order/Family:**  
Squamata: Gekkonidae

Photo: Noel Thomas



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore it is known only from primary forest in Bukit Timah Nature Reserve. Found mostly on granite or rocky substrates in humid forests.

**Distribution:** Peninsular Malaysia, Sumatra, Thailand and Singapore.

**Threats:** Poaching and habitat degradation.

**Scientific Interest and Potential Value:** *C. consobrinus* is a species complex consisting of multiple species, on which further work on taxonomy is needed.

**Conservation Measures:** The known Singapore locality is a legally protected nature reserve; continued habitat protection is required, and captive breeding could be an option.

**Scientific Name:**  
*Cyrtodactylus majulah*

**Common Name:**  
Singapore Bent-toed Gecko

**Order/Family:**  
Squamata: Gekkonidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Widespread in Bukit Timah and Central Catchment Nature reserves, it is also known from Admiralty Park. This species dwells in swamp forests adjacent to streams. Little else is known of its ecology.

**Distribution:** Singapore, and Pulau Bintan in Indonesia.

**Threats:** Habitat degradation and climate change.

**Scientific Interest and Potential Value:** The species is easily confused with the other members of the *C. quadrivirgatus* group, so further work is needed to fully

Photo: Noel Thomas



validate the occurrence of other species within the group in Singapore. Described from Singapore, extinction at the type locality would be an issue for future taxonomic work.

**Conservation Measures:** Population surveys and continued habitat protection. Two of its three known localities are fully protected by law.

**Scientific Name:**  
*Hemidactylus craspedotus*

**Common Name:**  
Frlly Gecko

**Order/Family:**  
Squamata: Gekkonidae

Photo: Low Ing Sind



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known from Bukit Timah and Central Catchment Nature Reserves. Found clinging to large trees in primary forests, this species is cryptic and elusive.

**Distribution:** Indonesia, Malaysia, Thailand and Singapore.

**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** Investigations into the ecology of this species are needed.

**Conservation Measures:** Population surveys and continued habitat protection within the nature reserves.

**Scientific Name:**

*Gekko kuhli*

**Common Name:**

Kuhl's Gliding Gecko

**Order/Family:**

Squamata: Gekkonidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore it is known only from Pulau Tekong.

**Distribution:** Indonesia, Malaysia, Thailand and Singapore.

**Threats:** Poaching and habitat degradation.

Photo: Law Ingg Thong



**Scientific Interest and Potential Value:** It is part of a species complex which comprises multiple species.

**Conservation Measures:** Population surveys are needed and may enable reintroduction into mainland Singapore.

**Scientific Name:**

*Tytthoscincus temasekensis*

**Common Name:**

Swamp Skink

**Order/Family:**

Squamata: Scincidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from swamp forest habitats in Bukit Timah and the Central Catchment Nature Reserves. Little else is known about the ecology and habits of this rare species.

**Distribution:** Known only from Singapore and potentially at a single site in Peninsular Malaysia.

**Threats:** Habitat degradation.

Photo: Law Ing Sind



**Scientific Interest and Potential Value:** Described from Singapore, extinction at the type locality would be an issue for future taxonomic work.

**Conservation Measures:** Although its known localities in Singapore are legally protected, population surveys are needed, and would be useful in assessing the potential for captive breeding to boost numbers.



**Scientific Name:**  
*Varanus dumerili*

**Common Name:**  
Dumeril's Monitor

**Order/Family:**  
Squamata: Varanidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Known only from a few records from Nee Soon Swamp forest. Ecological differences from other forest monitor lizards are poorly understood.

**Distribution:** Indonesia, Malaysia, Thailand and Singapore.

**Threats:** Poaching and habitat degradation.

Photo: Ali Ibrahim



**Scientific Interest and Potential Value:** The species is highly sought after in the pet trade.

**Conservation Measures:** Continued protection and management of Central Catchment Nature Reserve. Population surveys are needed and would be useful in assessing the potential for captive breeding to boost numbers.

**Scientific Name:**  
*Argyrophis muelleri*

**Common Name:**  
White-bellied Blind Snake

**Order/Family:**  
Squamata: Typhlopidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits mature and secondary forest. Highly fossorial. Known to burrow through soil or decaying logs and rarely comes to the surface.

**Distribution:** In Singapore, known from the Central Catchment Nature Reserve and Pulau Ubin. Distributed throughout the Malay Peninsula, Sumatra, Borneo and Indo-China.

**Threats:** Habitat degradation.

Photo: Nick Baker



**Scientific Interest and Potential Value:** Despite its striking appearance, the ecology and habits of this secretive snake are poorly known.

**Conservation Measures:** Habitat protection. Its known localities in Singapore are within protected and managed areas.



**Scientific Name:**  
*Cantoria violacea*

**Common Name:**  
Cantor's Water Snake

**Order/Family:**  
Squamata: Homalopsidae

Photo: Noel Thomas



**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits mangrove forests and mudflats. It is aquatic, nocturnal and known to use mud lobster mounds and crab burrows. Feeds on crabs and shrimps.

**Distribution:** In Singapore, known from the mangrove systems of Pasir Ris, Lim Chu Kang and Sungei Buloh Wetland Reserve.

**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** Known to eat snapping shrimps. The extent to which it specialises on snapping shrimps and its feeding behaviour merit detailed investigation.

**Conservation Measures:** Protection of mangrove habitats where the species is known. The current localities are in protected areas or managed parks.

**Scientific Name:**  
*Ahaetulla fasciolata*

**Common Name:**  
Speckle-headed Whip Snake

**Order/Family:**  
Squamata: Colubridae

Photo: Low Ing Sind



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits forests. Arboreal and diurnal in habits and likely feeds on lizards.

**Distribution:** In Singapore, known from the Bukit Timah Nature Reserve and the Singapore Botanic Gardens. It occurs in the Malay Peninsula, Sumatra and Borneo.

**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** A poorly known and locally rare species whose ecology and behaviour merit investigation.

**Conservation Measures:** Continued habitat protection and management in the Central Catchment Nature Reserves.

**Scientific Name:**

*Boiga drapiezii*

**Common Name:**

White-spotted Cat Snake

**Order/Family:**

Squamata: Colubridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits forests where it appears to be arboreal and nocturnal in habits.

**Distribution:** In Singapore, known only from the Central Catchment Nature Reserve. Widely distributed in the Malay Peninsula, Sumatra, Borneo, Java, the Philippines, and Vietnam.

**Threats:** Habitat degradation.

Photo: Noel Thomas



**Scientific Interest and Potential Value:** Rediscovered in Singapore in 2009.

**Conservation Measures:** Continued habitat protection and management in the Central Catchment Nature Reserves.

**Scientific Name:**

*Dendrelaphis haasi*

**Common Name:**

Haas's Bronzeback

**Order/Family:**

Squamata: Colubridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits forests. Diurnal and mainly arboreal. Often encountered close to slow moving forest streams. Appears to feed on frogs and lizards.

**Distribution:** In Singapore, known only from the Central Catchment Nature Reserve. Widely distributed in the Malay Peninsula, Sumatra, Borneo and Java.

**Threats:** Habitat degradation.

Photo: Serin Subaraj



**Scientific Interest and Potential Value:** A poorly known species whose ecology and habits merit detailed investigation.

**Conservation Measures:** Continued habitat protection and management in the Central Catchment Nature Reserve.

**Scientific Name:**  
*Dryophiops rubescens*

**Common Name:**  
Keel-bellied Whip Snake

**Order/Family:**  
Squamata: Colubridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits forests. Diurnal and arboreal but will come to ground to move between open stretches.

**Distribution:** In Singapore, recorded from the Bukit Timah and the Central Catchment Nature Reserves, Pulau Ubin, Pulau Tekong and the Western Catchment Area. Distributed in the Malay Peninsula, Cambodia, Sumatra, Java, Borneo and parts of the Philippines.

**Threats:** Habitat degradation.

Photo: Noel Thomas



**Scientific Interest and Potential Value:** A poorly known species whose ecology and habits are worth investigating. Closely related to the genus *Ahaetulla* which includes the Oriental Whip Snake, one of the commonest snakes in Singapore.

**Conservation Measures:** Habitat protection. The two nature reserves that it occurs in are already protected.

**Scientific Name:**  
*Lycodon subannulatus*

**Common Name:**  
Malayan Bridle Snake

**Order/Family:**  
Squamata: Colubridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits mature forest. Nocturnal and appears to be both arboreal and terrestrial. Known to feed on lizards.

**Distribution:** In Singapore, known from the Central Catchment Nature Reserve and Pulau Tekong. Distributed in the Malay Peninsula, Borneo and Sumatra.

**Threats:** Habitat degradation.

Photo: Noel Thomas



**Scientific Interest and Potential Value:** Reasons for its apparent rarity in Singapore merit investigation.

**Conservation Measures:** Continued habitat protection.

**Scientific Name:**  
*Oligodon signatus*

**Common Name:**  
Barred Kukri Snake

**Order/Family:**  
Squamata: Colubridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits mature forest and is primarily terrestrial.

**Distribution:** In Singapore, known from the Bukit Timah and Central Catchment Nature Reserves, as well as the Western Catchment Area and Bukit Batok Nature Park. Distributed in the Malay Peninsula, Sumatra and Borneo.



Photo: Low Ing Sind

**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** Singapore is the type locality of this poorly known species whose ecology and habits are worthy of investigation.

**Conservation Measures:** Continued habitat protection and management of the Bukit Timah and Central Catchment Nature Reserves.

**Scientific Name:**  
*Phytolopsis punctata*

**Common Name:**  
Blackwater Mud Snake

**Order/Family:**  
Squamata: Homalopsidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits swamp forest. Aquatic and burrows well into soft mud. It feeds on fish.

**Distribution:** In Singapore, known from only one location within the Central Catchment Nature Reserve. This species occurs in peat swamps on the Malay Peninsula, Sumatra and Borneo.



Photo: Noel Thomas

**Threats:** Habitat degradation and fouling of streams.

**Scientific Interest and Potential Value:** First discovered in Singapore only in 2014. Its ecology and habits are poorly known.

**Conservation Measures:** Continued habitat protection and management in the Central Nature Reserves.



**Scientific Name:**  
*Bungarus fasciatus*

**Common Name:**  
Banded Krait

**Order/Family:**  
Squamata: Elapidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Inhabits forests and scrubland. Locally it is found close to the coast and in mangroves. Terrestrial and nocturnal and feeds mainly on other snakes.

**Distribution:** In Singapore, it is found in Pulau Ubin, Pulau Tekong, Lim Chu Kang, Sungei Buloh and Khatib Bongsu. This species is widely distributed throughout Southeast Asia.

Photo: Noel Thomas



**Threats:** Habitat degradation.

**Scientific Interest and Potential Value:** High medical importance as it is a highly venomous snake.

**Conservation Measures:** Habitat protection and strict policing against illegal collecting and killing.

**Scientific Name:**  
*Ophiophagus hannah*

**Common Name:**  
King Cobra

**Order/Family:**  
Squamata: Elapidae

**National Status:** Vulnerable (VU)

**Habitat and Ecology:** Inhabits forests and scrubland. Terrestrial and diurnal, its diet comprises largely of other snakes and monitor lizards. The female lays her eggs in a nest of vegetation and guards them till they hatch.

**Distribution:** In Singapore, known from many locations including the Bukit Timah and Central Catchment Nature Reserves, Sungei Buloh Wetland Reserve, Kranji, Sentosa and Pulau Tekong. A complex of several taxa, this species is widespread from India to Southern China and throughout Southeast Asia.

Photo: Noel Thomas



**Threats:** Habitat degradation. Individuals have been killed by vehicles on the roads. Their skin has been used for the making of belts and wallets and other parts of the snake are collected for food.

**Scientific Interest and Potential Value:** This is the longest venomous snake in the world. King Cobras are often a highlight in zoos and private herpetological collections.

**Conservation Measures:** Habitat protection and strict policing against illegal collection and killing.

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# Birds

DING LI YONG, ALFRED CHIA, ANUJ JAIN, BENJAMIN P.Y.-H. LEE, DAVID Z.W. LI,  
GEOFFREY DAVISON, GEOFFREY LIM, GIM CHEONG TAN, JESSICA LEE,  
KIM CHUAH LIM, KIM SENG LIM, MOVIN NYANASENGARAN

**Scientific Name:**

*Dendrocygna javanica*

**Common Name:**

Lesser Whistling Duck

**Order/Family:**

Anseriformes: Anatidae

**National Status:** Endangered (EN). The species is assessed to have met criterion D (small population <200), and nearly met the thresholds for criterion A2 with an inferred decline of -43% over 10 years or three generations.

**Habitat and Ecology:** An uncommon resident of ponds and marshes with well-vegetated fringes, as well as flooded grasslands. It regularly occurs in reedy ponds at the Singapore Botanic Gardens and Gardens by the Bay. Birds are gregarious and may occur in flocks of more than 50 individuals (e.g. Lorong Halus, Kranji, Western Catchment), although parties of smaller numbers (1–6 individuals, Botanic Gardens) are more typical. The highest number ever recorded was a flock of 107 at Senoko wetlands on 14 June 1987 (SINAV 1:6; MBR 1986–87). Nests are usually built in tree cavities and breeding has been recently documented at several sites.

Photo: Con Foley



**Distribution:** Much of the Indian subcontinent, to S and SE China, mainland SE Asia and Thai-Malay Peninsula east to the Lesser Sundas.

**Threats:** Habitat loss and degradation (of marshes, flooded grasslands) are the main threats. Extensive areas of marshy countryside have now been cleared or developed in N, W Singapore. Hybridisation with the introduced Wandering Whistling Duck *D. arcuata* where they co-occur poses another threat.

**Scientific Interest and Potential Value:** One of two resident breeding species of wildfowl in Singapore, and potentially a good indicator of wetland conditions.

**Conservation Measures:** Habitat restoration of existing wetlands is expected to benefit the species. This may include improved management of ponds in Kranji marshes and elsewhere.

**Scientific Name:**

*Collocalia affinis*

**Common Name:**

Plume-toed Swiftlet

**Order/Family:**

Apodiformes: Apodidae

Photo: Lim Kim Chuah



**National Status:** *ssp. cyanoptila*. Vulnerable (VU). Previously considered Critically Endangered. Likely met Criterion D2 - small population and restricted number of locations of breeding colonies (up to 3 known, and none within a protected area) but not thresholds for CR based on new information. First discovered in Singapore in 1990 in Bukit Timah Nature Reserve. Formerly assessed to be very rare and localised but the recent discovery of at least two breeding colonies in the Bukit Timah area indicates a far larger population, estimated to exceed 200 pairs, and likely others undiscovered (Bukit Batok area).

**Habitat and Ecology:** A locally common swiftlet, most frequently seen foraging over forest edges, the forest canopy (both secondary and primary forests) and woodland. It regularly occurs around the fringes of the Bukit Timah Nature Reserve and in the Central Catchment forest; there are also records from the Southern Ridges, Bukit Batok and Singapore Botanic Gardens. Outside Singapore, the species is known to

form nesting colonies of several hundred individuals in old buildings, bridges and culverts.

**Distribution:** Thai-Malay Peninsula, Sumatra, Borneo and intervening islands; also Andaman and Nicobar Islands.

**Threats:** Habitat loss and degradation of secondary forests and woodland outside the Central forests expected to be a major threat. The known breeding colonies are close to residential areas and are highly susceptible to disturbance.

**Scientific Interest and Potential Value:** A member of a species complex widely distributed across Southeast Asia and the West Pacific.

**Conservation Measures:** Breeding colonies need to be better documented and protected as they are vulnerable to disturbance and construction.

**Scientific Name:**  
*Apus nipalensis*

**Common Name:**  
House Swift

**Order/Family:**  
**Apodiformes: Apodidae**

**National Status:** *ssp. subfurcatus*. Vulnerable (VU). Previously unassessed. An inferred decline of -42% over 10 years or three generations based on Annual Bird Census data, and therefore meets thresholds for Criterion A2. A previously common and widely distributed swift across Singapore and several satellite islands.

**Habitat and Ecology:** A locally uncommon swift, most frequently seen foraging over open country, urban areas, parks and woodland, and less frequently in forested areas. Bucknill & Chasen (1927) noted it to be very numerous and easily the commonest swift but numbers have declined steeply since the early 20th century. Most sightings from 2014 onward

comprised singles or pairs, especially around Seletar Dam-Punggol Barat, Kranji Marshes and the Southern Ridges. The largest congregation in recent years was 40-50 individuals at Singapore Quarry in May 2019. Breeding has been documented but not recently, the best known being the colonies around the General Post Office (now Fullerton Hotel) and the Tanjong Pagar Railway Station. The breeding season is from March to May, July to August and November.

**Distribution:** Himalayas and S China, east to mainland SE Asia, Greater and Lesser Sundas, the Philippines and Sulawesi.

Photo: Lee Tiah Khoo



**Threats:** Competition with Germain's swiftlets, which have become more abundant in recent years due to bird nest farming, may have played a role in its decline. Disturbance at nesting colonies (in urban areas) and the decline of aerial insect populations are potential threats.

**Scientific Interest and Potential Value:** The only local swift that regularly uses old building facades for nesting.

**Conservation Measures:** None at present besides monitoring. Studies are needed to establish causes of decline.

**Scientific Name:**

*Treron fulvicollis*

**Common Name:**

Cinnamon-headed Green Pigeon

**Order/Family:**

Columbiformes: Columbidae

**National Status:** ssp. *fulvicollis*. Endangered (EN). Previously unassessed. The species is expected to meet thresholds for Criterion B and D; it occurs at fewer than 5 locations, and the area of occupancy in Singapore is largely confined to Pulau Ubin, with only sporadic records in the Central Catchment and elsewhere.

**Habitat and Ecology:** Once considered a rare non-breeding visitor, recent evidence suggests that the species is an uncommon and highly localised resident, given regular documentation from Pulau Ubin. Bucknill & Chasen (1927) considered it an uncommon resident of coastal mangroves in the 1920s. Flocks of up to 20 individuals with immatures have been documented at fruiting trees, including *Ficus* sp. and *Syzygium polyanthum*, associating with Pink-necked *T. vernans* and Thick-billed Green Pigeon *T. curvirostra*. In Singapore, the species occurs mostly in coastal forests and mangroves, but is known to regularly stray into abutting areas of secondary woodland and old plantations.

**Distribution:** Thai-Malay Peninsula, Sumatra, Borneo, and intervening islands (e.g. Riau, Bangka).

**Threats:** Habitat loss and degradation of mangroves, secondary forests and woodland outside the Central Catchment forests expected to be a threat.

Photo: Con Foley



**Scientific Interest and Potential Value:** A species strongly associated with coastal forests, and thus a good indicator of the state of mangroves and adjacent swampy forests. Seed disperser for small fruits.

**Conservation Measures:** Long-term conservation and management of Pulau Ubin's natural areas will benefit the species.

**Scientific Name:**

*Ptilinopus jambu*

**Common Name:**

Jambu Fruit Dove

**Order/Family:**

Columbiformes: Columbidae

**National Status:** Vulnerable (VU). Previously unassessed. The species appears to be largely confined to the Central Catchment forests and is therefore expected to meet Criterion D for a small and restricted population.

**Habitat and Ecology:** An uncommon resident (and non-breeding visitor) of primary and secondary forests, sporadically entering secondary woodland, mangroves old plantations to feed at fruiting trees, typically among green pigeons. Most records are clustered around Bukit Timah Nature Reserve and the Central Catchment Nature Reserve, and adjoining parks. Bucknill & Chasen (1927) reported that the species was 'not common' and recorded 'several in the mangrove on the Singapore bank of the Johore Strait', but there are no recent records from mangroves. The highest count ever recorded was a flock of 15 seen at a *Ficus benjamina* at Sime Road in March 1988. Breeding has not been reported but

Photo: Con Foley



immatures have been seen Oct-Dec, and behaviour suggestive of nesting has been observed (e.g. birds carrying sticks, fruits).

**Distribution:** Thai-Malay Peninsula, Sumatra and Borneo. Few records on Java.

**Threats:** Habitat loss and degradation of secondary forests and woodland around and outside the Central forests is expected to be a threat.

**Scientific Interest and Potential Value:** Seed disperser for small fruits. Individuals are thought to move long distances.

**Conservation Measures:** The nature reserves and other forested areas provide habitat. Species may benefit from park connector network to access food resources.

**Scientific Name:**

*Ducula aenea*

**Common Name:**

Green Imperial Pigeon

**Order/Family:**

Columbiformes: Columbidae

**National Status:** ssp. *polia*. Endangered (EN). Previously unassessed. The species is expected to meet thresholds under Criterion D for small population (<250 individuals) and very small number of locations in Singapore, mostly in the Pasir Ris-Loyang area, Pulau Ubin and Pulau Tekong.

Photo: Lee Tiah Khee



**Habitat and Ecology:** Formerly considered a rare non-breeding visitor to the Singapore mainland, it is now a local and uncommon resident in the Changi-Pasir Ris area. There is also a known population in Pulau Ubin and Pulau Tekong. Historically, it was thought to be a resident in small numbers in mangroves and coastal areas (Chasen 1923; Gibson-Hill 1950) but may have been extirpated at some point thereafter as a breeding species. Sightings continued to remain scarce until the early 2010s when a regular flock was observed feeding on ornamental palms at Changi from around March 2013. The species may have recolonised woodland in eastern Singapore from Pulau Tekong or Malaysia in the past two decades as records became increasingly regular from 2015 onwards, including at least one nesting record at Changi Business Park. The highest counts involve flocks of 7–15 birds at Changi and Pasir Ris.

**Distribution:** Indian Subcontinent and S China, and much of SE Asia east to the Philippines and Sulawesi.

**Threats:** Habitat loss and degradation of secondary forests and woodland in eastern Singapore (Changi), Pulau Ubin and Pulau Tekong may pose a threat.

**Scientific Interest and Potential Value:** Probably an important seed disperser for medium to large fruits.

**Conservation Measures:** A species recovery plan developed by National Parks Board is in place, and tracking studies to understand its movements and ecology are ongoing.

**Scientific Name:**

*Porzana cinerea*

**Common Name:**

White-browed Crake

**Order/Family:**

Ralliformes: Rallidae

**National Status:** Vulnerable (VU). Previously unassessed. Inferred decline of 33% over 10 years or three generations based on Annual Bird Census data and therefore meets thresholds for Criterion A2.

**Habitat and Ecology:** An increasingly uncommon resident of freshwater wetlands with floating vegetation, marshes and wet grasslands. Kelham (1883) noted that it was formerly 'very plentiful' but became less common owing to drainage and urban expansion (also Robinson & Chasen 1936). Most recent records are concentrated in the wetlands on the western fringes of the Kranji Reservoir (e.g. Kranji Marshes, Neo Tiew) and adjacent marshy areas in Lim Chu Kang. There are also records from Sungei Buloh Wetland Reserve and the wetlands in Lorong Halus. Breeding has been documented, with the most recent record of two adults with two chicks at Neo Tiew Harvest Lane in Sep 2020.



Photo: Norhafani Abdul Majid

**Distribution:** Southeast Asia to New Guinea and Australia, east to Micronesian and the Polynesian islands (Samoa).

**Threats:** Habitat loss and degradation of wet grasslands and marshes. Extensive stands of reed beds and marshy scrub in the Kranji and Neo Tiew area have been cleared in recent years as a result of agricultural expansion.

**Scientific Interest and Potential Value:** The only member of the genus in Singapore, and a distinctive member of the avian assemblage in dense wetland vegetation.

**Conservation Measures:** The creation of artificial wetland habitats, such as those in Gardens by the Bay and Sengkang, may benefit the species.



**Scientific Name:**  
*Gallicrex cinerea*

**Common Name:**  
Watercock

**Order/Family:**  
Ralliformes: Rallidae

**National Status:** Endangered (EN). Previously unassessed. Inferred declines of 45-57% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data, therefore meeting thresholds for Criterion A2. Steep declines have also been noted in many parts of Southeast and East Asia.

**Habitat and Ecology:** An uncommon non-breeding visitor (and long-distance migrant) of mostly freshwater wetlands such as marshes, vegetated edges of ponds, lakes and ditches, and wet grassland. Formerly considered to be very common and widespread (e.g. Kelham 1883, Bucknill & Chasen 1936) but clearance of wet marshy area has reduced suitable habitat significantly (Hails 1987b). Records are widely distributed but increasingly scarce, with a particular concentration to the west, e.g. Kranji Marshes, Neo Tiew, Tuas and Bulim, and south (Marina East). High counts involved as many as five birds have been documented (e.g. Bulim on 7 Jan 2018). During the migration period (Dec-Jan), injured, lost or dead individuals are regularly recovered from residential areas.

Photo: Cheng Heng Yee



Male Watercock in flight.

**Distribution:** Indian Subcontinent, east to E, NE China, Korea and SE Asia. Northern populations winter in SE Asia, east to Sulawesi and Lesser Sundas.

**Threats:** Habitat loss is the main threat. A substantial number of records of dead, injured or lost birds, all likely casualties of collisions with structures have been documented, and suggests that the species is vulnerable to disorientation when migrating over urban areas.

**Scientific Interest and Potential Value:** Breeding populations occurring close to Singapore (to north Johor) suggests that records here involve both regional dispersants and long-distance migrants.

**Conservation Measures:** The creation and management of wetland habitats, such as stands of marshy vegetation in Gardens by the Bay and Kranji Marshes, may benefit the species.

**Scientific Name:**  
*Porphyrio poliocephalus*

**Common Name:**  
Grey-headed Swampen

**Order/Family:**  
Ralliformes: Rallidae

Photo: Con Foley





**National Status:** ssp. *viridis*. Critically Endangered (CR). Previously Near Threatened. Estimated declines of 57-61% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data meets thresholds for Criterion A2. However, actual rates of decline are believed to be more severe and the species has completely disappeared from one well-monitored area of Kranji where it was once common.

**Habitat and Ecology:** A formerly common and localised resident of freshwater wetlands, marshes (and marshy scrub), wet grasslands in western Singapore; very few recent records. In the 1980s, the species colonised and became established in marshland formed by the creation of the Kranji and Poyan Reservoirs (Hails 1988). The well-documented population in Kranji has declined since the mid-2010s although the cause of decline is unclear. High counts of up to 15 individuals were documented from Kranji Marshes in March 1989.

Breeding has been reported, with several records between 1986 and 2017 but none in recent years.

**Distribution:** Middle East and the Indian Subcontinent, east to mainland SE Asia and the Thai-Malay Peninsula.

**Threats:** Habitat loss and degradation of wet grasslands and marshes. Extensive stands of reed beds and marshy scrub in the Kranji and Neo Tiew area have been cleared in recent years due to agricultural expansion and land use change.

**Scientific Interest and Potential Value:** A member of a species complex widely distributed across Southeast Asia, the Indian Subcontinent and the Middle East.

**Conservation Measures:** Further research to understand the drivers of decline would be needed.

**Scientific Name:**  
*Tachybaptus ruficollis*

**Common Name:**  
Little Grebe

**Order/Family:**  
Podicipediformes: Podicipedidae

**National Status:** ssp. *poggei*. Critically Endangered (CR). Meets thresholds for Criterion B and D – the population of the species is unlikely to exceed 50 individuals, and restricted to no more than five sites, only one of which is protected. The species is also estimated to have declined by 48-67% over 10 years or three generations based on Asian Waterbird Census data.

**Habitat and Ecology:** A highly localised resident of freshwater ponds with vegetated margins, including quarry ponds. This species did not occur historically, and the first known record was from Punggol in Dec 1992. A small population was found in a series of ponds by Sungei Serangoon (Lorong Halus wetlands) and as many as 10 adults have been detected. A separate population of up to 13 birds was found at a quarry pond at Tampines in 1998 but the population was presumably lost when this site was drained. The first breeding record was 3 adults with a juvenile at Lorong

Photo: Mohamed Zahidi



Halus on 25 Oct 1994, with several more thereafter. The documented breeding season is Oct to May and Aug.

**Distribution:** Widely distributed across Eurasia and Africa: W Europe and Sub-Saharan Africa, Middle East, east to the Indian Subcontinent, much of E, NE China and SE Asia.

**Threats:** Loss, degradation and disturbance of often ephemeral freshwater pond habitat are the key threats, alongside invasive fish which may increase chick mortality.

**Scientific Interest and Potential Value:** The only breeding species of grebe in the region.

**Conservation Measures:** Several quarry ponds are included within protected and managed areas. Further research to understand habitat requirements and the drivers of decline would be needed.

**Scientific Name:**

*Himantopus himantopus*

**Common Name:**

Black-winged Stilt

**Order/Family:**

Charadriiformes: Recurvirostridae

**National Status:** Data Deficient (DD). Previously unassessed. Insufficient data to trigger thresholds for Red List criteria but more research is needed on the breeding population.

**Habitat and Ecology:** Considered a rare winter visitor and passage migrant to freshwater marshes, ponds and wet grasslands until it was discovered breeding in Pulau Tekong in 2019. The first record for Singapore was in 1918 (Robinson & Chasen 1936; Gibson-Hill 1950). Whilst rare, small groups or individuals have been sporadically found in wetlands across the country during migratory periods, with recent documentation from Jurong Lake Gardens, Sungei Buloh, Marina East and Tuas South, and are presumably from migratory populations. Two chicks seen on 27 and 29 Jul 2019, together with several adults on Pulau Tekong provided definitive proof of breeding and may have involved recent colonisation with source populations from E Johor. The birds also interacted with nesting Pied Stilts *H.*

Photo: Norhafani Abdul Majid



*leucocephalus* in the vicinity. Both species have recently expanded their breeding range in Malaysia.

**Distribution:** Breeds widely across Eurasia and Africa. Northern populations winter in N Africa and the Middle East, Indian Subcontinent, east to S China and SE Asia.

**Threats:** Habitat loss and degradation of wet grasslands and marshes. However, the species is able to utilise ephemeral habitat such as vegetated ponds formed on newly reclaimed land.

**Scientific Interest and Potential Value:** A member of a species complex closely related to Pied Stilt, with which extensive hybridisation has been documented.

**Conservation Measures:** Further surveys needed to establish the size of the breeding population on Pulau Tekong.

**Scientific Name:**

*Pluvialis fulva*

**Common Name:**

Pacific Golden Plover

**Order/Family:**

Charadriiformes: Charadriidae

**National Status:** Vulnerable (VU). Previously unassessed. The species is estimated to have declined by 31–39% over 10 years or three generations based on Asian Waterbird Census data, and therefore meeting thresholds for Criterion A2 (>30% in 10 years).

Photo: Norhafani Abdul Majid



**Habitat and Ecology:** Formerly considered a very common winter visitor and passage migrant to intertidal flats, mangroves and estuaries; the species also uses fields, open scrubby areas on reclaimed land, grassy areas and occasionally golf courses for foraging and as roosts. The birds typically arrive from late Aug and large flocks are known to occur at Sungei Buloh and Mandai mudflats. The Pacific Golden Plover has been considered the most abundant wintering shorebird in Singapore with mid-winter counts formerly exceeding 1,000 birds and the highest count being 2,000 individuals in 2005 (data: NParks). However, numbers have plummeted in the past two decades with much smaller congregations reported. Recent counts in Sungei Buloh typically involve 300-500 individuals (data: NParks).

**Distribution:** Breeds across the Eurasian Arctic east to W Alaska. Winters across E Africa, Indian

Subcontinent, S China and SE Asia, east to Australia and New Zealand.

**Threats:** Habitat loss and degradation of coastal intertidal areas (and grassy high tide roosts), but the species is especially vulnerable to threats across the East Asian-Australasian Flyway (outside Singapore), particularly shorebird hunting (and bycatch).

**Scientific Interest and Potential Value:** The population makes up a significant proportion of wader totals using the East Asian Australasian Migratory Flyway.

**Conservation Measures:** Long-term conservation and management of the Sungei Buloh and Mandai coastline is expected to benefit wintering populations.

**Scientific Name:**  
*Anarhynchus dealbatus*

**Common Name:**  
White-faced Plover

**Order/Family:**  
Charadriiformes: Charadriidae

**National Status:** Endangered (EN). Previously unassessed. The species may have declined by 44–53% over 10 years or three generations based on Asian Waterbird Census data for the similar-looking Kentish Plover *C. alexandrinus* (with which it was formerly considered to be conspecific), therefore meeting thresholds for Criterion A2.

**Habitat and Ecology:** An uncommon and highly localised winter visitor in small numbers to sandy and rocky coasts, including rocky seawalls. White-faced Plover is typically seen associating with large groups of other plovers (e.g. Tibetan Sand-plover *A. atrifrons*). Records used to be mostly concentrated around Tuas and Changi, but the rocky seawall and breakwater at Marina East appears to be a regular wintering locality, with up to five individuals recorded over Jan-Mar 2022. The highest count to date is eight individuals reported in Oct 2008.

Photo: Norhafiani Abdul Majid



*Anarhynchus dealbatus* breeding plumage.

Photo: Geoff Lim



*Anarhynchus dealbatus* non-breeding plumage.

**Distribution:** Breeds SE China (Fujian) to Vietnam and Cambodia, with recent breeding reported S Vietnam. Winters mainland SE Asia coasts to Thai-Malay Peninsula and Borneo.

**Threats:** Habitat loss and degradation of coastal intertidal areas. The species is vulnerable to threats across the East Asian-Australasian Flyway (outside Singapore), particularly shorebird hunting (and bycatch).

**Scientific Interest and Potential Value:** Until recently it was thought to be a localised subspecies of Kentish Plover but phylogenetic studies show that it is distinct.

**Conservation Measures:** None specific, other than protection under the Wildlife Act.

**Scientific Name:**

*Rostratula benghalensis*

**Common Name:**

Greater Painted-snipe

**Order/Family:**

Charadriiformes: Rostratulidae

**National Status:** Endangered (EN). Formerly Critically Endangered. The species may have declined by 43–57% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data, and therefore met thresholds for Criterion A2. However, it appears to be adaptable and is known to colonise marshy areas, including such habitat on reclaimed land. Crepuscular, and hard to detect during surveys, so likely overlooked.

**Habitat and Ecology:** An uncommon resident occurring in well-vegetated edges of freshwater ponds and ditches, and wet scrub and grassland, including on reclaimed land. Records are widely distributed, with sightings spanning Jurong West, parts of Lim Chu Kang to the Singapore Botanic Gardens, Seletar and Lorong Halus wetlands. The highest counts to date involved 12 individuals at Serangoon in 1992, and 11 at Kranji Marshes in Feb 2022. There are several documented breeding records, most recently from Jan-Apr 2022 when at least two adult males with three to five chicks were documented at Marina East. Breeding has been documented in Feb, Jun, Jul and Oct in Singapore.



Photo: Cheng Heng Yee

**Distribution:** Sub-Saharan Africa, east to Indian subcontinent, S, E China, and across SE Asia to the Lesser Sundas.

**Threats:** Habitat loss and degradation of wet grassland and scrub. Marshy areas that form on reclaimed land are often colonised but such habitat tends to be ephemeral.

**Scientific Interest and Potential Value:** A polyandrous species, females more brightly plumaged than males.

**Conservation Measures:** Occurs within wetlands in some protected areas, e.g., Singapore Botanic Gardens. The maintenance and management of stands of rank marshy vegetation and reedbeds in Kranji Marshes and Lorong Halus wetlands may benefit the species.

**Scientific Name:**  
*Numenius arquata*

**Common Name:**  
Eurasian Curlew

**Order/Family:**  
Charadriiformes: Scolopacidae

**National Status:** ssp. *orientalis*. Endangered (EN). Previously unassessed. The species is estimated to have declined by 47% over 10 years based on Annual Bird Census data and exceeding 90% when generation length is considered, and therefore meets thresholds for Criterion A2.

**Habitat and Ecology:** A rare winter visitor and passage migrant to muddy and sandy intertidal flats and estuaries, including on Pulau Ubin and Pulau Tekong. In Malaysia and Indonesia, the species typically associates with large flocks of Whimbrel *N. phaeopus*, godwits *Limosa* sp. and Great Knot *Calidris tenuirostris*. Historically, the strongholds for wintering birds were the Changi coast (e.g. Changi Cove) and the Serangoon Estuary (now mostly reclaimed), with six individuals reported from Serangoon in Sep 1987 being the highest count. Recent records mostly involve singletons from Sungei Buloh and the Pulau Tekong coast, with a high of four birds in Oct 2016.

**Distribution:** Breeds widely across Eurasia, from W Europe to Mongolia and N China; winters across Africa and Middle East, eastwards to E China and SE Asia.

Photo: Abdelhamid Bizid



**Threats:** Habitat loss and degradation of coastal intertidal areas. The species is also vulnerable to threats across the East Asian-Australasian Flyway, particularly shorebird hunting.

**Scientific Interest and Potential Value:** Scattered breeding populations across Europe and northern Asia migrate to different southern wintering grounds. The species has declined over much of its range and is Red Listed by several nations.

**Conservation Measures:** The sustained conservation and management of the Sungei Buloh Wetland Reserve and Chek Jawa (Pulau Ubin) coastline may benefit the species and several other shorebirds. Further surveys of wintering shorebirds on the Pulau Tekong coast may help to establish the importance of that site.

**Scientific Name:**  
*Limosa limosa*

**Common Name:**  
Black-tailed Godwit

**Order/Family:**  
Charadriiformes: Scolopacidae

Photo: Norhafani Abdul Majid





**National Status:** *ssp. melanuroides*. Critically Endangered (CR). Previously unassessed. The species is estimated to have declined by 48% over 10 years based on Annual Bird Census data, and exceeding 90% when generation time is considered, and therefore meets thresholds for Criterion A2.

**Habitat and Ecology:** An uncommon winter visitor and passage migrant to sandy and muddy intertidal flats and estuaries, and occasionally freshwater ponds. The maximum count was 141 birds at Sungei Buloh in January 1996, but most records involve far fewer individuals and are concentrated over the autumn months. In recent years, counts typically number below 10 and there are years with no records. The highest count between 2014 and 2020 involved 32 birds at Sungei Buloh in September 2015. A few individuals continue to use Sekudu rocks off Pulau Ubin as a high tide roost, and these birds are likely to feed at Chek Jawa or Pulau Tekong.

**Distribution:** Breeds across Eurasia: from N Europe, east to N China; winters S Europe and Africa, eastwards to Indian Subcontinent, SE Asia and Australia.

**Threats:** Habitat loss and degradation of coastal intertidal areas. The species is also vulnerable to threats across the East Asian-Australasian Flyway, particularly shorebird hunting.

**Scientific Interest and Potential Value:** A remarkable long-distance migrant.

**Conservation Measures:** The sustained management of the Sungei Buloh Wetland Reserve and Chek Jawa (Pulau Ubin) coastline may benefit the species and several other shorebirds.

**Scientific Name:**

*Tringa totanus*

**Common Name:**

Common Redshank

**Order/Family:**

Charadriiformes: Scolopacidae

**National Status:** *ssp. eurhina, terrignotae, ussuriensis*. Endangered (EN). Previously unassessed. The species is estimated to have declined by 26–50% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data, and therefore meets thresholds for Criterion A2.

**Habitat and Ecology:** A winter visitor and passage migrant occurring in muddy intertidal flats, estuaries and mangrove creeks. Also feeds in ponds and occasionally, flooded fields and marshes, while roosting in mangroves, and typically associates with Marsh Sandpiper and Common Greenshank when they are present. The species has been considered among the commonest shorebird species in Singapore but the rate of decline indicates that this may not continue. The highest count to date involved 1093 individuals

at Sungei Buloh in Sep 1998. Counts in recent years are lower, with congregations of around 200 and 250 birds at Sungei Buloh being more typical.

**Distribution:** Breeds widely across Eurasia: Scandinavia east to N China and Japan; also C Asia and the Qinghai-Tibetan Plateau. Winters Africa and Middle East, east to the Indian Subcontinent, SE Asia and Australia.

Photo: Norhafani Abdul Majid





**Threats:** Habitat loss and degradation of coastal intertidal areas. As for all other migratory shorebirds, populations are at risk on their breeding grounds, wintering grounds and their intervening migratory routes.

**Scientific Interest and Potential Value:** Through satellite tracking, wintering birds in Sungei Buloh and Ubin have been tracked to breeding areas in the Tibetan Plateau, and migrating across the Himalayas (Li et al. 2021). Young birds often do not complete the full

migration to breeding areas, e.g. one individual banded as a juvenile in Senoko in Sep 1983 was recaptured at Pattani Bay, Thailand in Jul 1985 (MBR 1984-85).

**Conservation Measures:** The sustained management of mudflat habitat in Sungei Buloh will benefit the species. Extensions of the boundaries of the protected area towards the intertidal flats and Mandai will secure key foraging and roost habitat.

**Scientific Name:**  
*Tringa stagnatilis*

**Common Name:**  
Marsh Sandpiper

**Order/Family:**  
Charadriiformes: Scolopacidae

**National Status:** Endangered (EN). Previously unassessed. The species is estimated to have declined by 41–52% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data, and therefore meets thresholds for Criterion A2.

**Habitat and Ecology:** Formerly common, the Marsh Sandpiper is a rare winter visitor and passage migrant occurring in sandy and muddy intertidal flats, estuaries and mangrove creeks, and occasionally foraging in freshwater marshes, ponds and wet grassland. It was once among the most abundant waders in Singapore, with the highest count being 770 individuals reported from Sungei Buloh in Dec 1998. Recent records are from Sungei Buloh, Seletar Dam and Pulau Ubin. Counts in recent years are a magnitude lower than the 1990s with mostly small parties of 2 to 5 birds and singletons reported except for a high count of 23 birds recorded in Oct 2020.

Photo: Yong Ding Li



**Distribution:** Breeds across Eurasia, from W Russia, east to NE China; winters Africa, SW Europe and Middle East, east to Indian Subcontinent, SE Asia and Australia.

**Threats:** Habitat loss and degradation of coastal intertidal areas. The species is also vulnerable to threats across the East Asian-Australasian Flyway.

**Scientific Interest and Potential Value:** One of the few wader species regularly using freshwater habitats.

**Conservation Measures:** The long-term conservation and management of mudflat habitat in Sungei Buloh will benefit the species. Recent extension of the boundaries of Sungei Buloh will also help secure key foraging habitat in Singapore.

**Scientific Name:**  
*Thalasseus bergii*

**Common Name:**  
Greater Crested Tern

**Order/Family:**  
Charadriiformes: Laridae

Photo: Norhafani Abdul Majid



**National Status:** ssp. *cristatus*. Endangered (EN). Previously unassessed. The species is estimated to have declined by 42% over 10 years or three generations based on data from the Annual Bird Census and exceeding 90% when generation time is considered, and therefore meets thresholds for Criterion A2. It is however still regularly observed in the Johor Straits although numbers seen in recent years are smaller.

**Habitat and Ecology:** A non-breeding visitor to the coastal waters around Singapore, and most offshore islands; birds regularly rest on intertidal flats and sand bars. The waters around Pulau Ubin and Pulau Tekong (in the Johor Straits) are where there are regular feeding and roosting congregations. Gibson-Hill (1950) reported that it was fairly plentiful along the Singapore Strait and noted that it was then the commonest tern; this observation remains valid to this day. Congregations of c. 100 on kelong poles in the Johor Straits and feeding off Sungei Serangoon were typical during the 1990s. While still regular, recent counts are much lower, with

counts at mostly 10–50 individuals from 2019–2021. High counts include 145 birds on the sandy intertidal flats at Chek Jawa, Ubin in Jan 2001.

**Distribution:** Breeds in colonies off the coasts of Africa, the Arabian Peninsula and Iran (i.e. Red Sea, Persian Gulf), and the Indian Subcontinent, eastwards to E China, SE Asia and Australia.

**Threats:** Plastic and water pollution likely pose a threat to the species, as they do with most seabirds. Other threats tend to operate at breeding colonies, of which there are none in Singapore waters.

**Scientific Interest and Potential Value:** An important component of the seabird community, taking small fish and invertebrates.

**Conservation Measures:** The sustained management of coastal habitat around Pulau Ubin will likely benefit the species.

**Scientific Name:**  
*Onychoprion anaethetus*

**Common Name:**  
Bridled Tern

**Order/Family:**  
Charadriiformes: Laridae

Photo: Lim Kim Chuah



**National Status:** ssp. *anaethetus*. Endangered (EN). Previously unassessed. Expected to meet thresholds for Criterion D; the population at the only known breeding colony (Horsburgh Lighthouse, Pedra Branca) is estimated at no more than 200 individuals.

**Habitat and Ecology:** An uncommon tern of offshore waters around Singapore, and a localised breeding visitor to Pedra Branca. Specimens collected from Horsburgh in Oct 1921 were the first record for Singapore. Individuals and small groups are regularly documented during pelagic surveys and the highest known counts involve 100–140 individuals in the Singapore Straits. Bridled Terns are known to disperse during the winter months and return to breed in Apr. From Apr, Bridled Terns are the dominant species of tern on the island where they nest on the flat roof of buildings, unusual as the species is normally known to nest on coral beaches, rocky and sandy slopes. One egg is laid.

**Distribution:** Breeds across tropical Atlantic, Indian, and W Pacific Oceans. In SE Asia, breeding colonies are on small islands across the South China Sea, to

the Philippines and eastward to New Guinea. Large breeding colonies are known from the E coast of Pahang and Johor (e.g. Pulau Seri Buat, Pulau Tinggi) based on recent surveys.

**Threats:** Plastic and water pollution likely poses a threat to the species, as it does with most seabirds. Other threats tend to operate at breeding colonies.

**Scientific Interest and Potential Value:** Reliant on offshore islands for breeding.

**Conservation Measures:** The species is well protected as Horsburgh Lighthouse is a restricted area, as long as no attempt is made to intervene. Further surveys should aim to track the size of the breeding population.

**Scientific Name:**  
*Sterna sumatrana*

**Common Name:**  
Black-naped Tern

**Order/Family:**  
Charadriiformes: Laridae

**National Status:** ssp. *sumatrana*. Endangered (EN). Expected to meet thresholds for Criterion D; the population at the only known breeding colony (Loyang Rocks) is estimated to be well below 100, with the single highest count consisting of 30–35 individuals.

**Habitat and Ecology:** An uncommon resident of inshore coastal waters around Singapore, and a localised breeder on Loyang Rocks. This species is typically more common in the Straits of Johor than the Singapore Straits where Bridled Tern is the dominant resident tern. Birds seen here may also involve dispersants from further north in Johor. Breeding has been regularly observed at Loyang Rocks since the 1940s, with three pairs documented in Jul 1949 (Gibson-Hill 1950). Birds lay a single egg on the bare rock surface, with up to seven pairs documented incubating or feeding young. The documented breeding season is from Apr to Aug. The highest counts known to date involved 30 birds off



Photo: Lee Tiah Khue

Changi Point on 12 Apr and 35 off Pulau Ubin in Apr 2005.

**Distribution:** Breeds in colonies across Indian Ocean, E and SE Asia, Indonesia, the Philippines, and New Guinea to Australia.

**Threats:** Plastic and water pollution likely pose a threat to the species, as they do with most seabirds. Large congregations of photographers who approach too close may cause disturbance to nesting birds, and the sole breeding site is technically unprotected.

**Scientific Interest and Potential Value:** Familiar to many people as its image used to feature on Singapore currency.

**Conservation Measures:** Further actions are needed to enhance protection for nesting birds on Loyang Rocks.

**Scientific Name:**  
*Leptoptilos javanicus*

**Common Name:**  
Lesser Adjutant

**Order/Family:**  
Ciconiiformes: Ciconiidae

**National Status:** Vulnerable (VU). Previously unassessed. Data on the species' status is still limited but it is reasonable to benchmark to the species' IUCN Red List status.

**Habitat and Ecology:** A small resident population once occurred in Singapore until the 1900s but this went extinct and the species was subsequently considered a rare non-breeding visitor, likely from colonies on the Johor coast. Records, typically singletons, have been concentrated around Sungei Buloh Wetland Reserve, Mandai Mudflats, Lim Chu Kang and Neo Tiew Crescent, and in the Western Catchment. The Lesser Adjutant appears to have become commoner in the past 5–6 years, and since 2020 small parties are regularly seen foraging on intertidal mudflats and mangrove creeks in Sungei Buloh, with as many as 17 birds counted in April 2023. A boat-based survey that spanned the coastal waters off Raffles Marina

Photo: Con Foley



and Mandai Mudflats tallied 15 individuals, with 10–13 seen feeding in Sungei Buloh alone. The species scavenges carcasses but also hunts fish and reptiles.

**Distribution:** Indian Subcontinent, east to mainland SE Asia and the Greater Sundas.

**Threats:** Habitat loss and degradation of coastal intertidal areas and mangroves.

**Scientific Interest and Potential Value:** Across its range the species is known to play an important scavenger role, as with vultures. Its unusual appearance can make it a flagship species.

**Conservation Measures:** The sustained conservation and management of coastal wetlands in Sungei Buloh, Lim Chu Kang and Kranji coastline is likely to benefit the species.

**Scientific Name:**  
*Ixobrychus sinensis*

**Common Name:**  
Yellow Bittern

**Order/Family:**  
Ciconiiformes: Ardeidae

**National Status:** Vulnerable (VU). Previously unassessed. The species, whilst still often seen, is estimated to have declined by 35% over 10 years or three generations based on Annual Bird Census, and therefore meets thresholds for Criterion A2.

Photo: Norhafani Abdul Majid



**Habitat and Ecology:** A winter visitor (possibly rarer as a resident breeder) of well-vegetated edges of ponds, freshwater marshes, reedbeds and wet grasslands. Migrants may also show up in mangroves and woodland with marshy fringes. Evidence of breeding dates back to the 1980s along the marshland abutting Kranji Reservoir, and the first nest was documented in Jun 1986. The known breeding period in Singapore spans May to Aug. Marshy areas and reedbeds in the Kranji and Neo Tiew area remain a stronghold, but birds occur widely during the migratory period.

**Distribution:** Indian subcontinent; C and E China, to SE Russia, Japan; Taiwan, SE Asia, Greater and Lesser

Sundas, the Philippines and New Guinea. E Asian populations are migratory, wintering in SE Asia.

**Threats:** Loss and degradation of freshwater wetland (ponds), marshland and reedbed habitat the key threat. Agricultural expansion in the Kranji area has driven clearance of marshy scrub and *Phragmites* and cattail reedbeds.

**Scientific Interest and Potential Value:** An indicator species in freshwater wetland habitat.

**Conservation Measures:** Further research to understand the drivers of decline would be needed.

**Scientific Name:**  
*Egretta eulophotes*

**Common Name:**  
Chinese Egret

**Order/Family:**  
Ciconiiformes: Ardeidae

**National Status:** Endangered (EN). The species is estimated to have declined by 43–69% over 10 years or three generations based on Annual Bird Census and Asian Waterbird Census data, and therefore meets thresholds for Criterion A2. Considered as globally Vulnerable in the IUCN Red List.

**Habitat and Ecology:** A rare winter visitor occurring in intertidal flats, estuaries, mangroves and creeks across Singapore, including Pulau Ubin and Pulau Tekong. The Serangoon Estuary (now Lorong Halus Wetlands) used to be a known wintering stronghold with high counts exceeding 10 individuals recorded through the 1980s. In recent years, double-digit counts come solely from Chek Jawa, Pulau Ubin, with up to 10 birds counted in Apr 2022. The species is more dependent on coastal wetlands than other egrets, and forages very actively on intertidal flats.

**Distribution:** Breeds on coasts of Russian Far East, Korean Peninsula, NE and E China; winters coasts of mainland SE Asia, Thai-Malay Peninsula and the Greater Sundas, east to Sulawesi and the Philippines.

Photo: Abdelhamid Bizid



**Threats:** Habitat loss and degradation of coastal intertidal areas and mangroves.

**Scientific Interest and Potential Value:** The scarcest of the egrets occurring in Singapore. One bird observed on 27 Feb 2022 on Pulau Ubin had been banded in South Korea on 24 Jun 2021 as a juvenile at its nest.

**Conservation Measures:** The sustained management of coastal intertidal habitat around Ubin, especially Chek Jawa, will likely benefit the species.



**Scientific Name:**  
***Ardea sumatrana***

**Common Name:**  
**Great-billed Heron**

**Order/Family:**  
**Ciconiiformes: Ardeidae**

**National Status:** ssp. *sumatrana*. Critically Endangered (CR). New information suggests that while the population has increased over time, the species continues to meet thresholds for Criterion D for a small population estimated at fewer than 50 individuals.

**Habitat and Ecology:** An uncommon resident occurring in intertidal flats, estuaries and mangrove creeks, as are rocky shores and reefs on small islands in the Singapore and Johor Straits, including Pulau Ubin and Pulau Tekong. Records from the Johor Straits had been scarce, but the species appears to have colonised the estuarine mangroves in Sungei Buloh, while the overall number of records has increased. At least two pairs appear to have established themselves at Sungei Buloh Wetland Reserve, and birds are now regularly seen in courtship display. The highest counts recorded in recent years involved five birds on Mandai Mudflats in Dec 2022, and a total of eight during a pelagic survey along the Johor Straits between Raffles Marina and Mandai Mudflats. Breeding was first reported in 1978: a nest with one young on a mangrove islet off Pulau Bukom. The breeding period spans the months of Feb to Jun, and Nov.

**Distribution:** Coastal SE Asia, from Greater and Lesser Sundas, the Philippines, east to Sulawesi, Moluccas, New Guinea and N Australia.



**Threats:** Habitat loss and degradation of coastal intertidal areas, reefs and mangroves.

**Scientific Interest and Potential Value:** Largest resident heron, and unlike its closest relatives the species appear to be a coastal specialist.

**Conservation Measures:** The sustained management of coastal habitat around Ubin, especially Chek Jawa, and Sungei Buloh is expected to benefit the species.



**Scientific Name:*****Elanus caeruleus*****Common Name:****Black-winged Kite****Order/Family:****Accipitriformes: Accipitridae**

**National Status:** *ssp. vociferus*. Vulnerable (VU). The species is assessed to have met thresholds for Criterion D for small population not exceeding 200 individuals, whilst suitable open country habitat has declined in Singapore.

**Habitat and Ecology:** A locally common resident of open country habitats such as grassland, scrub, freshwater marshes and occasionally playing fields, often uses recently reclaimed land. The species was historically considered a winter visitor, but sometime between the 1970s to 1980s it probably colonised recently cleared or reclaimed areas. Records are widely scattered but with concentrations in the Changi/Tanah Merah, Serangoon, Kranji and Tuas areas. The first breeding record was a pair seen at nest at Jalan Lembah Bedok in May 1986. More recently, there are several breeding records spanning 2011 to 2022, including well documented records from the Turut Track (Kranji) area.

Photo: Lua Wai Heng



**Distribution:** S Europe and Africa, east to S China and Indian Subcontinent. Also much of SE Asia, Sulawesi and New Guinea.

**Threats:** Loss and clearance of open country habitats, including grassland and coastal scrub.

**Scientific Interest and Potential Value:** The species complex has a very wide range from the Americas to Australia. It is a predator of rats and other small mammals.

**Conservation Measures:** Sustained management of open scrubby areas in the Kranji area can be expected to benefit the species.

**Scientific Name:*****Spilornis cheela*****Common Name:****Crested Serpent Eagle****Order/Family:****Accipitriformes: Accipitridae**

**National Status:** *ssp. malayensis*. Critically Endangered (CR). The species is assessed to have met thresholds for Criterion D with a small breeding population estimated at 2–5 pairs.

Photo: Norhafani Abdul Majid



**Habitat and Ecology:** A rare and localised resident of forests, secondary woodland, old plantations and mangroves, particularly the Central forests, Pulau Ubin and Pulau Tekong. *ssp. burmanicus* from mainland SE Asia has also been sporadically reported during the migratory period, as have presumed dispersants of *ssp. malayensis* from Malaysia. Robinson (1927) thought its occurrence was doubtful but Gibson-Hill (1950) considered it a resident in very small numbers. Presently, regular sites for the species are Pulau Ubin where possibly one pair occurs, and at least a pair in the Central Catchment Nature Reserve and adjoining woodland. The best known locality for the species is the woodland patch at Goldhill Ave, adjacent to MacRitchie forest. The pair at Goldhill was first reported in 2011, has been recorded regularly thereafter with mating observed in March 2021 (one young fledged).

**Distribution:** Indian Subcontinent and S China, mainland SE Asia, east to Borneo, Sumatra and Java.

**Threats:** Habitat loss and degradation of secondary forests and woodland outside the Central forests expected to be a major threat.

**Scientific Interest and Potential Value:** A specialist predator of mostly reptiles, especially arboreal snakes.

**Conservation Measures:** The species is assumed to be secure in the key protected areas, but long-term management and protection of woodland areas in W Singapore and Ubin may benefit the species.

**Scientific Name:**

*Haliaeetus ichthyaetus*

**Common Name:**

Grey-headed Fish Eagle

**Order/Family:**

Accipitriformes: Accipitridae

**National Status:** Vulnerable (VU). The species is assessed to have met thresholds for Criterion D due to its relatively small population. However, the population is estimated to have increased by more than 160% over 10 years or three generations based on Annual Bird Census data, and the area of occupancy has expanded. In the 1990s, the population was estimated at no more than 3 pairs.

**Habitat and Ecology:** An increasing and widespread resident (and probably non-breeding visitor) of forested reservoirs, quarries and adjacent woodland. The first Singapore record was an individual seen off Loyang in 1949, the next record at Tanjong Murai in 1980, and another was at MacRitchie Reservoir in 1983. Subsequently, records became increasingly frequent in the Central Catchment Nature Reserve, especially in MacRitchie Reservoir, and Poyan in the Western Catchment. By 2010, birds were regularly seen on almost every month at several sites across Singapore,



Photo: Wang Bin

including Sungei Buloh and Pulau Ubin. There are breeding records annually but possibly the best documented breeding involves a pair at Little Guilin Park.

**Distribution:** Indian Subcontinent, mainland SE Asia and the Malay Peninsula, east to the Philippines and Sulawesi.

**Threats:** Habitat loss and degradation of riparian secondary forests and woodland outside the Central forests is expected to be a major threat.

**Scientific Interest and Potential Value:** A specialist predator of fish, directly competing with White-bellied Sea Eagle, typically requiring forested banks of large water bodies.

**Conservation Measures:** The species is assumed to be secure in the key protected areas, but long-term management and protection of woodland areas in western Singapore will be important.

**Scientific Name:**  
*Bubo sumatranus*

**Common Name:**  
Barred Eagle Owl

**Order/Family:**  
Strigiformes: Strigidae

**National Status:** *ssp. sumatranus*. Critically Endangered (CR). Previously unassessed. The species is assessed to have met thresholds for Criterion D with an estimated population at less than 50 individuals. However, the increase in records over recent years suggests a growing population.

**Habitat and Ecology:** An uncommon resident of forests and tall woodland, primarily in the Central forests and Ubin. The species was believed to be extirpated after a long period with no records until the 1990s where the re-emergence of records may suggests that the species either recently recolonised Singapore or had escaped detection by earlier field surveys. There were several records from Central Catchment and Bukit Timah Nature Reserves between 1995 and 2008, while the first documentation on Pulau Ubin came in July 2015. Breeding has now been confirmed from sightings of juveniles at Pulau Ubin in March 2018, Bukit Timah (Singapore Quarry) in August 2018, 2019 and more recently in the Central Catchment (Rifle Range) in April 2021.

**Distribution:** Thai-Malay Peninsula, Sumatra, Java, Borneo and Bali

**Threats:** Habitat loss and degradation of secondary forests and woodland outside the Central forests expected to be a major threat.

Photo: Con Foley



**Scientific Interest and Potential Value:** An apex nocturnal predator in SE Asian forest ecosystems.

**Conservation Measures:** The species is assumed to be secure in the key protected areas, but long-term management and protection of woodland areas in Pulau Ubin will be important.

**Scientific Name:*****Strix seloputo*****Common Name:****Spotted Wood Owl****Order/Family:****Strigiformes: Strigidae**

**National Status:** ssp. *seloputo*. Vulnerable (VU). Previously Critically Endangered. Expected to have met thresholds for Criteria B and D as population is thought to be quite large, and the species has widely colonised parkland habitat.

**Habitat and Ecology:** A fairly common resident of forest edges, woodland, old plantations, and parkland widely distributed across Singapore, including on several offshore islands such as St. John's, Kusu, Sentosa and Ubin. The first modern record was a bird seen at MacRitchie Reservoir in December 1985, and since then it has been recorded from many sites throughout the mainland, including the fringes of the Central Catchment Nature Reserve, Singapore Botanic Gardens and the Southern Ridges (e.g. Telok Blangah, Kent Ridge), east to Pasir Ris and Changi. It is possible that the species colonised Singapore in the 1980s from populations in Peninsular Malaysia, as oil palm plantation (a known habitat) became more widespread there. The breeding period is from January to March and August to September, and there are several breeding records, most recently from Pasir Ris Park where a nest was discovered in February 2022, and chicks seen thereafter till June.

**Distribution:** Mainland SE Asia to the Thai-Malay Peninsula, Sumatra and Java. Also Palawan.

**Threats:** Habitat loss and degradation of secondary forests and woodland.

Photo: Norhafani Abdul Majid



**Scientific Interest and Potential Value:** An adaptable large owl that has spread widely across suburban woodland and parks in Singapore, and possibly an apex predator in such habitat.

**Conservation Measures:** The species is assumed to be secure in the key protected areas, but long-term protection of woodland area in Pulau Ubin, Pasir Ris and elsewhere will benefit the species.

**Scientific Name:*****Halcyon coromanda*****Common Name:****Ruddy Kingfisher****Order/Family:****Coraciiformes: Halcyonidae**

**National Status:** *ssp. minor*. Critically Endangered (CR). With a tiny estimated population of less than 50 individuals, the species is assessed to have met thresholds for Criterion D and possibly Criterion B.

**Habitat and Ecology:** A very rare and localised resident of mangrove forests, nipa swamps and adjacent coastal forest on Pulau Tekong and Pulau Ubin (*ssp. minor*). It also occurs as a winter visitor and passage migrant (*ssp. coromanda? major?*) in forests and woodland throughout Singapore. Historically, the species was recorded from mainland Singapore and the Ayer Merbau island cluster, but mangroves there have been entirely lost to the development of Jurong Island. There have been recent records from Pulau Ubin (2021–2022), and this may either involve recent colonists or a tiny, overlooked population. Pulau Tekong remains a stronghold for the species, and is the only site with breeding evidence, including observations of adults attending to juveniles and fledglings in

Photo: Belinda Wong



the late 1980s. The main influx of the migratory subspecies typically occurs from early October to the end of November and mid-February to March.

**Distribution:** E China, Korean Peninsula and Japan, to mainland SE Asia, east to the Greater Sundas, Sulawesi and the Philippines.

**Threats:** Habitat loss and degradation of mangroves and associated coastal vegetation.

**Scientific Interest and Potential Value:** One of three resident kingfishers in mangroves.

**Conservation Measures:** The continued protection of mangrove forests in Pulau Ubin and Pulau Tekong will benefit the species.

**Scientific Name:*****Alcedo meninting*****Common Name:****Blue-eared Kingfisher****Order/Family:****Coraciiformes: Alcedinidae**

**National Status:** *ssp. verreauxii*. Endangered (EN). The species is expected to have met thresholds for Criterion D for its small population but it is now known to be widespread, occurring across the Western Catchment, Pulau Ubin, Pulau Tekong, and several woodland sites.

Photo: Con Foley





**Habitat and Ecology:** A resident typically associated with forested streams in the Central forests. Gibson-Hill (1950) noted that it was resident in very small numbers and found in the more heavily wooded areas of Singapore. The occurrence of the species in Bukit Timah Nature Reserve and its adjoining parks since the 2010s suggests that it has successfully colonised the site from the Central Catchment Nature Reserve. Similarly, it appears to have recently colonised woodland on the fringes of Kranji Reservoir. Breeding has been variously documented, the first being a pair observed mating in July 1996 although no nests have ever been found in Singapore. Several more records of juveniles accompanied by adults have been documented across the Central Catchment and Bukit Timah Nature Reserves.

**Distribution:** Indian Subcontinent, mainland SE Asia, east to Sumatra, Borneo, Java and Palawan; also in Sulawesi and Lombok.

**Threats:** Habitat loss and degradation of secondary forests and woodland outside the Central forests expected to be a major threat.

**Scientific Interest and Potential Value:** A forest-living kingfisher that nests in earth banks.

**Conservation Measures:** The species is assumed to be secure in the key protected areas, but long-term protection of woodland areas in western Singapore and Pulau Ubin is expected to benefit the species.

**Scientific Name:**  
*Psilopogon rafflesii*

**Common Name:**  
**Red-crowned Barbet**

**Order/Family:**  
**Piciformes: Megalaimidae**

**National Status:** Vulnerable (VU). Previously unassessed. The species is expected to have met thresholds for Criterion D on the basis of a small population, and is largely restricted to the Central forests. A small decline has been detected based on Annual Bird Census data.

**Habitat and Ecology:** An uncommon resident of forests and forest edges, and primarily recorded in the Central Catchment and Bukit Timah Nature Reserves, with dispersants recorded elsewhere. It was formerly found on Pulau Ubin (Gibson-Hill 1950) but became extirpated there by the 1950s. A key stronghold in the Central Catchment Nature Reserve is the Nee Soon forest where up to 5 or 6 individuals can be recorded in a morning. The first breeding record was in April 1979 when a nest with young was found at Upper Peirce Reservoir. Since then, there has been several more breeding records, most recently an adult seen feeding berries to a juvenile at Dairy Farm Nature Park in April-May 2022.

Photo: Isabelle Lee



**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra and Borneo.

**Threats:** Competition with the introduced Lineated Barbet likely an important threat, especially in the fringes of the Central forests.

**Scientific Interest and Potential Value:** Likely an important fruit disperser for forest trees.

**Conservation Measures:** The species is assumed to be secure (but has small population size) in the Central forests, which are protected as Nature Reserves. Initiatives to improve forest connectivity can benefit the species.



**Scientific Name:**  
*Psittinus cyanurus*

**Common Name:**  
Blue-rumped Parrot

**Order/Family:**  
**Psittaciformes: Psittacidae**

**National Status:** ssp. *cyanurus*. Endangered (EN). Previously Critically Endangered. The species is assessed to have met thresholds for Criterion B and D due to its relatively small population not exceeding 250 individuals. However, the population is estimated to have increased by 210% over 10 years or three generations based on Annual Bird Census data.

**Habitat and Ecology:** An uncommon resident of forests, forest edges and woodland, especially in the Bukit Timah and Central Catchment Nature Reserves where it appears locally common and where flocks are regularly observed. Presumed dispersants have been more widely recorded, including on Pulau Ubin. The highest count to date involves a report of 12 individuals, including two juveniles, at Old Upper Thomson Road in July 2018 and comparable numbers at Windsor Nature Park. Breeding has not been directly documented but a female was observed inspecting a tree hole at Bukit

Photo: Con Foley



Timah Nature Reserve on 27 November 1988 (SINAV 2:11).

**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra, Borneo and intervening islands.

**Threats:** Competition with introduced parakeets (for nesting cavities) may be a potential threat.

**Scientific Interest and Potential Value:** Possibly a disperser for some forest trees (although more likely a seed predator).

**Conservation Measures:** A species recovery plan has been developed for the species by the National Parks Board and captive breeding activities are being undertaken at the (Mandai) Bird Paradise. The nature reserves provide protected habitat.

**Scientific Name:**  
*Cymbirhynchus macrorhynchos*

**Common Name:**  
Black-and-red Broadbill

**Order/Family:**  
**Passeriformes: Eurylaimidae**

**National Status:** ssp. *malaccensis*. Critically Endangered (CR). Previously unassessed. The species is expected to have met thresholds under Criterion D for small population (fewer than 50 individuals).

Photo: Norhafani Abdul Majid



**Habitat and Ecology:** Formerly considered a very rare non-breeding visitor (to Pulau Ubin), it now seems more likely that the Black-and-Red Broadbill occurs as a rare and localised resident in Pulau Ubin and Sungei Buloh. Bucknill and Chasen (1927) reported that it was an uncommon resident and was quite numerous on Pulau Ubin while Gibson-Hill (1950) considered it to be scarce but then the most plentiful of its family. A male photographed in woodland abutting mangroves on Pulau Ubin in August 2004 was the first confirmed report in four decades, and since then there has been an increase in the regularity of sightings there, including several in the Chek Jawa area from 2022 to 2023, and the Noordin area during a two-year survey of Pulau Ubin's biota. An adult was ringed at Sungei Buloh in 2019.

**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra and Borneo; also Cambodia and S Vietnam.

**Threats:** Habitat loss and degradation of mangrove forests and adjacent woodland. Small population at high risk of local extirpation.

**Scientific Interest and Potential Value:** Nests must overhang water. The species is attractive to photographers and birdwatchers.

**Conservation Measures:** The long-term protection of woodland areas in western Singapore and Pulau Ubin is expected to benefit the species.

**Scientific Name:**  
*Pitta megarhyncha*

**Common Name:**  
Mangrove Pitta

**Order/Family:**  
Passeriformes: Pittidae

**National Status:** Critically Endangered (CR). The species is expected to have met thresholds for Criteria B and D based on its small area of occupancy, and equivalently small population on Pulau Ubin and Pulau Tekong.

**Habitat and Ecology:** An uncommon but localised resident of mangroves and adjacent old plantations and woodland in Pulau Ubin and Pulau Tekong. The species appears to be a specialist feeder on crabs and other mangrove arthropods and is regularly seen hunting crabs on mud mounds and mangrove roots. Bucknill and Chasen (1927) noted the species to be a common resident of mangroves along the northern coast of Singapore but the species apparently became extirpated in the 1980s. Records elsewhere, including one from Sungei Buloh in 2008 may have involved dispersants from southern Johor. Allen (1955) described the first nest for Singapore from the Pasir Panjang area. Several records involving nest-building have been

Photo: Con Foley



documented on Pulau Ubin thereafter, and most recently adults and juveniles were reported in July 2022.

**Distribution:** Bangladesh, Myanmar, coastal Thai-Malay Peninsula and Sumatra.

**Threats:** Loss and degradation of mangrove forests.

**Scientific Interest and Potential Value:** Ecological interactions with the recently colonising Blue-winged Pitta merit further investigation. The latter species was not known to breed in Singapore until the past decade.

**Conservation Measures:** The species is assumed to be secure in Pulau Ubin.

**Scientific Name:**  
*Pericrocotus speciosus*

**Common Name:**  
Scarlet Minivet

**Order/Family:**  
Passeriformes: Campephagidae

**National Status:** ssp. *xanthogaster*. Critically Endangered (CR). The species is expected to have met thresholds for Criterion D for small population (fewer than 50 individuals). There are very few records since the early 2000s when it was regularly documented at Bukit Timah, suggesting continuing declines.

**Habitat and Ecology:** A very rare resident occurring in tall secondary and primary forest in Bukit Timah and the Central Catchment Nature Reserves (Lim and Gardner 1997). Most recent reports come from Bukit Timah Nature Reserve, where a few birds were regularly encountered up till the late 1990s, sometimes in mixed foraging flocks. There were no records there after March 1998 (SINAV 12:1). Only three records after 2000 were reported elsewhere (SINAV 14:4,

Photo: Con Foley



SINAV 18:3, NSSMBR Feb 2021) and all may involve non-breeding visitors. Breeding has not been reported for Singapore.

**Distribution:** Indian Subcontinent, S and SE China, mainland SE Asia, Greater Sundas and the Philippines. Also present in the Andaman and Nicobars.

**Threats:** This species is threatened due to its low population levels.

**Scientific Interest and Potential Value:** A largely canopy-feeding insectivore.

**Conservation Measures:** None specific to the species other than habitat conservation.

**Scientific Name:**  
*Dicrurus macrocercus*

**Common Name:**  
Black Drongo

**Order/Family:**  
Passeriformes: Dicruridae

**National Status:** ssp. *cathoecus*. Vulnerable (VU). Previously unassessed. The species is estimated to have declined by 43% over 10 years or three generations based on the Annual Bird Census data, and therefore meeting thresholds for Criterion A2.

**Habitat and Ecology:** A winter visitor and passage migrant occurring in grasslands, freshwater marshes, fields and open scrub, including on reclaimed land. Formerly regularly occurring in small numbers, the

Photo: Con Foley



evidence suggests that it has declined steadily and it has not been detected in some years since 2000s (LKS pers. obs.) and is corroborated by recent records, when sightings were only rarely reported (NSSMBR Nov 2014, Nov 2018, Mar 2019, Nov 2021, NSSBR 2022b). Surprisingly, the species is little documented in the historical literature such as Chasen (1923), Bucknill and Chasen (1927), Gibson-Hill (1950).

**Distribution:** Indian Subcontinent, E, SE and S China, mainland SE Asia, Java and Bali. E Asian populations winter south to SE Asia and the Greater Sundas.

**Threats:** Loss of open country habitat such as scrub. The increased use of agricultural chemicals may have contributed to its decline at the regional scale.

**Scientific Interest and Potential Value:** Considered an efficient agent in control of agricultural pests, such

as white grub (*Holotrichia*) (Rocamora and Yeatman-Berthelot 2020).

**Conservation Measures:** While currently globally abundant, this species is dependent on grasslands and open country, such as those around Tuas, Neo Tiew and Kranji; these are vulnerable to land clearance for development.

**Scientific Name:**  
*Hypothymis azurea*

**Common Name:**  
Black-naped Monarch

**Order/Family:**  
Passeriformes: Monarchidae

**National Status:** *ssp. prophata*. Critically Endangered (CR). The species is expected to have met thresholds for Criteria B and D based on its small area of occupancy, and equivalently small population known only from Pulau Tekong.

**Habitat and Ecology:** A rare and localised resident of secondary forests and adjacent mangrove and woodland on Pulau Tekong Besar and rarely on Pulau Ubin. It is also a very rare non-breeding visitor, with sightings of single individuals reported over the years (SINAV 18:1, NSSMBR Oct 2019, Jan 2021, Mar 2021). Previously, Gibson-Hill (1950) reported that it was resident in small numbers in scrub and thickly wooded areas, although Gregory (1970) mentioned that there were no records collected by the Royal Air Force Ornithological Society between 1967 and 1970.

Photo: Con Foley



**Distribution:** Indian Subcontinent, S and SW China, mainland SE Asia and Greater Sundas, east to Philippines, Lesser Sundas.

**Threats:** Loss and degradation of forests on Tekong.

**Scientific Interest and Potential Value:** A forest understorey insectivore.

**Conservation Measures:** More individuals may occur if increased habitat loss in southern Johor forces birds to find refuge further south in Singapore.

**Scientific Name:**  
*Pycnonotus zeylanicus*

**Common Name:**  
Straw-headed Bulbul

**Order/Family:**  
Passeriformes: Pycnonotidae

**National Status:** Endangered (EN). The species is expected to meet thresholds under Criterion D for small population, but newer data suggest that there has been a sustained population increase since the 2000s.

**Habitat and Ecology:** An uncommon to locally common resident of secondary forests, forest edge, old plantations, woodland, and parks on the Singapore mainland and Ubin. Several specimens were collected in Pulau Ubin in July 1921 (Chasen 1923) and are currently in the Lee Kong Chian Natural History Museum. Recent ecological studies have shown that this species favours ecotones (Ho 2000) and woodland and scrub in the vicinity of water such as quarries, ponds and rivers. Monitoring data by the Nature Society (Singapore) since the 2000s suggests that the species is expanding its mainland range. Recent documentation of breeding includes nesting observed at Dairy Farm Nature Park in July 2018 and sighting of adults with juveniles in March 2019 at Bukit Batok Nature Park. The documented breeding period is September to May. Observations of wild individuals in the Mandai area suggest that birds



Photo: Lee Tiah Khee

from previous clutches assist parents in raising young; up to two clutches have been reported in one year.

**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra, Borneo and Java (probably now extirpated).

**Threats:** This species is globally threatened due to the songbird trade and to a smaller extent, degradation of its riparian habitat.

**Scientific Interest and Potential Value:** Potentially an important disperser of small fruits in secondary forests, and riparian areas.

**Conservation Measures:** Singapore supports a large proportion of the known global population and a national species action plan was recently developed and published for the species. 'Critically Endangered' on the IUCN Global Red List, the species was uplisted to Appendix I in CITES (Convention on International Trade in Endangered Species) in 2022 after proposals by governments in the region.

**Scientific Name:**  
*Pycnonotus simplex*

**Common Name:**  
Cream-vented Bulbul

**Order/Family:**  
Passeriformes: Pycnonotidae

**National Status:** ssp. *simplex*. Vulnerable (VU). Previously unassessed. The species is expected to have met thresholds for Criterion D for small population (population fewer than 1,000 individuals). No clear



Photo: Norhafani Abdul Majid

trend was documented through Annual Bird Census data but there have been suspected declines (and the species is likely to have met thresholds for Criterion A2).



**Habitat and Ecology:** An uncommon resident of primary and secondary forests, and adjacent woodland in the Central forests, including several buffer nature parks. Records elsewhere, for instance in Bukit Batok and Singapore Botanic Gardens, likely refer to dispersants. Considered as 'not uncommon' by Bucknill & Chasen (1927) but populations likely to have further declined since then. Breeding has been reported and the documented breeding period is April, and June to October.

**Distribution:** Thai-Malay Peninsula, Sumatra, Borneo and intervening islands.

**Threats:** Loss and degradation of forest habitat. The species appears to be less tolerant of habitat disturbance than most other bulbuls.

**Scientific Interest and Potential Value:** Useful indicator species for good quality forests in Singapore. The closely related Cream-eyed Bulbul *P. pseudosimplex*, a (cryptic) species formerly thought endemic to Borneo has now been found in the Peninsula, and could occur (or have occurred) in Singapore.

**Conservation Measures:** The species is assumed to be secure in the Central forests and adjacent nature parks which provide protected and managed habitat.

**Scientific Name:**  
*Pycnonotus brunneus*

**Common Name:**  
Asian Red-eyed Bulbul

**Order/Family:**  
Passeriformes: Pycnonotidae

**National Status:** ssp. *brunneus*. Vulnerable (VU). The species is expected to have met Criterion D for small population – but the number of records has increased across Central Catchment Nature Reserve and adjacent parks and it is now relatively more abundant than Cream-vented Bulbul. A small increasing trend has been detected based on Annual Bird Census data.

**Habitat and Ecology:** An uncommon to locally common resident of primary and secondary forests, now largely restricted to the Central forests and adjoining woodland, including Bukit Batok. Compared to Cream-vented Bulbul, the species appears more adaptable, frequently occurring in secondary forest and woodland. Historically the species was more widespread and was considered as 'not uncommon' but it became extirpated from Pulau Ubin and Labrador Park by the 1980s. Breeding has been reported with the documented breeding period being March to April, and July.

**Distribution:** Thai-Malay Peninsula, Sumatra and Borneo.

Photo: Norhafiz Abdul Majid



**Threats:** Loss and degradation of forest habitat.

**Scientific Interest and Potential Value:** Useful indicator species for good quality forests in Singapore.

**Conservation Measures:** None specific to the species other than general habitat protection, and the species is assumed to be secure in the Central forests and adjacent nature parks.



**Scientific Name:**  
*Acrocephalus orientalis*

**Common Name:**  
Oriental Reed Warbler

**Order/Family:**  
Passeriformes: Acrocephalidae

**National Status:** Vulnerable (VU). Previously unassessed. The species is estimated to have declined by 45% over 10 years or three generations based on the Annual Bird Census data, and therefore meeting thresholds for Criterion A2.

**Habitat and Ecology:** A winter visitor and passage migrant to freshwater marshes, *Phragmites* reed beds and the well-vegetated fringes of ponds and reservoirs, flooded grassland and scrub. Presumed passage migrants occur in scrub in reclaimed areas such as Tuas and Changi, and occasionally in mangroves. Birds arrive from September and winterers (more females than males) may stay as late as mid-May. This is the commoner of two reed warblers occurring in Singapore, and appears to have a wider habitat breadth than Black-browed Reed Warbler *A. bistrigiceps*.



Photo: Norhafani Abdul Majid

**Distribution:** Breeds E Russia, E Mongolia, south to NE and E China, Japan and Korea; winters NE India, S China, mainland SE Asia, Sumatra, Borneo, the Philippines and Wallacea.

**Threats:** Habitat loss due to clearance of grasslands and marshes. Clearance of large areas of swampy grassland and reedbeds in the Neo Tiew area is expected to have reduced habitat significantly.

**Scientific Interest and Potential Value:** A useful indicator species of freshwater wetlands in E Asia.

**Conservation Measures:** The long-term management of the Kranji Marshes and other areas of freshwater wetlands (e.g. Sengkang, Lorong Halus) is expected to benefit this species.

**Scientific Name:**  
*Cyanoderma erythropterus*

**Common Name:**  
Chestnut-winged Babbler

**Order/Family:**  
Passeriformes: Timaliidae

**National Status:** ssp. *erythropterus*. Critically Endangered (CR). Newly uplisted. Expected to have met thresholds under Criterion D for small population; also Criterion B for small area of occupancy and limited number of sites (B2-a) where it is known to occur.



Photo: Con Foley

**Habitat and Ecology:** An increasingly uncommon resident of primary and secondary forests, and forest edges, often skulking in dense growths of ferns in the Central Catchment Nature Reserve where the Nee Soon swamp forest remains a stronghold; it appears extirpated from Bukit Timah. A species strongly associated with the forest understorey, Cros et al. (2020) found that genetic diversity of the species in intact forests elsewhere in SE Asia (Borneo) was nearly three times higher than sampled populations in Singapore, demonstrating the sustained erosion of genetic diversity as a result of forest fragmentation (which has reduced gene flow between forest patches within the Central Catchment Nature Reserve). Breeding reported and nest building activities have been most recently documented in May 2018. The breeding period in Singapore is April-May, and August.

**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra and Borneo.

**Threats:** Loss and degradation of forest habitat, small, declining population is at high risk of loss of genetic variability.

**Scientific Interest and Potential Value:** Useful indicator species of good quality forests in Singapore.

**Conservation Measures:** : The species is assumed to be secure in the Central Catchment forests, and adjacent nature parks; the constructed ecological corridor in the form of the EcoLink bridge between the Central Catchment and Bukit Timah may benefit the dispersal of this species, enabling potential recolonisation of suitable habitat in future.

**Scientific Name:**  
*Pellorneum malaccense*

**Common Name:**  
Short-tailed Babbler

**Order/Family:**  
Passeriformes: Pellorneidae

**National Status:** ssp. *malaccensis*. Vulnerable (VU). Expected to have met thresholds under Criterion D for small and declining population, and now shown to have low genetic variability (see Cros et al. 2017); also expected to have met thresholds for Vulnerable/Endangered under Criterion B2a.

**Habitat and Ecology:** A resident in primary and secondary forests in the Central Catchment Nature Reserve; there are very few recent records from Bukit Timah and it may now be on the verge of extirpation there. The species also once occurred in Singapore Botanic Gardens (Bucknill & Chasen 1927). A species of the forest understorey and floor, Short-tailed Babblers are not good dispersers and do not easily cross large gaps in forest landscapes, including large roads and water bodies. Cros et al. (2020) found that genetic diversity of the species in Singapore forests is nearly three times lower than populations in intact forests in Borneo and there are landscape-level barriers to gene flow



Photo: Norhafiani Abdul Majid

even within the Central Catchment (Sadanadan et al. 2015), splitting the species into further subpopulations. Breeding has been reported, the earliest being that of a pair carrying insects near a possible nest at Sime Road in May 1988. The documented breeding period in Singapore is January and May.

**Distribution:** Thai-Malay Peninsula, Sumatra and Borneo.

**Threats:** Loss and fragmentation of forest habitat. The small, declining and fragmented population even within the Central forests is at high risk of loss of genetic variability.

**Scientific Interest and Potential Value:** Useful indicator species of good quality forests.

**Conservation Measures:** The species is assumed to be secure in the Central forests, and adjacent nature

parks; the construction of an ecological corridor, the EcoLink between the Central Catchment and Bukit Timah may benefit the dispersal of this species, enabling potential recolonisation of habitat in future.

**Scientific Name:**  
*Copsychus malabaricus*

**Common Name:**  
White-rumped Shama

**Order/Family:**  
Passeriformes: Muscicapidae

**National Status:** ssp. *tricolor*. Endangered (EN). Previously Critically Endangered. The species is expected to have met threshold under Criterion D for small populations, although Pulau Tekong populations are yet to be quantified. The species is now known to occur at fairly high densities in Pulau Ubin.

**Habitat and Ecology:** An uncommon to rare resident of forests, woodland and old plantations but appears locally common in Pulau Ubin and Pulau Tekong. The species was formerly not uncommon in mainland Singapore (Bucknill & Chasen 1927, Gibson-Hill 1950) but the population was thought to have been poached to near extinction (Lim 1992). Pulau Ubin and Pulau Tekong remain key strongholds for the species in Singapore, and recent surveys have found up to 20 individuals in a morning in Pulau Ubin. Birds in the Central forests and elsewhere may involve a combination of genuinely wild birds and escapees. Breeding has been reported and the documented breeding period in Singapore is March and June to August.



Photo: Con Foley

**Distribution:** Indian subcontinent, S China, mainland SE Asia and Greater Sundas.

**Threats:** Poaching for the songbird trade (at the regional level), and the loss and degradation of forest habitats.

**Scientific Interest and Potential Value:** A sought after species in the songbird trade, an important component in the forest soundscape, and part of a genetically diverse group in SE Asia.

**Conservation Measures:** The long-term conservation and management of forest and woodland habitat is expected to benefit the species in Pulau Ubin, and possibly Pulau Tekong. Restricted access to Pulau Tekong limits the risk of poaching there.

**Scientific Name:**  
*Cyornis rufigastra*

**Common Name:**  
Mangrove Blue Flycatcher

**Order/Family:**  
Passeriformes: Muscicapidae

**National Status:** ssp. *rufigastra*. Critically Endangered (CR). The species is expected to have met thresholds for Criterion B and D (localised, and tiny population in Pulau Tekong, unlikely to exceed 50 individuals, few recent records from Pulau Ubin although breeding was documented there in the 2000s).

**Habitat and Ecology:** A rare and localised resident of mangrove forests, and adjacent secondary forests and woodland in Pulau Ubin and Pulau Tekong. It was formerly widespread and considered to be 'not uncommon in mangroves' on mainland Singapore (Chasen 1923, 1924; Bucknill & Chasen 1927; Gibson-Hill 1950), but by the late 1960s had declined greatly and was largely confined to mangroves in the Jurong area (Tweedie 1970). Breeding has been reported on both Pulau Ubin and Pulau Tekong from May to July.

**Distribution:** Thai-Malay Peninsula, Sumatra, Java and Borneo, north to the Philippines.

Photo: Lee Tiah Khoo



**Threats:** Loss and degradation of mangrove forests; small, declining population is at high risk of loss of genetic variability.

**Scientific Interest and Potential Value:** A mangrove specialist that is an important indicator of good quality mangrove forests.

**Conservation Measures:** The species is assumed to be secure in Pulau Tekong for the time being despite its small population.

**Scientific Name:**  
*Cyornis brunneatus*

**Common Name:**  
Brown-chested Jungle Flycatcher

**Order/Family:**  
Passeriformes: Muscicapidae

**National Status:** Vulnerable (VU). Previously unassessed. The species is expected to have approached thresholds under Criterion D, due to dependence on forests as wintering habitat. 'Vulnerable' on IUCN Red List due to presumed declines and small population.

Photo: Norhafani Abdul Majid



**Habitat and Ecology:** An uncommon passage migrant, occurring in primary and secondary forests, woodland, scrub, old plantations and occasionally parkland. Migrants have also shown up in remnant woodland in Bidadari, in stands of *Leucaena* and *Casuarina* scrub on reclaimed land in Tuas, and several offshore islands including Pulau Jurong, Ubin, Hantu and St. John's. There are also records from wooded patches in urban areas (e.g. Changi Business Park, Shenton Way) during the migration period from mid-September to early November, with birds periodically reported to collide with windows of lighted buildings. There are however very few records of wintering birds; in Peninsular Malaysia it mostly winters in lowland forests. This species was not listed by Bucknill & Chasen (1927) or Gibson-Hill (1950) and was only first documented in Singapore in the 1980s.

**Distribution:** Breeds C, SE China; winters Thai-Malay Peninsula and Sumatra.

**Threats:** Habitat loss and degradation in the wintering range. Also collisions with man-made structures on migration.

**Scientific Interest and Potential Value:** Recent taxonomic studies have established it to be an aberrant 'blue' flycatcher in the genus *Cyornis*.

**Conservation Measures:** Long-term protection and management of small woodland patches can be expected to benefit the species as stopover habitat. A small patch of woodland at Bidadari has been retained for the conservation of migratory landbirds.

**Scientific Name:**

*Chloropsis sonnerati*

**Common Name:**

Greater Green Leafbird

**Order/Family:**

Passeriformes: Chloropseidae

**National Status:** ssp. *zosterops*. Critically Endangered (CR). Expected to meet thresholds under Criterion D (population fewer than 250 individuals). Also expected to meet Criterion B2 for small area of occupancy and small populations. 'Endangered' on IUCN Red List.

**Habitat and Ecology:** An uncommon resident of primary and secondary forests, and adjacent woodland in the Central forests. It was formerly considered to be 'not uncommon' in mangroves (Chasen 1923; Bucknill & Chasen 1927) but there are no records today in mangroves. Recent data suggest that it is now restricted to the Bukit Timah and Central Catchment Nature Reserves, with the Nee Soon swamp forest an important stronghold. The summit at Bukit Timah Nature Reserve is known to attract as many as five to eight birds when the several *Ficus benjamina* trees are in fruit. Breeding has been variously documented in recent years, with immatures and juveniles seen in Bukit Timah and adjacent areas such as Dairy Farm Nature Park.

Photo: Con Foley



**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra and Borneo.

**Threats:** Loss and degradation of lowland forest habitat. This species is also threatened by poaching for the regional songbird trade.

**Scientific Interest and Potential Value:** A potentially important seed disperser for forest trees.

**Conservation Measures:** The species is assumed to be secure in the Central forests and adjacent nature parks; the construction of an ecological corridor, the EcoLink between the Central Catchment and Bukit Timah may benefit the dispersal of this species.

**Scientific Name:*****Leptocoma calcostetha*****Common Name:****Copper-throated Sunbird****Order/Family:****Passeriformes: Nectariniidae**

**National Status:** Vulnerable (VU). Previously unassessed. Restricted to a small set of mangrove remnants and expected to have met thresholds under Criterion B (population fewer than 1,000 individuals), locally extirpated in Pasir Ris and Ulu Pandan mangroves.

**Habitat and Ecology:** A locally common resident of mangroves and adjacent coastal vegetation such as beach scrub and secondary woodland. Historically 'plentiful' around the coasts and in coconut plantations (Bucknill & Chasen 1927; Gibson-Hill 1950), the species is now largely confined to mangroves and coastal scrub in and around Sungei Buloh Wetland Reserve, and on Pulau Ubin, Pulau Tekong and Pulau Semakau. The documented breeding period is February to May, August and December. Nest building has also been regularly reported from Sungei Buloh between March and June in recent years.

**Distribution:** S Myanmar, Thai-Malay Peninsula, Sumatra, Java, Borneo and Palawan.

Photo: Norhafani Abdul Majid



**Threats:** Loss and degradation of mangrove forests.

**Scientific Interest and Potential Value:** A mangrove specialist that is an indicator of good quality mangrove habitat. May potentially be an important pollinator for several mangrove trees.

**Conservation Measures:** The long-term conservation and management of mangrove forests at Ubin is expected to benefit the species in Pulau Ubin. Similarly, the expansion of the Sungei Buloh Wetland Reserve towards Mandai and Kranji will also help to secure key habitat.



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# Marine Mammals

SIRIUS Z.H. NG, ZEEHAN JAAFAR

**Scientific Name:**

*Neophocaena phocaenoides*  
(Cuvier, 1829)

**Common Name:**

Finless Porpoise

**Family:**

Phocoenidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Finless porpoise inhabits shallow coastal waters especially estuaries, embayments, and areas adjacent to mangrove forests. They feed on small fishes, crustaceans, and cephalopods.

**Distribution:** This species is widely distributed throughout the coastal areas of the Indo-Pacific ranging from the Persian Gulf to the South China Sea. In Singapore, this species has been reported only in the north-eastern Johor Straits of Singapore.

**Threats:** Habitat loss, habitat modification, net entanglement, elevated marine noise pollution and high vessel traffic.



A small pod of *Neophocaena phocaenoides* in the waters off Pulau Langkawi, Kedah, Malaysia.

**Scientific Interest and Potential Value:** Recent dramatic widespread declines to the populations of this species were attributed to the habitat degradation and losses, as well as fishing gear entanglement. Consequently, this species is classified as Vulnerable to extinction throughout its range.

**Conservation Measures:** Presently, there are no conservation measures specific for this species. There have been no other reports of this species since 2011, suggesting that no known resident individuals or population(s) continue to occur within the territorial waters of Singapore.

**Scientific Name:**

*Tursiops aduncus* (Ehrenberg, 1833)

**Common Name:**

Indo-Pacific Bottlenose Dolphin

**Family:**

Delphinidae



A pod of *Tursiops aduncus* in the waters offshore of Kedah, Malaysia.

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Indo-Pacific Bottlenose Dolphin inhabits tropical marine habitats from shallow coastal waters to deeper areas but are most commonly observed over continental shelf areas shallower than 100m. This species is non-migratory and occupy small home ranges, moving in pod sizes of not more than 30 individuals. In some areas, they occur in mixed pods with other dolphin species. This species primarily feeds on fishes.

**Distribution:** As its common name suggests, this species is well distributed throughout the coastal regions of the Indo-Pacific. In Singapore, this species has been recorded along the waters of north-eastern Johor Straits, the Singapore Straits, and Horsburgh Lighthouse. Similar to *Sousa chinensis*, the majority of sightings of this species have been within the Singapore Straits.

**Threats:** Habitat loss, habitat modification, net entanglement, elevated marine noise pollution and high vessel traffic.

**Scientific Interest and Potential Value:** Global populations of this species are classified as Near Threatened by IUCN's Red List of Threatened Species and are primarily impacted by fishing gear entanglement. In some areas within its range, *Tursiops aduncus* is actively hunted for human consumption or targeted by the oceanarium industry.

**Conservation Measures:** At present, there are no conservation measures specific for this species. Existing measures are in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**

*Sousa chinensis* (Osbeck, 1765)

**Common Name:**

Indo-Pacific Humpback Dolphin

**Family:**

Delphinidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This species is commonly observed in shallow nearshore coastal habitats within and/or adjacent to sandbanks, coral reefs, rocky reefs, estuaries, and mangrove areas. Indo-Pacific Humpback Dolphins occupy a small home range, and rarely migrate over large distances. Natural pod sizes tend to be between two and six individuals, although pods of several dozen individuals have been observed in areas with larger populations. Where populations are studied, calving is observed throughout the year although the monsoon seasons is demonstrated to positively impact birth rates. This species engages in opportunistic foraging and consume a wide range of prey items including cephalopods and crustaceans.



*Sousa chinensis* individual leaping out of water off Pulau Langkawi, Kedah, Malaysia.

**Distribution:** The Indo-Pacific Humpback Dolphin is endemic to the coastal areas of the eastern Indian Ocean and western Pacific Ocean. In Singapore, this species has been recorded along the waters of north-eastern Johor Straits, the Southern and Western Islands of the Singapore Straits, and Horsburgh Lighthouse. Sites along the Singapore Straits—Pulau Tekukor, Sisters' Islands, St John's Island and Lazarus Island, Pulau Hantu, Terumbu Pempang Laut and Terumbu Pempang Darat—are identified as areas with the most sightings events.

**Threats:** Habitat loss, habitat modification, net entanglement, elevated marine noise pollution and high vessel traffic.

**Scientific Interest and Potential Value:** Global populations of this species are classified as Vulnerable to extinction by IUCN's Red List of Threatened Species. Throughout its distribution, most population sizes are on the decline, given their susceptibility to coastal

anthropogenic activities. In certain areas, *Sousa chinensis* are actively hunted for human consumption or targeted by the oceanarium industry.

**Conservation Measures:** Presently, there are no conservation measures specific to this species. Existing measures exist in the form of area protection and maritime regulation within the Sisters' Islands Marine Park.

**Scientific Name:**

*Orcaella brevirostris*  
(Owen in Gray, 1866)

**Common Name:**

Irrawaddy Dolphin

**Family:**

Delphinidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This elusive species is typically found in shallow coastal areas. The Irrawaddy Dolphin is known to enter the lower reaches of rivers depending on factors such as freshwater flow, water depth and temperature. This species exhibits high site fidelity and are usually encountered in small groups of fewer than ten individuals.

**Distribution:** The Irrawaddy dolphin is distributed along coastal areas of tropical and subtropical continental Southeast Asia, including the central islands of the Indonesian Archipelago, Borneo and Palawan, Philippines as well as the Bay of Bengal,. There are a total of four unconfirmed and one confirmed record of this species in Singapore, with the most recent being a carcass recovered off East Coast Park beach in 2014.



Photo: The MARECET Research Organisation

A pod of *Orcaella brevirostris* offshore in the waters of Matang, Perak, Malaysia.

**Threats:** Habitat loss, habitat modification, net entanglement, elevated marine noise pollution and high vessel traffic.

**Scientific Interest and Potential Value:** Global *Orcaella brevirostris* populations are classified as Endangered by IUCN's Red List of Threatened Species.

**Conservation Measures:** There are no species-specific conservation measures in place. Since the carcass retrieval in 2014, there is no evidence to indicate that resident individuals or population(s) of *Orcaella brevirostris* occur within the territorial waters of Singapore.

**Scientific Name:**

*Dugong dugon*  
(Müller, 1776)

**Common Name:**

Dugong

**Family:**

Dugongidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** The Dugong is an elusive specie typically occurring in nearshore areas such as embayments, mangrove forests, and estuaries. Dugongs are reported to travel in small groups, but mother-calf pairs are most frequently observed. This species displays high site fidelity, associated to established feeding grounds. Dugongs are herbivorous, consuming a variety of seagrass species. Dugongs leaves behind characteristic serpentine shaped furrows devoid of vegetation—known as ‘feeding trails’—within seagrass meadows.

**Distribution:** Dugongs are naturally distributed between 23.5° north and south of the equator. Large herds of dugongs in north-eastern Australia and the Persian Gulf account for the majority of the global population. In Singapore, this species has been reported along the north-eastern Johor Straits and the Western Islands of the Singapore Straits. The north-eastern Johor Straits—in areas of Pulau Ubin, Pulau Tekong and Changi—has been identified as a hotspot of dugong activity since the early 19th century. At these sites, sightings of live individuals, recoveries of carcasses, and presence of feeding trails are most common. Feeding trails have also been reported from sites within the Singapore Straits, such as Terumbu Pandan, signalling the area as important for native dugong populations.

Photo: The MareCel Research Organisation



A herd of *Dugong dugon* off Pulau Sibul, Johor, Malaysia.

**Threats:** Habitat loss, habitat modification, net entanglement, elevated marine noise pollution and high vessel traffic.

**Scientific Interest and Potential Value:** Dugong herbivory is described to enhance the germination potential of seagrass seeds and improve both the productivity and clonal richness of seagrass meadows. Dugongs are therefore important in shaping the seagrass ecosystem, and the resultant services conferred by seagrass meadows (e.g., carbon sequestering potential). Global populations of dugongs are classified as Vulnerable to extinction in IUCN’s Red List of Threatened Species. Remnant populations of this species along the coastal areas of Southeast Asia remain poorly studied, thus hindering broad-area conservation efforts.

**Conservation Measures:** There are no conservation measures specific to this species at present. Limited protection exists in the form of area protection and maritime regulation within the Chek Jawa Wetlands and Sisters’ Islands Marine Park.



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# Terrestrial Mammals

NORMAN T-L. LIM, BENJAMIN P.Y.-H. LEE, ROBERT C.H. TEO, MARCUS A.H. CHUA,  
SUAY HWEE YEO, MAX D.Y. KHOO, TZE KWAN FUNG

**Scientific Name:**

*Tragulus napu*

**Common Name:**

Greater Mouse-deer

**Order/Family:**

Artiodactyla: Tragulidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Forest and back mangroves. Nocturnal and mostly solitary. Feeds mostly on fallen fruits.

**Distribution:** Mostly found in suitable habitats across Pulau Ubin. One individual was recorded with a camera trap at the Western Catchment in 2012. The species is present in the Malay Peninsula, Borneo, Sumatra, and smaller islands.

**Threats:** Habitat loss and possibly predation by feral domestic dogs.

Photo: Marcus A.H. Chua



**Scientific Interest and Potential Value:** The species was thought to be nationally extinct in Singapore for over 80 years since the 1920s. Precise mechanisms leading to their rediscovery (e.g., natural recolonisation, accidental escape, deliberate release) is not known.

**Conservation Measures:** Habitat protection and restoration.

**Scientific Name:**

*Aonyx cinereus*

**Common Name:**

Asian Small-clawed Otter

**Order/Family:**

Carnivora: Mustelidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** In Singapore, occurs mainly in mangroves and mudflats in small family groups. This nocturnal creature eats mainly crustaceans and molluscs.

**Distribution:** In Singapore, presently recorded from Pulau Ubin and Pulau Tekong. Distributed from India

Photo: Max D.Y. Khoo



and south China to the Malay Peninsula, Sumatra, Borneo, Java, and Palawan.

**Threats:** Habitat loss, human disturbance, and persecution.

**Scientific Interest and Potential Value:** Because of its adorable appearance, there is a growing threat to the species in the region as they are increasingly trapped for the illegal pet trade.

**Conservation Measures:** Habitat protection and stringent policing against poaching. The local population may not be strictly resident as individuals can easily travel between shores of the Johor Straits.

**Scientific Name:**  
*Arctogalidia trivirgata*

**Common Name:**  
Small-toothed Palm Civet,  
Three-striped Palm Civet

**Order/Family:**  
Carnivora: Viverridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Primary, mature secondary forest, and freshwater swamp forest. This nocturnal, omnivorous, and generally solitary animal is primarily arboreal. Known diet in Singapore include fruits of *Palaquium obovatum*, figs, and more recently, a Sunda Slow Loris (*Nycticebus coucang*) as vertebrate prey.

**Distribution:** In Singapore, confined to the Central Catchment Nature Reserve, Bukit Timah Nature Reserve, and the peripheral nature parks. Distributed over Southeast Asia from Assam, south China, Indochina to the Malay Peninsula, Sumatra, and Borneo.

**Threats:** Habitat loss. The species also faces illegal trapping for the wildlife trade in neighbouring countries.

Photo: Nick Baker



**Scientific Interest and Potential Value:** Records are anecdotal and information on the biology of this species is scant. The frugivorous nature of this civet species suggests that it could be an effective seed disperser. This species is also hunted for the illegal wildlife trade in neighbouring countries.

**Conservation Measures:** Habitat protection, reforestation, ensuring connectivity across forest patches, and stringent policing against poaching.

**Scientific Name:**  
*Prionailurus bengalensis*

**Common Name:**  
Mainland Leopard Cat

**Order/Family:**  
Carnivora: Felidae

Photo: Marcus A.H. Chua



**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found in forests, scrublands, and plantations with vegetation cover. Noted to occur in reclaimed land with secondary forest succession. Nocturnal and crepuscular, feeding on rodents, lizards, birds, frogs, and arthropods. An estimate of 21 adult individuals on Pulau Tekong in 2012, and fewer on the main island of Singapore and Pulau Ubin.

**Distribution:** Offshore islands of Pulau Tekong and Pulau Ubin, Western Catchment Area, including Sungei Buloh Nature Park Network, Central Catchment Nature Reserve and surrounding forested habitats. Occurs from Siberia, to Pakistan, East Asia, and mainland Southeast Asia in other parts of its geographical range.

**Threats:** Habitat loss and fragmentation, road kills. The limited genetic variability of this species in Singapore may lead to inbreeding depression. Leopard cats are sometimes desired in the wildlife trade as pets or for breeding hybrid Bengal cats.

**Scientific Interest and Potential Value:** Leopard cats in southern Peninsular Malaysia and Singapore are thought to occur in a possible hybrid zone between the mainland leopard cats and Sunda leopard cat (*P. javanensis*). The exact evolutionary relationship is yet to be determined.

**Conservation Measures:** Habitat protection and restoration, roadkill mitigation measures, and stringent policing against poaching.

**Scientific Name:**  
*Penthetor lucasii*

**Common Name:**  
Dusky Fruit Bat

**Order/Family:**  
Chiroptera: Pteropodidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This gregarious frugivore roosts in caves and under rock shelters, a habit that limits its distribution. It is known to carry fruit back to its roost for consumption. An estimated 60 bats live in a cave in Bukit Timah Nature Reserve.

**Distribution:** In Singapore, recent records are restricted to the Bukit Timah Nature Reserve. Distributed in the Malay Peninsula, the Riau Islands and Borneo.

**Threats:** Habitat loss and disturbance of roosting sites.

**Scientific Interest and Potential Value:** As its habits are poorly known, there is scope for scientific investigations. Fruit bats serve as pollinators and seed-dispersing agents for certain tree species.

**Conservation Measures:** Habitat protection and protection of known roosting sites (e.g., installing gates at caves where this species is known to roost to prevent human disturbance).

Photo: Benjamin P.Y.-H. Lee



**Scientific Name:**

*Pteropus vampyrus*

**Common Name:**

Large Flying Fox

**Order/Family:**

Chiroptera: Pteropodidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** They roost gregariously in tall trees during the day and move out to feed before dusk, usually flying long distances. Its diet consists of fruits, flowers, pollen, and nectar from many trees species in both forests and cultivated lands.

**Distribution:** This bat is no longer a resident of Singapore but it is known to occur as a visitor throughout the year in the Central Catchment Nature Reserve, Swiss Club Road remnant forest, the Southern Islands of St John's and Sisters', and Pulau Ubin. Occasionally, they would occur in large groups of about a hundred, as observed in 2001 and 2020. They are found over much of Southeast Asia, from south Vietnam to Borneo and the Philippines.

Photo: Benjamin P.Y.-H. Lee



**Threats:** There are no current threats to this species in Singapore. Elsewhere in its range, the threats are overharvesting and habitat loss, and sometimes persecution as a crop pest.

**Scientific Interest and Potential Value:** A crucial pollinating agent for many species of forest and crop trees, including durian.

**Conservation Measures:** The Nature Reserves together with its buffer parks, as well as Pulau Ubin, provide refuge, food resources, and protection for visiting bats from other parts of the archipelago.

**Scientific Name:**

*Megaderma spasma*

**Common Name:**

Lesser Asian False-vampire Bat,  
Malayan False-vampire Bat

**Order/Family:**

Chiroptera: Megadermatidae

**National Status:** Endangered (EN)

**Habitat and Ecology:** This bat roosts in small groups in caves, tunnels, and hollow trees in forest. It feeds on insects and other animals, including smaller bats, but does not feed on blood.

Photo: Benjamin P.Y.-H. Lee





**Distribution:** In Singapore, known from Pulau Tekong and Pulau Ubin. Distributed in India and Sri Lanka, across to Indochina, the Philippines, the Malay Peninsula, Sumatra, Borneo and Java.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** This species may play a role in the suppression of insect pests through their consumption of large insects.

**Conservation Measures:** Habitat protection and artificial roost provision through the building of bat houses. Preliminary efforts at roost provision suggest that the species responds well to artificial roost structures locally and the population has increased.

**Scientific Name:**  
*Rhinolophus trifolius*

**Common Name:**  
Trefoil Horseshoe Bat

**Order/Family:**  
Chiroptera: Rhinolophidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This distinctive insectivorous bat with large yellow nose-leaf is known to inhabit the understorey of forests. It roosts singly among vegetation and appears to hunt from a perch by fly-catching.

**Distribution:** In Singapore, recorded from the Central Catchment Nature Reserve, and Pulau Tekong. Distributed in India, Myanmar, Thailand, the Malay Peninsula, Sumatra, Borneo, and Java.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Its population and ecology are not well-known.

**Conservation Measures:** Protection of forest habitats.

Photo: Nick Baker





**Scientific Name:**

*Hypsugo macrotis*

**Common Name:**

Big-eared Pipistrelle

**Order/Family:**

Chiroptera: Vespertilionidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** This insectivorous bat forages in semi-cluttered environments, and its ecology and wing morphology suggests that it is an edge species. It has been recorded elsewhere foraging at forest edges and above tree canopies, as well as open areas like coastal mudflats, as with the lone record from Singapore.

**Distribution:** In Singapore, there is a single published record in 2018 from mudflats at Chek Jawa, Pulau Ubin. Distribution includes west Peninsular Malaysia, northeast Sumatra, Padang, Enggano, Bali, and Lombok Island.

Photo: Chung Yi Fei



**Threats:** Unknown, although an urban roost in Peninsular Malaysia had evidence of disturbance by domestic cats.

**Scientific Interest and Potential Value:** Unknown. This species is very rarely recorded throughout its entire distribution, and it is listed as Data Deficient on the IUCN Global Red List.

**Conservation Measures:** More surveys and research are required to better understand its ecology for conservation actions.

**Scientific Name:**

*Galeopterus variegatus*

**Common Name:**

Sunda Colugo

**Order/Family:**

Dermoptera: Cynocephalidae

**National Status:** Near Threatened (NT)

**Habitat and Ecology:** Forests as the species is strictly arboreal; sightings of individuals in gardens and plantations are possible when these sites are adjacent to forests. Largely sedentary during the day, and perches against tree trunks or rests amongst canopy vegetation and in tree hollows. Nocturnal and moves between trees via gliding for foraging and other activities. Feeds primarily on leaves. Estimated to be at 1,500 individuals in Singapore.

Photo: Max D.Y. Khoo



**Distribution:** In Singapore, mainly in Bukit Timah Nature Reserve, Central Catchment Nature Reserve and their periphery. Increasing sightings outside of these areas in recent years (e.g., Wessex estate, Gallop Road). Found across mainland Southeast Asia, Borneo, Sumatra, and Java.

**Threats:** Habitat loss and fragmentation. In neighbouring countries, they may be persecuted as they occasionally feed on flowers of crop plants (e.g., coconut).

**Scientific Interest and Potential Value:** Little is known of the biology and ecology of the Sunda Colugo, particularly of wild individuals. Recent genetic studies

reveal that colugos are the sister group to primates, and there might be multiple cryptic species within this wide-ranging species.

**Conservation Measures:** Protection of habitats. Glide poles could be installed in between forest fragments to enhance connectivity across gaps.

**Scientific Name:**  
*Manis javanica*

**Common Name:**  
Sunda Pangolin

**Order/Family:**  
Pholidota: Manidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Forests, scrublands and plantations. Largely nocturnal and active for about four hours each night. Diet consists of termites and ants whose nests are ripped open with the pangolin's foreclaws, and prey lapped up with its long and sticky tongue. Although largely terrestrial when active, the species shelters in burrows, in the canopy level of trees, and even urban structures when available. When threatened, curls itself up into a ball.

**Distribution:** In Singapore, mainly in the Central Catchment Nature Reserve and its periphery. It is also recorded from Bukit Timah Nature Reserve, Bukit Batok, Western Catchment Area, and on the islands of Ubin and Tekong. This species occurs in mainland Southeast Asia, Borneo, Sumatra, and Java, including Bali and Lombok.

**Threats:** Habitat loss, road kills, and poaching. Forests could be important for reproduction as pangolins utilise natal dens associated with large trees. Road kills are a significant cause of mortality in Singapore.

Photo: Max D.Y. Khoo



Pangolins are hunted heavily for their meat and scales in neighbouring countries.

**Scientific Interest and Potential Value:** Very little is known of the biology and ecology of the Sunda Pangolin, particularly of wild individuals. Although the species is listed in CITES Appendix I, pangolin meat and scales are still highly sought after in neighbouring countries for use in traditional Chinese medicine and as wild game meat.

**Conservation Measures:** Wildlife crossings could be constructed to facilitate the animals' movements across roads that bisect wooded areas (e.g., area near intersection of Pan-Island and Bukit Timah Expressways).

**Scientific Name:**  
*Nycticebus coucang*

**Common Name:**  
Sunda Slow Loris

**Order/Family:**  
Primates: Loridae

**National Status:** Endangered (EN)

**Habitat and Ecology:** Inhabits forests. This nocturnal and arboreal creature is usually solitary and sleeps in a curled-up posture on branches. Despite its name, its movements are not necessarily slow. Its diet consists mainly of flowers, sap, fruits, gum, and insects.

**Distribution:** In Singapore, recorded from the Bukit Timah and Central Catchment Nature Reserves, Nature Parks, and Pulau Tekong. Native to Southeast Asia in the Malay Peninsula, Sumatra, and some surrounding islands.

**Threats:** Habitat loss and poaching.

Photo: Norman T.L. Lim



**Scientific Interest and Potential Value:** One of the few mammals whose bite is known to be venomous. Due to its attractive appearance, individuals are often caught and sold as pets.

**Conservation Measures:** Protection of forest habitats, ensuring connectivity across forest patches, and enforcement of strict anti-poaching laws. It is possible that part of the local slow loris population consists of abandoned pets.

**Scientific Name:**  
*Presbytis femoralis*

**Common Name:**  
Raffles's Banded Langur

**Order/Family:**  
Primates: Cercopithecidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Inhabits mature/secondary lowland and swamp forest. This arboreal creature is usually in troop of 6 to 15 individuals, consisting of a dominant male, several females, and their offspring. Its diet consists mainly of leaves, flowers, fruits, and sometimes insects. It has a few roosting sites that they will switch around. Tall big trees are their preferred roosting sites.

Photo: Andie Ang



**Distribution:** Endemic to Southern Johor (Malaysia) and Singapore. In Singapore, recorded from the Central Catchment Nature Reserves and some adjacent Nature Parks or secondary forests.

**Threats:** Habitat loss and low genetic diversity due to small population size of ~70 individuals in 2023. Road kills have occurred from time to time.

**Scientific Interest and Potential Value:** With the recognition of two other subspecies (*P. f. robinsoni* and *P. f. percura*) as distinct from *P. femoralis*, the small geographical distribution and population size of this species warrant targeted conservation actions to ensure the continued survival of the species.

**Conservation Measures:** Most individuals in Singapore reside within the protected Nature Reserves and Nature Parks, with only a small number of individuals wandering to unprotected secondary forests. Installation of rope bridges and planting of trees with widespread canopy along road dividers will enhance habitat connectivity and facilitate safe passage across roads.

**Scientific Name:**  
*Hylopetes spadiceus*

**Common Name:**  
Red-cheeked Flying Squirrel

**Order/Family:**  
Rodentia: Sciuridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs in forests. Nocturnal and arboreal, moving through forest by climbing up trees and gliding. Nests in small tree holes that are plugged with fibrous plant material during the day.

**Distribution:** Locally restricted to Bukit Timah Nature Reserve and Central Catchment Nature Reserve. Range includes Indochina, Malay Peninsula, Sumatra, Java, and Borneo.

**Threats:** Habitat loss.

Photo: Robert C.H. Teo



**Scientific Interest and Potential Value:** It is difficult to observe this shy animal, due to its arboreal habits and its evasive behaviour when lights are used for illumination. Therefore, very little is known about the ecology and behaviour of this species.

**Conservation Measures:** Safeguarding of natural habitat and known nests.



**Scientific Name:**

*Rhinosciurus laticaudatus*

**Common Name:**

Shrew-faced Ground Squirrel

**Order/Family:**

Rodentia: Sciuridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs in primary and tall secondary forests. Diurnal and terrestrial. Diet consists of insects, earthworms, and fallen fruits. Rarely encountered during visual surveys; recent records were largely from camera traps deployed in forests.

**Distribution:** Locally restricted to Bukit Timah Nature Reserve and Central Catchment Nature Reserve. Range includes Borneo, Peninsular Malaysia, southern Thailand, and Sumatra and adjacent islands.

Photo: Nick Baker



**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Very little is known about the ecology and behaviour of this secretive species.

**Conservation Measures:** Safeguarding of natural habitat.

**Scientific Name:**

*Maxomys rajah*

**Common Name:**

Brown Spiny Rat

**Order/Family:**

Rodentia: Muridae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Occurs in primary and secondary forests. Nocturnal and largely terrestrial, rests in burrows during the day. Feeds on fallen fruits and seeds, shoots and insects. Studies in Borneo have reported population explosions triggered by masting events.

**Distribution:** Locally recorded from Central Catchment Nature Reserve only. Range includes Borneo, Peninsular Malaysia, Peninsular Thailand, and Sumatra and adjacent islands.

Photo: Nick Baker



**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Very little is known about the ecology and behaviour of this species.

**Conservation Measures:** Protection of natural habitat.

**Scientific Name:**  
*Hystrix brachyura*

**Common Name:**  
Malayan Porcupine

**Order/Family:**  
Rodentia: Hystricidae

**National Status:** Critically Endangered (CR)

**Habitat and Ecology:** Found in forests and forest edge habitats, including agricultural areas. Nocturnal and terrestrial, using extensive burrows to rest during the day. Feeds on roots, tubers, bark, fallen fruits, and bone of dead animals. Solitary or in small family groups. When threatened, the hollow quills are raised and shaken to produce a rattling noise. When this fails as a deterrence, porcupines may charge backwards with quills raised.

**Distribution:** Locally recorded from Bukit Timah Nature Reserve, Central Catchment Nature Reserve, Pulau Ubin, Pulau Tekong, and Western Catchment Area. Range includes Bangladesh, Borneo, India, Indochina, Nepal, Peninsular Malaysia, southern China, Sumatra, and Tibet.

Photo: Norman T.L. Lim



**Threats:** Habitat loss and road kills.

**Scientific Interest and Potential Value:** More studies are needed to determine if current records include other porcupine species, as not all recorded animals possess the distinctive colouration of *H. brachyura*.

**Conservation Measures:** Safeguarding of natural habitats. Wildlife crossings between habitat fragments (e.g., culverts under roads) could benefit the species.

**Scientific Name:**  
*Tupaia glis*

**Common Name:**  
Common Tree shrew

**Order/Family:**  
Scandentia: Tupaiidae

**National Status:** Least Concern (LC)

**Habitat and Ecology:** Occurs in primary and secondary forests. Diurnal and commonly observed alone or in pairs in the lower understorey levels of the forest. Diet includes fruits, seeds, leaves, and arthropods. Territorial chases occur between individuals of the same sex.

Photo: Nick Baker





**Distribution:** Found in Bukit Timah Nature Reserve, Central Catchment Nature Reserve, and surrounding nature parks. Native to the Malay Peninsula.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** Little is known of the biology and ecology of the Common Treeshrew. In Singapore, this is the only member in the order.

**Conservation Measures:** Protection of natural habitat.

**Scientific Name:**  
*Crocidura malayana*

**Common Name:**  
Malayan Shrew

**Order/Family:**  
Soricomorpha: Soricidae

Drawing of *Crocidura malayana*:  
Kelvin K.P. Lim



**National Status:** Data Deficient (DD)

**Habitat and Ecology:** Occurs mainly in forest, where it forages on the forest floor, largely hidden away in the leaf litter. Individuals that have been encountered thus far have been caught in pitfall traps. The diet of this terrestrial animal consists mainly of insects.

**Distribution:** Locally confined to the Bukit Timah Nature Reserve and certain locations in the Central Catchment Nature Reserve. Apparently endemic to the Malay Peninsula.

**Threats:** Habitat loss.

**Scientific Interest and Potential Value:** This secretive animal is rarely encountered during visual surveys and extremely difficult to observe under natural conditions. Therefore, very little is known about this species.

**Conservation Measures:** Protection of its natural habitat is vital to its survival.

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# CHECKLISTS OF BIODIVERSITY

## Red Lists of Singapore Biodiversity

A selection of mainly threatened species in Singapore has been described and illustrated in the main section. The following checklists in this section attempt to provide a fuller picture of Singapore's biodiversity. Species that are threatened and not threatened are included in the checklists and a category of threat status (conservation status) in the national context has been assigned to them. Even so, the number of species in Singapore is still hardly known for a number of taxa especially for those groups from the invertebrates, let alone the information needed for the assessment of their conservation status. Great strides have been made to include and list the number of species from taxa ranging from the algae, plants, fungi to the fauna including the invertebrates and vertebrates.

We have decided to include as many species as possible that have been recorded from Singapore, from the taxa covered in this edition, whether they are threatened or not, to complete the picture rather than to leave their status ambiguous.

The RDB2 column in these checklists present the earlier threat assessment for each taxon as given in the second edition of the Singapore Red Data Book (SRDB2) published in 2008 (or 'Not Listed' is given in the RDB2 column if the taxon was not included in the 2008 checklists). Do note that the names used in the SRDB2 may not be the same as in the third edition (SRDB3) due to synonymy, misapplication of names or recircumscription of taxa. To ascertain how each plant name is to be interpreted between the two editions, please refer to Lindsay et al., (2022) in the References under the Flora chapter. For other groups of organisms, refer to the References under the relevant chapters, seek advice from specialists, or use only the names in the list and the assessments in the RDB3 column.

The Categories used in this 3<sup>rd</sup> edition Singapore Red Data Book checklists are:

|                                     | Category                    | Abbreviation | Remarks                                                                                                                                                                                             |
|-------------------------------------|-----------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Not Threatened</b>               | Least Concern               | LC           | Not approaching the criteria for being threatened                                                                                                                                                   |
|                                     | Near-Threatened             | NT           | Approaching but not yet reaching the threshold for being threatened                                                                                                                                 |
| <b>Threatened</b>                   | Vulnerable                  | VU           |                                                                                                                                                                                                     |
|                                     | Endangered                  | EN           |                                                                                                                                                                                                     |
|                                     | Critically Endangered       | CR           |                                                                                                                                                                                                     |
| <b>Extirpation &amp; Extinction</b> | Presumed Nationally Extinct | NEx          | The species is extinct (extirpated) within Singapore but it still survives outside Singapore.                                                                                                       |
|                                     | Globally Extinct            | EX           | The species is extinct all over the world, both in the wild and in cultivation                                                                                                                      |
| <b>Other Categories</b>             | Data Deficient              | DD           | Species eligible for assessment at the national level but with inadequate information to make an informed assessment                                                                                |
|                                     | Not Applicable              | NA           | Species that are not eligible for assessment at the national level (mainly introduced taxa and vagrants)                                                                                            |
|                                     | Not Evaluated               | NE           | Species that are possibly eligible for assessment but have not yet been evaluated against the criteria                                                                                              |
|                                     | Not Listed                  | Not Listed   | Species not listed in the records (in the IUCN Global Red List database, or the first edition Singapore Red Data Book - RDB1 and second edition Singapore Red Data Book - RDB2) for whatever reason |

**Checklist of Algae Species with their Category of Threat Status for Singapore**

Prepared by Michelle Lee Ai Chin, Jenny Fong, Yip Zhi Ting, Regina Yeo Shu Wen, Valerie Kwan

| <b>Family</b>    | <b>Genus</b>          | <b>Species</b>                                | <b>Authority</b>                               | <b>RDB2</b> | <b>RDB3</b> |
|------------------|-----------------------|-----------------------------------------------|------------------------------------------------|-------------|-------------|
| Achnanthaceae    | <i>Achnanthes</i>     | <i>brevipes</i> var. <i>intermedia</i>        | (Kützting) Cleve                               | Not Listed  | NE          |
| Achnanthaceae    | <i>Achnanthes</i>     | <i>exigua</i>                                 | Grunow                                         | Not Listed  | NE          |
| Achnanthaceae    | <i>Achnanthes</i>     | <i>longipes</i>                               | C.Agardh                                       | Not Listed  | NE          |
| Achnanthaceae    | <i>Achnanthes</i>     | <i>suchlandtii</i>                            | Hustedt                                        | Not Listed  | NE          |
| Achnanthaceae    | <i>Achnanthes</i>     | <i>temperei</i>                               | M.Peragallo                                    | Not Listed  | NE          |
| Achnanthaceae    | <i>Achnanthes</i>     | <i>tenuistauros</i>                           | A.Mann                                         | Not Listed  | NE          |
| Achnanthidiaceae | <i>Lemnicola</i>      | <i>hungarica</i>                              | (Grunow) F.E.Round & P.W.Basson                | Not Listed  | NE          |
| Achnanthidiaceae | <i>Planothidium</i>   | <i>hauckianum</i>                             | (Grunow) Round & Bukhtiyarova                  | Not Listed  | NE          |
| Cocconeidaceae   | <i>Amphicocconeis</i> | <i>disculoides</i>                            | (Hustedt) Stefano & Marino                     | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>dirupta</i>                                | Gregory                                        | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>disculus</i>                               | (Schumann) Cleve                               | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>feuerbornii</i>                            | Hustedt                                        | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>heteroidea</i>                             | C.A.Hantzsch                                   | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>pelta</i>                                  | A.Schmidt                                      | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>placentula</i>                             | Ehrenberg                                      | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>placentula</i> var. <i>euglypta</i>        | (Ehrenberg) Grunow                             | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>pseudomarginata</i> var. <i>intermedia</i> | Grunow                                         | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>speciosa</i>                               | Gregory                                        | Not Listed  | NE          |
| Cocconeidaceae   | <i>Cocconeis</i>      | <i>sublittoralis</i>                          | Hendey                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Bacillaria</i>     | <i>paradoxa</i>                               | J.F.Gmelin                                     | Not Listed  | NE          |
| Bacillariaceae   | <i>Bacillaria</i>     | <i>paxillifer</i> var. <i>tumidula</i>        | (Grunow) Witkowski, Lange-Bertalot & Metzeltin | Not Listed  | NE          |
| Bacillariaceae   | <i>Cylindrotheca</i>  | <i>closterium</i>                             | (Ehrenberg) Reimann & J.C.Lewin                | Not Listed  | NE          |
| Bacillariaceae   | <i>Denticula</i>      | <i>subtilis</i>                               | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Fragilariopsis</i> | <i>cylindrus</i>                              | (Grunow) Krieger                               | Not Listed  | NE          |
| Bacillariaceae   | <i>Fragilariopsis</i> | <i>oceanica</i>                               | (Cleve) Hasle                                  | Not Listed  | NE          |
| Bacillariaceae   | <i>Hantzschia</i>     | <i>amphioxys</i> var. <i>capitata</i>         | O.F.Müller                                     | Not Listed  | NE          |
| Bacillariaceae   | <i>Hantzschia</i>     | <i>virgata</i>                                | (Roper) Grunow                                 | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>acicularis</i>                             | (Kützting) W.Smith                             | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>amphibia</i>                               | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>amphibia</i> var. <i>acutiuscula</i>       | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>bilobata</i> var. <i>minor</i>             | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>brebissonii</i> var. <i>borealis</i>       | Cleve                                          | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>brevissima</i>                             | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>commutata</i>                              | Grunow                                         | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>constricta</i>                             | (Gregory) Grunow                               | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>gandersheimensis</i>                       | Krasske                                        | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>hybridaeformis</i>                         | Hustedt                                        | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>lanceolata</i>                             | W.Smith                                        | Not Listed  | NE          |
| Bacillariaceae   | <i>Nitzschia</i>      | <i>linearis</i> var. <i>subtilis</i>          | (Grunow) Hustedt                               | Not Listed  | NE          |

| Family            | Genus                   | Species                                                   | Authority                         | RDB2       | RDB3 |
|-------------------|-------------------------|-----------------------------------------------------------|-----------------------------------|------------|------|
| Bacillariaceae    | <i>Nitzschia</i>        | <i>longissima</i>                                         | (Brébisson) Ralfs                 | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>lorenziana</i>                                         | Grunow                            | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>nana</i>                                               | Grunow                            | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>palea</i>                                              | (Kützing) W.Smith                 | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>punctata</i> var. <i>coarctata</i>                     | (Grunow) Hustedt                  | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>romana</i>                                             | Grunow                            | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>sigma</i>                                              | (Kützing) W.Smith                 | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>sigma</i> var. <i>rigida</i>                           | Grunow ex van Heurck              | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>sigmoidea</i>                                          | (Nitzsch) W. Smith                | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>tryblionella</i> var. <i>victoriae</i>                 | (Grunow) Grunow                   | Not Listed | NE   |
| Bacillariaceae    | <i>Nitzschia</i>        | <i>vermicularis</i>                                       | (Kützing) Hantzsch                | Not Listed | NE   |
| Bacillariaceae    | <i>Psammodictyon</i>    | <i>panduriforme</i>                                       | (W. Gregory) D.G. Mann            | Not Listed | NE   |
| Bacillariaceae    | <i>Pseudo-nitzschia</i> | <i>pungens</i>                                            | (Grunow ex Cleve)<br>G.R.Hasle    | Not Listed | NE   |
| Bacillariaceae    | <i>Pseudo-nitzschia</i> | <i>seriata</i>                                            | (Cleve) H.Peragallo               | Not Listed | NE   |
| Bacillariaceae    | <i>Tryblionella</i>     | <i>apiculata</i>                                          | Gregory                           | Not Listed | NE   |
| Bacillariaceae    | <i>Tryblionella</i>     | <i>cocconeiformis</i>                                     | (Grunow) D.G.                     | Not Listed | NE   |
| Bacillariaceae    | <i>Tryblionella</i>     | <i>compressa</i>                                          | (J.W.Bailey) M.Poulin             | Not Listed | NE   |
| Bacillariaceae    | <i>Tryblionella</i>     | <i>granulata</i>                                          | (Grunow) D.G. Mann                | Not Listed | NE   |
| Anomooneidaceae   | <i>Anomooneis</i>       | <i>serians</i>                                            | (Brébisson ex Kützing)<br>A.Cleve | Not Listed | NE   |
| Cymbellaceae      | <i>Brebissonia</i>      | <i>lanceolata</i>                                         | (C.Agardh) Mahoney & Reimer       | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>hebridica</i>                                          | (W.Gregory) Grunow                | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>minuta</i> var. <i>pseudogracilis</i>                  | (Choln.) Reimer                   | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>norvegica</i>                                          | Grunow                            | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>triangulum</i>                                         | (Ehrenberg) Cleve                 | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>turgida</i>                                            | W.Gregory                         | Not Listed | NE   |
| Cymbellaceae      | <i>Cymbella</i>         | <i>turgidula</i>                                          | Grunow                            | Not Listed | NE   |
| Cymbellaceae      | <i>Navicella</i>        | <i>pusilla</i>                                            | (Grunow) Krammer                  | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>affine</i> var. <i>insigne</i>                         | (W.Gregory)<br>G.W.Andrews        | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>angustatum</i>                                         | (Kützing) Rabenhorst              | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>angustatum</i> var. <i>[producta]</i> f. <i>indica</i> | H.P.Gandhi                        | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>gracile</i>                                            | Ehrenberg                         | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>olivaceum</i> var. <i>insigne</i>                      | (Cleve) van Heruck                | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>parvulum</i>                                           | (Kützing) Kützing                 | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>parvulum</i> var. <i>lagenula</i>                      | (Grunow) Hustedt                  | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>puiggarianum</i> var. <i>aequatorialis</i>             | Cleve                             | Not Listed | NE   |
| Gomphonemataceae  | <i>Gomphonema</i>       | <i>sphaerophorum</i>                                      | Ehrenberg                         | Not Listed | NE   |
| Rhoicospheniaceae | <i>Rhoicosphenia</i>    | <i>abbreviata</i>                                         | (C.Agardh) Lange-Bertalot         | Not Listed | NE   |
| Eunotiaceae       | <i>Desmogonium</i>      | <i>rabenhorstianum</i>                                    | Grunow                            | Not Listed | NE   |
| Eunotiaceae       | <i>Eunotia</i>          | <i>arcus</i> var. <i>uncinata</i>                         | Grunow                            | Not Listed | NE   |
| Eunotiaceae       | <i>Eunotia</i>          | <i>bilunaris</i>                                          | (Ehrenberg)<br>Schaarschmidt      | Not Listed | NE   |



| Family         | Genus                | Species                                                     | Authority                         | RDB2       | RDB3 |
|----------------|----------------------|-------------------------------------------------------------|-----------------------------------|------------|------|
| Eunotiaceae    | <i>Eunotia</i>       | <i>camelus</i> var.<br><i>kaarverensis</i>                  | Gandhi                            | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>fallax</i>                                               | A.Cleve                           | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>gracilis</i>                                             | (Ehrenberg) Rabenhorst            | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>incisa</i>                                               | W.Smith ex W.Gregory              | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>major</i> var. <i>indica</i>                             | (Grunow) Cleve-Euler              | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>monodon</i>                                              | Ehrenberg                         | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>monodon</i> var. <i>constricta</i>                       | A.Cleve                           | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>pectinalis</i>                                           | (Kützing) Rabenhorst              | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>praerupta</i>                                            | Ehrenberg                         | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>praerupta</i> var. <i>inflata</i>                        | Grunow                            | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>robusta</i>                                              | Ralfs                             | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>serra</i>                                                | Ehrenberg                         | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>sudetica</i> var. <i>bidens</i>                          | Hustedt                           | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>valida</i> var. <i>[ambigua]</i> f.<br><i>borivliana</i> | E.A.Gonzalves &<br>H.P.Gandhi     | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>vanheurckii</i>                                          | R.M.Patrick                       | Not Listed | NE   |
| Eunotiaceae    | <i>Eunotia</i>       | <i>veneris</i>                                              | (Kützing) De Toni                 | Not Listed | NE   |
| Fragilariaceae | <i>Fragilaria</i>    | <i>capucina</i> var. <i>vaucheriae</i>                      | (Kützing) Lange-Bertalot          | Not Listed | NE   |
| Fragilariaceae | <i>Fragilaria</i>    | <i>inflata</i>                                              | (Heiden) Hustedt                  | Not Listed | NE   |
| Fragilariaceae | <i>Fragilaria</i>    | <i>lapponica</i>                                            | Grunow                            | Not Listed | NE   |
| Fragilariaceae | <i>Fragilaria</i>    | <i>leptostauron</i> var. <i>dubia</i>                       | (Grunow) Hustedt                  | Not Listed | NE   |
| Fragilariaceae | <i>Fragilaria</i>    | <i>schulzii</i>                                             | C.Brockmann                       | Not Listed | NE   |
| Fragilariaceae | <i>Martyana</i>      | <i>martyi</i>                                               | (Héribaud) Round                  | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>amphicephala</i>                                         | Kützing                           | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>crystallina</i>                                          | (C.Agardh) Kützing                | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>demerarae</i>                                            | Grunow                            | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>fasciculata</i> var. <i>truncata</i>                     | (Greville) Pantocsek              | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>formosa</i>                                              | Hantzsch                          | Not Listed | NE   |
| Fragilariaceae | <i>Synedra</i>       | <i>gailonii</i>                                             | (J.Bory) Ehrenberg                | Not Listed | NE   |
| Staurosiraceae | <i>Opephora</i>      | <i>pacifica</i>                                             | (Grunow) Petit                    | Not Listed | NE   |
| Staurosiraceae | <i>Opephora</i>      | <i>schwartzii</i>                                           | (Grunow) Petit ex<br>Pelletan     | Not Listed | NE   |
| Staurosiraceae | <i>Staurosirella</i> | <i>pinnata</i>                                              | (Ehrenberg)                       | Not Listed | NE   |
| Licmophoraceae | <i>Licmophora</i>    | <i>ehrenbergii</i>                                          | (Kützing) Grunow                  | Not Listed | NE   |
| Licmophoraceae | <i>Licmophora</i>    | <i>gracilis</i>                                             | (Ehrenberg) Grunow                | Not Listed | NE   |
| Licmophoraceae | <i>Licmophora</i>    | <i>lyngbyei</i>                                             | (Kützing) Grunow ex<br>van Heurck | Not Listed | NE   |
| Ulnariaceae    | <i>Ulnaria</i>       | <i>biceps</i>                                               | (Kützing) P.Compère               | Not Listed | NE   |
| Ulnariaceae    | <i>Ulnaria</i>       | <i>ulna</i>                                                 | (Nitzsch) P.Compère               | Not Listed | NE   |
| Ulnariaceae    | <i>Ulnaria</i>       | <i>ulna</i> var. <i>amphirhynchus</i>                       | (Ehrenberg) M.Aboal               | Not Listed | NE   |
| Lyrellaceae    | <i>Lyrella</i>       | <i>clavata</i>                                              | (Gregory) D.G.Mann                | Not Listed | NE   |
| Lyrellaceae    | <i>Lyrella</i>       | <i>lyra</i>                                                 | (Ehrenberg) Karajeva              | Not Listed | NE   |
| Lyrellaceae    | <i>Lyrella</i>       | <i>praetexta</i>                                            | (Ehrenberg) D.G.Mann              | Not Listed | NE   |
| Lyrellaceae    | <i>Petroneis</i>     | <i>monilifera</i>                                           | (Cleve) A.J.Stickle &<br>D.G.Mann | Not Listed | NE   |
| Lyrellaceae    | <i>Petroneis</i>     | <i>transfuga</i>                                            | (Grunow ex Cleve)<br>D.G.Mann     | Not Listed | NE   |

| Family          | Genus             | Species                                        | Authority                          | RDB2       | RDB3 |
|-----------------|-------------------|------------------------------------------------|------------------------------------|------------|------|
| Mastogloiaceae  | <i>Mastogloia</i> | <i>fimbriata</i>                               | (Brightwell) Cleve                 | Not Listed | NE   |
| Amphipleuraceae | <i>Frustulia</i>  | <i>rhomboides</i>                              | (Ehrenberg) De Toni                | Not Listed | NE   |
| Amphipleuraceae | <i>Frustulia</i>  | <i>rhomboides</i> var.<br><i>saxonica</i>      | (Rabenhorst) De Toni               | Not Listed | NE   |
| Diadesmidaceae  | <i>Diadesmis</i>  | <i>contenta</i>                                | (Grunow ex van Heurck)<br>D.G.Mann | Not Listed | NE   |
| Diadesmidaceae  | <i>Luticola</i>   | <i>mutica</i>                                  | (Kützing) D.G.Mann                 | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>bombiformis</i>                             | Cleve                              | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>bombus</i>                                  | (Ehrenberg) Cleve                  | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>bombus</i> var. <i>densestriata</i>         | (A.Schmidt) Cleve                  | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>coffaeiformis</i>                           | (Schmidt) Cleve                    | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>crabro</i>                                  | Ehrenberg                          | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>exemta</i> var. <i>digrediens</i>           | Cleve                              | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>gravelleana</i>                             | R.Hagelstein                       | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>incurvata</i>                               | (Gregory) Cleve                    | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>interrupta</i>                              | (Kützing) Cleve                    | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>interrupta</i> var.<br><i>gorjanovicii</i>  | (Pantocsek) Cleve                  | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>litoralis</i>                               | (Donkin) Cleve                     | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>oculata</i>                                 | (Brébisson) Cleve                  | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>puella</i>                                  | (Schumann) Cleve                   | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>smithii</i>                                 | (Brébisson in W.Smith)<br>Cleve    | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>smithii</i> var. <i>rhombica</i>            | Mereschkowski                      | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>subovalis</i>                               | Cleve                              | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>vetula</i>                                  | (A.Schmidt) Cleve                  | Not Listed | NE   |
| Diploneidaceae  | <i>Diploneis</i>  | <i>weissflogii</i>                             | (A.Schmidt) Cleve                  | Not Listed | NE   |
| Naviculaceae    | <i>Caloneis</i>   | <i>alpestris</i>                               | (Grunow) Cleve                     | Not Listed | NE   |
| Naviculaceae    | <i>Caloneis</i>   | <i>liber</i>                                   | (W.Smith) Cleve                    | Not Listed | NE   |
| Naviculaceae    | <i>Caloneis</i>   | <i>ventricosa</i> var. <i>minuta</i>           | (Grunow) R.M.Patrick               | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>balticum</i>                                | (Ehrenberg) Rabenhorst             | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>distortum</i>                               | (W.Smith) Griffith &<br>Henfrey    | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>exilis</i>                                  | (Grunow) C.W.Reimer                | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>fasciola</i> var. <i>sulcatum</i>           | (Grunow) Cleve                     | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>plagiostomum</i>                            | (Grunow) Cleve                     | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>rectum</i>                                  | (Donkin) Cleve                     | Not Listed | NE   |
| Naviculaceae    | <i>Gyrosigma</i>  | <i>simile</i>                                  | (Grunow) Boyer                     | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>cincta</i>                                  | (Ehrenberg) Ralfs                  | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>cryptocephala</i> f.<br><i>terrestris</i>   | Lund                               | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>discernenda</i>                             | Pantocsek                          | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>distans</i>                                 | (W.Smith) Ralfs                    | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>elginensis</i>                              | (W.Gregory) Ralfs                  | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>feuerborni</i>                              | Hustedt                            | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>forcipata</i> var.<br><i>suborbicularis</i> | (Grunow) Grunow in<br>van Heurck   | Not Listed | NE   |
| Naviculaceae    | <i>Navicula</i>   | <i>glacialis</i>                               | (Cleve) Cleve                      | Not Listed | NE   |

| Family            | Genus              | Species                                   | Authority                      | RDB2       | RDB3 |
|-------------------|--------------------|-------------------------------------------|--------------------------------|------------|------|
| Naviculaceae      | <i>Navicula</i>    | <i>gruendleri</i>                         | (Cleve & Grunow) Cleve         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>hustedtii</i>                          | Krasske                        | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>lateropunctata</i>                     | J.H.Wallace                    | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>menaiana</i>                           | Hendey                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>monilifera</i> var. <i>constricta</i>  | Heiden                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>mutica</i> var. <i>undulata</i>        | (Hilse) Grunow                 | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>niceaensis</i>                         | H.Peragallo                    | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>ostenfeldii</i>                        | Ostrup                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>pennata</i>                            | A.Schmidt                      | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>philippinarum</i>                      | A.Mann                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>pi</i>                                 | Cleve                          | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>platessa</i>                           | Cleve                          | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>platyventris</i>                       | Meister                        | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>plicata</i>                            | Donkin                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>pupula</i> var. <i>capitata</i>        | Skvortzov & Meyer              | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>radiosafallax</i>                      | Lange-Bertalot                 | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>ramosissima</i>                        | (C.Agardh) Cleve               | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>ramosissima</i> f. <i>caspia</i>       | (Grunow) Cleve                 | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>reichardtii</i>                        | (Grunow) Grunow                | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>rhoneis</i>                            | (Ehrenberg) Ralfs              | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>rhynchocephala</i>                     | Kützing                        | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>secura</i>                             | R.M.Patrick                    | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>subtilissima</i>                       | Cleve                          | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>tridentula</i>                         | Krasske                        | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>tripunctata</i>                        | (O.F.Müller) Bory              | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>trituberculata</i>                     | Prowse                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>veneta</i>                             | Kützing                        | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>yarrensis</i>                          | Grunow                         | Not Listed | NE   |
| Naviculaceae      | <i>Navicula</i>    | <i>zostereti</i>                          | Grunow                         | Not Listed | NE   |
| Naviculaceae      | <i>Trachyneis</i>  | <i>antillarum</i>                         | (Cleve & Grunow in Cleve)      | Not Listed | NE   |
| Naviculaceae      | <i>Trachyneis</i>  | <i>aspera</i>                             | (Ehrenberg) Cleve              | Not Listed | NE   |
| Naviculaceae      | <i>Trachyneis</i>  | <i>aspera</i> var. <i>intermedia</i>      | (Grunow) Cleve                 | Not Listed | NE   |
| Naviculaceae      | <i>Trachyneis</i>  | <i>aspera</i> var. <i>pulchella</i>       | (W.Smith) Cleve                | Not Listed | NE   |
| Neidiaceae        | <i>Neidium</i>     | <i>productum</i>                          | (W.Smith) Cleve                | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>acrospira</i>                          | W.Smith                        | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>biceps</i>                             | W.Gregory                      | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>borealis</i>                           | Ehrenberg                      | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>borealis</i> var. <i>rectangularis</i> | Carlson                        | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>brauniana</i>                          | (Grunow) Mills                 | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>cruciformis</i>                        | (Donkin) Cleve                 | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>intermedia</i>                         | (Lagerstedt) Cleve             | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>mayeri</i>                             | K.Krammer                      | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>microstauron</i>                       | (Ehrenberg) Cleve              | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>obscura</i>                            | Krasske                        | Not Listed | NE   |
| Pinnulariaceae    | <i>Pinnularia</i>  | <i>subcapitata</i>                        | W.Gregory                      | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i> | <i>aestuarii</i>                          | (Brébisson ex Kützing) W.Smith | Not Listed | NE   |

| Family            | Genus                 | Species                                  | Authority                            | RDB2       | RDB3 |
|-------------------|-----------------------|------------------------------------------|--------------------------------------|------------|------|
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>delicatum</i>                         | W.Smith                              | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>elongatum</i>                         | W.Smith                              | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>fasciola</i>                          | (Ehrenberg) W.Smith                  | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>formosum</i>                          | W.Smith                              | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>intermedium</i>                       | W.Smith                              | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>majus</i>                             | (Grunow) Cleve                       | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>marinum</i>                           | Donkin                               | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>normanii</i>                          | Ralfs                                | Not Listed | NE   |
| Pleurosigmataceae | <i>Pleurosigma</i>    | <i>salinarum</i>                         | (Grunow) Grunow                      | Not Listed | NE   |
| Sellaphoraceae    | <i>Sellaphora</i>     | <i>pupula</i>                            | (Kützing)<br>Mereschkovsky           | Not Listed | NE   |
| Stauroneidaceae   | <i>Craticula</i>      | <i>halophila</i>                         | (Grunow in van Heurck)<br>D.G.Mann   | Not Listed | NE   |
| Stauroneidaceae   | <i>Stauroneis</i>     | <i>anceps</i>                            | Ehrenberg                            | Not Listed | NE   |
| Stauroneidaceae   | <i>Stauroneis</i>     | <i>membranacea</i>                       | (Cleve) Hustedt                      | Not Listed | NE   |
| Stauroneidaceae   | <i>Stauroneis</i>     | <i>nobilis</i>                           | Schumann                             | Not Listed | NE   |
| Stauroneidaceae   | <i>Stauroneis</i>     | <i>phoenicenteron</i>                    | (Nitzsch) Ehrenberg                  | Not Listed | NE   |
| Plagiogrammaeae   | <i>Plagiogramma</i>   | <i>staurophorum</i>                      | (Gregory) Heiberg                    | Not Listed | NE   |
| Grammatophoraceae | <i>Grammatophora</i>  | <i>marina</i>                            | (Lyngbye) Kützing                    | Not Listed | NE   |
| Grammatophoraceae | <i>Grammatophora</i>  | <i>oceanica</i>                          | Ehrenberg                            | Not Listed | NE   |
| Tabellariaceae    | <i>Asterionella</i>   | <i>japonica</i>                          | Cleve & Moller                       | Not Listed | NE   |
| Tabellariaceae    | <i>Tabellaria</i>     | <i>fenestrata</i>                        | (Lyngbye) Kützing                    | Not Listed | NE   |
| Psammodiscaceae   | <i>Psammodiscus</i>   | <i>nitidus</i>                           | (W.Gregory) Round &<br>D.G.Mann      | Not Listed | NE   |
| Rhabdonemataceae  | <i>Rhabdonema</i>     | <i>adriaticum</i>                        | Kützing                              | Not Listed | NE   |
| Rhaphoneidaceae   | <i>Delphineis</i>     | <i>surirella</i>                         | (Ehrenberg)<br>G.W.Andrews           | Not Listed | NE   |
| Rhaphoneidaceae   | <i>Rhaphoneis</i>     | <i>amphicerus</i>                        | (Ehrenberg) Ehrenberg                | Not Listed | NE   |
| Rhopalodiaceae    | <i>Pyxidicula</i>     | <i>africana</i>                          | B.J.Cholnoky                         | Not Listed | NE   |
| Rhopalodiaceae    | <i>Rhopalodia</i>     | <i>gibba</i> var. <i>ventricosa</i>      | (Kützing) H.Peragallo &<br>Peragallo | Not Listed | NE   |
| Rhopalodiaceae    | <i>Rhopalodia</i>     | <i>gibberula</i>                         | (Ehrenberg) Otto Müller              | Not Listed | NE   |
| Rhopalodiaceae    | <i>Rhopalodia</i>     | <i>gibberula</i> var. <i>producta</i>    | (Grunow) Cleve-Euler                 | Not Listed | NE   |
| Rhopalodiaceae    | <i>Rhopalodia</i>     | <i>gibberula</i> var. <i>vanheurckii</i> | Otto Müller                          | Not Listed | NE   |
| Rhopalodiaceae    | <i>Rhopalodia</i>     | <i>musculus</i>                          | (Kützing) Otto Müller                | Not Listed | NE   |
| Striatellaceae    | <i>Striatella</i>     | <i>unipunctata</i>                       | (Lyngbye) C.Agardh                   | Not Listed | NE   |
| Surirellaceae     | <i>Campylodiscus</i>  | <i>fastuosus</i>                         | Ehrenberg                            | Not Listed | NE   |
| Surirellaceae     | <i>Campylodiscus</i>  | <i>ralfsii</i>                           | W.Smith                              | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>amoricana</i>                         | H.Peragallo                          | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>caproni</i>                           | L.A.Brébisson ex F.<br>Kitton        | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>fastuosa</i>                          | (Ehrenberg) Kützing                  | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>fastuosa</i> var. <i>recedens</i>     | (A.Schmidt) Cleve                    | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>linearis</i>                          | W.Smith                              | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>muelleri</i>                          | F.Hustedt                            | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>robusta</i>                           | Ehrenberg                            | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>spiralis</i>                          | Kützing                              | Not Listed | NE   |
| Surirellaceae     | <i>Surirella</i>      | <i>tenuissima</i>                        | Hustedt                              | Not Listed | NE   |
| Surirellaceae     | <i>Tryblioptychus</i> | <i>cocconeiformis</i>                    | (Grunow) Hendey                      | Not Listed | NE   |

| Family              | Genus                | Species                                 | Authority                                 | RDB2       | RDB3 |
|---------------------|----------------------|-----------------------------------------|-------------------------------------------|------------|------|
| Thalassionemataceae | <i>Thalassionema</i> | <i>nitzschoides</i>                     | (Grunow)<br>Mereschkowsky                 | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>acutiuscula</i>                      | Kützing                                   | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>angusta</i> var. <i>eulensteinii</i> | (Grunow) Cleve                            | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>angusta</i> var. <i>oblongella</i>   | Grunow                                    | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>angusta</i> var. <i>ventricosa</i>   | (W.Gregory) Cleve                         | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>coffeaeformis</i>                    | (C.Agardh) Kützing                        | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>decipiens</i>                        | Grunow                                    | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>graeffei</i> var. <i>minor</i>       | Peragallo                                 | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>holsatica</i>                        | Hustedt                                   | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>javanica</i>                         | A.W.F.Schmidt                             | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>normanii</i>                         | Rabenhorst                                | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>ostrearia</i>                        | Brébisson                                 | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>proteus</i>                          | Gregory                                   | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>turgida</i>                          | W.Gregory                                 | Not Listed | NE   |
| Catenulaceae        | <i>Amphora</i>       | <i>wisei</i>                            | (M.M.Salah)<br>R.Simonsen                 | Not Listed | NE   |
| Coscinodiscaceae    | <i>Coscinodiscus</i> | <i>argus</i>                            | Ehrenberg                                 | Not Listed | NE   |
| Coscinodiscaceae    | <i>Coscinodiscus</i> | <i>marginatus</i>                       | Ehrenberg                                 | Not Listed | NE   |
| Coscinodiscaceae    | <i>Coscinodiscus</i> | <i>radiatus</i>                         | Ehrenberg                                 | Not Listed | NE   |
| Coscinodiscaceae    | <i>Coscinodiscus</i> | <i>wailesii</i>                         | Gran & Angst                              | Not Listed | NE   |
| Heliopeltaceae      | <i>Actinoptychus</i> | <i>senarius</i>                         | (Ehrenberg) Ehrenberg                     | Not Listed | NE   |
| Hemidiscaceae       | <i>Actinocyclus</i>  | <i>octonarius</i>                       | Ehrenberg                                 | Not Listed | NE   |
| Hemidiscaceae       | <i>Actinocyclus</i>  | <i>octonarius</i> var. <i>sparsus</i>   | (Gregory) Hendey                          | Not Listed | NE   |
| Hemidiscaceae       | <i>Actinocyclus</i>  | <i>platensis</i>                        | F.C.Müller Melchers                       | Not Listed | NE   |
| Hemidiscaceae       | <i>Azpeitia</i>      | <i>nodulifera</i>                       | (A.W.F.Schmidt)<br>G.A.Fryxell & P.A.Sims | Not Listed | NE   |
| Hyalodiscaceae      | <i>Hyalodiscus</i>   | <i>stelliger</i>                        | J.W.Bailey                                | Not Listed | NE   |
| Melosiraceae        | <i>Melosira</i>      | <i>granulata</i>                        | (Ehrenberg) Ralfs                         | Not Listed | NE   |
| Melosiraceae        | <i>Melosira</i>      | <i>italica</i>                          | (Ehrenberg) Kützing                       | Not Listed | NE   |
| Melosiraceae        | <i>Melosira</i>      | <i>nummuloides</i>                      | C.Agardh                                  | Not Listed | NE   |
| Paraliaceae         | <i>Paralia</i>       | <i>sulcata</i>                          | (Ehrenberg) Cleve                         | Not Listed | NE   |
| Stephanopyxidaceae  | <i>Stephanopyxis</i> | <i>turris</i> var. <i>polaris</i>       | Grunow                                    | Not Listed | NE   |
| Triceratiaceae      | <i>Triceratium</i>   | <i>broeckii</i>                         | G. Leuduger-Fortmorel                     | Not Listed | NE   |
| Triceratiaceae      | <i>Triceratium</i>   | <i>dubium</i>                           | Brightwell                                | Not Listed | NE   |
| Biddulphiaceae      | <i>Biddulphia</i>    | <i>biddulphiana</i>                     | (J.E.Smith) Boyer                         | Not Listed | NE   |
| Biddulphiaceae      | <i>Biddulphia</i>    | <i>petitiana</i>                        | (G.Leuduger-Fortmorel)<br>A.Mann          | Not Listed | NE   |
| Biddulphiaceae      | <i>Biddulphia</i>    | <i>vesiculosa</i>                       | (C.Agardh) Boyer                          | Not Listed | NE   |
| Chaetocerotaceae    | <i>Bacteriastrum</i> | <i>delicatum</i>                        | Cleve                                     | Not Listed | NE   |
| Chaetocerotaceae    | <i>Bacteriastrum</i> | <i>hyalinum</i>                         | Lauder                                    | Not Listed | NE   |
| Chaetocerotaceae    | <i>Chaetoceros</i>   | <i>danicus</i>                          | Cleve                                     | Not Listed | NE   |
| Chaetocerotaceae    | <i>Chaetoceros</i>   | <i>lorenzianus</i>                      | Grunow                                    | Not Listed | NE   |
| Chaetocerotaceae    | <i>Chaetoceros</i>   | <i>peruvianus</i>                       | Brightwell                                | Not Listed | NE   |
| Chaetocerotaceae    | <i>Chaetoceros</i>   | <i>tetrastichon</i>                     | Cleve                                     | Not Listed | NE   |
| Cymatosiraceae      | <i>Cymatosira</i>    | <i>lorenziana</i>                       | Grunow                                    | Not Listed | NE   |
| Eupodiscaceae       | <i>Auliscus</i>      | <i>reticulatus</i>                      | Greville                                  | Not Listed | NE   |
| Odontellaceae       | <i>Odontella</i>     | <i>aurita</i>                           | (Lyngbye) C.Agardh                        | Not Listed | NE   |
| Odontellaceae       | <i>Odontella</i>     | <i>mobiliensis</i>                      | (J.W.Bailey) Grunow                       | Not Listed | NE   |
| Odontellaceae       | <i>Odontella</i>     | <i>obtusa</i>                           | Kützing                                   | Not Listed | NE   |

| Family               | Genus                    | Species                                   | Authority                               | RDB2       | RDB3 |
|----------------------|--------------------------|-------------------------------------------|-----------------------------------------|------------|------|
| Isthmiaceae          | <i>Isthmia</i>           | <i>enervis</i>                            | Ehrenberg                               | Not Listed | NE   |
| Lithodesmiaceae      | <i>Ditylum</i>           | <i>brightwellii</i>                       | (T.West) Grunow                         | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>kuetzingiana</i>                       | Thwaites                                | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>meneghiniana</i>                       | Kützing                                 | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>operculata</i>                         | (C.Agardh) Kützing                      | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>stelligera</i>                         | Cleve & Grunow                          | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>striata</i>                            | (Kützing) Grunow                        | Not Listed | NE   |
| Stephanodiscaceae    | <i>Cyclotella</i>        | <i>stylorum</i>                           | Brightwell                              | Not Listed | NE   |
| Stephanodiscaceae    | <i>Stephanodiscus</i>    | <i>rotula</i>                             | (Kützing) Hendey                        | Not Listed | NE   |
| Skeletonemaceae      | <i>Skeletonema</i>       | <i>costatum</i>                           | (Greville) Cleve                        | Not Listed | NE   |
| Thalassiosiraceae    | <i>Shionodiscus</i>      | <i>oestrupii</i>                          | (Ostenfeld)                             | Not Listed | NE   |
|                      |                          |                                           | A.J.Alverson, S.H.Kang<br>& E.C.Theriot |            |      |
| Thalassiosiraceae    | <i>Thalassiosira</i>     | <i>angulata</i>                           | (W.Gregory) Hasle                       | Not Listed | NE   |
| Thalassiosiraceae    | <i>Thalassiosira</i>     | <i>condensata</i>                         | Cleve                                   | Not Listed | NE   |
| Thalassiosiraceae    | <i>Thalassiosira</i>     | <i>decipiens</i>                          | (Grunow) E.G.Jørgensen                  | Not Listed | NE   |
| Thalassiosiraceae    | <i>Thalassiosira</i>     | <i>eccentrica</i>                         | (Ehrenberg) Cleve                       | Not Listed | NE   |
| Thalassiosiraceae    | <i>Thalassiosira</i>     | <i>rotula</i>                             | Meunier                                 | Not Listed | NE   |
| Climacospheniaceae   | <i>Climacosphenia</i>    | <i>moniligera</i>                         | Ehrenberg                               | Not Listed | NE   |
| Toxariaceae          | <i>Toxarium</i>          | <i>hennedyanum</i>                        | (Gregory) Pelletan                      | Not Listed | NE   |
| Characeae            | <i>Chara</i>             | <i>fibrosa</i> subsp. <i>benthamii</i>    | (A.Braun) Zaneveld                      | Not Listed | NE   |
| Characeae            | <i>Chara</i>             | <i>fibrosa</i> subsp. <i>gymnopitys</i>   | (A.Braun) Zaneveld                      | Not Listed | NE   |
|                      |                          | <i>acuminata</i> var. <i>subglomerata</i> | (A.Braun) T.F.Allen                     | Not Listed | NE   |
| Characeae            | <i>Nitella</i>           | <i>mucosa</i>                             | (C.F.O.Nordstedt)                       | Not Listed | NE   |
|                      |                          |                                           | J.Groves                                |            |      |
| Chaetosphaeridiaceae | <i>Chaetosphaeridium</i> | <i>globosum</i>                           | (Nordstedt) Klebahn                     | Not Listed | NE   |
| Elakatothricaceae    | <i>Elakatothrix</i>      | <i>viridis</i>                            | (J.Snow) Printz                         | Not Listed | NE   |
| Klebsormidiaceae     | <i>Klebsormidium</i>     | <i>nitens</i>                             | (Meneghini) Lokhorst                    | Not Listed | NE   |
| Closteriaceae        | <i>Closterium</i>        | <i>kützingii</i>                          | Bréb.                                   | Not Listed | NE   |
| Closteriaceae        | <i>Closterium</i>        | <i>navicula</i>                           | (Brébisson) Lütkenmüller                | Not Listed | NE   |
| Closteriaceae        | <i>Closterium</i>        | <i>parvulum</i>                           | Nägeli                                  | Not Listed | NE   |
| Closteriaceae        | <i>Closterium</i>        | <i>tumidum</i>                            | L.N.Johnson                             | Not Listed | NE   |
| Desmidiaceae         | <i>Actinotaenium</i>     | <i>turgidum</i>                           | (Brébisson ex Ralfs)                    | Not Listed | NE   |
|                      |                          |                                           | Teiling ex Ruzicka & Pouzar             |            |      |
| Desmidiaceae         | <i>Arthrodesmus</i>      | <i>incus</i>                              | Hassall ex Ralfs                        | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>askenasyi</i>                          | Schmidle                                | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>connatum</i>                           | Brébisson ex Ralfs                      | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>contractum</i>                         | O.Kirchner                              | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>lundellii</i> var. <i>corruptum</i>    | (W.B.Turner) West & G.S.West            | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>obsoletum</i>                          | (Hantzsch) Reinsch                      | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>pyramidatum</i>                        | Brébisson ex Ralfs                      | Not Listed | NE   |
| Desmidiaceae         | <i>Cosmarium</i>         | <i>quadrum</i>                            | P.Lundell                               | Not Listed | NE   |
| Desmidiaceae         | <i>Desmidium</i>         | <i>coarctatum</i>                         | Nordstedt                               | Not Listed | NE   |
| Desmidiaceae         | <i>Euastrum</i>          | <i>ansatum</i>                            | Ehrenberg ex Ralfs                      | Not Listed | NE   |
| Desmidiaceae         | <i>Euastrum</i>          | <i>binale</i> var. <i>hians</i>           | (W.West) Willi Krieger                  | Not Listed | NE   |



| Family         | Genus                | Species                               | Authority                      | RDB2       | RDB3 |
|----------------|----------------------|---------------------------------------|--------------------------------|------------|------|
| Desmidiaceae   | <i>Euastrum</i>      | <i>gnathophorum</i>                   | W.West & G.S.West              | Not Listed | NE   |
| Desmidiaceae   | <i>Hyalotheca</i>    | <i>burmensis</i>                      | W.West & G.S.West              | Not Listed | NE   |
| Desmidiaceae   | <i>Hyalotheca</i>    | <i>dissiliens</i>                     | Brébisson ex Ralfs             | Not Listed | NE   |
| Desmidiaceae   | <i>Micrasterias</i>  | <i>foliacea</i>                       | Bailey ex Ralfs                | Not Listed | NE   |
| Desmidiaceae   | <i>Micrasterias</i>  | <i>mahabuleshwariensis</i>            | J.Hobson                       | Not Listed | NE   |
| Desmidiaceae   | <i>Micrasterias</i>  | <i>pinnatifida</i>                    | Ralfs                          | Not Listed | NE   |
| Desmidiaceae   | <i>Pleurotaenium</i> | <i>baculoides</i>                     | (J.Roy & Bisset) Playfair      | Not Listed | NE   |
| Desmidiaceae   | <i>Pleurotaenium</i> | <i>nodosum</i>                        | (F.M.Bailey) P.Lundell         | Not Listed | NE   |
| Desmidiaceae   | <i>Pleurotaenium</i> | <i>subcoronulatum</i>                 | (W.B.Turner) W.West & G.S.West | Not Listed | NE   |
| Desmidiaceae   | <i>Pleurotaenium</i> | <i>verrucosum</i>                     | (J.W.Bailey) P.Lundell         | Not Listed | NE   |
| Desmidiaceae   | <i>Spondylosium</i>  | <i>tetragonum</i>                     | W.West & G.S.West              | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>arachne</i> var. <i>curvatum</i>   | W.West & G.S.West              | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>disparatum</i>                     | W.West & G.S.West              | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>gracile</i>                        | Ralfs                          | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>hexacerum</i>                      | Ehrenberg ex Wittrock          | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>orbiculare</i>                     | Meneghini ex Ralfs             | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>paradoxum</i>                      | Meyen                          | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>smithii</i>                        | Teiling                        | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>subpygmaeum</i>                    | W.West                         | Not Listed | NE   |
| Desmidiaceae   | <i>Staurastrum</i>   | <i>wildemanii</i>                     | Gutwinski                      | Not Listed | NE   |
| Desmidiaceae   | <i>Stauroidesmus</i> | <i>connatus</i>                       | (P.Lundell) Thomasson          | Not Listed | NE   |
| Desmidiaceae   | <i>Stauroidesmus</i> | <i>dejectus</i>                       | (Brébisson) Teiling            | Not Listed | NE   |
| Desmidiaceae   | <i>Stauroidesmus</i> | <i>megacanthus</i>                    | (P.Lundell) Thunmark           | Not Listed | NE   |
| Desmidiaceae   | <i>Tetmemorus</i>    | <i>brebissonii</i>                    | (Menegh.) Ralfs                | Not Listed | NE   |
| Gonatozygaceae | <i>Gonatozygon</i>   | <i>monotaenium</i>                    | De Bary                        | Not Listed | NE   |
| Peniaceae      | <i>Penium</i>        | <i>digitus</i>                        | Brébisson ex Ralfs             | Not Listed | NE   |
| Mesotaeniaceae | <i>Spirotaenia</i>   | <i>condensata</i>                     | Brébisson                      | Not Listed | NE   |
| Zygnemataceae  | <i>Mougeotia</i>     | <i>genuflexa</i>                      | (Dillwyn) C.Agardh             | Not Listed | NE   |
| Zygnemataceae  | <i>Spirogyra</i>     | <i>angolensis</i>                     | Welwitsch                      | Not Listed | NE   |
| Oedogoniaceae  | <i>Oedogonium</i>    | <i>cylindrosporum</i>                 | C.C.Jao                        | Not Listed | NE   |
| Oedogoniaceae  | <i>Oedogonium</i>    | <i>khannae</i>                        | Skuja                          | Not Listed | NE   |
| Oedogoniaceae  | <i>Oedogonium</i>    | <i>pusillum</i>                       | Kirchner                       | Not Listed | NE   |
| Codiaceae      | <i>Codium</i>        | <i>arabicum</i>                       | Kützing                        | Not Listed | NE   |
| Codiaceae      | <i>Codium</i>        | <i>effusum</i>                        | (Rafinesque) Delle Chiaje      | Not Listed | NE   |
| Codiaceae      | <i>Codium</i>        | <i>geppiorum</i>                      | O.C.Schmidt                    | Not Listed | NE   |
| Codiaceae      | <i>Codium</i>        | <i>tomentosum</i>                     | Stackhouse                     | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>discoidea</i>                      | Decaisne                       | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>discoidea</i> f. <i>intermedia</i> | Gilbert                        | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>fragilis</i>                       | W.R.Taylor                     | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>gracilis</i>                       | Harvey ex J.Agardh             | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>incrassata</i>                     | (J.Ellis) J.V.Lamouroux        | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>macroloba</i>                      | Decaisne                       | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>opuntia</i>                        | (Linnaeus) J.V.Lamouroux       | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>opuntia</i> var. <i>minor</i>      | (Vickers) W.R.Taylor           | Not Listed | NE   |
| Halimedaceae   | <i>Halimeda</i>      | <i>papyracea</i>                      | Zanardini                      | Not Listed | NE   |

| Family             | Genus                   | Species              | Authority                                     | RDB2       | RDB3 |
|--------------------|-------------------------|----------------------|-----------------------------------------------|------------|------|
| Halimedaceae       | <i>Halimeda</i>         | <i>tuna</i>          | (J.Ellis & Solander)                          | Not Listed | NE   |
| Udoteaceae         | <i>Avrainvillea</i>     | <i>amadelpha</i>     | J.V.Lamouroux<br>(Montagne) A.Gepp & E.S.Gepp | Not Listed | NE   |
| Udoteaceae         | <i>Avrainvillea</i>     | <i>erecta</i>        | (Berkeley) A.Gepp & E.S.Gepp                  | Not Listed | NE   |
| Udoteaceae         | <i>Avrainvillea</i>     | <i>lacerata</i>      | Harvey ex J.Agardh                            | Not Listed | NE   |
| Udoteaceae         | <i>Avrainvillea</i>     | <i>obscura</i>       | (C.Agardh) J.Agardh                           | Not Listed | NE   |
| Udoteaceae         | <i>Boodleopsis</i>      | <i>carolinensis</i>  | Trono                                         | Not Listed | NE   |
| Udoteaceae         | <i>Boodleopsis</i>      | <i>carolinensis</i>  | Trono                                         | Not Listed | NE   |
| Udoteaceae         | <i>Rhipidosiphon</i>    | <i>javensis</i>      | Montagne                                      | Not Listed | NE   |
| Udoteaceae         | <i>Udotea</i>           | <i>argentea</i>      | Zanardini                                     | Not Listed | NE   |
| Udoteaceae         | <i>Udotea</i>           | <i>flabellum</i>     | (J.Ellis & Solander)                          | Not Listed | NE   |
|                    |                         |                      | M.A.Howe                                      |            |      |
| Udoteaceae         | <i>Udotea</i>           | <i>glaucescens</i>   | Harvey ex J.Agardh                            | Not Listed | NE   |
| Aphanochaetaceae   | <i>Aphanochaete</i>     | <i>repens</i>        | A.Braun                                       | Not Listed | NE   |
| Aphanochaetaceae   | <i>Thamniochaete</i>    | <i>huberii</i>       | F.Gay                                         | Not Listed | NE   |
| Schizomeridaceae   | <i>Schizomeris</i>      | <i>leibleinii</i>    | Kützing                                       | Not Listed | NE   |
| Chlamydomonadaceae | <i>Sphaerella</i>       | <i>lacustris</i>     | (Girod-Chantrons)                             | Not Listed | NE   |
|                    |                         |                      | Wittrock                                      |            |      |
| Chlorangiellaceae  | <i>Malleochloris</i>    | <i>sessilis</i>      | Pascher                                       | Not Listed | NE   |
| Chlorangiellaceae  | <i>Stylosphaeridium</i> | <i>stipitatum</i>    | (Bachmann) Geitler & Gimesi                   | Not Listed | NE   |
| Chlorococcaceae    | <i>Chlorococcum</i>     | <i>infusum</i>       | (Schrank) Meneghini                           | Not Listed | NE   |
| Goniaceae          | <i>Gonium</i>           | <i>pectorale</i>     | O.F.Müller                                    | Not Listed | NE   |
| Palmellaceae       | <i>Sphaerocystis</i>    | <i>schroeteri</i>    | Chodat                                        | Not Listed | NE   |
| Palmellopsidaceae  | <i>Asterococcus</i>     | <i>limneticus</i>    | G.M.Smith                                     | Not Listed | NE   |
| Palmellopsidaceae  | <i>Chlamydocapsa</i>    | <i>planctonica</i>   | (W.West & G.S.West)                           | Not Listed | NE   |
|                    |                         |                      | Fott                                          |            |      |
| Phacotaceae        | <i>Phacotus</i>         | <i>lenticularis</i>  | (Ehrenberg) Stein                             | Not Listed | NE   |
| Phacotaceae        | <i>Pteromonas</i>       | <i>aculeata</i>      | Lemmermann                                    | Not Listed | NE   |
| Phacotaceae        | <i>Pteromonas</i>       | <i>angulosa</i>      | Lemmermann                                    | Not Listed | NE   |
| Protosiphonaceae   | <i>Spongiochloris</i>   | <i>spongiosa</i>     | (Vischer) Starr                               | Not Listed | NE   |
| Spondylomoraceae   | <i>Spondylomorom</i>    | <i>quaternarium</i>  | Ehrenberg                                     | Not Listed | NE   |
| Tetrabaenaceae     | <i>Tetrabaena</i>       | <i>socialis</i>      | (Dujardin) H.Nozaki & M.Itoh                  | Not Listed | NE   |
| Tetrasporaceae     | <i>Apiocystis</i>       | <i>brauniana</i>     | Nägeli                                        | Not Listed | NE   |
| Volvocaceae        | <i>Pandorina</i>        | <i>charkowiensis</i> | Korschikov                                    | Not Listed | NE   |
| Volvocaceae        | <i>Pandorina</i>        | <i>elegans</i>       | (Ehrenberg) Dujardin                          | Not Listed | NE   |
| Volvocaceae        | <i>Pandorina</i>        | <i>morum</i>         | (O.F.Müller) Bory de Saint- Vincent           | Not Listed | NE   |
| Volvocaceae        | <i>Platydorina</i>      | <i>caudata</i>       | Kofoed                                        | Not Listed | NE   |
| Volvocaceae        | <i>Volvox</i>           | <i>aureus</i>        | Ehrenberg                                     | Not Listed | NE   |
| Volvocaceae        | <i>Volvulina</i>        | <i>steinii</i>       | Playfair                                      | Not Listed | NE   |
| Chlorellaceae      | <i>Keratococcus</i>     | <i>bicaudatus</i>    | (A.Braun ex Rabenhorst)                       | Not Listed | NE   |
|                    |                         |                      | J.B.Petersen                                  |            |      |
| Cladophoraceae     | <i>Chaetomorpha</i>     | <i>aerea</i>         | (Dillwyn) Kützing                             | Not Listed | NE   |
| Cladophoraceae     | <i>Chaetomorpha</i>     | <i>antennina</i>     | (Bory de Saint-Vincent) Kützing               | Not Listed | NE   |
| Cladophoraceae     | <i>Chaetomorpha</i>     | <i>crassa</i>        | (C. Agardh) Kützing                           | Not Listed | NE   |

| Family           | Genus                  | Species              | Authority                                                                                                                        | RDB2       | RDB3 |
|------------------|------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------|------------|------|
| Cladophoraceae   | <i>Chaetomorpha</i>    | <i>gracilis</i>      | Kützinger                                                                                                                        | Not Listed | NE   |
| Cladophoraceae   | <i>Chaetomorpha</i>    | <i>indica</i>        | (Kützinger) Kützinger                                                                                                            | Not Listed | NE   |
| Cladophoraceae   | <i>Chaetomorpha</i>    | <i>ligustica</i>     | (Kützinger) Kützinger                                                                                                            | Not Listed | NE   |
| Cladophoraceae   | <i>Chaetomorpha</i>    | <i>linum</i>         | (O.F.Müller) Kützinger                                                                                                           | Not Listed | NE   |
| Cladophoraceae   | <i>Chaetomorpha</i>    | <i>spiralis</i>      | Okamura                                                                                                                          | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>crispula</i>      | Vickers                                                                                                                          | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>herpestica</i>    | (Montagne) Kützinger                                                                                                             | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>patentiramea</i>  | (Montagne) Kützinger                                                                                                             | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>sericea</i>       | (Hudson) Kützinger                                                                                                               | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>vagabunda</i>     | (Linnaeus) Hoek                                                                                                                  | Not Listed | NE   |
| Cladophoraceae   | <i>Cladophora</i>      | <i>viridifusca</i>   | (Montagne) Montagne                                                                                                              | Not Listed | NE   |
| Cladophoraceae   | <i>Pithophora</i>      | <i>sumatrana</i>     | Schmidle                                                                                                                         | Not Listed | NE   |
| Cladophoraceae   | <i>Rhizoclonium</i>    | <i>africanum</i>     | Kützinger                                                                                                                        | Not Listed | NE   |
| Cladophoraceae   | <i>Rhizoclonium</i>    | <i>grande</i>        | Børgesen                                                                                                                         | Not Listed | NE   |
| Cladophoraceae   | <i>Rhizoclonium</i>    | <i>tortuosum</i>     | (Dillwyn) Kützinger                                                                                                              | Not Listed | NE   |
| Siphonocladaceae | <i>Dictyosphaeria</i>  | <i>cavernosa</i>     | (Forsskål) Børgesen                                                                                                              | Not Listed | NE   |
| Siphonocladaceae | <i>Dictyosphaeria</i>  | <i>intermedia</i>    | Weber-van Bosse                                                                                                                  | Not Listed | NE   |
| Valoniaceae      | <i>Valonia</i>         | <i>aegagropila</i>   | C.Agardh                                                                                                                         | Not Listed | NE   |
| Valoniaceae      | <i>Valonia</i>         | <i>fastigiata</i>    | Harvey ex J.Agardh                                                                                                               | Not Listed | NE   |
| Valoniaceae      | <i>Valonia</i>         | <i>ventricosa</i>    | J.Agardh                                                                                                                         | Not Listed | NE   |
| Valoniaceae      | <i>Valoniopsis</i>     | <i>pachynema</i>     | (G.Martens) Børgesen                                                                                                             | Not Listed | NE   |
| Dasycladaceae    | <i>Bornetella</i>      | <i>oligospora</i>    | Solms-Laubach                                                                                                                    | Not Listed | NE   |
| Dasycladaceae    | <i>Bornetella</i>      | <i>sphaerica</i>     | (Zanardini) Solms-Laubach                                                                                                        | Not Listed | NE   |
| Dasycladaceae    | <i>Neomeris</i>        | <i>annulata</i>      | Dickie                                                                                                                           | Not Listed | NE   |
| Dasycladaceae    | <i>Neomeris</i>        | <i>bilimbata</i>     | J.T.Koster                                                                                                                       | Not Listed | NE   |
| Dasycladaceae    | <i>Neomeris</i>        | <i>dumetosa</i>      | J.V.Lamouroux                                                                                                                    | Not Listed | NE   |
| Dasycladaceae    | <i>Neomeris</i>        | <i>stipitata</i>     | Howe                                                                                                                             | Not Listed | NE   |
| Dasycladaceae    | <i>Neomeris</i>        | <i>vanbosseae</i>    | M.A.Howe                                                                                                                         | Not Listed | NE   |
| Polyphysaceae    | <i>Acetabularia</i>    | <i>dentata</i>       | Solms-Laubach                                                                                                                    | Not Listed | NE   |
| Polyphysaceae    | <i>Parvocaulis</i>     | <i>parvulus</i>      | (Solms-Laubach)<br>S.Berger, U.Fettweiss,<br>S.Gleissberg, L.B.Liddle,<br>U.Richter, H.Sawitsky &<br>G.C.Zuccarello              | Not Listed | NE   |
| Polyphysaceae    | <i>Parvocaulis</i>     | <i>polyphysoides</i> | (P.L.Crouan &<br>H.M.Crouan) S.Berger,<br>U.Fettweiss,<br>S.Gleissberg, L.B.Liddle,<br>U.Richter, H.Sawitsky &<br>G.C.Zuccarello | Not Listed | NE   |
| Characiaceae     | <i>Characium</i>       | <i>acuminatum</i>    | A.Braun                                                                                                                          | Not Listed | NE   |
| Gloeotilaceae    | <i>Radiofilum</i>      | <i>conjunctivum</i>  | Schmidle                                                                                                                         | Not Listed | NE   |
| Golenkiniaceae   | <i>Golenkinia</i>      | <i>paucispina</i>    | W.West & G.S.West                                                                                                                | Not Listed | NE   |
| Golenkiniaceae   | <i>Golenkinia</i>      | <i>radiata</i>       | Chodat                                                                                                                           | Not Listed | NE   |
| Hydrodictyaceae  | <i>Parapediastrium</i> | <i>biradiatum</i>    | (Meyen) E.Hegewald                                                                                                               | Not Listed | NE   |
| Hydrodictyaceae  | <i>Pediastrium</i>     | <i>boryanum</i>      | (Turpin) Meneghini                                                                                                               | Not Listed | NE   |
| Hydrodictyaceae  | <i>Pediastrium</i>     | <i>duplex</i>        | Meyen                                                                                                                            | Not Listed | NE   |

| Family          | Genus                   | Species                                           | Authority                                             | RDB2       | RDB3 |
|-----------------|-------------------------|---------------------------------------------------|-------------------------------------------------------|------------|------|
| Hydrodictyaceae | <i>Pediastrum</i>       | <i>duplex</i> var. <i>gracillimum</i>             | W.West & G.S.West                                     | Not Listed | NE   |
| Hydrodictyaceae | <i>Pediastrum</i>       | <i>simplex</i>                                    | Meyen                                                 | Not Listed | NE   |
| Hydrodictyaceae | <i>Stauridium</i>       | <i>tetras</i>                                     | (Ehrenberg) E.Hegewald                                | Not Listed | NE   |
| Microsporaceae  | <i>Microspora</i>       | <i>floccosa</i>                                   | (Vaucher) Thuret                                      | Not Listed | NE   |
| Microsporaceae  | <i>Microspora</i>       | <i>stagnorum</i>                                  | (Kützing) Lagerheim                                   | Not Listed | NE   |
| Neochloridaceae | <i>Chlorotetraedron</i> | <i>incus</i>                                      | (Teiling) Komárek & Kovácik                           | Not Listed | NE   |
| Neochloridaceae | <i>Schroederia</i>      | <i>planktonica</i>                                | (Skuja) Philipose                                     | Not Listed | NE   |
| Neochloridaceae | <i>Schroederia</i>      | <i>setigera</i>                                   | (Schröder) Lemmermann                                 | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>caudatum</i>                                   | (Corda) Hansgirg                                      | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>hemisphaericum</i>                             | Skuja                                                 | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>lobulatum</i>                                  | (Nägeli) Hansgirg                                     | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>minimum</i>                                    | (A.Braun) Hansgirg                                    | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>muticum</i> f. <i>punctulatum</i>              | (Reinsch) De Toni                                     | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>proteiforme</i>                                | (Turner) Brunnthaler                                  | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>regulare</i> var. <i>incus</i> f. <i>major</i> | Prescott                                              | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>trigonum</i>                                   | (Nägeli) Hansgirg                                     | Not Listed | NE   |
| Neochloridaceae | <i>Tetraedron</i>       | <i>trigonum</i> var. <i>gracile</i>               | (Reinsch) De Toni                                     | Not Listed | NE   |
| Oocystaceae     | <i>Selenastrum</i>      | <i>bibraianum</i>                                 | Reinsch                                               | Not Listed | NE   |
| Oocystaceae     | <i>Selenastrum</i>      | <i>gracile</i>                                    | Reinsch                                               | Not Listed | NE   |
| Radiococcaceae  | <i>Radiococcus</i>      | <i>nimbatus</i>                                   | (De Wildeman) Schmidle                                | Not Listed | NE   |
| Radiococcaceae  | <i>Tomaculum</i>        | <i>catenatum</i>                                  | Whitford                                              | Not Listed | NE   |
| Scenedesmaceae  | <i>Acutodesmus</i>      | <i>acuminatus</i>                                 | (Lagerheim) Tsarenko                                  | Not Listed | NE   |
| Scenedesmaceae  | <i>Acutodesmus</i>      | <i>obliquus</i>                                   | (Turpin) Hegewald & Hanagata                          | Not Listed | NE   |
| Scenedesmaceae  | <i>Coelastrum</i>       | <i>proboscideum</i>                               | Bohlin                                                | Not Listed | NE   |
| Scenedesmaceae  | <i>Coelastrum</i>       | <i>pulchrum</i>                                   | Schmidle                                              | Not Listed | NE   |
| Scenedesmaceae  | <i>Coelastrum</i>       | <i>reticulatum</i>                                | (P.A.Dangeard) Senn                                   | Not Listed | NE   |
| Scenedesmaceae  | <i>Coelastrum</i>       | <i>sphaericum</i>                                 | Nägeli                                                | Not Listed | NE   |
| Scenedesmaceae  | <i>Desmodesmus</i>      | <i>armatus</i>                                    | R.Chodat                                              | Not Listed | NE   |
| Scenedesmaceae  | <i>Desmodesmus</i>      | <i>perforatus</i>                                 | (Lemmermann) E.Hegewald                               | Not Listed | NE   |
| Scenedesmaceae  | <i>Dimorphococcus</i>   | <i>lunatus</i>                                    | A.Braun                                               | Not Listed | NE   |
| Scenedesmaceae  | <i>Hylodesmus</i>       | <i>singaporensis</i>                              | Eliás, Nemcová, Skaloud, Neustupa (O.Kirchner) Chodat | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>abundans</i>                                   | (O.Kirchner) Chodat                                   | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>acuminatus</i>                                 | (Lagerheim) Chodat                                    | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>acutus</i> var. <i>globosus</i>                | Hortobágyi                                            | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>arcuatus</i>                                   | Lemmermann                                            | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>balatonicus</i>                                | Hortobágyi                                            | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>bicaudatus</i>                                 | (Hansgirg) Chodat                                     | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>bijuga</i>                                     | (Turpin) Lagerheim                                    | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>brasiliensis</i>                               | Bohlin                                                | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>denticulatus</i>                               | Lagerheim                                             | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>dispar</i>                                     | Brébisson                                             | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>      | <i>ecornis</i>                                    | (Ehrenberg) Chodat                                    | Not Listed | NE   |

| Family          | Genus                 | Species                                   | Authority                                                                                     | RDB2       | RDB3 |
|-----------------|-----------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------|------------|------|
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>longispina</i>                         | R.Chodat                                                                                      | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>magnus</i>                             | Meyen                                                                                         | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>obliquus</i>                           | (Turpin) Kützing                                                                              | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>opoliensis</i>                         | P.G.Richter                                                                                   | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>polyglobulus</i>                       | Hortobágyi                                                                                    | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>quadricauda</i>                        | (Turpin) Brébisson                                                                            | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>quadricauda</i> var. <i>parvus</i>     | G.M.Smith                                                                                     | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>quadrispina</i>                        | Chodat                                                                                        | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>rubescens</i>                          | (Dangeard) E.Kessler,<br>M.Schafer, C.Hummer,<br>A.Kloboucek &<br>V.A.R.Huss                  | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>sooi</i>                               | Hortobágyi                                                                                    | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>spinosus</i>                           | Chodat                                                                                        | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>subspicatus</i>                        | Chodat                                                                                        | Not Listed | NE   |
| Scenedesmaceae  | <i>Scenedesmus</i>    | <i>verrucosus</i>                         | Y.V.Roll                                                                                      | Not Listed | NE   |
| Scenedesmaceae  | <i>Tetrademus</i>     | <i>cumbricus</i>                          | G.S.West                                                                                      | Not Listed | NE   |
| Scenedesmaceae  | <i>Tetrallantos</i>   | <i>lagerheimii</i>                        | Teiling                                                                                       | Not Listed | NE   |
| Scenedesmaceae  | <i>Tetrastrum</i>     | <i>heteracanthum</i>                      | (Nordstedt) Chodat                                                                            | Not Listed | NE   |
| Scenedesmaceae  | <i>Tetrastrum</i>     | <i>staurogeniaeforme</i>                  | (Schröder)                                                                                    | Not Listed | NE   |
| Selenastraceae  | <i>Ankistrodesmus</i> | <i>falcatus</i>                           | Lemmermann<br>(Corda) Ralfs                                                                   | Not Listed | NE   |
| Selenastraceae  | <i>Ankistrodesmus</i> | <i>spiralis</i>                           | (W.B.Turner)                                                                                  | Not Listed | NE   |
| Selenastraceae  | <i>Chlorolobion</i>   | <i>braunii</i>                            | Lemmermann<br>(Nägeli) Komárek                                                                | Not Listed | NE   |
| Selenastraceae  | <i>Kirchneriella</i>  | <i>lunaris</i>                            | (Kirchner) K.Möbius                                                                           | Not Listed | NE   |
| Sphaeropleaceae | <i>Ankyra</i>         | <i>ancora</i>                             | (G.M.Smith) Fott                                                                              | Not Listed | NE   |
| Treubariaceae   | <i>Treubaria</i>      | <i>crassispina</i>                        | G.M.Smith                                                                                     | Not Listed | NE   |
| Treubariaceae   | <i>Treubaria</i>      | <i>schmidlei</i>                          | (Schröder) Fott &<br>Kováčik                                                                  | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>clathrata</i>                          | (Roth) Greville                                                                               | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>flexuosa</i>                           | (Wulfen) J. Agardh                                                                            | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>flexuosa</i>                           | subsp. <i>flexuosa</i><br>(Wulfen) J. Agardh<br>subsp. <i>paradoxa</i> (C.<br>Agardh) Bliding | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>intestinalis</i>                       | (Linnaeus) Nees                                                                               | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>lingulata</i>                          | J. Agardh                                                                                     | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>muscooides</i>                         | (Clemente y Rubio)                                                                            | Not Listed | NE   |
| Ulvaceae        | <i>Enteromorpha</i>   | <i>ovata</i>                              | Cremades<br>Thivy & Visalakshmi ex<br>H.Joshi &<br>V.Krishnamurthy                            | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>beytensis</i>                          | Thivy & Sharma                                                                                | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>clathrata</i>                          | (Roth) C. Agardh                                                                              | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>compressa</i>                          | Linnaeus                                                                                      | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>fasciata</i>                           | Delile                                                                                        | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>fenestrata</i>                         | Postels & Ruprecht                                                                            | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>flexuosa</i>                           | Wulfen                                                                                        | Not Listed | NE   |
| Ulvaceae        | <i>Ulva</i>           | <i>flexuosa</i> subsp.<br><i>paradoxa</i> | (C.Agardh) M.J.Wynne                                                                          | Not Listed | NE   |

| Family                            | Genus                   | Species                                    | Authority                            | RDB2       | RDB3 |
|-----------------------------------|-------------------------|--------------------------------------------|--------------------------------------|------------|------|
| Ulveaceae                         | <i>Ulva</i>             | <i>intestinalis</i>                        | Linnaeus                             | Not Listed | NE   |
| Ulveaceae                         | <i>Ulva</i>             | <i>lactuca</i>                             | Linnaeus                             | Not Listed | NE   |
| Ulveaceae                         | <i>Ulva</i>             | <i>latissima</i>                           | [auctorum]                           | Not Listed | NE   |
| Ulveaceae                         | <i>Ulva</i>             | <i>pertusa</i>                             | Kjellman                             | Not Listed | NE   |
| Ulveaceae                         | <i>Ulva</i>             | <i>reticulata</i>                          | Forsskål                             | Not Listed | NE   |
| Nephroselmidae                    | <i>Heteromastix</i>     | <i>angulata</i>                            | Korshikov                            | Not Listed | NE   |
| Pedinomonadaceae                  | <i>Pedinomonas</i>      | <i>minor</i>                               | Korshikov                            | Not Listed | NE   |
| Phacotaceae                       | <i>Pedinopera</i>       | <i>granulosa</i>                           | (Playfair) Pascher                   | Not Listed | NE   |
| Scourfieldiaceae                  | <i>Scourfieldia</i>     | <i>complanata</i>                          | G.S.West                             | Not Listed | NE   |
| Chlorococcaceae                   | <i>Podohedra</i>        | <i>tropica</i>                             | J.Neustupa                           | Not Listed | NE   |
| Chlorellaceae                     | <i>Actinastrum</i>      | <i>hantzschii</i>                          | Lagerheim                            | Not Listed | NE   |
| Chlorellaceae                     | <i>Actinastrum</i>      | <i>hantzschii</i> var.<br><i>elongatum</i> | G.M.Smith                            | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>angustaeolipsoidea</i>                  | N.Hanagata &<br>M.Chihara            | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>homosphaera</i>                         | Skuja                                | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>luteo-viridis</i>                       | Chodat                               | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>rugosa</i>                              | J.B.Petersen                         | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>saccharophila</i>                       | (Krüger) Migula                      | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>sphaerica</i>                           | Tschermak-Woess                      | Not Listed | NE   |
| Chlorellaceae                     | <i>Chlorella</i>        | <i>vulgaris</i>                            | Beijerinck                           | Not Listed | NE   |
| Chlorellaceae                     | <i>Closteriopsis</i>    | <i>longissima</i>                          | (Lemmermann)<br>Lemmermann           | Not Listed | NE   |
| Chlorellaceae                     | <i>Dictyosphaerium</i>  | <i>pulchellum</i>                          | H.C.Wood                             | Not Listed | NE   |
| Chlorellaceae                     | <i>Micractinium</i>     | <i>bornhemense</i>                         | (W.Conrad) Korshikov                 | Not Listed | NE   |
| Chlorellaceae                     | <i>Micractinium</i>     | <i>pusillum</i>                            | Fresenius                            | Not Listed | NE   |
| Chlorellaceae                     | <i>Nannochloris</i>     | <i>bacillaris</i>                          | Naumann                              | Not Listed | NE   |
| Chlorococcaceae                   | <i>Podohedra</i>        | <i>saltans</i>                             | J.Neustupa                           | Not Listed | NE   |
| Oocystaceae                       | <i>Cerasterias</i>      | <i>irregularis</i>                         | G.M.Smith                            | Not Listed | NE   |
| Oocystaceae                       | <i>Cerasterias</i>      | <i>staurastroides</i>                      | W.West & G.S.West                    | Not Listed | NE   |
| Oocystaceae                       | <i>Chodatella</i>       | <i>wratislaviensis</i>                     | (Schröder) Ley                       | Not Listed | NE   |
| Oocystaceae                       | <i>Keriochlamys</i>     | <i>styriaca</i>                            | Pascher                              | Not Listed | NE   |
| Oocystaceae                       | <i>Lagerheimia</i>      | <i>genevensis</i>                          | (Chodat) Chodat                      | Not Listed | NE   |
| Oocystaceae                       | <i>Lagerheimia</i>      | <i>longiseta</i>                           | (Lemmermann) Printz                  | Not Listed | NE   |
| Oocystaceae                       | <i>Lagerheimia</i>      | <i>subsalsa</i>                            | Lemmermann                           | Not Listed | NE   |
| Oocystaceae                       | <i>Nephrocystium</i>    | <i>agardhianum</i>                         | Nägeli                               | Not Listed | NE   |
| Oocystaceae                       | <i>Oocystis</i>         | <i>elliptica</i>                           | West                                 | Not Listed | NE   |
| Oocystaceae                       | <i>Oocystis</i>         | <i>pusilla</i>                             | Hansgirg                             | Not Listed | NE   |
| Oocystaceae                       | <i>Oonephris</i>        | <i>obesa</i>                               | (W.West) Fott                        | Not Listed | NE   |
| Oocystaceae                       | <i>Pachycladella</i>    | <i>umbrina</i>                             | (G.M.Smith) P.C.Silva                | Not Listed | NE   |
| Microthamniales<br>incertae sedis | <i>Microthamnion</i>    | <i>kuetzingianum</i>                       | Nägeli                               | Not Listed | NE   |
| Chlorococcaceae                   | <i>Elliptochloris</i>   | <i>subsphaerica</i>                        | (H.Reisigl) H.Ettl &<br>G.Gärtnert   | Not Listed | NE   |
| Prasiolales incertae<br>sedis     | <i>Desmococcus</i>      | <i>olivaceus</i>                           | (Persoon ex Acharius)<br>J.R.Laundon | Not Listed | NE   |
| Chlorococcaceae                   | <i>Dictyochloropsis</i> | <i>irregularis</i>                         | T.Nakano & Y.Isagi                   | Not Listed | NE   |
| Chlorococcaceae                   | <i>Dictyochloropsis</i> | <i>symbiontica</i>                         | Tschermak-Woess                      | Not Listed | NE   |
| Chlorococcaceae                   | <i>Myrmecia</i>         | <i>globosa</i>                             | Printz                               | Not Listed | NE   |



| Family                             | Genus                 | Species                                     | Authority                                   | RDB2       | RDB3 |
|------------------------------------|-----------------------|---------------------------------------------|---------------------------------------------|------------|------|
| Chlorococcaceae                    | <i>Myrmecia</i>       | <i>irregularis</i>                          | (J.B.Petersen) H.Ettl & G.Gärtner           | Not Listed | NE   |
| Coccomyxaceae                      | <i>Ourococcus</i>     | <i>bicaudatus</i>                           | (A.Braun) Grobéty                           | Not Listed | NE   |
| Trebouxiophyceae<br>incertae sedis | <i>Crucigenia</i>     | <i>tetrapedia</i>                           | (Kirchner) W.West & G.S.West                | Not Listed | NE   |
| Trebouxiophyceae<br>incertae sedis | <i>Pseudomarvania</i> | <i>aerophytica</i>                          | (Neustupa & Sejnohová) Eliáš &              | Not Listed | NE   |
| Trebouxiophyceae<br>incertae sedis | <i>Watanabea</i>      | <i>reniformis</i>                           | N.Hanagata, I.Karube, M.Chihara & P.C.Silva | Not Listed | NE   |
| Trebouxiophyceae<br>incertae sedis | <i>Botryococcus</i>   | <i>braunii</i>                              | Kützing                                     | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>corymbosa</i>                            | J. Agardh                                   | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>hypnoides</i>                            | J.V.Lamouroux                               | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>indica</i>                               | A. Gepp & E. Gepp                           | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>pennata</i>                              | J.V.Lamouroux                               | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>pennata</i> var. <i>leprieurii</i>       | (Kützing) Collins & Hervey                  | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>pennata</i> var. <i>secunda</i>          | (Harvey) Collins & Hervey                   | Not Listed | NE   |
| Bryopsidaceae                      | <i>Bryopsis</i>       | <i>plumosa</i>                              | (Hudson) C. Agardh                          | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>cupressoides</i>                         | (West) C.Agardh                             | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>lentillifera</i>                         | J.Agardh                                    | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>macrophysa</i>                           | (Sonder ex Kützing) G.Murray                | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>mexicana</i>                             | Sonder ex Kützing                           | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>peltata</i>                              | J.V.Lamouroux                               | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>peltata</i> var. <i>macrodisca</i>       | (Decaisne) Weber-van Bosse                  | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>racemosa</i>                             | (Forsskål) J.Agardh                         | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>racemosa</i> var. <i>clavifera</i>       | (C.Agardh) Weber-van Bosse                  | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>racemosa</i> var. <i>occidentalis</i>    | (J.Agardh) Børgesen                         | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>racemosa</i> var. <i>turbinata</i>       | (J.Agardh) Eubank                           | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>scalpelliformis</i>                      | (R.Brown ex Turner) C.Agardh                | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>serrulata</i>                            | (Forsskål) J.Agardh                         | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>sertularioides</i>                       | (S.G.Gmelin) M.A.Howe                       | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>sertularioides</i> var. <i>longiseta</i> | (Bory de Saint-Vincent) Svedelius           | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>taxifolia</i>                            | (M.Vahl) C.Agardh                           | Not Listed | NE   |
| Caulerpaceae                       | <i>Caulerpa</i>       | <i>verticillata</i>                         | J.Agardh                                    | Not Listed | NE   |
| Derbesiaceae                       | <i>Derbesia</i>       | <i>fastigiata</i>                           | W.R. Taylor                                 | Not Listed | NE   |
| Derbesiaceae                       | <i>Derbesia</i>       | <i>fastigiata</i>                           | W.R.Taylor                                  | Not Listed | NE   |
| Udoteaceae                         | <i>Chlorodesmis</i>   | <i>hildebrandtii</i>                        | A.Gepp & E.S.Gepp                           | Not Listed | NE   |
| Anadyomenaceae                     | <i>Anadyomene</i>     | <i>stellata</i>                             | (Wulfen) C.Agardh                           | Not Listed | NE   |
| Anadyomenaceae                     | <i>Anadyomene</i>     | <i>wrightii</i>                             | Harvey ex J.E.Gray                          | Not Listed | NE   |
| Anadyomenaceae                     | <i>Microdictyon</i>   | <i>tenuius</i>                              | J.E.Gray                                    | Not Listed | NE   |
| Boodleaceae                        | <i>Boodlea</i>        | <i>composita</i>                            | (Harvey) F.Brand                            | Not Listed | NE   |

| Family            | Genus                 | Species                 | Authority                                     | RDB2       | RDB3 |
|-------------------|-----------------------|-------------------------|-----------------------------------------------|------------|------|
| Boodleaceae       | <i>Boodlea</i>        | <i>montagnei</i>        | (Harvey ex J.E.Gray)<br>Egerod                | Not Listed | NE   |
| Boodleaceae       | <i>Cladophoropsis</i> | <i>javanica</i>         | (Kützing) P.C.Silva                           | Not Listed | NE   |
| Boodleaceae       | <i>Cladophoropsis</i> | <i>membranacea</i>      | (Hofman Bang ex C.<br>Agardh) Børgesen        | Not Listed | NE   |
| Boodleaceae       | <i>Cladophoropsis</i> | <i>sundanensis</i>      | Reinbold                                      | Not Listed | NE   |
| Boodleaceae       | <i>Cladophoropsis</i> | <i>vaucheriaeformis</i> | (J.E.Areschoug)<br>Papenfuss                  | Not Listed | NE   |
| Boodleaceae       | <i>Phyllocladion</i>  | <i>anastomosans</i>     | (Harvey) Kraft & M.J.<br>Wynne                | Not Listed | NE   |
| Siphonocladaceae  | <i>Boergesenia</i>    | <i>forbesii</i>         | (Harvey) Feldmann<br>Marine                   | Not Listed | NE   |
| Trentepohliaceae  | <i>Printzina</i>      | <i>effusa</i>           | (Krempelhuber)<br>R.H.Thompson &<br>D.E.Wujek | Not Listed | NE   |
| Trentepohliaceae  | <i>Printzina</i>      | <i>lagenifera</i>       | (Hildebrand)<br>R.H.Thompson &<br>D.E.Wujek   | Not Listed | NE   |
| Trentepohliaceae  | <i>Trentepohlia</i>   | <i>aurea</i>            | (Linnaeus) C.F.P.Martius                      | Not Listed | NE   |
| Trentepohliaceae  | <i>Trentepohlia</i>   | <i>odorata</i>          | (F.H.Wiggers) Wittrock                        | Not Listed | NE   |
| Trentepohliaceae  | <i>Trentepohlia</i>   | <i>rigidula</i>         | (J.Müller) Hariot                             | Not Listed | NE   |
| Collinsiellaceae  | <i>Collinsiella</i>   | <i>cava</i>             | (Yendo) Printz                                | Not Listed | NE   |
| Gloeotilaceae     | <i>Binuclearia</i>    | <i>tectorum</i>         | (Kützing) Berger ex<br>Wichmann               | Not Listed | NE   |
| Codonosigidae     | <i>Sphaeroeca</i>     | <i>volvox</i>           | Lauterborn                                    | Not Listed | NE   |
| Cryptomonadaceae  | <i>Cryptomonas</i>    | <i>erosa</i>            | Ehrenberg                                     | Not Listed | NE   |
| Cryptomonadaceae  | <i>Cryptomonas</i>    | <i>ovata</i>            | Ehrenberg                                     | Not Listed | NE   |
| Cryptomonadaceae  | <i>Cryptomonas</i>    | <i>paramaecium</i>      | (Ehrenberg) Hoef-<br>Emden & Melkonian        | Not Listed | NE   |
| Cryptomonadaceae  | <i>Cryptomonas</i>    | <i>phaseolus</i>        | Skuja                                         | Not Listed | NE   |
| Senniaceae        | <i>Sennia</i>         | <i>parvula</i>          | Skuja                                         | Not Listed | NE   |
| Senniaceae        | <i>Sennia</i>         | <i>parvula</i>          | Skuja                                         | Not Listed | NE   |
| Chroococcaceae    | <i>Chroococcus</i>    | <i>dispersus</i>        | (Keissler) Lemmermann                         | Not Listed | NE   |
| Chroococcaceae    | <i>Chroococcus</i>    | <i>limneticus</i>       | Lemmermann                                    | Not Listed | NE   |
| Chroococcaceae    | <i>Chroococcus</i>    | <i>minutus</i>          | (Kützing) Nägeli                              | Not Listed | NE   |
| Chroococcaceae    | <i>Chroococcus</i>    | <i>turgidus</i>         | (Kützing) Nägeli                              | Not Listed | NE   |
| Cyanobacteriaceae | <i>Aphanothece</i>    | <i>conglomerata</i>     | Rich                                          | Not Listed | NE   |
| Cyanobacteriaceae | <i>Aphanothece</i>    | <i>stagnina</i>         | (Sprengel) A.Braun                            | Not Listed | NE   |
| Cyanobacteriaceae | <i>Gloeothece</i>     | <i>rupestris</i>        | (Lyngbye) Bornet                              | Not Listed | NE   |
| Merismopediaceae  | <i>Aphanocapsa</i>    | <i>elachista</i>        | W.West & G.S.West                             | Not Listed | NE   |
| Merismopediaceae  | <i>Aphanocapsa</i>    | <i>incerta</i>          | (Lemmermann)<br>Cronberg & Komárek            | Not Listed | NE   |
| Merismopediaceae  | <i>Coelosphaerium</i> | <i>kuetzingianum</i>    | Nägeli                                        | Not Listed | NE   |
| Merismopediaceae  | <i>Merismopedia</i>   | <i>elegans</i>          | A.Braun ex Kützing,<br>1849                   | Not Listed | NE   |
| Merismopediaceae  | <i>Merismopedia</i>   | <i>minima</i>           | Beck                                          | Not Listed | NE   |
| Merismopediaceae  | <i>Merismopedia</i>   | <i>thermalis</i>        | Kützing, 1843                                 | Not Listed | NE   |
| Merismopediaceae  | <i>Snowella</i>       | <i>lacustris</i>        | (Chodat) Komárek &<br>Hindák, 1988            | Not Listed | NE   |
| Merismopediaceae  | <i>Synechocystis</i>  | <i>aquatilis</i>        | Sauvageau                                     | Not Listed | NE   |

| Family             | Genus                     | Species                  | Authority                                                          | RDB2       | RDB3 |
|--------------------|---------------------------|--------------------------|--------------------------------------------------------------------|------------|------|
| Microcystaceae     | <i>Gloeocapsa</i>         | <i>compacta</i>          | Kützing                                                            | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>aeruginosa</i>        | (Kützing) Kützing                                                  | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>flos-aquae</i>        | (Wittrock) Kirchner                                                | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>robusta</i>           | (Clark) Nygaard                                                    | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>smithii</i>           | Komárek & Anagnostidis                                             | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>wesenbergii</i>       | (Komárek) Komárek                                                  | Not Listed | NE   |
| Microcystaceae     | <i>Microcystis</i>        | <i>zanardinii</i>        | (Hauck) P.Silva                                                    | Not Listed | NE   |
| Stichosiphonaceae  | <i>Stichosiphon</i>       | <i>sansibaricus</i>      | (Hieronymus) Drouet & Daily                                        | Not Listed | NE   |
| Gomphosphaeriaceae | <i>Gomphosphaeria</i>     | <i>aponina</i>           | Kützing                                                            | Not Listed | NE   |
| Hapalosiphonaceae  | <i>Hapalosiphon</i>       | <i>fontinalis</i>        | (C.Agardh) Bornet                                                  | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>circinalis</i>        | Rabenhorst ex Bornet & Flahault                                    | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>flos-aquae</i>        | (Lyngbye) Brébisson ex Bornet & Flahault                           | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>fuellebornii</i>      | Schmidle                                                           | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>licheniformis</i>     | Bory de Saint-Vincent                                              | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>macrospora</i>        | Klebahn                                                            | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>planctonica</i>       | Brunnthaler                                                        | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>pseudoscillatoria</i> | Bory de Saint- Vincent                                             | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>spiroides</i>         | Klebahn                                                            | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>tanganyikae</i>       | G.S.West                                                           | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>torulosa</i>          | Lagerheim ex Bornet & Flahault                                     | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>utermohli</i>         | (Utermöhl) Geitler                                                 | Not Listed | NE   |
| Nostocaceae        | <i>Anabaena</i>           | <i>licheniformis</i>     | Bory de Saint- Vincent                                             | Not Listed | NE   |
| Nostocaceae        | <i>Aphanizomenon</i>      | <i>aphanizomenoides</i>  | (Forti) Hortobágyi & Komárek                                       | Not Listed | NE   |
| Nostocaceae        | <i>Aphanizomenon</i>      | <i>issatschenkoi</i>     | (Usacev) Proshkina-Lavrenko                                        | Not Listed | NE   |
| Nostocaceae        | <i>Aphanizomenon</i>      | <i>ovalisporum</i>       | Forti                                                              | Not Listed | NE   |
| Nostocaceae        | <i>Cylindrospermopsis</i> | <i>raciborskii</i>       | (Woloszynska) Seenaya & Subba Raju                                 | Not Listed | NE   |
| Nostocaceae        | <i>Cylindrospermum</i>    | <i>minimum</i>           | G.S.West                                                           | Not Listed | NE   |
| Nostocaceae        | <i>Dolichospermum</i>     | <i>flos-aquae</i>        | (Brébisson ex Bornet & Flahault) P.Wacklin, L.Hoffmann & J.Komárek | Not Listed | NE   |
| Nostocaceae        | <i>Nodularia</i>          | <i>spumigena</i>         | Mertens                                                            | Not Listed | NE   |
| Nostocaceae        | <i>Nostoc</i>             | <i>commune</i>           | Vaucher ex Bornet & Flahault, 1888                                 | Not Listed | NE   |
| Nostocaceae        | <i>Nostoc</i>             | <i>commune</i>           | Vaucher ex Bornet & Flahault                                       | Not Listed | NE   |
| Nostocaceae        | <i>Nostoc</i>             | <i>paludosum</i>         | Kützing ex Bornet & Flahault, 1886                                 | Not Listed | NE   |
| Nostocaceae        | <i>Nostoc</i>             | <i>paludosum</i>         | Kützing ex Bornet & Flahault                                       | Not Listed | NE   |
| Nostocaceae        | <i>Raphidiopsis</i>       | <i>curvata</i>           | F.E.Fritsch & M.F.Rich                                             | Not Listed | NE   |
| Nostocaceae        | <i>Symphyosiphon</i>      | <i>arenarius</i>         | Zanardini                                                          | Not Listed | NE   |
| Nostocaceae        | <i>Trichormus</i>         | <i>azollae</i>           | (Strasburger) Komárek & Anagnostidis                               | Not Listed | NE   |

| Family            | Genus                 | Species              | Authority                                      | RDB2       | RDB3 |
|-------------------|-----------------------|----------------------|------------------------------------------------|------------|------|
| Rivulariaceae     | <i>Gardnerula</i>     | <i>spongiosa</i>     | (Zanardini) Tsedng & Hua                       | Not Listed | NE   |
| Rivulariaceae     | <i>Thrichocladia</i>  | <i>nostocoides</i>   | Zanardini                                      | Not Listed | NE   |
| Scytonemataceae   | <i>Brachytrichia</i>  | <i>quoyi</i>         | (C. Agardh) Bornet & Flauhault                 | Not Listed | NE   |
| Scytonemataceae   | <i>Scytonema</i>      | <i>hofman-bangii</i> | C.Agardh ex P.C.Silva                          | Not Listed | NE   |
| Tolypothrichaceae | <i>Tolypothrix</i>    | <i>tenuis</i>        | Kützing                                        | Not Listed | NE   |
| Borziaceae        | <i>Komvophoron</i>    | <i>constrictum</i>   | (Szafer) Anagnostidis & Komárek                | Not Listed | NE   |
| Cyanobacteriaceae | <i>Cyanothece</i>     | <i>aeruginosa</i>    | (Nägeli) Komárek                               | Not Listed | NE   |
| Microcoleaceae    | <i>Microcoleus</i>    | <i>vaginatus</i>     | (Vaucher) Gomont ex Gomont                     | Not Listed | NE   |
| Microcoleaceae    | <i>Planktothrix</i>   | <i>rubescens</i>     | (De Candolle ex Gomont) Anagnostidis & Komárek | Not Listed | NE   |
| Microcoleaceae    | <i>Porphyrosiphon</i> | <i>luteus</i>        | (Gomont) Anagnostidis & Komárek                | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>aestuarii</i>     | (Mertens) Liebman ex Gomont                    | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>birgei</i>        | G.M.Smith                                      | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>majuscula</i>     | (Dillwyn) Harvey ex Gomont                     | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>martensiana</i>   | Meneghini ex Gomont                            | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>noronhae</i>      | Dickie ex Forti                                | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>lutea</i>         | (C. Agardh) Areschoug                          | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>majuscula</i>     | (Dillwyn) Harvey ex Gomont, 1892               | Not Listed | NE   |
| Oscillatoriaceae  | <i>Lyngbya</i>        | <i>noronhae</i>      | Dickie ex Forti, 1907                          | Not Listed | NE   |
| Oscillatoriaceae  | <i>Oscillatoria</i>   | <i>curviceps</i>     | C.Agardh ex Gomont                             | Not Listed | NE   |
| Oscillatoriaceae  | <i>Oscillatoria</i>   | <i>subbrevis</i>     | Schmidle                                       | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>articulatum</i>   | (Gardner) Anagnostidis & Komárek               | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>formosum</i>      | (Bory de Saint-Vincent) Anagnostidis & Komárek | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>granulatum</i>    | (Gardner) Anagnostidis                         | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>limosum</i>       | (Dillwyn) P.C.Silva                            | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>lucidum</i>       | (C.Agardh) Kützing ex                          | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>taylori</i>       | (Drouet & Strickland)                          | Not Listed | NE   |
| Oscillatoriaceae  | <i>Phormidium</i>     | <i>versicolor</i>    | Wartmann ex Gomont                             | Not Listed | NE   |
| Oscillatoriaceae  | <i>Symphyosiphon</i>  | <i>arenarius</i>     | Zanardini, 1872                                | Not Listed | NE   |
| Phormidiaceae     | <i>Arthrospira</i>    | <i>gigantea</i>      | (Schmidle) Anagnostidis                        | Not Listed | NE   |
| Phormidiaceae     | <i>Arthrospira</i>    | <i>jenneri</i>       | Stizenberger ex Gomont                         | Not Listed | NE   |
| Phormidiaceae     | <i>Arthrospira</i>    | <i>major</i>         | (Kützing) Crow                                 | Not Listed | NE   |
| Pseudanabaenaceae | <i>Geitlerinema</i>   | <i>acutissimum</i>   | (Kufferath) Anagnostidis                       | Not Listed | NE   |
| Pseudanabaenaceae | <i>Geitlerinema</i>   | <i>splendidum</i>    | (Greville) Anagnostidis                        | Not Listed | NE   |

| Family            | Genus                 | Species                | Authority                                                                     | RDB2       | RDB3 |
|-------------------|-----------------------|------------------------|-------------------------------------------------------------------------------|------------|------|
| Schizotrichaceae  | <i>Schizothrix</i>    | <i>arenaria</i>        | (Berkeley) Gomont                                                             | Not Listed | NE   |
| Schizotrichaceae  | <i>Schizothrix</i>    | <i>calcicola</i>       | (C.Agardh) Gomont ex Gomont                                                   | Not Listed | NE   |
| Schizotrichaceae  | <i>Schizothrix</i>    | <i>mexicana</i>        | Gomont                                                                        | Not Listed | NE   |
| Spirulinaceae     | <i>Spirulina</i>      | <i>gomontiana</i>      | (Setchell) Geitler                                                            | Not Listed | NE   |
| Spirulinaceae     | <i>Spirulina</i>      | <i>subsalsa</i>        | Örstedt ex Gomont                                                             | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Leibleinia</i>     | <i>epiphytica</i>      | (Hieronymus) Compère, 1985                                                    | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Leptolyngbya</i>   | <i>cebennensis</i>     | (Gomont) I.Umezaki & M.Watanabe                                               | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Leptolyngbya</i>   | <i>laminosa</i>        | (Gomont) Anagnostidis & Komárek                                               | Not Listed | NE   |
| Chamaesiphonaceae | <i>Clastidium</i>     | <i>setigerum</i>       | Kirchner                                                                      | Not Listed | NE   |
| Coelosphaeriaceae | <i>Woronichinia</i>   | <i>naegeliana</i>      | (Unger) Elenkin                                                               | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Leibleinia</i>     | <i>epiphytica</i>      | (Hieronymus) Compère                                                          | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Planktolyngbya</i> | <i>contorta</i>        | (Lemmermann)                                                                  | Not Listed | NE   |
| Leptolyngbyaceae  | <i>Planktolyngbya</i> | <i>limnetica</i>       | Anagnostidis & Komárek<br>(Lemmermann)<br>J.Komárková-Legnerová & G. Cronberg | Not Listed | NE   |
| Pseudanabaenaceae | <i>Jaaginema</i>      | <i>angustissimum</i>   | (W.West & G.S.West) Anagnostidis & Komárek                                    | Not Listed | NE   |
| Pseudanabaenaceae | <i>Pseudanabaena</i>  | <i>catenata</i>        | Lauterborn                                                                    | Not Listed | NE   |
| Ceratiaceae       | <i>Ceratium</i>       | <i>hirundinella</i>    | (O.F.Müller) Dujardin                                                         | Not Listed | NE   |
| Pyrocystaceae     | <i>Alexandrium</i>    | <i>leei</i>            | E.Balech                                                                      | Not Listed | NE   |
| Pyrocystaceae     | <i>Gambierdiscus</i>  | <i>yasumotoi</i>       | M.J.Holmes                                                                    | Not Listed | NE   |
| Gymnodiniaceae    | <i>Gymnodinium</i>    | <i>catenatum</i>       | L.W.Graham                                                                    | Not Listed | NE   |
| Gymnodiniaceae    | <i>Gymnodinium</i>    | <i>uberrimum</i>       | (G.J.Allman) Kofoid & Swezy                                                   | Not Listed | NE   |
| Peridiniaceae     | <i>Peridiniopsis</i>  | <i>thompsonii</i>      | (Thompson) Bourrelly                                                          | Not Listed | NE   |
| Peridiniaceae     | <i>Peridinium</i>     | <i>africanum</i>       | Lemmermann                                                                    | Not Listed | NE   |
| Peridiniaceae     | <i>Peridinium</i>     | <i>bipes</i>           | F.Stein                                                                       | Not Listed | NE   |
| Peridiniaceae     | <i>Peridinium</i>     | <i>cinctum</i>         | (O.F.Müller) Ehrenberg                                                        | Not Listed | NE   |
| Peridiniaceae     | <i>Peridinium</i>     | <i>gatunense</i>       | Nygaard                                                                       | Not Listed | NE   |
| Peridiniaceae     | <i>Peridinium</i>     | <i>umbonatum</i>       | F.Stein                                                                       | Not Listed | NE   |
| Hemidiniaceae     | <i>Hemidinium</i>     | <i>nasutum</i>         | F.Stein                                                                       | Not Listed | NE   |
| Goniodomataceae   | <i>Goniodoma</i>      | <i>sphaericum</i>      | Murray & Whitting                                                             | Not Listed | NE   |
| Euglenidae        | <i>Amblyopsis</i>     | <i>viridis</i>         | Ehrenberg                                                                     | Not Listed | NE   |
| Euglenidae        | <i>Colacium</i>       | <i>vesiculosum</i>     | Ehrenberg                                                                     | Not Listed | NE   |
| Euglenidae        | <i>Cryptoglena</i>    | <i>skujae</i>          | Marin & Melkonian                                                             | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>acus</i>            | Ehrenberg                                                                     | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>chlorophoenicea</i> | L.K.Schmarda                                                                  | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>cyclopicola</i>     | J.Gickelhorn                                                                  | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>elongata</i>        | Schewiakoff                                                                   | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>granulata</i>       | (G.A.Klebs) Schmitz                                                           | Not Listed | NE   |
| Euglenidae        | <i>Euglena</i>        | <i>intermedia</i>      | (Klebs) F.R.Schmitz                                                           | Not Listed | NE   |

| Family     | Genus                | Species                                 | Authority                      | RDB2       | RDB3 |
|------------|----------------------|-----------------------------------------|--------------------------------|------------|------|
| Euglenidae | <i>Euglena</i>       | <i>longicauda</i>                       | Ehrenberg                      | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>mainxi</i>                           | Deflandre                      | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>mutabilis</i>                        | Schmitz                        | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>oxyuris</i>                          | Schmarda                       | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>pisciformis</i>                      | Klebs                          | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>proxima</i>                          | P.A.Dangeard                   | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>refringens</i>                       | M.Gojdics                      | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>sanguinea</i>                        | Ehrenberg                      | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>splendens</i>                        | P.A.Dangeard                   | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>subehrenbergii</i>                   | Skuja                          | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>texta</i>                            | (Dujardin) Hübner              | Not Listed | NE   |
| Euglenidae | <i>Euglena</i>       | <i>tripteris</i>                        | (Dujardin) Klebs               | Not Listed | NE   |
| Euglenidae | <i>Monomorphina</i>  | <i>pyrum</i>                            | (Ehrenberg)<br>Mereschkowski   | Not Listed | NE   |
| Euglenidae | <i>Strombomonas</i>  | <i>australica</i>                       | (Playfair) Deflandre           | Not Listed | NE   |
| Euglenidae | <i>Strombomonas</i>  | <i>deflandrei</i>                       | (Y.V.Roll) Deflandre           | Not Listed | NE   |
| Euglenidae | <i>Strombomonas</i>  | <i>gibberosa</i>                        | (Playfair) Deflandre           | Not Listed | NE   |
| Euglenidae | <i>Strombomonas</i>  | <i>verrucosa</i>                        | (E.Daday) Deflandre            | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>allia</i>                            | Drezepolski                    | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>armata</i>                           | (Ehrenberg) F.Stein            | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>conica</i>                           | Playfair                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>dybowskii</i>                        | Drezepolski                    | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>hispida</i>                          | (Perty) F.Stein                | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>hispida</i> var. <i>elongata</i>     | G.A.Prowse                     | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>hystrix</i> var. <i>paucispinosa</i> | G.A.Prowse                     | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>intermedia</i>                       | P.A.Dangeard                   | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>klebsii</i>                          | Deflandre                      | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>lacustris</i>                        | Drezepolski                    | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>lismorensis</i>                      | Playfair                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>megalacantha</i>                     | Da Cunha                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>mirabilis</i> var. <i>affinis</i>    | Skvortzov                      | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>oblonga</i>                          | Lemmermann                     | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>pulchella</i>                        | Drezepolski                    | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>rugulosa</i>                         | F.Stein ex Deflandre           | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>scabra</i> var. <i>labiata</i>       | (Teiling) Huber-<br>Pestalozzi | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>similis</i>                          | A.Stokes                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>superba</i>                          | Svirenko                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>volvocina</i>                        | (Ehrenberg) Ehrenberg          | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>volvocinopsis</i>                    | Svirenko                       | Not Listed | NE   |
| Euglenidae | <i>Trachelomonas</i> | <i>volzii</i> var. <i>cylindracea</i>   | Playfair                       | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>fusca</i>                            | (Klebs) Kosmala &<br>Zakrys    | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>fusififormis</i>                     | (H.J.Carter)<br>Lemmermann     | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>marssonii</i>                        | Lemmermann                     | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>ovum</i>                             | (Ehrenberg)<br>Lemmermann      | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>playfairiana</i>                     | Deflandre                      | Not Listed | NE   |
| Phacaceae  | <i>Lepocinclis</i>   | <i>salina</i>                           | F.E.Fritsch                    | Not Listed | NE   |



| Family            | Genus                    | Species                               | Authority                      | RDB2       | RDB3 |
|-------------------|--------------------------|---------------------------------------|--------------------------------|------------|------|
| Phacaceae         | <i>Lepocinclis</i>       | <i>sphagnophila</i>                   | Lemmermann                     | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>acuminatus</i>                     | Stokes                         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>angulatus</i>                      | Pochm.                         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>anomalus</i>                       | F.E.Fritsch & M.F.Rich         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>caudatus</i>                       | Hübner                         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>caudatus</i> var. <i>ovalis</i>    | Drezepolski                    | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>curvicauda</i>                     | Svirengo                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>glaber</i>                         | (Defl.) Pochmann               | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>hamatus</i>                        | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>helikoides</i>                     | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>lefèvrei</i>                       | Bourrelly                      | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>longicauda</i> f. <i>rotundus</i>  | (Pochmann) Popova              | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>meson</i>                          | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>monilatus</i> var. <i>suecicus</i> | Lemmermann                     | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>onyx</i>                           | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>orbicularis</i>                    | K.Hübner                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>oscillans</i>                      | G.A.Klebs                      | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>pleuronectes</i>                   | (O.F.Müller) Dujardin          | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>polytrophos</i>                    | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>pyrum</i>                          | (Ehrenberg) F.Stein            | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>raciborskii</i>                    | Drezepolski                    | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>ranula</i>                         | Pochmann                       | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>tortus</i>                         | (Lemmermann)<br>Skvortzov      | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>tricarinatus</i>                   | Prowse                         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>trifacialis</i>                    | Prowse                         | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>triqueter</i>                      | (Ehrenberg) Dujardin           | Not Listed | NE   |
| Phacaceae         | <i>Phacus</i>            | <i>unidentatus</i>                    | Prowse                         | Not Listed | NE   |
| Anisonemidae      | <i>Heteronema</i>        | <i>acus</i>                           | (Ehrenberg) Stein              | Not Listed | NE   |
| Anisonemidae      | <i>Heteronema</i>        | <i>polymorphum</i>                    | Deflandre                      | Not Listed | NE   |
| Astasiidae        | <i>Astasia</i>           | <i>variabilis</i>                     | Skvortzov                      | Not Listed | NE   |
| Astasiidae        | <i>Cyclidiopsis</i>      | <i>acus</i>                           | Korchikow                      | Not Listed | NE   |
| Distigmidae       | <i>Distigma</i>          | <i>curvatum</i>                       | Pringsheim                     | Not Listed | NE   |
| Distigmidae       | <i>Distigma</i>          | <i>proteus</i>                        | Ehrenberg                      | Not Listed | NE   |
| Peranemidae       | <i>Peranema</i>          | <i>cuneatum</i>                       | Playfair                       | Not Listed | NE   |
| Peranemidae       | <i>Peranema</i>          | <i>curvicauda</i>                     | Skuja                          | Not Listed | NE   |
| Chromulinaceae    | <i>Chromulina</i>        | <i>sphaerica</i>                      | Bachmann                       | Not Listed | NE   |
| Chrysamoebaceae   | <i>Chrysamoeba</i>       | <i>radians</i>                        | Klebs                          | Not Listed | NE   |
| Chrysococcaceae   | <i>Chrysococcus</i>      | <i>biporus</i>                        | Skuja                          | Not Listed | NE   |
| Chrysococcaceae   | <i>Chrysococcus</i>      | <i>rufescens</i>                      | Klebs                          | Not Listed | NE   |
| Mallomonadaceae   | <i>Mallomonas</i>        | <i>acaroides</i>                      | Perty                          | Not Listed | NE   |
| Mallomonadaceae   | <i>Synura</i>            | <i>uvella</i>                         | Ehrenberg                      | Not Listed | NE   |
| Eustigmataceae    | <i>Eustigmatos</i>       | <i>vischeri</i>                       | Hibberd                        | Not Listed | NE   |
| Eustigmataceae    | <i>Pseudostaurastrum</i> | <i>hastatum</i>                       | (Reinsch) Chodat               | Not Listed | NE   |
| Goniochloridaceae | <i>Tetraedriella</i>     | <i>regularis</i>                      | (Kützing) Fott                 | Not Listed | NE   |
| Dictyotaceae      | <i>Canistrocarpus</i>    | <i>cervicornis</i>                    | (Kützing) De Paula & De Clerck | Not Listed | NE   |
| Dictyotaceae      | <i>Dictyopteris</i>      | <i>delicatula</i>                     | J.V.Lamoureux                  | Not Listed | NE   |
| Dictyotaceae      | <i>Dictyopteris</i>      | <i>repens</i>                         | (Okamura) Børgesen             | Not Listed | NE   |

| Family           | Genus                 | Species                                 | Authority                                       | RDB2       | RDB3 |
|------------------|-----------------------|-----------------------------------------|-------------------------------------------------|------------|------|
| Dictyotaceae     | <i>Dictyopteris</i>   | <i>woodwardia</i>                       | (R.Brown ex Turner)<br>C.Agardh                 | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>adnata</i>                           | Zanardini                                       | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>bartayresiana</i>                    | J.V.Lamouroux                                   | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>cervicornis</i>                      | Kützing                                         | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>ciliolata</i>                        | Sonder ex Kützing                               | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>crispata</i>                         | J.V.Lamouroux                                   | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>dichotoma</i>                        | (Hudson)<br>J.V.Lamouroux                       | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>dichotoma</i> var. <i>intricata</i>  | (C.Agardh) Greville                             | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>hauckiana</i>                        | Nizamuddin                                      | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyota</i>       | <i>lata</i>                             | J.V.Lamouroux                                   | Not Listed | NE   |
| Dictyotaceae     | <i>Dictyotopsis</i>   | <i>propagulifera</i>                    | Troll                                           | Not Listed | NE   |
| Dictyotaceae     | <i>Lobophora</i>      | <i>challengeriae</i>                    | Viera                                           | Not Listed | DD   |
| Dictyotaceae     | <i>Lobophora</i>      | <i>lamourouxii</i>                      | Payri & Vieira                                  | Not Listed | DD   |
| Dictyotaceae     | <i>Lobophora</i>      | <i>novae</i>                            | Sun, Lim Tanaka, Kawai                          | Not Listed | DD   |
| Dictyotaceae     | <i>Lobophora</i>      | <i>variegata</i>                        | (J.V.Lamouroux)<br>Womersley ex<br>E.C.Oliveira | Not Listed | DD   |
| Dictyotaceae     | <i>Padina</i>         | <i>antillarum</i>                       | (Kützing) Piccone                               | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>australis</i>                        | Hauck                                           | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>boryana</i>                          | Thivy                                           | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>distromatica</i>                     | Hauck                                           | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>gymnospora</i>                       | (Kützing) Sonder                                | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>pavonica</i>                         | (Linnaeus) Thivy                                | Not Listed | NE   |
| Dictyotaceae     | <i>Padina</i>         | <i>tetrametrica</i>                     | Hauck                                           | Not Listed | NE   |
| Dictyotaceae     | <i>Stoechospermum</i> | <i>marginatum</i>                       | (C.Agardh) Kützing                              | Not Listed | NE   |
| Dictyotaceae     | <i>Styopodium</i>     | <i>zonale</i>                           | (Lamouroux) Papenfuss                           | Not Listed | NE   |
| Dictyotaceae     | <i>Styopodium</i>     | <i>zonale</i>                           | (J.V.Lamouroux)<br>Papenfuss                    | Not Listed | NE   |
| Acinetosporaceae | <i>Feldmannia</i>     | <i>indica</i>                           | (Sonder) Womersley &<br>A.Bailey                | Not Listed | NE   |
| Chordariaceae    | <i>Trichocladia</i>   | <i>nostocoides</i>                      | Zanardini                                       | Not Listed | NE   |
| Scytosiphonaceae | <i>Chnoospora</i>     | <i>implexa</i>                          | J.Agardh                                        | Not Listed | NE   |
| Scytosiphonaceae | <i>Hydroclathrus</i>  | <i>cancellatus</i>                      | Bory de Saint-Vincent                           | Not Listed | NE   |
| Scytosiphonaceae | <i>Hydroclathrus</i>  | <i>clathratus</i>                       | (C.Agardh) M.A.Howe                             | Not Listed | NE   |
| Scytosiphonaceae | <i>Iyengaria</i>      | <i>stellata</i>                         | (Børgesen) Børgesen                             | Not Listed | NE   |
| Scytosiphonaceae | <i>Rosenvingea</i>    | <i>fastigiata</i> f. <i>major</i>       | (Reinbold) Egerod                               | Not Listed | NE   |
| Scytosiphonaceae | <i>Rosenvingea</i>    | <i>orientalis</i>                       | (J.Agardh) Børgesen                             | Not Listed | NE   |
| Fucaceae         | <i>Fucus</i>          | <i>clavifer</i>                         | Turner                                          | Not Listed | NE   |
| Sargassaceae     | <i>Hormophysa</i>     | <i>cuneiformis</i>                      | (J. Gmelin) P.C. Silva                          | Not Listed | NE   |
| Sargassaceae     | <i>Hormophysa</i>     | <i>triquetra</i>                        | (C.Agardh) Kützing                              | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>condensata</i>                       | Sonder                                          | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>conoides</i>                         | (J.Agardh) Kützing                              | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>conoides</i> f. <i>laticuspidata</i> | W.R.Taylor                                      | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>conoides</i> f. <i>retroflexa</i>    | W.R.Taylor                                      | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>decurrens</i>                        | Bory de Saint-Vincent                           | Not Listed | NE   |
| Sargassaceae     | <i>Turbinaria</i>     | <i>murrayana</i>                        | E.S.Barton                                      | Not Listed | NE   |

| Family            | Genus                | Species                                         | Authority                         | RDB2       | RDB3 |
|-------------------|----------------------|-------------------------------------------------|-----------------------------------|------------|------|
| Sargassaceae      | <i>Turbinaria</i>    | <i>ornata</i>                                   | (Turner) J. Agardh                | Not Listed | NE   |
| Sargassaceae      | <i>Turbinaria</i>    | <i>ornata</i> var. <i>serrata</i>               | Jaasund                           | Not Listed | NE   |
| Sargassaceae      | <i>Turbinaria</i>    | <i>trialata</i>                                 | (J. Agardh) Kützing               | Not Listed | NE   |
| Neoralsiaceae     | <i>Neoralsia</i>     | <i>expansa</i>                                  | (J. Agardh) P.-E. Lim & H. Kawai  | Not Listed | NE   |
| Scytosiphonaceae  | <i>Colpomenia</i>    | <i>sinuosa</i>                                  | (Mertens ex Roth) Derbès & Solier | Not Listed | NE   |
| Sphacelariaceae   | <i>Sphacelaria</i>   | <i>caespitula</i>                               | Lyngbye                           | Not Listed | NE   |
| Sphacelariaceae   | <i>Sphacelaria</i>   | <i>indica</i>                                   | Reinke                            | Not Listed | NE   |
| Sphacelariaceae   | <i>Sphacelaria</i>   | <i>tribuloides</i>                              | Meneghini                         | Not Listed | NE   |
| Vacuolariaceae    | <i>Chattonella</i>   | <i>subsalsa</i>                                 | B. Biecheler                      | Not Listed | NE   |
| Botrydiopsidaceae | <i>Botrydiopsis</i>  | <i>intercedens</i>                              | Pascher                           | Not Listed | NE   |
| Characiopsidaceae | <i>Harpochytrium</i> | <i>discoepidium</i>                             | Skuja                             | Not Listed | NE   |
| Scidiaceae        | <i>Centritractus</i> | <i>belonophorus</i>                             | (W. Schmidel) E. Lemmermann       | Not Listed | NE   |
| Sargassaceae      | <i>Sargassum</i>     | <i>angustifolium</i>                            | C. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>aquifolium</i>                               | (Turner) C. Agardh                | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>assimile</i>                                 | Harvey                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>baccularia</i>                               | (Mertens) C. Agardh               | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>baccularia</i> var. <i>subcompressum</i>     | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>belangeri</i>                                | Bory de Saint-Vincent             | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>biserrula</i>                                | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>var. singapoorensis</i>                      |                                   |            |      |
| Sargassaceae      | <i>Sargassum</i>     | <i>brevifolium</i>                              | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>var. pergracile</i>                          |                                   |            |      |
| Sargassaceae      | <i>Sargassum</i>     | <i>cervicorne</i>                               | Greville                          | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>cinereum</i>                                 | J. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>filifolium</i>                               | C. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>glaucescens</i>                              | J. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>glaucescens</i> var. <i>ivanii</i>           | (Montagne) Grunow                 | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>gracile</i>                                  | J. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>granuliferum</i>                             | C. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>granuliferum</i> var. <i>dubiosum</i>        | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>grevillei</i>                                | J. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>ilicifolium</i>                              | (Turner) C. Agardh                | Not Listed | LC   |
| Sargassaceae      | <i>Sargassum</i>     | <i>ilicifolium</i> var. <i>pseudospinulosum</i> | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>latifolium</i>                               | (Turner) C. Agardh                | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>latifolium</i> var. <i>seychellense</i>      | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>microcystum</i>                              | J. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>microcystum</i> f. <i>dilatatum</i>          | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>microphyllum</i>                             | C. Agardh                         | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>myriocystum</i> var. <i>grandifolium</i>     | Grunow                            | Not Listed | DD   |
| Sargassaceae      | <i>Sargassum</i>     | <i>obtusifolium</i> var. <i>reichelii</i>       | Grunow                            | Not Listed | DD   |

| Family             | Genus                   | Species                                         | Authority                                                               | RDB2       | RDB3 |
|--------------------|-------------------------|-------------------------------------------------|-------------------------------------------------------------------------|------------|------|
| Sargassaceae       | <i>Sargassum</i>        | <i>oocyste</i> var. <i>chierchii</i>            | Grunow                                                                  | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>parvifolium</i>                              | (Turner) C. Agardh                                                      | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>plagiophyllum</i>                            | C. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>plagiophyllum</i> var. <i>hebetatum</i>      | Grunow                                                                  | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>plagiophyllum</i> var. <i>singapoorensis</i> | Grunow                                                                  | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>polycystum</i>                               | C. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>pseudocystocarpum</i>                        | Grunow                                                                  | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>pulchellum</i>                               | Grunow                                                                  | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>siliquosum</i>                               | J. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | sp.                                             | Mattio and Payri                                                        | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>squarrosus</i>                               | Greville                                                                | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>subspatulatum</i>                            | (Grunow) Grunow                                                         | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>swartzii</i>                                 | C. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>torvum</i>                                   | J. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>virgatum</i>                                 | C. Agardh                                                               | Not Listed | DD   |
| Sargassaceae       | <i>Sargassum</i>        | <i>vulgare</i>                                  | C. Agardh                                                               | Not Listed | DD   |
| Erythrotrichiaceae | <i>Erythrotrichia</i>   | <i>carnea</i>                                   | (Dillwyn) J. Agardh                                                     | Not Listed | DD   |
| Erythrotrichiaceae | <i>Sahlingia</i>        | <i>subintegra</i>                               | (Rosenvinge) Kornmann                                                   | Not Listed | DD   |
| Acrochaetiaceae    | <i>Acrochaetium</i>     | <i>hypneae</i>                                  | (Børgesen) Børgesen                                                     | Not Listed | NE   |
| Batrachospermaceae | <i>Batrachospermum</i>  | <i>turfosum</i>                                 | Bory de Saint- Vincent                                                  | Not Listed | NE   |
| Bonnemaisoniaceae  | <i>Asparagopsis</i>     | <i>taxiformis</i>                               | (Delile) Trevisan                                                       | Not Listed | LC   |
| Callithamniaceae   | <i>Spyridia</i>         | <i>filamentosa</i>                              | (Wulfen) Harvey                                                         | Not Listed | LC   |
| Ceramaceae         | <i>Antithamnionella</i> | <i>breviramosa</i>                              | (E.Y. Dawson) Wollaston                                                 | Not Listed | DD   |
| Ceramaceae         | <i>Centroceras</i>      | <i>clavulatum</i>                               | (C. Agardh) Montagne                                                    | Not Listed | DD   |
| Ceramaceae         | <i>Corallophila</i>     | <i>huysmansii</i>                               | (Weber-van Bosse)                                                       | Not Listed | DD   |
| Ceramaceae         | <i>Gayliella</i>        | <i>fimbriata</i>                                | R.E. Norris<br>(Setchell & N.L. Gardner)                                | Not Listed | DD   |
| Ceramaceae         | <i>Gayliella</i>        | <i>flaccida</i>                                 | T.O. Cho & S.M. Boo<br>(Harvey ex Kützinger)<br>T.O. Cho & L.J. McIlvor | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>adhaerens</i>                                | R.J. King & Puttock                                                     | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>angustalata</i>                              | J.A. West                                                               | Not Listed | NE   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>beccarii</i>                                 | (Zanardini) De Toni                                                     | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>bengalensis</i>                              | (G. Martens) R.J. King & Puttock                                        | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>leprieurii</i>                               | (Montagne) G. Martens                                                   | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>leprieurii</i> var. <i>hookeri</i>           | Post                                                                    | Not Listed | NE   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>ogawaraensis</i>                             | Okamura                                                                 | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>saigonensis</i>                              | Tanaka & Pham-Hoàng Hô                                                  | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>stipitata</i>                                | Post                                                                    | Not Listed | NE   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>stipitata</i>                                | E. Post                                                                 | Not Listed | DD   |
| Delesseriaceae     | <i>Caloglossa</i>       | <i>vieillardii</i>                              | (Kützinger) Setchell                                                    | Not Listed | DD   |
| Delesseriaceae     | <i>Heterosiphonia</i>   | <i>crispella</i>                                | (C. Agardh) M.J. Wynne                                                  | Not Listed | DD   |
| Delesseriaceae     | <i>Martensia</i>        | <i>elegans</i>                                  | Hering                                                                  | Not Listed | DD   |

| Family           | Genus                  | Species                                  | Authority                                            | RDB2       | RDB3 |
|------------------|------------------------|------------------------------------------|------------------------------------------------------|------------|------|
| Rhodomelaceae    | <i>Acanthophora</i>    | <i>muscoides</i>                         | (Linnaeus) Bory                                      | Not Listed | DD   |
| Rhodomelaceae    | <i>Acanthophora</i>    | <i>spicifera</i>                         | (M.Vahl) Børgesen                                    | Not Listed | LC   |
| Rhodomelaceae    | <i>Acrocystis</i>      | <i>nana</i>                              | Zanardini                                            | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>calliptera</i>                        | (Montagne) Montagne                                  | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>kelanensis</i>                        | Grunow                                               | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>moritziana</i>                        | (Sonder ex Kützing)<br>J.Agardh                      | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>pinnata</i>                           | J. Tanaka & Chihara                                  | Not Listed | NE   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>radicans</i>                          | (Montagne) Montagne                                  | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>simpliciuscula</i>                    | Harvey ex J.Agardh                                   | Not Listed | DD   |
| Rhodomelaceae    | <i>Bostrychia</i>      | <i>tenella</i>                           | (J.V.Lamouroux)<br>J.Agardh                          | Not Listed | DD   |
| Rhodomelaceae    | <i>Chondria</i>        | <i>riparia</i>                           | (J.Agardh) De Toni                                   | Not Listed | DD   |
| Rhodomelaceae    | <i>Chondria</i>        | <i>simpliciuscula</i>                    | Weber Bosse                                          | Not Listed | DD   |
| Rhodomelaceae    | <i>Endosiphonia</i>    | <i>horrida</i>                           | (C. Agardh) P.C.Silva                                | Not Listed | LC   |
| Rhodomelaceae    | <i>Herposiphonia</i>   | <i>parca</i>                             | Setchell                                             | Not Listed | DD   |
| Rhodomelaceae    | <i>Herposiphonia</i>   | <i>secunda</i>                           | (C.Agardh) Ambronn                                   | Not Listed | DD   |
| Rhodomelaceae    | <i>Herposiphonia</i>   | <i>secunda</i> f. <i>tenella</i>         | (C.Agardh) M.J.Wynne                                 | Not Listed | NE   |
| Rhodomelaceae    | <i>Laurencia</i>       | <i>botryoides</i>                        | (C.Agardh) Gaillon                                   | Not Listed | DD   |
| Rhodomelaceae    | <i>Laurencia</i>       | <i>microcladia</i>                       | Kützing                                              | Not Listed | DD   |
| Rhodomelaceae    | <i>Laurencia</i>       | <i>singaporensis</i>                     | Zanardini ex De Toni & Levi                          | Not Listed | DD   |
| Rhodomelaceae    | <i>Leveillea</i>       | <i>jungermannioides</i>                  | (Hering & G.Martens)<br>Harvey                       | Not Listed | DD   |
| Rhodomelaceae    | <i>Melanothamnus</i>   | <i>ferulaceus</i>                        | (Suhr ex J.Agardh) Díaz-<br>Tapia & Maggs            | Not Listed | DD   |
| Rhodomelaceae    | <i>Melanothamnus</i>   | <i>platycarpus</i>                       | (Børgesen) Díaz-Tapia & Maggs                        | Not Listed | DD   |
| Rhodomelaceae    | <i>Murrayella</i>      | <i>pericladus</i>                        | (C.Agardh) F.Schmitz                                 | Not Listed | DD   |
| Rhodomelaceae    | <i>Neosiphonia</i>     | <i>ferulacea</i>                         | (Suhr ex J.Agardh)<br>S.M.Guimarães & M.T.Fujii      | Not Listed | NE   |
| Rhodomelaceae    | <i>Neosiphonia</i>     | <i>howei</i>                             | (Hollenberg) Skelton & G.R.South                     | Not Listed | NE   |
| Rhodomelaceae    | <i>Palisada</i>        | <i>perforata</i>                         | (Bory) K.W.Nam                                       | Not Listed | DD   |
| Rhodomelaceae    | <i>Polysiphonia</i>    | <i>ferulacea</i>                         | Suhr ex J. Agardh                                    | Not Listed | NE   |
| Rhodomelaceae    | <i>Polysiphonia</i>    | <i>howei</i>                             | Hollenberg                                           | Not Listed | NE   |
| Rhodomelaceae    | <i>Polysiphonia</i>    | <i>platycarpa</i>                        | Børgesen                                             | Not Listed | NE   |
| Rhodomelaceae    | <i>Stictosiphonia</i>  | <i>kelanensis</i>                        | (Grunow) King & Puttock                              | Not Listed | NE   |
| Rhodomelaceae    | <i>Wilsonosiphonia</i> | <i>howei</i>                             | (Hollenberg)<br>D.Bustamante, Won & T.O.Cho          | Not Listed | DD   |
| Wrangeliaceae    | <i>Anotrichium</i>     | <i>tenuis</i>                            | (C.Agardh) Nägeli                                    | Not Listed | DD   |
| Wrangeliaceae    | <i>Griffithsia</i>     | <i>ovalis</i>                            | Harvey                                               | Not Listed | DD   |
| Colaconemataceae | <i>Colaconema</i>      | <i>hypneae</i>                           | (Børgesen) A.A.Santos & C.W.N.Moura                  | Not Listed | DD   |
| Corallinaceae    | <i>Jania</i>           | <i>adhaerens</i>                         | J.V.Lamouroux                                        | Not Listed | NE   |
| Corallinaceae    | <i>Jania</i>           | <i>capillacea</i>                        | Harvey                                               | Not Listed | DD   |
| Corallinaceae    | <i>Jania</i>           | <i>pedunculata</i> var. <i>adhaerens</i> | (J.V.Lamouroux)<br>A.S.Harvey, Woelkerling & Reviers | Not Listed | DD   |

| Family            | Genus                | Species                          | Authority                                       | RDB2       | RDB3 |
|-------------------|----------------------|----------------------------------|-------------------------------------------------|------------|------|
| Corallinaceae     | <i>Jania</i>         | <i>ungulata</i>                  | (Yendo) Yendo                                   | Not Listed | DD   |
| Corallinaceae     | <i>Jania</i>         | <i>verrucosa</i>                 | J.V.Lamouroux                                   | Not Listed | NE   |
| Hydrolithaceae    | <i>Hydrolithon</i>   | <i>farinosum</i>                 | (J.V.Lamouroux)<br>Penrose &<br>Y.M.Chamberlain | Not Listed | DD   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>anceps</i>                    | (Lamarck) Decaisne                              | Not Listed | DD   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>foliacea</i>                  | J.V.Lamouroux                                   | Not Listed | DD   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>foliacea</i> f. <i>erecta</i> | Weber Bosse                                     | Not Listed | DD   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>fragilissima</i>              | (Linnaeus)<br>J.V.Lamouroux                     | Not Listed | LC   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>rigida</i>                    | J.V.Lamouroux                                   | Not Listed | DD   |
| Lithophyllaceae   | <i>Amphiroa</i>      | <i>tribulus</i>                  | (J.Ellis & Solander)<br>J.V.Lamouroux           | Not Listed | DD   |
| Lithothamniaceae  | <i>Lithothamnion</i> | <i>erubescens</i>                | Foslie                                          | Not Listed | NE   |
| Lithothamniaceae  | <i>Melyvonnea</i>    | <i>erubescens</i>                | (Foslie) Athanasiadis &<br>D.L.Ballantine       | Not Listed | DD   |
| Halymeniaceae     | <i>Halymenia</i>     | <i>amoena</i>                    | Bory de Saint-Vincent                           | Not Listed | NE   |
| Halymeniaceae     | <i>Halymenia</i>     | <i>microcarpa</i>                | (Montagne) P.C.Silva                            | Not Listed | NE   |
| Gelidiaceae       | <i>Gelidium</i>      | <i>amansii</i>                   | (J.V.Lamouroux)<br>J.V.Lamouroux                | Not Listed | DD   |
| Gelidiaceae       | <i>Gelidium</i>      | <i>divaricatum</i>               | G.Martens                                       | Not Listed | DD   |
| Gelidiaceae       | <i>Gelidium</i>      | <i>pusillum</i>                  | (Stackhouse) Le Jolis                           | Not Listed | DD   |
| Gelidiaceae       | <i>Gelidium</i>      | <i>sentosaense</i>               | G.H.Boo, Y.Cai &<br>S.M.Boo                     | Not Listed | DD   |
| Gelidiellaceae    | <i>Gelidiella</i>    | <i>acerosa</i>                   | (Forsskål) Feldmann &<br>G.Hamel                | Not Listed | DD   |
| Pterocladaceae    | <i>Pterocladella</i> | <i>bartlettii</i>                | (W.R.Taylor) Santelices                         | Not Listed | DD   |
| Pterocladaceae    | <i>Pterocladella</i> | <i>caerulescens</i>              | (Kützting) Santelices &<br>Hommersand           | Not Listed | DD   |
| Pterocladaceae    | <i>Pterocladella</i> | <i>capillacea</i>                | (S.G.Gmelin) Santelices<br>& Hommersand         | Not Listed | LC   |
| Caulacanthaceae   | <i>Catenella</i>     | <i>caespitosa</i>                | (Withering) L.M.Irvine                          | Not Listed | DD   |
| Caulacanthaceae   | <i>Catenella</i>     | <i>impudica</i>                  | (Montagne) J.Agardh                             | Not Listed | DD   |
| Caulacanthaceae   | <i>Catenella</i>     | <i>nipae</i>                     | Zanardini                                       | Not Listed | DD   |
| Caulacanthaceae   | <i>Caulacanthus</i>  | <i>ustulatus</i>                 | (Turner) Kützting                               | Not Listed | DD   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>anastomosans</i>              | Papenfuss, Lipkin &<br>P.C.Silva                | Not Listed | DD   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>caespitosa</i>                | P.J.L.Geraldino &<br>S.M.Boo                    | Not Listed | DD   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>cornuta</i>                   | (Kützting) J.Agardh                             | Not Listed | DD   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>esperii</i>                   | Bory de Saint-Vincent                           | Not Listed | NE   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>musciiformis</i>              | (Wulfen) J.V.Lamouroux                          | Not Listed | DD   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>pannosa</i>                   | J.Agardh                                        | Not Listed | LC   |
| Cystocloniaceae   | <i>Hypnea</i>        | <i>spinella</i>                  | (C.Agardh) Kützting                             | Not Listed | DD   |
| Rhizophyllidaceae | <i>Portieria</i>     | <i>hornemannii</i>               | (Lyngbye) P.C.Silva                             | Not Listed | DD   |
| Solieriaceae      | <i>Eucheuma</i>      | <i>arnoldii</i>                  | Weber-van Bosse                                 | Not Listed | NE   |
| Solieriaceae      | <i>Eucheuma</i>      | <i>crassum</i>                   | Zanardini                                       | Not Listed | DD   |
| Solieriaceae      | <i>Eucheuma</i>      | <i>denticulatum</i>              | (N.L.Burman) Collins &<br>Hervey                | Not Listed | DD   |



| Family         | Genus               | Species                            | Authority                                              | RDB2       | RDB3 |
|----------------|---------------------|------------------------------------|--------------------------------------------------------|------------|------|
| Solieriaceae   | <i>Eucheuma</i>     | <i>edule</i>                       | (Kützting) Weber Bosse                                 | Not Listed | DD   |
| Solieriaceae   | <i>Eucheuma</i>     | <i>horridum</i>                    | J.Agardh                                               | Not Listed | DD   |
| Solieriaceae   | <i>Kappaphycus</i>  | <i>cottonii</i>                    | (Weber Bosse) Doty ex H.D.Nguyen & Q.N.Huyn            | Not Listed | DD   |
| Solieriaceae   | <i>Kappaphycus</i>  | <i>striatum</i>                    | (Schmitz) Doty ex P.C. Silva                           | Not Listed | NE   |
| Solieriaceae   | <i>Kappaphycus</i>  | <i>striatus</i>                    | (F.Schmitz) L.M.Liao                                   | Not Listed | DD   |
| Solieriaceae   | <i>Mimica</i>       | <i>arnoldii</i>                    | (Weber Bosse) Santiañez & M.J.Wynne                    | Not Listed | DD   |
| Solieriaceae   | <i>Solieria</i>     | <i>robusta</i>                     | (Greville) Kylin                                       | Not Listed | DD   |
| Gracilariaceae | <i>Corallopsis</i>  | <i>urvillei</i> var. <i>cereus</i> | J.Agardh                                               | Not Listed | NE   |
| Gracilariaceae | <i>Crassiphycus</i> | <i>changii</i>                     | (B.-M.Xia & I.A.Abbott) Gurgel, J.N.Norris & Fredericq | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>arcuata</i>                     | Zanardini                                              | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>blodgettii</i>                  | Harvey                                                 | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>bursa-pastoris</i>              | (S.G.Gmelin) P.C.Silva                                 | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>canaliculata</i>                | Sonder                                                 | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>changii</i>                     | (B.M.Xia & I.A.Abbott) I.A.Abbott, J.Zhang & B.M.Xia   | Not Listed | NE   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>chondracantha</i>               | (Kützting) A.J.K.Millar                                | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>coronopifolia</i>               | J.Agardh                                               | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>corticata</i>                   | (J.Agardh) J.Agardh                                    | Not Listed | LC   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>debilis</i>                     | (Forsskål) Børgesen                                    | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>disticha</i>                    | (J.Agardh) J.Agardh                                    | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>edulis</i>                      | (S.G.Gmelin) P.C.Silva                                 | Not Listed | NE   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>gracilis</i>                    | (Stackhouse) Steentoft, L.M.Irvine & Farnham           | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>lichenoides</i>                 | Greville forma taenioides (J. Agardh) V. May           | Not Listed | NE   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>manilaensis</i>                 | Yamamoto & Trono                                       | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>minuta</i>                      | Lewmanomont                                            | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>rhodymenioides</i>              | A.J.K.Millar                                           | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>salicornia</i>                  | (C.Agardh) E.Y.Dawson                                  | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>srilankia</i>                   | (Chang & B.Xia) Withell, A.J.K.Millar & Kraft          | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>tenuistipitata</i>              | C.F.Chang & B.M.Xia                                    | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>urvillei</i>                    | (Montagne) I.A.Abbott                                  | Not Listed | NE   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>vanbosseae</i>                  | (I.A.Abbott) I.A.Abbott                                | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>verrucosa</i>                   | (Esper) M.P.Reis                                       | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>vieillardii</i>                 | P.C.Silva                                              | Not Listed | DD   |
| Gracilariaceae | <i>Gracilaria</i>   | <i>disticha</i>                    | (J.Agardh) J.Agardh                                    | Not Listed | NE   |
| Gracilariaceae | <i>Hydropuntia</i>  | <i>edulis</i>                      | (S.G.Gmelin) Gurgel & Fredericq                        | Not Listed | LC   |

| Family           | Genus                | Species               | Authority                                    | RDB2       | RDB3 |
|------------------|----------------------|-----------------------|----------------------------------------------|------------|------|
| Gracilariaceae   | <i>Hydropuntia</i>   | <i>eucheumatoides</i> | (Harvey) Gurgel & Fredericq                  | Not Listed | DD   |
| Gracilariaceae   | <i>Hydropuntia</i>   | <i>urvillei</i>       | Montagne                                     | Not Listed | DD   |
| Gracilariaceae   | <i>Polycavernosa</i> | <i>urvillei</i>       | (Montagne) Xia & Abbott                      | Not Listed | NE   |
| Halymeniaceae    | <i>Grateloupia</i>   | <i>filicina</i>       | (J.V.Lamouroux)<br>C.Agardh                  | Not Listed | DD   |
| Halymeniaceae    | <i>Halymenia</i>     | <i>dilatata</i>       | Zanardini                                    | Not Listed | LC   |
| Halymeniaceae    | <i>Halymenia</i>     | <i>durvillei</i>      | Bory                                         | Not Listed | LC   |
| Halymeniaceae    | <i>Halymenia</i>     | <i>floresii</i>       | (Clemente) C.Agardh                          | Not Listed | DD   |
| Halymeniaceae    | <i>Halymenia</i>     | <i>formosa</i>        | Harvey ex Kützinger                          | Not Listed | DD   |
| Halymeniaceae    | <i>Halymenia</i>     | <i>maculata</i>       | J.Agardh                                     | Not Listed | LC   |
| Hapalidiaceae    | <i>Melobesia</i>     | <i>membranacea</i>    | (Esper) J.V.Lamouroux                        | Not Listed | DD   |
| Mesophyllumaceae | <i>Mesophyllum</i>   | <i>erubescens</i>     | (Foslie) Me.Lemoine                          | Not Listed | DD   |
| Galaxauraceae    | <i>Actinotrichia</i> | <i>fragilis</i>       | (Forsskål) Børgesen                          | Not Listed | DD   |
| Galaxauraceae    | <i>Galaxaura</i>     | <i>divaricata</i>     | (Linnaeus) Huisman & R.A.Townsend            | Not Listed | DD   |
| Galaxauraceae    | <i>Galaxaura</i>     | <i>rugosa</i>         | (J.Ellis & Solander)<br>J.V.Lamouroux        | Not Listed | DD   |
| Galaxauraceae    | <i>Tricleocarpa</i>  | <i>cylindrica</i>     | (J.Ellis & Solander)<br>Huisman & Borowitzka | Not Listed | LC   |
| Galaxauraceae    | <i>Tricleocarpa</i>  | <i>fragilis</i>       | (Linnaeus) Huisman & R.A.Townsend            | Not Listed | DD   |
| Peyssonneliaceae | <i>Peyssonnelia</i>  | <i>inamoena</i>       | Pilger                                       | Not Listed | DD   |
| Peyssonneliaceae | <i>Peyssonnelia</i>  | <i>rubra</i>          | (Greville) J.Agardh                          | Not Listed | DD   |
| Champiaceae      | <i>Champia</i>       | <i>parvula</i>        | (C.Agardh) Harvey                            | Not Listed | DD   |
| Champiaceae      | <i>Coelothrix</i>    | <i>irregularis</i>    | (Harvey) Børgesen                            | Not Listed | DD   |
| Lomentariaceae   | <i>Ceratodictyon</i> | <i>intricatum</i>     | (C.Agardh) R.E.Norris                        | Not Listed | LC   |
| Lomentariaceae   | <i>Ceratodictyon</i> | <i>spongiosum</i>     | Zanardini                                    | Not Listed | LC   |
| Lomentariaceae   | <i>Gelidiopsis</i>   | <i>intricata</i>      | (C.Agardh) Vickers                           | Not Listed | NE   |
| Rhodymeniaceae   | <i>Botryocladia</i>  | <i>leptopoda</i>      | (J.Agardh) Kylin                             | Not Listed | DD   |
| Rhodymeniaceae   | <i>Botryocladia</i>  | <i>skottsbergii</i>   | (Børgesen) Levring                           | Not Listed | DD   |
| Rhodymeniaceae   | <i>Chrysomenia</i>   | <i>procumbens</i>     | Weber Bosse                                  | Not Listed | DD   |
| Sebdeniaceae     | <i>Sebdenia</i>      | <i>amoena</i>         | (Bory) E.Soler-Onís                          | Not Listed | DD   |

### Checklist of Flora Species with their Category of Threat Status for Singapore

Prepared by D.J. Middleton, S. Lindsay, B.C. Ho, K.Y. Chong, P. Athen, Bazilah Ibrahim, J.Chen L.M.J. Chen, L.M. Choo, J.W.M. Gan, S.K. Ganesan, E.M. Gardner, A.Q. Hu, S.L. Koh, H. Kurzweil, S. Lai, W.N. Lam, S.M.L. Lee, P.K.F. Leong, J. Leong-Škorničková, D.C.H. Liew, R.C.J. Lim, W.H. Lim, Y.W. Low, H.K. Lua, L. Neo, X.Y. Ng, M.A. Niissalo, A. Phang, M.L. Rodda, W.W. Seah, D.C. Thomas, I.M. Turner, K.M. Wong, S.M. Yaakub, C.K. Yeo & Y.S. Yeoh

| Major Group           | Family            | Taxon Name                                                                              | RDB2       | RDB3 |
|-----------------------|-------------------|-----------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Liverwort | Adelanthaceae     | <i>Syzygiella subintegerrima</i> (Reinw. et al.) Spruce                                 | Not Listed | NEx  |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia crenulata</i> Schiffn.                                                     | Not Listed | NEx  |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia elata</i> (Steph.) Schiffn.                                                | Not Listed | EN   |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia graeffei</i> (Steph.) Hewson                                               | Not Listed | VU   |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia grossitexta</i> (Steph.) Furuki                                            | Not Listed | NEx  |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia inconspicua</i> (Steph.) Reeb & Bardat                                     | Not Listed | VU   |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia latifrondoides</i> Schiffn.                                                | Not Listed | EX   |
| Bryophyte - Liverwort | Aneuraceae        | <i>Riccardia singaporensis</i> Schiffn.                                                 | Not Listed | EN   |
| Bryophyte - Liverwort | Calypogeiaceae    | <i>Calypogeia arguta</i> Nees & Mont.                                                   | Not Listed | VU   |
| Bryophyte - Liverwort | Calypogeiaceae    | <i>Mizutania riccardioides</i> Furuki & Z.Iwats.                                        | Not Listed | CR   |
| Bryophyte - Liverwort | Cephaloziellaceae | <i>Cephaloziella inaequalis</i> R.M.Schust.                                             | Not Listed | CR   |
| Bryophyte - Liverwort | Cephaloziellaceae | <i>Cylindrocolea kiaeri</i> (Austin) Váňa                                               | Not Listed | CR   |
| Bryophyte - Liverwort | Cyathodiaceae     | <i>Cyathodium cavernarum</i> Kunze                                                      | Not Listed | LC   |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania apiculata</i> (Reinw. et al.) Nees                                         | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania brotheri</i> Steph.                                                        | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania ericoides</i> (Nees) Mont.                                                 | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania gaudichaudii</i> (Nees & Mont.) Nees & Mont.                               | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania gracilis</i> (Reinw. et al.) Nees var. <i>brevior</i> Gottsche et al.      | Not Listed | LC   |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania hypoleuca</i> Nees                                                         | Not Listed | CR   |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania intermedia</i> (Reinw. et al.) Nees                                        | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania nodulosa</i> (Reinw. et al.) Nees                                          | Not Listed | NEx  |
| Bryophyte - Liverwort | Frullaniaceae     | <i>Frullania sublignosa</i> Steph.                                                      | Not Listed | NEx  |
| Bryophyte - Liverwort | Jackiellaceae     | <i>Jackiella javanica</i> Schiffn.                                                      | Not Listed | EN   |
| Bryophyte - Liverwort | Jackiellaceae     | <i>Jackiella singaporensis</i> Schiffn.                                                 | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Acrolejeunea fertilis</i> (Reinw. et al.) Schiffn.                                   | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Acrolejeunea pycnoclada</i> (Taylor) Schiffn. subsp. <i>pycnoclada</i>               | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Acrolejeunea securifolia</i> (Nees) Steph. subsp. <i>hartmannii</i> (Steph.) Gradst. | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Caudalejeunea cristiloba</i> (Steph.) Gradst. subsp. <i>cristiloba</i>               | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Caudalejeunea reniloba</i> (Gottsche) Steph.                                         | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Ceratolejeunea singaporensis</i> (Lindenb.) Schiffn.                                 | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Cheilolejeunea intertexta</i> (Lindenb.) Steph.                                      | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Cheilolejeunea lindenberghii</i> (Gottsche) Mizut.                                   | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Cheilolejeunea malaccensis</i> (G.Hoffm.) X.L.He                                     | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Cheilolejeunea rigidula</i> (Nees ex Mont.) R.M.Schust.                              | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae      | <i>Cheilolejeunea ventricosa</i> (Schiffn. ex P.Syd.) X.L.He                            | Not Listed | NEx  |

| Major Group           | Family       | Taxon Name                                                                                                       | RDB2       | RDB3 |
|-----------------------|--------------|------------------------------------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cheilolejeunea vittata</i> (Steph. ex G.Hoffm.) R.M.Schust. & Kachroo                                         | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea aequabilis</i> (Sande Lac.) Schiffn.                                                             | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea ceratilobula</i> (P.C.Chen) R.M.Schust.                                                          | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea cordiflora</i> Steph.                                                                            | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea cuneata</i> (Lehm. & Lindenb.) Herzog                                                            | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea floccosa</i> (Lehm. & Lindenb.)                                                                  | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea grossepapillosa</i> (Horik.) N.Kitag.                                                            | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea haskarliana</i> (Lehm.) Schiffn.                                                                 | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea inflectens</i> (Mitt.) Benedix                                                                   | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea perakensis</i> Tixier                                                                            | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea planissima</i> (Mitt.) Abeyw.                                                                    | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea raduliloba</i> Steph.                                                                            | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea siamensis</i> Steph.                                                                             | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea stoniana</i> Tixier                                                                              | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea trichomanis</i> (Gottsche) Besch.                                                                | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Cololejeunea wightii</i> Steph.                                                                               | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Colura brevistyla</i> Herzog                                                                                  | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Colura cristata</i> Jovet-Ast                                                                                 | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Drepanolejeunea vesiculosa</i> (Mitt.) Steph.                                                                 | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Gaolejeunea hoi</i> W.Ye & Y.M.Wei                                                                            | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea adpressa</i> Nees                                                                                    | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea cocoes</i> Mitt.                                                                                     | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea exilis</i> (Reinw. et al.) Grolle                                                                    | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea flava</i> (Sw.) Nees                                                                                 | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea papilionacea</i> Prantl                                                                              | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea sordida</i> (Nees) Nees                                                                              | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lejeunea tenella</i> Taylor                                                                                   | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lepidolejeunea bidentula</i> (Steph.) R.M.Schust.                                                             | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Leptolejeunea elliptica</i> (Lehm. & Lindenb.) Besch.                                                         | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Leptolejeunea epiphylla</i> (Mitt.) Steph.                                                                    | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Leptolejeunea maculata</i> (Mitt.) Schiffn.                                                                   | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Leptolejeunea truncatifolia</i> Steph.                                                                        | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Leptolejeunea vitrea</i> (Nees) Schiffn.                                                                      | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lopholejeunea nigricans</i> (Lindenb.) Schiffn.                                                               | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Lopholejeunea subfusca</i> (Nees) Schiffn.                                                                    | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Metalejeunea cucullata</i> (Reinw. et al.) Grolle                                                             | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Microlejeunea filicuspis</i> (Steph.) Heinrichs et al.                                                        | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Microlejeunea lunulatiloba</i> Horik.                                                                         | Not Listed | DD   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Microlejeunea punctiformis</i> (Taylor) Steph.                                                                | Not Listed | DD   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Microlejeunea ulicina</i> (Taylor) Steph.                                                                     | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Mohamedia borneensis</i> (Steph.) R.L.Zhu & L.Shu                                                             | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Myriocoleopsis minutissima</i> (Sm.) R.L.Zhu et al.<br>subsp. <i>myriocarpa</i> (Nees & Mont.) R.L.Zhu et al. | Not Listed | EN   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Pycnolejeunea contigua</i> (Nees) Grolle                                                                      | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae | <i>Schiffneriolejeunea cumingiana</i> (Mont.) Gradst.                                                            | Not Listed | CR   |

| Major Group           | Family           | Taxon Name                                                         | RDB2       | RDB3 |
|-----------------------|------------------|--------------------------------------------------------------------|------------|------|
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Schiffneriolejeunea pulopenangensis</i> (Gottsche) Gradst.      | Not Listed | LC   |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Schiffneriolejeunea tumida</i> (Nees) Gradst.                   | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Spruceanthus planiusculus</i> (Mitt.) X.Q.Shi et al.            | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Thysananthus ciliaris</i> (Sande Lac.) Sukkharak                | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Thysananthus comosus</i> Lindenb.                               | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Thysananthus fruticosus</i> (Lindenb. & Gottsche) Schiffn.      | Not Listed | CR   |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Thysananthus indicus</i> (Steph.) Sukkharak & Gradst.           | Not Listed | NEx  |
| Bryophyte - Liverwort | Lejeuneaceae     | <i>Thysananthus spathulistipus</i> (Reinw. et al.) Lindenb.        | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Acromastigum echinatum</i> (Gottsche) A.Evans                   | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Acromastigum inaequilaterum</i> (Lehm. & Lindenb.) A.Evans      | Not Listed | CR   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania fleischeri</i> (Steph.) Abeyw.                         | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania indica</i> (Gottsche & Lindenb.) Trevis.               | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania paradoxa</i> (Sande Lac.) Steph.                       | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania recurva</i> (Mont.) Trevis.                            | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania tridens</i> (Reinw. et al.) Trevis.                    | Not Listed | EN   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Bazzania wallichiana</i> (Lindenb.) Trevis.                     | Not Listed | EN   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Kurzia gonyotricha</i> (Sande Lac.) Grolle                      | Not Listed | NEx  |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Neolepidozia mamilliosa</i> (Schiffn.) E.D.Cooper               | Not Listed | CR   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Neolepidozia wallichiana</i> (Gottsche) Fulford & J.Taylor      | Not Listed | EN   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Telaranea major</i> (Herzog) J.J.Engel & G.L.Merr.              | Not Listed | CR   |
| Bryophyte - Liverwort | Lepidoziaceae    | <i>Tricholepidozia neesii</i> (Lindenb.) E.D.Cooper                | Not Listed | EN   |
| Bryophyte - Liverwort | Lophocoleaceae   | <i>Chiloscyphus tridens</i> Steph.                                 | Not Listed | DD   |
| Bryophyte - Liverwort | Lophocoleaceae   | <i>Heteroscyphus argutus</i> (Reinw. et al.) Schiffn.              | Not Listed | LC   |
| Bryophyte - Liverwort | Lophocoleaceae   | <i>Heteroscyphus splendens</i> (Lehm. & Lindenb.) Grolle           | Not Listed | DD   |
| Bryophyte - Liverwort | Lophocoleaceae   | <i>Heteroscyphus succulentus</i> (Gottsche) Schiffn.               | Not Listed | CR   |
| Bryophyte - Liverwort | Lophocoleaceae   | <i>Heteroscyphus zollingeri</i> (Gottsche) Schiffn.                | Not Listed | LC   |
| Bryophyte - Liverwort | Marchantiaceae   | <i>Marchantia acaulis</i> Steph.                                   | EN         | NEx  |
| Bryophyte - Liverwort | Marchantiaceae   | <i>Marchantia emarginata</i> Reinw. et al.                         | Not Listed | EN   |
| Bryophyte - Liverwort | Pallaviciniaceae | <i>Pallavicinia levieri</i> Schiffn.                               | Not Listed | DD   |
| Bryophyte - Liverwort | Pallaviciniaceae | <i>Pallavicinia lyellii</i> (Hook.) Gray                           | Not Listed | VU   |
| Bryophyte - Liverwort | Pallaviciniaceae | <i>Podomitrium malaccense</i> (Steph.) Campb.                      | Not Listed | EN   |
| Bryophyte - Liverwort | Plagiochilaceae  | <i>Plagiochila bantamensis</i> (Reinw. et al.) Mont.               | Not Listed | CR   |
| Bryophyte - Liverwort | Plagiochilaceae  | <i>Plagiochila kurzii</i> Steph.                                   | Not Listed | CR   |
| Bryophyte - Liverwort | Plagiochilaceae  | <i>Plagiochila sciophila</i> Nees                                  | Not Listed | NEx  |
| Bryophyte - Liverwort | Radulaceae       | <i>Radula anceps</i> Sande Lac.                                    | Not Listed | EN   |
| Bryophyte - Liverwort | Radulaceae       | <i>Radula javanica</i> Gottsche                                    | Not Listed | CR   |
| Bryophyte - Liverwort | Radulaceae       | <i>Radula loriaana</i> Castle                                      | Not Listed | CR   |
| Bryophyte - Liverwort | Radulaceae       | <i>Radula reflexa</i> Nees & Mont.                                 | Not Listed | NEx  |
| Bryophyte - Liverwort | Ricciaceae       | <i>Riccia treubiana</i> Steph.                                     | Not Listed | LC   |
| Bryophyte - Liverwort | Schistochilaceae | <i>Schistochila sciurea</i> (Nees) Schiffn.                        | Not Listed | NEx  |
| Bryophyte - Liverwort | Solenostomaceae  | <i>Solenostoma ariadne</i> (Taylor) R.M.Schust. ex Váňa & D.G.Long | Not Listed | NEx  |
| Bryophyte - Liverwort | Solenostomaceae  | <i>Solenostoma truncatum</i> (Nees) R.M.Schust. ex Váňa & D.G.Long | Not Listed | VU   |

| Major Group           | Family          | Taxon Name                                                                         | RDB2       | RDB3 |
|-----------------------|-----------------|------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Liverwort | Trichocoleaceae | <i>Trichocolea pluma</i> (Reinw. et al.) Mont.                                     | Not Listed | CR   |
| Bryophyte - Moss      | Bartramiaceae   | <i>Philonotis hastata</i> (Duby) Wijk & Margad.                                    | Not Listed | LC   |
| Bryophyte - Moss      | Bartramiaceae   | <i>Philonotis laii</i> T.J.Kop.                                                    | Not Listed | DD   |
| Bryophyte - Moss      | Bartramiaceae   | <i>Philonotis mollis</i> (Dozy & Molk.) Mitt.                                      | Not Listed | DD   |
| Bryophyte - Moss      | Bartramiaceae   | <i>Philonotis thwaitesii</i> Mitt.                                                 | Not Listed | LC   |
| Bryophyte - Moss      | Bryaceae        | <i>Bryum apiculatum</i> Schwägr.                                                   | Not Listed | LC   |
| Bryophyte - Moss      | Bryaceae        | <i>Bryum coronatum</i> Schwägr.                                                    | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Arthrocormus schimperii</i> (Dozy & Molk.) Dozy & Molk.                         | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes boulayi</i> Besch.                                                   | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes crassinerve</i> (Mitt.) A.Jaeger                                     | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes erosum</i> Müll.Hal.                                                 | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes fasciculatum</i> Dozy & Molk.                                        | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes graeffeanum</i> Müll.Hal.                                            | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes lonchophyllum</i> Schwägr. subsp. <i>lonchophyllum</i>               | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes moluccense</i> Schwägr.                                              | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes motleyi</i> Mitt.                                                    | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes pallidum</i> Mitt.                                                   | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes porrectum</i> Mitt.                                                  | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes serratum</i> A.Braun ex Müll.Hal.                                    | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes subintegrum</i> Broth.                                               | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes taitense</i> (Sull.) Mitt.                                           | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Calymperes tenerum</i> Müll.Hal.                                                | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Exostratum blumei</i> (Nees ex Hampe) L.T.Ellis                                 | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Leucophanes candidum</i> (Schwägr.) Lindb.                                      | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Leucophanes glaucum</i> (Schwägr.) Mitt. subsp. <i>glaucum</i>                  | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Leucophanes octoblepharioides</i> Brid. subsp. <i>octoblepharioides</i>         | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium fasciculatum</i> (Hook. & Grev.) H.Rob. subsp. <i>fasciculatum</i> | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium flavum</i> (Müll.Hal.) H.Rob.                                      | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium jungquianum</i> (Mitt.) H.Rob.                                     | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium repens</i> (Harv.) H.Rob.                                          | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium undulatum</i> (Dozy & Molk.) H.Rob.                                | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Mitthyridium wallisii</i> (Müll.Hal.) H.Rob.                                    | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Octoblepharum albidum</i> Hedw.                                                 | Not Listed | LC   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon albobaginatulus</i> Schwägr.                                        | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon aristifolius</i> Mitt.                                              | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon armatus</i> Mitt.                                                   | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon borneensis</i> (Hampe) A.Jaeger                                     | Not Listed | NEx  |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon ciliatus</i> (Hook.) Schwägr.                                       | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon croceus</i> Mitt.                                                   | Not Listed | EN   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon loreus</i> (Sande Lac.) W.D.Reese                                   | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon muelleri</i> (Dozy & Molk.) Sande Lac.                              | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon revolutus</i> Dozy & Molk.                                          | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon rufescens</i> Hook. & Grev.                                         | Not Listed | CR   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon spiculosus</i> Hook. & Grev.                                        | Not Listed | VU   |
| Bryophyte - Moss      | Calymperaceae   | <i>Syrrhopodon trachyphyllus</i> Mont.                                             | Not Listed | NEx  |



| Major Group      | Family         | Taxon Name                                                                                                        | RDB2       | RDB3 |
|------------------|----------------|-------------------------------------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Moss | Calymperaceae  | <i>Syrrophodon tristichus</i> Nees ex Schwägr.                                                                    | Not Listed | CR   |
| Bryophyte - Moss | Daltoniaceae   | <i>Distichophyllum schmidtii</i> Broth.                                                                           | Not Listed | NEx  |
| Bryophyte - Moss | Dicranaceae    | <i>Dicranoloma braunii</i> (Müll.Hal.) Paris                                                                      | Not Listed | NEx  |
| Bryophyte - Moss | Dicranaceae    | <i>Leptotrichella brasiliensis</i> (Duby) Ochyra                                                                  | Not Listed | DD   |
| Bryophyte - Moss | Dicranaceae    | <i>Leptotrichella miqueliana</i> (Mont.) Lindb. ex Broth. var. <i>longifolia</i> (Baumgartner & J.Froehl.) Ochyra | Not Listed | DD   |
| Bryophyte - Moss | Dicranaceae    | <i>Leptotrichella miqueliana</i> (Mont.) Lindb. ex Broth. var. <i>miqueliana</i>                                  | Not Listed | LC   |
| Bryophyte - Moss | Dicranaceae    | <i>Leucoloma amoenevirens</i> Mitt.                                                                               | Not Listed | NEx  |
| Bryophyte - Moss | Diphysciaceae  | <i>Diphyscium mucronifolium</i> Mitt.                                                                             | CR         | CR   |
| Bryophyte - Moss | Ditrichaceae   | <i>Garckea flexuosa</i> (Griff.) Margad. & Nork.                                                                  | Not Listed | EN   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens autoicus</i> Thér. & Dixon                                                                           | Not Listed | DD   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens bogoriensis</i> M.Fleisch.                                                                           | Not Listed | EN   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens ceylonensis</i> Dozy & Molk.                                                                         | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens crassinervis</i> Sande Lac.                                                                          | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens crenulatus</i> Mitt. var. <i>elmeri</i> (Broth.) Z.Iwats. & Tad.Suzuki                               | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens crispulus</i> Brid. var. <i>crispulus</i>                                                            | Not Listed | EN   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens flaccidus</i> Mitt.                                                                                  | Not Listed | EN   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens guangdongensis</i> Z.Iwats. & Z.H.Li                                                                 | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens gymnogynus</i> Besch.                                                                                | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens holleanus</i> Dozy & Molk.                                                                           | Not Listed | CR   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens oblongifolius</i> Hook.f. & Wilson                                                                   | Not Listed | DD   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens pallidinervis</i> Mitt.                                                                              | Not Listed | CR   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens pallidus</i> Hook.f. & Wilson                                                                        | Not Listed | CR   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens pellucidus</i> Hornsch.                                                                              | Not Listed | LC   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens polypodioides</i> Hedw.                                                                              | Not Listed | CR   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens pseudoceylonensis</i> B.C.Tan & M.-                                                                  | Not Listed | DD   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens serratus</i> Müll.Hal.                                                                               | Not Listed | DD   |
| Bryophyte - Moss | Fissidentaceae | <i>Fissidens zollingeri</i> Mont.                                                                                 | Not Listed | LC   |
| Bryophyte - Moss | Hypnaceae      | <i>Ctenidiadelphus plumularia</i> (Müll.Hal.)                                                                     | Not Listed | NEx  |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium buitenzorgi</i> (Bél.) Mitt.                                                                    | Not Listed | DD   |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium ichnotocladum</i> (Müll.Hal.) A.Jaeger                                                          | Not Listed | NEx  |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium incubans</i> (Reinw. & Hornsch.) A.Jaeger                                                       | Not Listed | CR   |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium monumentorum</i> (Duby) A.Jaeger                                                                | Not Listed | EN   |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium moritzii</i> A.Jaeger var. <i>moritzii</i>                                                      | Not Listed | CR   |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium singaporense</i> Dixon                                                                          | Not Listed | EN   |
| Bryophyte - Moss | Hypnaceae      | <i>Ectropothecium zollingeri</i> (Müll.Hal.) A.Jaeger                                                             | Not Listed | DD   |
| Bryophyte - Moss | Hypnaceae      | <i>Taxiphyllum taxirameum</i> (Mitt.) M.Fleisch.                                                                  | Not Listed | EN   |
| Bryophyte - Moss | Hypnaceae      | <i>Vesicularia dubyana</i> (Müll.Hal.) Broth.                                                                     | Not Listed | LC   |
| Bryophyte - Moss | Hypnaceae      | <i>Vesicularia kurzii</i> (A.Jaeger) Broth.                                                                       | Not Listed | DD   |
| Bryophyte - Moss | Hypnaceae      | <i>Vesicularia miquelii</i> (Sande Lac.) M.Fleisch.                                                               | Not Listed | EN   |
| Bryophyte - Moss | Hypnaceae      | <i>Vesicularia montagnei</i> (Bél.) Broth.                                                                        | Not Listed | VU   |
| Bryophyte - Moss | Hypnaceae      | <i>Vesicularia reticulata</i> (Dozy & Molk.) Broth.                                                               | Not Listed | LC   |

| Major Group      | Family           | Taxon Name                                                                                                              | RDB2       | RDB3 |
|------------------|------------------|-------------------------------------------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Moss | Hypnodendraceae  | <i>Dendro-hypnum subspiniervium</i> (Müll.Hal.)<br>N.E.Bell et al. subsp. <i>arborescens</i> (Mitt.) N.E.Bell<br>et al. | Not Listed | NEx  |
| Bryophyte - Moss | Hypopterygiaceae | <i>Hypopterygium tamarisci</i> (Sw.) Brid. ex Müll.Hal.                                                                 | Not Listed | NEx  |
| Bryophyte - Moss | Leucobryaceae    | <i>Campylopus serratus</i> Sande Lac.                                                                                   | Not Listed | EN   |
| Bryophyte - Moss | Leucobryaceae    | <i>Cladopodanthus heterophyllus</i> (M.Fleisch.)<br>E.B.Bartram                                                         | Not Listed | NEx  |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum aduncum</i> Dozy & Molk. var.<br><i>aduncum</i>                                                           | Not Listed | VU   |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum aduncum</i> Dozy & Molk. var.<br><i>teysmannianum</i> (Dozy & Molk.) T.Yamag.                             | Not Listed | DD   |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum aduncum</i> Dozy & Molk. var.<br><i>tjibodense</i> (M.Fleisch.) Ochyra                                    | Not Listed | NEx  |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum chlorophyllosum</i> Müll.Hal.                                                                             | Not Listed | DD   |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum javense</i> (Brid.) Mitt.                                                                                 | Not Listed | NEx  |
| Bryophyte - Moss | Leucobryaceae    | <i>Leucobryum sanctum</i> (Nees ex Schwägr.) Hampe<br>var. <i>sanctum</i>                                               | Not Listed | EN   |
| Bryophyte - Moss | Meteoriaceae     | <i>Aerobryopsis longissima</i> (Dozy & Molk.)<br>M.Fleisch.                                                             | Not Listed | NEx  |
| Bryophyte - Moss | Mniaceae         | <i>Plagiomnium succulentum</i> (Mitt.) T.J.Kop.                                                                         | Not Listed | DD   |
| Bryophyte - Moss | Myuriaceae       | <i>Oedicladium pseudorufescens</i> (Hampe) B.C.Tan<br>& Mohamed                                                         | Not Listed | NEx  |
| Bryophyte - Moss | Neckeraceae      | <i>Caduciella mariei</i> (Besch.) Enroth                                                                                | Not Listed | NEx  |
| Bryophyte - Moss | Neckeraceae      | <i>Neckeropsis gracilentia</i> (Bosch & Sande Lac.)<br>M.Fleisch.                                                       | Not Listed | CR   |
| Bryophyte - Moss | Neckeraceae      | <i>Pinnatella mucronata</i> (Bosch & Sande Lac.)<br>M.Fleisch.                                                          | Not Listed | NEx  |
| Bryophyte - Moss | Orthotrichaceae  | <i>Desmotheca apiculata</i> (Dozy & Molk.) Lindb.                                                                       | Not Listed | NEx  |
| Bryophyte - Moss | Orthotrichaceae  | <i>Groutiella tomentosa</i> (Hornsch.) Wijk & Margad.                                                                   | Not Listed | NEx  |
| Bryophyte - Moss | Orthotrichaceae  | <i>Macromitrium fuscescens</i> Schwägr.                                                                                 | Not Listed | NEx  |
| Bryophyte - Moss | Orthotrichaceae  | <i>Macromitrium incurvifolium</i> (Hook. & Grev.)<br>Schwägr.                                                           | Not Listed | NEx  |
| Bryophyte - Moss | Orthotrichaceae  | <i>Macromitrium nepalense</i> (Hook. & Grev.)<br>Schwägr.                                                               | Not Listed | NEx  |
| Bryophyte - Moss | Pilotrichaceae   | <i>Callicostella papillata</i> (Mont.) Mitt. var.<br><i>papillata</i>                                                   | Not Listed | EN   |
| Bryophyte - Moss | Pilotrichaceae   | <i>Callicostella papillata</i> (Mont.) Mitt. var.<br><i>prabaktiana</i> (Müll.Hal.) Streimann                           | Not Listed | EN   |
| Bryophyte - Moss | Plagiotheciaceae | <i>Pseudotaxiphyllum pohliicarpum</i> (Sull. & Lesq.)<br>Z.Iwats.                                                       | Not Listed | EN   |
| Bryophyte - Moss | Polytrichaceae   | <i>Pogonatum piliferum</i> (Dozy & Molk.) Touw                                                                          | Not Listed | CR   |
| Bryophyte - Moss | Pottiaceae       | <i>Barbula thelimitria</i> Müll.Hal.                                                                                    | Not Listed | DD   |
| Bryophyte - Moss | Pottiaceae       | <i>Chionoloma angustatum</i> (Mitt.) M.Menzel                                                                           | Not Listed | NEx  |
| Bryophyte - Moss | Pottiaceae       | <i>Chionoloma induratum</i> Dixon                                                                                       | Not Listed | NEx  |
| Bryophyte - Moss | Pottiaceae       | <i>Gymnostomiella vernicosa</i> (Hook. ex Harv.)<br>M.Fleisch. var. <i>vernicosa</i>                                    | Not Listed | NEx  |
| Bryophyte - Moss | Pottiaceae       | <i>Hydrogonium arcuatum</i> (Griff.) Wijk & Margad.                                                                     | Not Listed | NEx  |
| Bryophyte - Moss | Pottiaceae       | <i>Hydrogonium consanguineum</i> (Thwaites & Mitt.)<br>Hilp. var. <i>consanguineum</i>                                  | Not Listed | LC   |
| Bryophyte - Moss | Pottiaceae       | <i>Hydrogonium orientale</i> (F.Weber) Jan Kučera                                                                       | Not Listed | LC   |
| Bryophyte - Moss | Pottiaceae       | <i>Hydrogonium subcomosum</i> (Broth.) P.C.Chen                                                                         | Not Listed | NEx  |
| Bryophyte - Moss | Pottiaceae       | <i>Hyophila беруensis</i> Dixon                                                                                         | Not Listed | DD   |

| Major Group      | Family             | Taxon Name                                                                            | RDB2       | RDB3 |
|------------------|--------------------|---------------------------------------------------------------------------------------|------------|------|
| Bryophyte - Moss | Pottiaceae         | <i>Hyophila involuta</i> (Hook.) A.Jaeger                                             | Not Listed | LC   |
| Bryophyte - Moss | Pottiaceae         | <i>Hyophila javanica</i> (Nees & Blume) Brid.                                         | Not Listed | DD   |
| Bryophyte - Moss | Pottiaceae         | <i>Splachnobryum oorschotii</i> (Sande Lac.) Müll.Hal.                                | Not Listed | EN   |
| Bryophyte - Moss | Pottiaceae         | <i>Splachnobryum temasekense</i> B.C.Tan et al.                                       | Not Listed | CR   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Isopterygium albescent</i> (Hook.) A.Jaeger var. <i>albescent</i>                  | Not Listed | LC   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Isopterygium bancanum</i> (Sande Lac.) A.Jaeger                                    | Not Listed | LC   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium instratum</i> (Brid.) Broth.                                           | Not Listed | LC   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium isocladum</i> (Bosch & Sande Lac.) Renauld & Cardot                    | Not Listed | NEx  |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium kerianum</i> (Broth.) Broth.                                           | Not Listed | NEx  |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium leptosigmatum</i> (Müll.Hal. ex Geh.) Paris                            | Not Listed | NEx  |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium nepalense</i> (Schwägr.) Broth.                                        | Not Listed | LC   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Taxithelium vernieri</i> (Duby) Besch.                                             | Not Listed | DD   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Trismegistia lancifolia</i> (Harv.) Broth. var. <i>lancifolia</i>                  | CR         | CR   |
| Bryophyte - Moss | Pylaisiadelphaceae | <i>Trismegistia lancifolia</i> (Harv.) Broth. var. <i>pseudoplicata</i> H.Akiyama     | Not Listed | CR   |
| Bryophyte - Moss | Racopilaceae       | <i>Racopilum cuspidigerum</i> (Schwägr.) Ångstr.                                      | Not Listed | NEx  |
| Bryophyte - Moss | Rhizogoniaceae     | <i>Pyrrhobryum latifolium</i> (Bosch & Sande Lac.) Mitt.                              | Not Listed | CR   |
| Bryophyte - Moss | Rhizogoniaceae     | <i>Pyrrhobryum spiniforme</i> (Hedw.) Mitt.                                           | EN         | CR   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Acanthorrhynchium papillatum</i> (Harv.) M.Fleisch.                                | Not Listed | VU   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Acroporium convolutum</i> (Sande Lac.) M.Fleisch. var. <i>convolutum</i>           | Not Listed | CR   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Acroporium microcladon</i> (Dozy & Molk.) B.C.Tan                                  | Not Listed | NEx  |
| Bryophyte - Moss | Sematophyllaceae   | <i>Acroporium rufum</i> (Reinw. & Hornsch.) M.Fleisch.                                | Not Listed | NEx  |
| Bryophyte - Moss | Sematophyllaceae   | <i>Acroporium secundum</i> (Reinw. & Hornsch.) M.Fleisch. var. <i>secundum</i>        | Not Listed | NEx  |
| Bryophyte - Moss | Sematophyllaceae   | <i>Clastobryophilum asperifolium</i> (Thwaites & Mitt.) B.C.Tan                       | Not Listed | NEx  |
| Bryophyte - Moss | Sematophyllaceae   | <i>Meiothecium jagorii</i> (Müll.Hal.) Broth. var. <i>jagorii</i>                     | Not Listed | DD   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Meiothecium microcarpum</i> (Harv.) Mitt. var. <i>lineolatum</i> (Duby) M.Fleisch. | Not Listed | DD   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Meiothecium microcarpum</i> (Harv.) Mitt. var. <i>microcarpum</i>                  | Not Listed | LC   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Meiothecium microcarpum</i> (Harv.) Mitt. var. <i>minus</i> (Paris) Wijk & Margad. | Not Listed | DD   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Papillidiopsis bruchii</i> (Dozy & Molk.) W.R.Buck & B.C.Tan                       | CR         | CR   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Papillidiopsis luxurians</i> (Dozy & Molk.) W.R.Buck & B.C.Tan                     | Not Listed | NEx  |
| Bryophyte - Moss | Sematophyllaceae   | <i>Papillidiopsis ramulina</i> (Thwaites & Mitt.) W.R.Buck & B.C.Tan                  | Not Listed | EN   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Sematophyllum subpinnatum</i> (Brid.) E.Britton                                    | Not Listed | EN   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Trichosteleum boschii</i> (Dozy & Molk.) A.Jaeger                                  | Not Listed | EN   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Trichosteleum fleischeri</i> B.C.Tan et al.                                        | Not Listed | EN   |
| Bryophyte - Moss | Sematophyllaceae   | <i>Trichosteleum saproxylophilum</i> (Müll.Hal.) B.C.Tan et al.                       | Not Listed | NEx  |

| Major Group          | Family           | Taxon Name                                                                  | RDB2       | RDB3 |
|----------------------|------------------|-----------------------------------------------------------------------------|------------|------|
| Bryophyte - Moss     | Sematophyllaceae | <i>Trichosteleum stigmatosum</i> Mitt.                                      | Not Listed | VU   |
| Bryophyte - Moss     | Thuidiaceae      | <i>Pelekium bifarium</i> (Bosch & Sande Lac.) M.Fleisch.                    | Not Listed | NEx  |
| Bryophyte - Moss     | Thuidiaceae      | <i>Pelekium velatum</i> Mitt.                                               | Not Listed | VU   |
| Bryophyte - Hornwort | Anthocerotaceae  | <i>Folioceros glandulosus</i> (Lehm. & Lindenb.) D.C.Bharadwaj              | VU         | VU   |
| Bryophyte - Hornwort | Notothyladaceae  | <i>Notothylas javanica</i> (Sande Lac.) Gottsche                            | Not Listed | VU   |
| Bryophyte - Hornwort | Notothyladaceae  | <i>Phaeoceros laevis</i> (L.) Prosk.                                        | Not Listed | DD   |
| Lycophyte            | Lycopodiaceae    | <i>Palhinhaea cernua</i> (L.) Franco & Vasc.                                | Not Listed | LC   |
| Lycophyte            | Lycopodiaceae    | <i>Phlegmariurus carinatus</i> (Desv.) Ching                                | NEx        | CR   |
| Lycophyte            | Lycopodiaceae    | <i>Phlegmariurus dalhousieanus</i> (Spring) A.R.Field & Bostock             | NEx        | NEx  |
| Lycophyte            | Lycopodiaceae    | <i>Phlegmariurus nummulariifolius</i> (Blume) Ching                         | NEx        | NEx  |
| Lycophyte            | Lycopodiaceae    | <i>Phlegmariurus phlegmaria</i> (L.) T.Sen & U.Sen                          | EN         | EN   |
| Lycophyte            | Lycopodiaceae    | <i>Phlegmariurus squarrosus</i> (G.Forst.) Á.Löve & D.Löve                  | NEx        | NEx  |
| Lycophyte            | Selaginellaceae  | <i>Selaginella ciliaris</i> (Retz.) Spring                                  | Not Listed | LC   |
| Lycophyte            | Selaginellaceae  | <i>Selaginella intermedia</i> (Blume) Spring var. <i>intermedia</i>         | VU         | LC   |
| Lycophyte            | Selaginellaceae  | <i>Selaginella mayeri</i> Hieron.                                           | EN         | EN   |
| Lycophyte            | Selaginellaceae  | <i>Selaginella roxburghii</i> (Hook. & Grev.) Spring var. <i>roxburghii</i> | VU         | VU   |
| Lycophyte            | Selaginellaceae  | <i>Selaginella wallichii</i> (Hook. & Grev.) Spring                         | CR         | NEx  |
| Lycophyte            | Selaginellaceae  | <i>Selaginella willdenowii</i> (Desv.) Baker                                | VU         | VU   |
| Fern                 | Aspleniaceae     | <i>Asplenium batuense</i> Alderw.                                           | EN         | EN   |
| Fern                 | Aspleniaceae     | <i>Asplenium</i> cf. <i>oxyphyllum</i> J.Sm. ex Kunze                       | Not Listed | DD   |
| Fern                 | Aspleniaceae     | <i>Asplenium longissimum</i> Blume                                          | Not Listed | LC   |
| Fern                 | Aspleniaceae     | <i>Asplenium macrophyllum</i> Sw.                                           | NEx        | NEx  |
| Fern                 | Aspleniaceae     | <i>Asplenium nidus</i> L. var. <i>musifolium</i> (Mett.) C.Chr.             | Not Listed | LC   |
| Fern                 | Aspleniaceae     | <i>Asplenium nidus</i> L. var. <i>nidus</i>                                 | Not Listed | LC   |
| Fern                 | Aspleniaceae     | <i>Asplenium nitidum</i> Sw.                                                | NEx        | CR   |
| Fern                 | Aspleniaceae     | <i>Asplenium phyllitidis</i> D.Don subsp. <i>malesicum</i> Holttum          | EN         | CR   |
| Fern                 | Aspleniaceae     | <i>Asplenium tenerum</i> G.Forst.                                           | VU         | EN   |
| Fern                 | Athyriaceae      | <i>Diplazium cordifolium</i> Blume                                          | EN         | CR   |
| Fern                 | Athyriaceae      | <i>Diplazium esculentum</i> (Retz.) Sw.                                     | VU         | VU   |
| Fern                 | Athyriaceae      | <i>Diplazium fraxinifolium</i> C.Presl                                      | EN         | CR   |
| Fern                 | Athyriaceae      | <i>Diplazium holttumii</i> Hovenkamp                                        | EN         | EN   |
| Fern                 | Athyriaceae      | <i>Diplazium mixtum</i> (Roxb.) C.V.Morton                                  | EN         | EN   |
| Fern                 | Athyriaceae      | <i>Diplazium phanerotis</i> Kunze                                           | VU         | EN   |
| Fern                 | Athyriaceae      | <i>Diplazium polypodioides</i> Blume                                        | EN         | NEx  |
| Fern                 | Athyriaceae      | <i>Diplazium sorzogonense</i> (C.Presl) C.Presl                             | EN         | EN   |
| Fern                 | Athyriaceae      | <i>Diplazium sylvaticum</i> (Bory) Sw.                                      | Not Listed | CR   |
| Fern                 | Athyriaceae      | <i>Diplazium tomentosum</i> Blume                                           | VU         | CR   |
| Fern                 | Blechnaceae      | <i>Blechnopsis finlaysonianana</i> (Wall. ex Hook. & Grev.) C.Presl         | VU         | LC   |
| Fern                 | Blechnaceae      | <i>Blechnopsis orientalis</i> (L.) C.Presl                                  | VU         | LC   |
| Fern                 | Blechnaceae      | <i>Stenochlaena palustris</i> (Burm.f.) Bedd.                               | Not Listed | LC   |
| Fern                 | Blechnaceae      | <i>Telmatoblechnum indicum</i> (Burm.f.) Perrie et al.                      | VU         | CR   |
| Fern                 | Cyatheaceae      | <i>Alsophila glabra</i> (Blume) Hook.                                       | NEx        | NEx  |

| Major Group | Family           | Taxon Name                                                                 | RDB2       | RDB3 |
|-------------|------------------|----------------------------------------------------------------------------|------------|------|
| Fern        | Cyatheaceae      | <i>Alsophila latebrosa</i> Wall. ex Hook.                                  | VU         | LC   |
| Fern        | Cyatheaceae      | <i>Sphaeropteris squamulata</i> (Blume) R.M.Tryon                          | EN         | VU   |
| Fern        | Cyatheaceae      | <i>Sphaeropteris trichodesma</i> (Scort.) R.M.Tryon                        | Not Listed | CR   |
| Fern        | Davalliaceae     | <i>Davallia angustata</i> Wall. ex Hook. & Grev.                           | EN         | NEx  |
| Fern        | Davalliaceae     | <i>Davallia denticulata</i> (Burm.f.) Mett. var. <i>denticulata</i>        | Not Listed | LC   |
| Fern        | Davalliaceae     | <i>Davallia heterophylla</i> Sm.                                           | NEx        | NEx  |
| Fern        | Davalliaceae     | <i>Davallia parvula</i> Wall. ex Hook. & Grev.                             | NEx        | NEx  |
| Fern        | Davalliaceae     | <i>Davallia pectinata</i> Sm.                                              | EN         | NEx  |
| Fern        | Davalliaceae     | <i>Davallia repens</i> (L.f.) Kuhn                                         | VU         | NEx  |
| Fern        | Davalliaceae     | <i>Davallia solida</i> (G.Forst.) Sw. var. <i>solida</i>                   | VU         | VU   |
| Fern        | Davalliaceae     | <i>Davallia triphylla</i> Hook.                                            | VU         | CR   |
| Fern        | Dennstaedtiaceae | <i>Histiopteris incisa</i> (Thunb.) J.Sm.                                  | VU         | CR   |
| Fern        | Dennstaedtiaceae | <i>Microlepia speluncae</i> (L.) T.Moore                                   | Not Listed | VU   |
| Fern        | Dennstaedtiaceae | <i>Pteridium revolutum</i> (Blume) Nakai                                   | Not Listed | DD   |
| Fern        | Dennstaedtiaceae | <i>Pteridium semihastatum</i> (Wall. ex J.Agardh) S.B.Andrews              | VU         | EN   |
| Fern        | Dipteridaceae    | <i>Dipteris conjugata</i> Reinw.                                           | CR         | CR   |
| Fern        | Dryopteridaceae  | <i>Bolbitis appendiculata</i> (Willd.) K.Iwats.                            | EN         | EN   |
| Fern        | Dryopteridaceae  | <i>Bolbitis heteroclita</i> (C.Presl) Ching                                | EN         | NEx  |
| Fern        | Dryopteridaceae  | <i>Bolbitis sinuata</i> (C.Presl) Hennisman                                | NEx        | CR   |
| Fern        | Dryopteridaceae  | <i>Elaphoglossum amblyphyllum</i> P.R.Bell ex                              | EN         | NEx  |
| Fern        | Dryopteridaceae  | <i>Pleocnemia irregularis</i> (C.Presl) Holttum                            | Not Listed | LC   |
| Fern        | Dryopteridaceae  | <i>Pleocnemia olivacea</i> (Copel.) Holttum                                | Not Listed | NEx  |
| Fern        | Dryopteridaceae  | <i>Teratophyllum aculeatum</i> (Blume) Mett. ex Kuhn var. <i>aculeatum</i> | CR         | CR   |
| Fern        | Dryopteridaceae  | <i>Teratophyllum ludens</i> (Fée) Holttum                                  | CR         | CR   |
| Fern        | Dryopteridaceae  | <i>Teratophyllum rotundifoliatum</i> (Bonap.)                              | CR         | CR   |
| Fern        | Gleicheniaceae   | <i>Dicranopteris curranii</i> Copel.                                       | Not Listed | LC   |
| Fern        | Gleicheniaceae   | <i>Dicranopteris linearis</i> (Burm.f.) Underw. var. <i>linearis</i>       | Not Listed | LC   |
| Fern        | Gleicheniaceae   | <i>Dicranopteris subpectinata</i> (Christ) C.M.Kuo                         | Not Listed | LC   |
| Fern        | Gleicheniaceae   | <i>Sticherus truncatus</i> (Willd.) Nakai                                  | VU         | VU   |
| Fern        | Hymenophyllaceae | <i>Abrodictyum obscurum</i> (Blume) Ebihara & K.Iwats.                     | EN         | VU   |
| Fern        | Hymenophyllaceae | <i>Callistopteris superba</i> (Backh.) Ebihara &                           | NEx        | CR   |
| Fern        | Hymenophyllaceae | <i>Cephalomanes javanicum</i> (Blume) C.Presl var. <i>javanicum</i>        | EN         | EN   |
| Fern        | Hymenophyllaceae | <i>Cephalomanes singaporianum</i> Bosch                                    | VU         | CR   |
| Fern        | Hymenophyllaceae | <i>Crepidomanes christii</i> (Copel.) Copel.                               | NEx        | NEx  |
| Fern        | Hymenophyllaceae | <i>Crepidomanes humile</i> (G.Forst.) Bosch                                | EN         | NEx  |
| Fern        | Hymenophyllaceae | <i>Crepidomanes minutum</i> (Blume) K.Iwats.                               | NEx        | NEx  |
| Fern        | Hymenophyllaceae | <i>Didymoglossum bimarginatum</i> (Bosch) Ebihara & K.Iwats.               | EN         | EN   |
| Fern        | Hymenophyllaceae | <i>Didymoglossum motleyi</i> (Bosch) Ebihara & K.Iwats.                    | EN         | EN   |
| Fern        | Hymenophyllaceae | <i>Didymoglossum sublimbatum</i> (Müll.Berol.) Ebihara & K.Iwats.          | EN         | EN   |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum acanthoides</i> (Bosch) Rosenst.                          | EN         | NEx  |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum denticulatum</i> Sw.                                      | EN         | NEx  |

| Major Group | Family           | Taxon Name                                                 | RDB2       | RDB3 |
|-------------|------------------|------------------------------------------------------------|------------|------|
| Fern        | Hymenophyllaceae | <i>Hymenophyllum digitatum</i> (Sw.) Fosberg               | Not Listed | NEx  |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum holochilum</i> (Bosch) C.Chr.             | EN         | NEx  |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum pallidum</i> (Blume) Ebihara & K.Iwats.   | NEx        | NEx  |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum polyanthos</i> (Sw.) Sw.                  | NEx        | NEx  |
| Fern        | Hymenophyllaceae | <i>Hymenophyllum serrulatum</i> (C.Presl) C.Chr.           | EN         | NEx  |
| Fern        | Lindsaeaceae     | <i>Lindsaea borneensis</i> Hook.                           | NEx        | NEx  |
| Fern        | Lindsaeaceae     | <i>Lindsaea cultrata</i> (Willd.) Sw.                      | EN         | EN   |
| Fern        | Lindsaeaceae     | <i>Lindsaea divergens</i> Hook. & Grev.                    | NEx        | CR   |
| Fern        | Lindsaeaceae     | <i>Lindsaea doryphora</i> K.U.Kramer                       | EN         | EN   |
| Fern        | Lindsaeaceae     | <i>Lindsaea ensifolia</i> Sw. var. <i>ensifolia</i>        | Not Listed | LC   |
| Fern        | Lindsaeaceae     | <i>Lindsaea heterophylla</i> Dryand.                       | NEx        | CR   |
| Fern        | Lindsaeaceae     | <i>Lindsaea orbiculata</i> (Lam.) Mett.                    | NEx        | CR   |
| Fern        | Lindsaeaceae     | <i>Lindsaea ovata</i> J.Sm.                                | NEx        | NEx  |
| Fern        | Lindsaeaceae     | <i>Lindsaea parallelogramma</i> Alderw.                    | NEx        | NEx  |
| Fern        | Lindsaeaceae     | <i>Lindsaea parasitica</i> (Roxb.) Wall. ex Hieron.        | VU         | EN   |
| Fern        | Lindsaeaceae     | <i>Lindsaea pectinata</i> Blume                            | NEx        | CR   |
| Fern        | Lindsaeaceae     | <i>Lindsaea walkerae</i> Hook.                             | NEx        | NEx  |
| Fern        | Lindsaeaceae     | <i>Tapeinidium pinnatum</i> (Cav.) C.Chr.                  | VU         | NEx  |
| Fern        | Lomariopsidaceae | <i>Lomariopsis lineata</i> (C.Presl) Holttum               | CR         | EN   |
| Fern        | Lygodiaceae      | <i>Lygodium flexuosum</i> (L.) Sw.                         | Not Listed | LC   |
| Fern        | Lygodiaceae      | <i>Lygodium longifolium</i> (Willd.) Sw.                   | VU         | LC   |
| Fern        | Lygodiaceae      | <i>Lygodium microphyllum</i> (Cav.) R.Br.                  | Not Listed | LC   |
| Fern        | Lygodiaceae      | <i>Lygodium salicifolium</i> C.Presl                       | Not Listed | VU   |
| Fern        | Marattiaceae     | <i>Angiopteris evecta</i> (G.Forst.) Hoffm.                | VU         | VU   |
| Fern        | Nephrolepidaceae | <i>Nephrolepis acutifolia</i> (Desv.) Christ               | EN         | EN   |
| Fern        | Nephrolepidaceae | <i>Nephrolepis biserrata</i> (Sw.) Schott                  | Not Listed | LC   |
| Fern        | Nephrolepidaceae | <i>Nephrolepis brownii</i> (Desv.) Hovenkamp & Miyam.      | Not Listed | DD   |
| Fern        | Nephrolepidaceae | <i>Nephrolepis radicans</i> (Burm.f.) Kuhn                 | Not Listed | NEx  |
| Fern        | Ophioglossaceae  | <i>Helminthostachys zeylanica</i> (L.) Hook.               | Not Listed | CR   |
| Fern        | Ophioglossaceae  | <i>Ophioglossum nudicaule</i> L.f.                         | Not Listed | DD   |
| Fern        | Ophioglossaceae  | <i>Ophioglossum pendulum</i> L.                            | CR         | CR   |
| Fern        | Ophioglossaceae  | <i>Ophioglossum reticulatum</i> L.                         | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Ctenopterella blechnoides</i> (Grev.) Parris            | NEx        | NEx  |
| Fern        | Polypodiaceae    | <i>Drynaria quercifolia</i> (L.) J.Sm.                     | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Drynaria sparsisora</i> (Desv.) T.Moore                 | Not Listed | VU   |
| Fern        | Polypodiaceae    | <i>Drynaria speciosa</i> (Blume) Christenh.                | NEx        | NEx  |
| Fern        | Polypodiaceae    | <i>Goniophlebium percussum</i> (Cav.) W.H.Wagner & Grether | VU         | VU   |
| Fern        | Polypodiaceae    | <i>Lecanopteris crustacea</i> Copel.                       | VU         | NEx  |
| Fern        | Polypodiaceae    | <i>Lecanopteris sinuosa</i> (Wall. ex Hook.) Copel.        | Not Listed | EN   |
| Fern        | Polypodiaceae    | <i>Microsorium membranifolium</i> (R.Br.) Ching            | Not Listed | NEx  |
| Fern        | Polypodiaceae    | <i>Microsorium punctatum</i> (L.) Copel.                   | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Microsorium rubidum</i> (Kunze) Copel.                  | EN         | DD   |
| Fern        | Polypodiaceae    | <i>Microsorium scolopendria</i> (Burm.f.) Copel.           | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Paragramma longifolia</i> (Blume) T.Moore               | EN         | NEx  |
| Fern        | Polypodiaceae    | <i>Platyterium coronarium</i> (J.Koenig) Desv.             | Not Listed | EN   |
| Fern        | Polypodiaceae    | <i>Platyterium ridleyi</i> Christ                          | NEx        | NEx  |
| Fern        | Polypodiaceae    | <i>Pyrrosia angustata</i> (Sw.) Ching                      | VU         | EN   |



| Major Group | Family           | Taxon Name                                                      | RDB2       | RDB3 |
|-------------|------------------|-----------------------------------------------------------------|------------|------|
| Fern        | Polypodiaceae    | <i>Pyrrosia lanceolata</i> (L.) Farw.                           | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Pyrrosia longifolia</i> (Burm.f.) C.V.Morton                 | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Pyrrosia piloselloides</i> (L.) M.G.Price                    | Not Listed | LC   |
| Fern        | Polypodiaceae    | <i>Selliguea lateritia</i> (Baker) Hovenkamp                    | NEx        | NEx  |
| Fern        | Polypodiaceae    | <i>Selliguea stenophylla</i> (Blume) Parris                     | Not Listed | NEx  |
| Fern        | Polypodiaceae    | <i>Selliguea taeniata</i> (Sw.) Parris                          | Not Listed | NEx  |
| Fern        | Psilotaceae      | <i>Psilotum complanatum</i> Sw.                                 | NEx        | NEx  |
| Fern        | Psilotaceae      | <i>Psilotum nudum</i> (L.) P.Beauv.                             | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Acrostichum aureum</i> L.                                    | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Acrostichum speciosum</i> Willd.                             | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Adiantum flabellulatum</i> L.                                | EN         | NEx  |
| Fern        | Pteridaceae      | <i>Adiantum stenochlamys</i> Baker                              | NEx        | NEx  |
| Fern        | Pteridaceae      | <i>Antrophyum callifolium</i> Blume                             | CR         | CR   |
| Fern        | Pteridaceae      | <i>Cheilanthes tenuifolia</i> (Burm.f.) Sw.                     | VU         | VU   |
| Fern        | Pteridaceae      | <i>Haplopteris dareicarpa</i> (Hook.) S.Linds. & C.W.Chen       | NEx        | NEx  |
| Fern        | Pteridaceae      | <i>Haplopteris elongata</i> (Sw.) E.H.Crane                     | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Haplopteris ensiformis</i> (Sw.) E.H.Crane                   | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Haplopteris sessilifrons</i> (Miyam. & H.Ohba) S.Linds.      | Not Listed | NEx  |
| Fern        | Pteridaceae      | <i>Pteris mertensioides</i> Willd.                              | EN         | NEx  |
| Fern        | Pteridaceae      | <i>Syngamma wallichii</i> (Hook.) Bedd.                         | EN         | EN   |
| Fern        | Pteridaceae      | <i>Taenitis blechnoides</i> (Willd.) Sw.                        | Not Listed | LC   |
| Fern        | Pteridaceae      | <i>Taenitis interrupta</i> Hook. & Grev.                        | Not Listed | DD   |
| Fern        | Pteridaceae      | <i>Vaginularia trichoidea</i> Fée                               | NEx        | NEx  |
| Fern        | Schizaeaceae     | <i>Actinostachys digitata</i> (L.) Wall.                        | EN         | EN   |
| Fern        | Schizaeaceae     | <i>Actinostachys wagneri</i> (Selling) C.F.Reed                 | NEx        | NEx  |
| Fern        | Schizaeaceae     | <i>Schizaea dichotoma</i> (L.) Sm.                              | EN         | EN   |
| Fern        | Tectariaceae     | <i>Tectaria angulata</i> (Willd.) Copel.                        | EN         | NEx  |
| Fern        | Tectariaceae     | <i>Tectaria barberi</i> (Hook.) Copel.                          | Not Listed | LC   |
| Fern        | Tectariaceae     | <i>Tectaria grandidentata</i> (Ces.) Holttum                    | EN         | NEx  |
| Fern        | Tectariaceae     | <i>Tectaria multicaudata</i> (C.B.Clarke) Ching                 | EN         | CR   |
| Fern        | Tectariaceae     | <i>Tectaria sagenioides</i> (Mett.) Christenh.                  | EN         | EN   |
| Fern        | Tectariaceae     | <i>Tectaria semipinnata</i> (Roxb.) C.V.Morton                  | EN         | EN   |
| Fern        | Tectariaceae     | <i>Tectaria singaporiana</i> (Wall. ex Hook. & Grev.) Copel.    | EN         | LC   |
| Fern        | Tectariaceae     | <i>Tectaria vasta</i> (Blume) Copel.                            | EN         | CR   |
| Fern        | Thelypteridaceae | <i>Abacopteris repanda</i> (Fée) S.E.Fawc. & A.R.Sm.            | Not Listed | EN   |
| Fern        | Thelypteridaceae | <i>Amblovenatum decorum</i> (Domin) S.Linds. & D.J.Middleton    | Not Listed | CR   |
| Fern        | Thelypteridaceae | <i>Amblovenatum opulentum</i> (Kaulf.) J.P.Roux                 | EN         | LC   |
| Fern        | Thelypteridaceae | <i>Christella arida</i> (D.Don) Holttum                         | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Christella dentata</i> (Forssk.) Brownsey & Jermy            | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Christella parasitica</i> (L.) H.Lév.                        | Not Listed | VU   |
| Fern        | Thelypteridaceae | <i>Christella subpubescens</i> (Blume) Holttum                  | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Cyclosorus interruptus</i> (Willd.) H.Ito                    | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Grypothrix triphylla</i> (Sw.) S.E.Fawc. & A.R.Sm.           | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Mesophlebion chlamydophorum</i> (Rosenst. ex C.Chr.) Holttum | VU         | VU   |
| Fern        | Thelypteridaceae | <i>Mesophlebion motleyanum</i> (Hook.) Holttum                  | VU         | CR   |

| Major Group | Family           | Taxon Name                                              | RDB2       | RDB3 |
|-------------|------------------|---------------------------------------------------------|------------|------|
| Fern        | Thelypteridaceae | <i>Metathelypteris dayi</i> (Bedd.) Holttum             | NEx        | DD   |
| Fern        | Thelypteridaceae | <i>Pronephrium menisciocarpon</i> (Blume) Holttum       | EN         | NEx  |
| Fern        | Thelypteridaceae | <i>Reholttumia truncata</i> (Poir.) S.E.Fawc. & A.R.Sm. | VU         | CR   |
| Fern        | Thelypteridaceae | <i>Sphaerostephanos heterocarpos</i> (Blume)            | Not Listed | LC   |
| Fern        | Thelypteridaceae | <i>Sphaerostephanos polycarpus</i> (Blume) Copel.       | VU         | LC   |
| Fern        | Thelypteridaceae | <i>Strophocaulon unitum</i> (L.) S.E.Fawc. & A.R.Sm.    | Not Listed | VU   |
| Gymnosperm  | Cycadaceae       | <i>Cycas edentata</i> de Laub.                          | CR         | CR   |
| Gymnosperm  | Gnetaceae        | <i>Gnetum gnemon</i> L. var. <i>gnemon</i>              | CR         | CR   |
| Gymnosperm  | Gnetaceae        | <i>Gnetum gnemonoides</i> Brongn.                       | CR         | CR   |
| Gymnosperm  | Gnetaceae        | <i>Gnetum latifolium</i> Blume                          | CR         | CR   |
| Gymnosperm  | Gnetaceae        | <i>Gnetum macrostachyum</i> Hook.f.                     | CR         | CR   |
| Gymnosperm  | Gnetaceae        | <i>Gnetum microcarpum</i> Blume                         | EN         | EN   |
| Gymnosperm  | Podocarpaceae    | <i>Nageia wallichiana</i> (C.Presl) Kuntze              | CR         | CR   |
| Gymnosperm  | Podocarpaceae    | <i>Podocarpus polystachyus</i> R.Br. ex Endl.           | CR         | EN   |
| Angiosperm  | Acanthaceae      | <i>Acanthus ebracteatus</i> Vahl                        | VU         | VU   |
| Angiosperm  | Acanthaceae      | <i>Acanthus ilicifolius</i> L.                          | Not Listed | EN   |
| Angiosperm  | Acanthaceae      | <i>Acanthus volubilis</i> Nees                          | VU         | EN   |
| Angiosperm  | Acanthaceae      | <i>Avicennia alba</i> Blume                             | Not Listed | LC   |
| Angiosperm  | Acanthaceae      | <i>Avicennia marina</i> (Forssk.) Vierh.                | CR         | CR   |
| Angiosperm  | Acanthaceae      | <i>Avicennia officinalis</i> L.                         | Not Listed | LC   |
| Angiosperm  | Acanthaceae      | <i>Avicennia rumphiana</i> Hallier f.                   | Not Listed | LC   |
| Angiosperm  | Acanthaceae      | <i>Hygrophila ringens</i> (L.) R.Br. ex Steud.          | Not Listed | LC   |
| Angiosperm  | Acanthaceae      | <i>Justicia quadrifaria</i> (Nees) T.Anderson           | NEx        | NEx  |
| Angiosperm  | Acanthaceae      | <i>Justicia vasculosa</i> (Nees) T.Anderson             | CR         | CR   |
| Angiosperm  | Acanthaceae      | <i>Pseuderanthemum kingii</i> (C.B.Clarke) Ridl.        | NEx        | NEx  |
| Angiosperm  | Acanthaceae      | <i>Ptyssiglottis kunthiana</i> (Nees) B.Hansen          | Not Listed | EN   |
| Angiosperm  | Acanthaceae      | <i>Staurogyne griffithiana</i> (Nees) Kuntze            | NEx        | CR   |
| Angiosperm  | Acanthaceae      | <i>Staurogyne kingiana</i> C.B.Clarke                   | CR         | CR   |
| Angiosperm  | Acanthaceae      | <i>Staurogyne setigera</i> (Nees) Kuntze                | CR         | CR   |
| Angiosperm  | Acanthaceae      | <i>Strobilanthes brunelloides</i> (Lam.) J.R.I.Wood     | Not Listed | EN   |
| Angiosperm  | Acanthaceae      | <i>Strobilanthes collina</i> Nees                       | Not Listed | DD   |
| Angiosperm  | Acanthaceae      | <i>Strobilanthes echinata</i> Nees                      | Not Listed | NEx  |
| Angiosperm  | Acanthaceae      | <i>Strobilanthes palawanensis</i> Elmer                 | CR         | CR   |
| Angiosperm  | Acanthaceae      | <i>Thunbergia dasyclamys</i> Bremek.                    | EX         | NEx  |
| Angiosperm  | Achariaceae      | <i>Ryparosa fasciculata</i> King                        | CR         | CR   |
| Angiosperm  | Achariaceae      | <i>Ryparosa hullettii</i> King                          | NEx        | CR   |
| Angiosperm  | Actinidiaceae    | <i>Saurauia pentapetala</i> (Jack) Hoogland             | NEx        | CR   |
| Angiosperm  | Adoxaceae        | <i>Viburnum sambucinum</i> Reinw. ex Blume              | NEx        | NEx  |
| Angiosperm  | Aizoaceae        | <i>Sesuvium portulacastrum</i> (L.) L.                  | Not Listed | LC   |
| Angiosperm  | Amaranthaceae    | <i>Allmania nodiflora</i> (L.) R.Br. ex Wight           | Not Listed | LC   |
| Angiosperm  | Amaranthaceae    | <i>Cyathula prostrata</i> (L.) Blume                    | Not Listed | LC   |
| Angiosperm  | Amaryllidaceae   | <i>Crinum asiaticum</i> L.                              | CR         | CR   |
| Angiosperm  | Anacardiaceae    | <i>Bouea oppositifolia</i> (Roxb.) Meisn.               | VU         | CR   |
| Angiosperm  | Anacardiaceae    | <i>Buchanania arborescens</i> (Blume) Blume             | Not Listed | LC   |
| Angiosperm  | Anacardiaceae    | <i>Buchanania sessifolia</i> Blume                      | CR         | EN   |
| Angiosperm  | Anacardiaceae    | <i>Camposperma auriculatum</i> (Blume) Hook.f.          | Not Listed | LC   |
| Angiosperm  | Anacardiaceae    | <i>Camposperma squamatum</i> Ridl.                      | Not Listed | VU   |
| Angiosperm  | Anacardiaceae    | <i>Dracontomelon dao</i> (Blanco) Merr. & Rolfe         | Not Listed | CR   |

| Major Group | Family            | Taxon Name                                                                    | RDB2       | RDB3 |
|-------------|-------------------|-------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Anacardiaceae     | <i>Gluta malayana</i> (Corner) Ding Hou                                       | Not Listed | CR   |
| Angiosperm  | Anacardiaceae     | <i>Gluta wallichii</i> (Hook.f.) Ding Hou                                     | Not Listed | EN   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera foetida</i> Lour.                                                | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera gracilipes</i> Hook.f.                                           | Not Listed | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera griffithii</i> Hook.f.                                           | EN         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera laurina</i> Blume                                                | NEx        | NEx  |
| Angiosperm  | Anacardiaceae     | <i>Mangifera magnifica</i> Kochummen                                          | CR         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera paludosa</i> Kosterm. ex S.K.Ganesan                             | NEx        | NEx  |
| Angiosperm  | Anacardiaceae     | <i>Mangifera pentandra</i> Hook.f.                                            | Not Listed | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera quadrifida</i> Jack                                              | Not Listed | CR   |
| Angiosperm  | Anacardiaceae     | <i>Mangifera subsessilifolia</i> Kosterm.                                     | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Melanochyla angustifolia</i> Hook.f.                                       | Not Listed | CR   |
| Angiosperm  | Anacardiaceae     | <i>Melanochyla auriculata</i> Hook.f.                                         | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Melanochyla bracteata</i> King                                             | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Melanochyla caesia</i> (Blume) Ding Hou                                    | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Parishia insignis</i> Hook.f.                                              | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Parishia maingayi</i> Hook.f. var. <i>maingayi</i>                         | VU         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Parishia paucijuga</i> Engl.                                               | EN         | CR   |
| Angiosperm  | Anacardiaceae     | <i>Semecarpus heterophyllus</i> Blume                                         | Not Listed | NEx  |
| Angiosperm  | Anacardiaceae     | <i>Swintonia schwenkii</i> (Teijsm. & Binn.) Teijsm. & Binn.                  | VU         | CR   |
| Angiosperm  | Ancistrocladaceae | <i>Ancistrocladus tectorius</i> (Lour.) Merr.                                 | CR         | CR   |
| Angiosperm  | Anisophylleaceae  | <i>Anisophyllea disticha</i> (Jack) Baill.                                    | Not Listed | LC   |
| Angiosperm  | Anisophylleaceae  | <i>Anisophyllea griffithii</i> Oliv.                                          | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Alphonsea johorensis</i> J.Sinclair                                        | Not Listed | EN   |
| Angiosperm  | Annonaceae        | <i>Alphonsea maingayi</i> Hook.f. & Thomson                                   | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Anaxagorea javanica</i> Blume var. <i>javanica</i>                         | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Artabotrys costatus</i> King                                               | VU         | EN   |
| Angiosperm  | Annonaceae        | <i>Artabotrys crassifolius</i> Hook.f. & Thomson                              | CR         | EN   |
| Angiosperm  | Annonaceae        | <i>Artabotrys maingayi</i> Hook.f. & Thomson                                  | CR         | VU   |
| Angiosperm  | Annonaceae        | <i>Artabotrys scortechnii</i> King                                            | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Artabotrys suaveolens</i> (Blume) Blume                                    | EN         | LC   |
| Angiosperm  | Annonaceae        | <i>Artabotrys wrayi</i> King                                                  | EN         | DD   |
| Angiosperm  | Annonaceae        | <i>Cyathocalyx sumatranus</i> Scheff.                                         | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Dasymaschalon dasymaschalum</i> (Blume) I.M.Turner                         | CR         | EN   |
| Angiosperm  | Annonaceae        | <i>Dasymaschalon wallichii</i> (Hook.f. & Thomson) Jing Wang & R.M.K.Saunders | Not Listed | EN   |
| Angiosperm  | Annonaceae        | <i>Dendrokingstonia nervosa</i> (Hook.f. & Thomson) Rauschert                 | Not Listed | CR   |
| Angiosperm  | Annonaceae        | <i>Desmos dumosus</i> (Roxb.) Saff.                                           | CR         | CR   |
| Angiosperm  | Annonaceae        | <i>Desmos dunalii</i> (Wall. ex Hook.f. & Thomson) Saff.                      | Not Listed | CR   |
| Angiosperm  | Annonaceae        | <i>Drepananthus pruniferus</i> Maingay ex Hook.f. & Thomson                   | Not Listed | CR   |
| Angiosperm  | Annonaceae        | <i>Drepananthus ramuliflorus</i> Maingay ex Hook.f. & Thomson                 | Not Listed | VU   |
| Angiosperm  | Annonaceae        | <i>Drepananthus ridleyi</i> (King) Survesw. & R.M.K.Saunders                  | VU         | EN   |
| Angiosperm  | Annonaceae        | <i>Fissistigma fulgens</i> (Hook.f. & Thomson) Merr.                          | VU         | VU   |

| Major Group | Family     | Taxon Name                                                                             | RDB2       | RDB3 |
|-------------|------------|----------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Annonaceae | <i>Fissistigma lanuginosum</i> (Hook.f. & Thomson) Merr.                               | EN         | EN   |
| Angiosperm  | Annonaceae | <i>Fissistigma manubriatum</i> (Hook.f. & Thomson) Merr.                               | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Fissistigma ovoideum</i> (King) Merr.                                               | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Friesodielsia biglandulosa</i> (Blume) Steenis                                      | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Friesodielsia borneensis</i> (Miq.) Steenis var. <i>sumatrana</i> (Miq.) I.M.Turner | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Friesodielsia calycina</i> (King) Steenis                                           | VU         | NEx  |
| Angiosperm  | Annonaceae | <i>Friesodielsia glauca</i> (Hook.f. & Thomson) Steenis                                | NEx        | EN   |
| Angiosperm  | Annonaceae | <i>Friesodielsia latifolia</i> (Hook.f. & Thomson) Steenis                             | Not Listed | LC   |
| Angiosperm  | Annonaceae | <i>Goniotalamus macrophyllus</i> (Blume) Hook.f. & Thomson                             | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Goniotalamus malayanus</i> Hook.f. & Thomson                                        | VU         | CR   |
| Angiosperm  | Annonaceae | <i>Goniotalamus ridleyi</i> King                                                       | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Goniotalamus tapis</i> Miq.                                                         | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Huberantha jenkinsii</i> (Hook.f. & Thomson) Chaowasku                              | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Huberantha rumphii</i> (Blume ex Hensch.) Chaowasku                                 | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Maasia glauca</i> (Hassk.) Mols et al.                                              | EN         | CR   |
| Angiosperm  | Annonaceae | <i>Maasia hypoleuca</i> (Hook.f. & Thomson) Mols et al.                                | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Maasia sumatrana</i> (Miq.) Mols et al.                                             | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Meiogyne virgata</i> (Blume) Miq.                                                   | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Mezzettia parviflora</i> Becc.                                                      | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Miliusa eupoda</i> (Miq.) I.M.Turner                                                | NEx        | NEx  |
| Angiosperm  | Annonaceae | <i>Mitrella kentii</i> (Blume) Miq.                                                    | Not Listed | VU   |
| Angiosperm  | Annonaceae | <i>Monocarpia maingayi</i> (Hook.f. & Thomson) I.M.Turner                              | VU         | CR   |
| Angiosperm  | Annonaceae | <i>Monoon anomalum</i> (Becc.) B.Xue & R.M.K.Saunders                                  | NEx        | NEx  |
| Angiosperm  | Annonaceae | <i>Monoon borneense</i> (H.Okada) B.Xue & R.M.K.Saunders                               | EN         | EN   |
| Angiosperm  | Annonaceae | <i>Monoon hookerianum</i> (King) B.Xue & R.M.K.Saunders                                | CR         | NEx  |
| Angiosperm  | Annonaceae | <i>Monoon lateriflorum</i> (Blume) Miq.                                                | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Monoon sclerophyllum</i> (Hook.f. & Thomson) B.Xue & R.M.K.Saunders                 | CR         | CR   |
| Angiosperm  | Annonaceae | <i>Orophea hastata</i> King                                                            | NEx        | CR   |
| Angiosperm  | Annonaceae | <i>Phaeanthus intermedius</i> (P.Parm.) I.M.Turner & Veldkamp                          | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Phaeanthus splendens</i> Miq.                                                       | Not Listed | CR   |
| Angiosperm  | Annonaceae | <i>Polyalthia angustissima</i> Ridl.                                                   | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Polyalthia cauliflora</i> Hook.f. & Thomson                                         | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Popowia fusca</i> King                                                              | VU         | VU   |
| Angiosperm  | Annonaceae | <i>Popowia pisocarpa</i> (Blume) Endl. ex Walp.                                        | VU         | EN   |
| Angiosperm  | Annonaceae | <i>Popowia tomentosa</i> Maingay ex Hook.f. & Thomson var. <i>tomentosa</i>            | EN         | CR   |

| Major Group | Family      | Taxon Name                                                          | RDB2       | RDB3 |
|-------------|-------------|---------------------------------------------------------------------|------------|------|
| Angiosperm  | Annonaceae  | <i>Pyramidanthe prismatica</i> (Hook.f. & Thomson) Merr.            | EN         | EN   |
| Angiosperm  | Annonaceae  | <i>Trivalvaria macrophylla</i> (Blume) Miq. var. <i>macrophylla</i> | NEx        | NEx  |
| Angiosperm  | Annonaceae  | <i>Uvaria blumei</i> (Boerl.) I.M.Turner                            | Not Listed | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria clementis</i> (Merr.) Attan. et al.                       | NEx        | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria cuneifolia</i> (Hook.f. & Thomson) L.L.Zhou et al.        | CR         | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria curtisii</i> King                                         | NEx        | EN   |
| Angiosperm  | Annonaceae  | <i>Uvaria excelsa</i> (Hook.f. & Thomson) King                      | Not Listed | NEx  |
| Angiosperm  | Annonaceae  | <i>Uvaria grandiflora</i> Roxb. ex Hornem.                          | VU         | VU   |
| Angiosperm  | Annonaceae  | <i>Uvaria griffithii</i> L.L.Zhou et al.                            | VU         | VU   |
| Angiosperm  | Annonaceae  | <i>Uvaria hirsuta</i> Jack                                          | VU         | VU   |
| Angiosperm  | Annonaceae  | <i>Uvaria leptopoda</i> (King) J.Sinclair                           | CR         | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria littoralis</i> (Blume) Blume                              | Not Listed | LC   |
| Angiosperm  | Annonaceae  | <i>Uvaria lobbiana</i> Hook.f. & Thomson                            | NEx        | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria micrantha</i> (A.DC.) Hook.f. & Thomson                   | Not Listed | CR   |
| Angiosperm  | Annonaceae  | <i>Uvaria pauciovulata</i> Hook.f. & Thomson                        | CR         | CR   |
| Angiosperm  | Annonaceae  | <i>Xylopia caudata</i> Hook.f. & Thomson var. <i>caudata</i>        | VU         | EN   |
| Angiosperm  | Annonaceae  | <i>Xylopia dicarpa</i> Hook.f. & Thomson                            | Not Listed | CR   |
| Angiosperm  | Annonaceae  | <i>Xylopia ferruginea</i> (Hook.f. & Thomson) Baill.                | Not Listed | EN   |
| Angiosperm  | Annonaceae  | <i>Xylopia fusca</i> Maingay ex Hook.f. & Thomson                   | CR         | CR   |
| Angiosperm  | Annonaceae  | <i>Xylopia magna</i> Maingay ex Hook.f. & Thomson                   | CR         | CR   |
| Angiosperm  | Annonaceae  | <i>Xylopia malayana</i> Hook.f. & Thomson                           | Not Listed | VU   |
| Angiosperm  | Annonaceae  | <i>Xylopia oxyantha</i> (Hook.f. & Thomson) Hook.f. & Thomson       | Not Listed | CR   |
| Angiosperm  | Apiaceae    | <i>Centella asiatica</i> (L.) Urb.                                  | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Alstonia angustifolia</i> Wall. ex A.DC.                         | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Alstonia angustiloba</i> Miq.                                    | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Alstonia pneumatophora</i> Backer ex Den Berger                  | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Alstonia spatulata</i> Blume                                     | VU         | EN   |
| Angiosperm  | Apocynaceae | <i>Alyxia reinwardtii</i> Blume                                     | NEx        | LC   |
| Angiosperm  | Apocynaceae | <i>Anodendron candolleianum</i> Wight                               | CR         | DD   |
| Angiosperm  | Apocynaceae | <i>Anodendron parviflorum</i> (Roxb.) I.M.Turner                    | Not Listed | DD   |
| Angiosperm  | Apocynaceae | <i>Cerbera manghas</i> L.                                           | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Cerbera odollam</i> Gaertn.                                      | VU         | VU   |
| Angiosperm  | Apocynaceae | <i>Chonemorpha fragrans</i> (Moon) Alston                           | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Cynanchum ovalifolium</i> Wight                                  | VU         | CR   |
| Angiosperm  | Apocynaceae | <i>Dischidia acutifolia</i> Maingay ex Hook.f.                      | Not Listed | CR   |
| Angiosperm  | Apocynaceae | <i>Dischidia albida</i> Griff.                                      | CR         | NEx  |
| Angiosperm  | Apocynaceae | <i>Dischidia albiflora</i> Griff.                                   | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Dischidia bengalensis</i> Colebr.                                | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Dischidia cochleata</i> Blume                                    | CR         | NEx  |
| Angiosperm  | Apocynaceae | <i>Dischidia complex</i> Griff.                                     | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Dischidia hirsuta</i> (Blume) Decne.                             | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Dischidia major</i> (Vahl) Merr.                                 | NEx        | LC   |
| Angiosperm  | Apocynaceae | <i>Dischidia nummularia</i> R.Br.                                   | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Dyera costulata</i> (Miq.) Hook.f.                               | Not Listed | VU   |
| Angiosperm  | Apocynaceae | <i>Epigynum ridleyi</i> King & Gamble                               | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Finlaysonia obovata</i> Wall.                                    | CR         | CR   |

| Major Group | Family      | Taxon Name                                                                              | RDB2       | RDB3 |
|-------------|-------------|-----------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Apocynaceae | <i>Gongreos wallichii</i> (Wight) Rodda et al.                                          | Not Listed | CR   |
| Angiosperm  | Apocynaceae | <i>Gymnanthera oblonga</i> (Burm.f.) P.S.Green                                          | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya campanulata</i> Blume                                                           | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Hoya caudata</i> Hook.f.                                                             | Not Listed | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya coriacea</i> Blume                                                              | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya coronaria</i> Blume                                                             | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya diversifolia</i> Blume                                                          | CR         | VU   |
| Angiosperm  | Apocynaceae | <i>Hoya finlaysonii</i> Wight                                                           | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Hoya lacunosa</i> Blume                                                              | EN         | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya latifolia</i> G.Don                                                             | EN         | LC   |
| Angiosperm  | Apocynaceae | <i>Hoya obtusifolia</i> Wight                                                           | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya revoluta</i> Wight ex Hook.f.                                                   | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Hoya scortechinii</i> King & Gamble                                                  | Not Listed | CR   |
| Angiosperm  | Apocynaceae | <i>Hoya verticillata</i> (Vahl) G.Don                                                   | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Hoya wallichii</i> (Wight) C.M.Burton                                                | Not Listed | NEx  |
| Angiosperm  | Apocynaceae | <i>Jasminanthes maingayi</i> (Hook.f.) Rodda                                            | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Kibatalia maingayi</i> (Hook.f.) Woodson                                             | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Kopsia singaporensis</i> Ridl.                                                       | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Leuconotis griffithii</i> Hook.f.                                                    | VU         | LC   |
| Angiosperm  | Apocynaceae | <i>Melodinus orientalis</i> Blume                                                       | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Micrechites lancifolius</i> (Hook.f.) D.J.Middleton & Livsh.                         | Not Listed | CR   |
| Angiosperm  | Apocynaceae | <i>Micrechites serpyllifolius</i> (Blume) Kosterm.                                      | CR         | EN   |
| Angiosperm  | Apocynaceae | <i>Ochrosia oppositifolia</i> (Lam.) K.Schum.                                           | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Parsonsia alboflavescens</i> (Dennst.) Mabb.                                         | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Parsonsia curvisepala</i> K.Schum.                                                   | Not Listed | NEx  |
| Angiosperm  | Apocynaceae | <i>Sarcolobus globosus</i> Wall.                                                        | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Secamone griffithii</i> (Decne.) Klack.                                              | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Secamone maingayi</i> (Hook.f.) Rodda                                                | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Strophanthus caudatus</i> (L.) Kurz                                                  | CR         | EN   |
| Angiosperm  | Apocynaceae | <i>Strophanthus singaporianus</i> (Wall. ex G.Don) Gilg                                 | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Tabernaemontana corymbosa</i> Roxb. ex Wall.                                         | EN         | EN   |
| Angiosperm  | Apocynaceae | <i>Tabernaemontana pauciflora</i> Blume                                                 | VU         | EN   |
| Angiosperm  | Apocynaceae | <i>Urceola brachysepala</i> Hook.f.                                                     | EN         | LC   |
| Angiosperm  | Apocynaceae | <i>Urceola elastica</i> Roxb.                                                           | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Urceola laevigata</i> (Juss.) D.J.Middleton & Livsh.                                 | CR         | NEx  |
| Angiosperm  | Apocynaceae | <i>Urceola lucida</i> (A.DC.) Benth. & Hook.f. ex Kurz                                  | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Urceola polyneura</i> (Hook.f.) D.J.Middleton & Livsh.                               | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Urceola torulosa</i> Hook.f.                                                         | EN         | LC   |
| Angiosperm  | Apocynaceae | <i>Vincetoxicum flexuosum</i> (R.Br.) Kuntze var. <i>tenuis</i> (Blume) Schneidt et al. | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Vincetoxicum globiferum</i> (Hook.f.) Kuntze                                         | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Willughbeia angustifolia</i> (Miq.) Markgr.                                          | NEx        | NEx  |
| Angiosperm  | Apocynaceae | <i>Willughbeia coriacea</i> Wall.                                                       | Not Listed | LC   |
| Angiosperm  | Apocynaceae | <i>Willughbeia edulis</i> Roxb.                                                         | NEx        | CR   |
| Angiosperm  | Apocynaceae | <i>Willughbeia flavescens</i> Dyer ex Hook.f.                                           | CR         | CR   |
| Angiosperm  | Apocynaceae | <i>Willughbeia tenuiflora</i> Dyer ex Hook.f.                                           | CR         | CR   |



| Major Group | Family        | Taxon Name                                                   | RDB2       | RDB3 |
|-------------|---------------|--------------------------------------------------------------|------------|------|
| Angiosperm  | Apocynaceae   | <i>Wrightia laevis</i> Hook.f.                               | CR         | CR   |
| Angiosperm  | Aquifoliaceae | <i>Ilex cymosa</i> Blume                                     | Not Listed | LC   |
| Angiosperm  | Aquifoliaceae | <i>Ilex macrophylla</i> Wall. ex Hook.f., nom. illeg. hom.   | VU         | CR   |
| Angiosperm  | Aquifoliaceae | <i>Ilex maingayi</i> Hook.f.                                 | EN         | NEx  |
| Angiosperm  | Aquifoliaceae | <i>Ilex nervulosa</i> (Loes.) S.Andrews                      | Not Listed | NEx  |
| Angiosperm  | Araceae       | <i>Aglaonema griffithii</i> Schott                           | NEx        | NEx  |
| Angiosperm  | Araceae       | <i>Aglaonema nebulosum</i> N.E.Br.                           | VU         | EN   |
| Angiosperm  | Araceae       | <i>Aglaonema nitidum</i> (Jack) Kunth                        | VU         | VU   |
| Angiosperm  | Araceae       | <i>Aglaonema simplex</i> Blume                               | Not Listed | VU   |
| Angiosperm  | Araceae       | <i>Alocasia longiloba</i> Miq.                               | Not Listed | LC   |
| Angiosperm  | Araceae       | <i>Amorphophallus prainii</i> Hook.f.                        | CR         | NEx  |
| Angiosperm  | Araceae       | <i>Amydrium medium</i> (Zoll. & Moritz) Nicolson             | EN         | EN   |
| Angiosperm  | Araceae       | <i>Anadendrum montanum</i> (Blume) Schott                    | VU         | VU   |
| Angiosperm  | Araceae       | <i>Cryptocoryne ciliata</i> (Roxb.) Fisch. ex Schott         | NEx        | NEx  |
| Angiosperm  | Araceae       | <i>Cryptocoryne griffithii</i> Schott                        | CR         | CR   |
| Angiosperm  | Araceae       | <i>Cyrtosperma merkusii</i> (Hassk.) Schott                  | VU         | VU   |
| Angiosperm  | Araceae       | <i>Epipremnum giganteum</i> (Roxb.) Schott                   | Not Listed | LC   |
| Angiosperm  | Araceae       | <i>Homalomena coerulescens</i> Jungh. ex Miq.                | EN         | NEx  |
| Angiosperm  | Araceae       | <i>Homalomena griffithii</i> (Schott) Hook.f.                | VU         | DD   |
| Angiosperm  | Araceae       | <i>Homalomena humilis</i> (Jack) Hook.f.                     | EN         | CR   |
| Angiosperm  | Araceae       | <i>Homalomena nathanielii</i> S.Y.Wong & P.C.Boyce           | Not Listed | CR   |
| Angiosperm  | Araceae       | <i>Homalomena pontederiifolia</i> Griff. ex Hook.f.          | Not Listed | DD   |
| Angiosperm  | Araceae       | <i>Homalomena rostrata</i> Griff.                            | EN         | NEx  |
| Angiosperm  | Araceae       | <i>Lasia spinosa</i> (L.) Thwaites                           | VU         | EN   |
| Angiosperm  | Araceae       | <i>Lemna tenera</i> Kurz                                     | NEx        | NEx  |
| Angiosperm  | Araceae       | <i>Pothos venustus</i> (Wall. ex C.DC.) A.Hay & P.C.Boyce    | VU         | CR   |
| Angiosperm  | Araceae       | <i>Rhaphidophora burkilliana</i> Ridl.                       | CR         | CR   |
| Angiosperm  | Araceae       | <i>Rhaphidophora korthalsii</i> Schott                       | VU         | VU   |
| Angiosperm  | Araceae       | <i>Rhaphidophora lobbii</i> Schott                           | VU         | VU   |
| Angiosperm  | Araceae       | <i>Rhaphidophora maingayi</i> Hook.f.                        | VU         | EN   |
| Angiosperm  | Araceae       | <i>Rhaphidophora minor</i> Hook.f.                           | VU         | VU   |
| Angiosperm  | Araceae       | <i>Rhaphidophora sylvestris</i> (Blume) Engl.                | Not Listed | CR   |
| Angiosperm  | Araceae       | <i>Schismatoglottis lowiae</i> S.Y.Wong & P.C.Boyce          | VU         | VU   |
| Angiosperm  | Araceae       | <i>Schismatoglottis pantiensis</i> S.Y.Wong et al.           | VU         | VU   |
| Angiosperm  | Araceae       | <i>Scindapsus hederaceus</i> Miq.                            | Not Listed | LC   |
| Angiosperm  | Araceae       | <i>Scindapsus lucens</i> Bogner & P.C.Boyce                  | Not Listed | CR   |
| Angiosperm  | Araceae       | <i>Scindapsus pictus</i> Hassk.                              | Not Listed | EN   |
| Angiosperm  | Araliaceae    | <i>Arthrophyllum jackianum</i> (G.Don) Frodin                | Not Listed | LC   |
| Angiosperm  | Araliaceae    | <i>Heptapleurum cephalotes</i> C.B.Clarke                    | Not Listed | NEx  |
| Angiosperm  | Araliaceae    | <i>Heptapleurum ellipticum</i> (Blume) Seem.                 | VU         | EN   |
| Angiosperm  | Araliaceae    | <i>Heptapleurum hullettii</i> King                           | CR         | CR   |
| Angiosperm  | Araliaceae    | <i>Heptapleurum lanceolatum</i> (Ridl.) Lowry & G.M.Plunkett | NEx        | NEx  |
| Angiosperm  | Araliaceae    | <i>Heptapleurum oxyphyllum</i> (Miq.) Seem.                  | NEx        | NEx  |
| Angiosperm  | Araliaceae    | <i>Heptapleurum ridleyi</i> King                             | NEx        | NEx  |
| Angiosperm  | Araliaceae    | <i>Hydrocotyle sibthorpioides</i> Lam.                       | Not Listed | LC   |
| Angiosperm  | Araliaceae    | <i>Trevesia burckii</i> Boerl.                               | CR         | NEx  |

| Major Group | Family    | Taxon Name                                                                                         | RDB2       | RDB3 |
|-------------|-----------|----------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Arecaceae | <i>Calamus crinitus</i> (Blume) Miq. subsp. <i>sabut</i> (Becc.) A.J.Hend.                         | CR         | EN   |
| Angiosperm  | Arecaceae | <i>Calamus densiflorus</i> Becc.                                                                   | NEx        | CR   |
| Angiosperm  | Arecaceae | <i>Calamus diepenhorstii</i> Miq.                                                                  | EN         | EN   |
| Angiosperm  | Arecaceae | <i>Calamus erinaceus</i> (Becc.) Becc. subsp.                                                      | VU         | LC   |
| Angiosperm  | Arecaceae | <i>Calamus gracilipes</i> Miq.                                                                     | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Calamus hirsutus</i> (Blume) Miq. subsp. <i>hirsutus</i>                                        | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Calamus insignis</i> Griff.                                                                     | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus javensis</i> Blume                                                                      | NEx        | EN   |
| Angiosperm  | Arecaceae | <i>Calamus leptopus</i> Griff.                                                                     | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus lobbianus</i> Becc.                                                                     | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus longipes</i> Griff.                                                                     | VU         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus melanochaetes</i> (Blume) Miq.                                                          | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Calamus micracanthus</i> Griff.                                                                 | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus micranthus</i> Blume                                                                    | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Calamus oblongus</i> Reinw. ex Blume subsp. <i>depressiusculus</i> (Miq. ex H.Wendl.) A.J.Hend. | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus ornatus</i> Blume                                                                       | NEx        | CR   |
| Angiosperm  | Arecaceae | <i>Calamus oxleyanus</i> Teijsm. & Binn. ex Miq.                                                   | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus periacanthus</i> (Miq.) Miq.                                                            | CR         | EN   |
| Angiosperm  | Arecaceae | <i>Calamus plicatus</i> Blume                                                                      | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Calamus ridleyanus</i> Becc.                                                                    | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Caryota mitis</i> Lour.                                                                         | Not Listed | LC   |
| Angiosperm  | Arecaceae | <i>Cyrtostachys renda</i> Blume                                                                    | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Eleiodoxa conferta</i> (Griff.) Burret                                                          | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Iguanura geonomiformis</i> Mart.                                                                | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Korthalsia echinometra</i> Becc.                                                                | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Korthalsia flagellaris</i> Miq.                                                                 | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Korthalsia laciniosa</i> (Griff.) Mart.                                                         | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Korthalsia rigida</i> Blume                                                                     | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Korthalsia rostrata</i> Blume                                                                   | EN         | EN   |
| Angiosperm  | Arecaceae | <i>Korthalsia scortechinii</i> Becc.                                                               | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Licuala ferruginea</i> Becc.                                                                    | EN         | VU   |
| Angiosperm  | Arecaceae | <i>Licuala spinosa</i> Wurm                                                                        | VU         | LC   |
| Angiosperm  | Arecaceae | <i>Licuala triphylla</i> Griff.                                                                    | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Myrialepis paradoxa</i> (Kurz) J.Dransf.                                                        | CR         | VU   |
| Angiosperm  | Arecaceae | <i>Nenga pumila</i> H.Wendl. ex Schaedtler var. <i>pachystachya</i> (Blume) Fernando               | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Nypa fruticans</i> Wurm                                                                         | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Oncosperma horridum</i> (Griff.) Scheff.                                                        | VU         | VU   |
| Angiosperm  | Arecaceae | <i>Oncosperma tigillarum</i> (Jack) Ridl.                                                          | VU         | LC   |
| Angiosperm  | Arecaceae | <i>Orania sylvicola</i> (Griff.) H.E.Moore                                                         | CR         | CR   |
| Angiosperm  | Arecaceae | <i>Pholidocarpus kingianus</i> (Becc.) Ridl.                                                       | NEx        | DD   |
| Angiosperm  | Arecaceae | <i>Pinanga auriculata</i> Becc. var. <i>leucocarpa</i>                                             | Not Listed | NEx  |
| Angiosperm  | Arecaceae | <i>Pinanga disticha</i> (Roxb.) Blume ex H.Wendl.                                                  | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Pinanga limosa</i> Ridl.                                                                        | NEx        | NEx  |
| Angiosperm  | Arecaceae | <i>Pinanga malaiana</i> (Mart.) Scheff.                                                            | NEx        | CR   |
| Angiosperm  | Arecaceae | <i>Pinanga simplicifrons</i> (Miq.) Becc.                                                          | NEx        | CR   |
| Angiosperm  | Arecaceae | <i>Pinanga singaporensis</i> Ridl.                                                                 | NEx        | NEx  |

| Major Group | Family           | Taxon Name                                                                                         | RDB2       | RDB3 |
|-------------|------------------|----------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Arecaceae        | <i>Pinanga subruminata</i> Becc.                                                                   | NEx        | NEx  |
| Angiosperm  | Arecaceae        | <i>Plectocomia elongata</i> Mart. ex Blume                                                         | VU         | LC   |
| Angiosperm  | Arecaceae        | <i>Plectocomiopsis geminiflora</i> (Griff.) Becc.                                                  | Not Listed | CR   |
| Angiosperm  | Arecaceae        | <i>Rhopaloblaste singaporensis</i> (Becc.) Benth. & Hook.f.                                        | CR         | CR   |
| Angiosperm  | Arecaceae        | <i>Salacca affinis</i> Griff.                                                                      | NEx        | CR   |
| Angiosperm  | Aristolochiaceae | <i>Aristolochia jackii</i> Steud.                                                                  | NEx        | NEx  |
| Angiosperm  | Aristolochiaceae | <i>Thottea grandiflora</i> Rottb.                                                                  | VU         | VU   |
| Angiosperm  | Aristolochiaceae | <i>Thottea praetermissa</i> T.L.Yao                                                                | CR         | CR   |
| Angiosperm  | Asparagaceae     | <i>Dracaena brachystachys</i> Hook.f.                                                              | NEx        | CR   |
| Angiosperm  | Asparagaceae     | <i>Dracaena breviflora</i> Ridl.                                                                   | Not Listed | CR   |
| Angiosperm  | Asparagaceae     | <i>Dracaena cantleyi</i> Baker                                                                     | VU         | EN   |
| Angiosperm  | Asparagaceae     | <i>Dracaena elliptica</i> Thunb.                                                                   | CR         | CR   |
| Angiosperm  | Asparagaceae     | <i>Dracaena granulata</i> Hook.f.                                                                  | VU         | EN   |
| Angiosperm  | Asparagaceae     | <i>Dracaena maingayi</i> Hook.f.                                                                   | VU         | EN   |
| Angiosperm  | Asparagaceae     | <i>Dracaena porteri</i> Baker                                                                      | Not Listed | LC   |
| Angiosperm  | Asparagaceae     | <i>Dracaena singaporensis</i> Ridl.                                                                | NEx        | CR   |
| Angiosperm  | Asparagaceae     | <i>Dracaena umbratica</i> Ridl.                                                                    | VU         | VU   |
| Angiosperm  | Asparagaceae     | <i>Peliosanthes teta</i> Andrews subsp. <i>humilis</i> (Andrews) Jessop ex Gandhi                  | VU         | EN   |
| Angiosperm  | Asphodelaceae    | <i>Dianella ensifolia</i> (L.) Redouté                                                             | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Acmella paniculata</i> (Wall. ex DC.) R.K.Jansen                                                | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Adenostemma viscosum</i> J.R.Forst. & G.Forst.                                                  | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Blumea balsamifera</i> (L.) DC.                                                                 | NEx        | CR   |
| Angiosperm  | Asteraceae       | <i>Blumea lacera</i> (Burm.f.) DC.                                                                 | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Blumea riparia</i> DC.                                                                          | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Emilia sonchifolia</i> (L.) DC.                                                                 | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Enydra fluctuans</i> Lour.                                                                      | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Gynura procumbens</i> (Lour.) Merr.                                                             | CR         | CR   |
| Angiosperm  | Asteraceae       | <i>Mikania cordata</i> (Burm.f.) B.L.Rob.                                                          | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Pluchea indica</i> (L.) Less.                                                                   | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Sphaeranthus africanus</i> L.                                                                   | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Vernonia arborea</i> Buch.-Ham.                                                                 | VU         | CR   |
| Angiosperm  | Asteraceae       | <i>Vernonia cinerea</i> (L.) Less.                                                                 | Not Listed | LC   |
| Angiosperm  | Asteraceae       | <i>Vernonia patula</i> (Aiton) Merr.                                                               | Not Listed | NEx  |
| Angiosperm  | Asteraceae       | <i>Wollastonia biflora</i> (L.) DC.                                                                | Not Listed | LC   |
| Angiosperm  | Bignoniaceae     | <i>Deplanchea bancana</i> (Scheff.) Steenis                                                        | NEx        | CR   |
| Angiosperm  | Bignoniaceae     | <i>Dolichandrone spathacea</i> (L.f.) K.Schum.                                                     | CR         | CR   |
| Angiosperm  | Bignoniaceae     | <i>Fernandoa adenophylla</i> (Wall. ex G.Don) Steenis                                              | Not Listed | NEx  |
| Angiosperm  | Bignoniaceae     | <i>Pajanelia longifolia</i> (Willd.) K.Schum.                                                      | NEx        | NEx  |
| Angiosperm  | Bignoniaceae     | <i>Radermachera quadripinnata</i> (Blanco) Seem. subsp. <i>lobbii</i> (Teijsm. & Binn.) I.M.Turner | CR         | CR   |
| Angiosperm  | Bignoniaceae     | <i>Stereospermum tetragonum</i> DC.                                                                | CR         | NEx  |
| Angiosperm  | Bonnetiaceae     | <i>Ploiarius elegans</i> Korth.                                                                    | Not Listed | LC   |
| Angiosperm  | Boraginaceae     | <i>Cordia dichotoma</i> G.Forst.                                                                   | CR         | NEx  |
| Angiosperm  | Boraginaceae     | <i>Cordia subcordata</i> Lam.                                                                      | CR         | CR   |
| Angiosperm  | Boraginaceae     | <i>Heliotropium biblianum</i> Craven                                                               | NEx        | NEx  |
| Angiosperm  | Burmanniaceae    | <i>Burmannia championii</i> Thwaites                                                               | CR         | NEx  |
| Angiosperm  | Burmanniaceae    | <i>Burmannia coelestis</i> D.Don                                                                   | Not Listed | EN   |

| Major Group | Family         | Taxon Name                                                                                                   | RDB2       | RDB3 |
|-------------|----------------|--------------------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Burmanniaceae  | <i>Burmannia wallichii</i> (Miers) Hook.f.                                                                   | Not Listed | NEx  |
| Angiosperm  | Burmanniaceae  | <i>Gymnosiphon aphyllus</i> Blume                                                                            | NEx        | NEx  |
| Angiosperm  | Burseraceae    | <i>Canarium grandifolium</i> (Ridl.) H.J.Lam                                                                 | CR         | CR   |
| Angiosperm  | Burseraceae    | <i>Canarium littorale</i> Blume                                                                              | Not Listed | EN   |
| Angiosperm  | Burseraceae    | <i>Canarium patentinervium</i> Miq.                                                                          | EN         | EN   |
| Angiosperm  | Burseraceae    | <i>Canarium pilosum</i> A.W.Benn.                                                                            | EN         | VU   |
| Angiosperm  | Burseraceae    | <i>Dacryodes costata</i> (A.W.Benn.) H.J.Lam                                                                 | EN         | EN   |
| Angiosperm  | Burseraceae    | <i>Dacryodes incurvata</i> (Engl.) H.J.Lam                                                                   | Not Listed | CR   |
| Angiosperm  | Burseraceae    | <i>Dacryodes laxa</i> (A.W.Benn.) H.J.Lam                                                                    | EN         | EN   |
| Angiosperm  | Burseraceae    | <i>Dacryodes longifolia</i> (King) H.J.Lam                                                                   | CR         | CR   |
| Angiosperm  | Burseraceae    | <i>Dacryodes nervosa</i> (H.J.Lam) Leenh.                                                                    | Not Listed | CR   |
| Angiosperm  | Burseraceae    | <i>Dacryodes puberula</i> (A.W.Benn.) H.J.Lam                                                                | Not Listed | NEx  |
| Angiosperm  | Burseraceae    | <i>Dacryodes rostrata</i> (Blume) H.J.Lam                                                                    | VU         | VU   |
| Angiosperm  | Burseraceae    | <i>Dacryodes rugosa</i> (Blume) H.J.Lam var. <i>rugosa</i>                                                   | CR         | CR   |
| Angiosperm  | Burseraceae    | <i>Santiria apiculata</i> A.W.Benn. var. <i>apiculata</i>                                                    | Not Listed | LC   |
| Angiosperm  | Burseraceae    | <i>Santiria conferta</i> A.W.Benn.                                                                           | CR         | CR   |
| Angiosperm  | Burseraceae    | <i>Santiria griffithii</i> (Hook.f.) Engl.                                                                   | Not Listed | EN   |
| Angiosperm  | Burseraceae    | <i>Santiria laevigata</i> Blume                                                                              | VU         | VU   |
| Angiosperm  | Burseraceae    | <i>Santiria rubiginosa</i> Blume var. <i>rubiginosa</i>                                                      | VU         | EN   |
| Angiosperm  | Burseraceae    | <i>Santiria tomentosa</i> Blume                                                                              | EN         | CR   |
| Angiosperm  | Burseraceae    | <i>Triomma malaccensis</i> Hook.f.                                                                           | EN         | CR   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum biflorum</i> M.R.Hend. & Wyatt-Sm.                                                            | NEx        | NEx  |
| Angiosperm  | Calophyllaceae | <i>Calophyllum calaba</i> L. var. <i>bracteatum</i> (Wight) P.F.Stevens                                      | NEx        | NEx  |
| Angiosperm  | Calophyllaceae | <i>Calophyllum costulatum</i> M.R.Hend. & Wyatt-Sm.                                                          | NEx        | NEx  |
| Angiosperm  | Calophyllaceae | <i>Calophyllum dispar</i> P.F.Stevens                                                                        | CR         | CR   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum ferrugineum</i> Ridl. var. <i>ferrugineum</i>                                                 | Not Listed | LC   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum inophyllum</i> L.                                                                             | CR         | EN   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum lanigerum</i> Miq. var. <i>austrororiaceum</i> (Whitmore) P.F.Stevens                         | EN         | EN   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum macrocarpum</i> Hook.f.                                                                       | CR         | CR   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum pulcherrimum</i> Wall. ex Choisy                                                              | Not Listed | LC   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum rigidum</i> Miq.                                                                              | CR         | NEx  |
| Angiosperm  | Calophyllaceae | <i>Calophyllum rubiginosum</i> M.R.Hend. & Wyatt-Sm.                                                         | EN         | EN   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum rufigemmatum</i> M.R.Hend. & Wyatt-Sm. ex P.F.Stevens                                         | EN         | EN   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum sundaicum</i> P.F.Stevens                                                                     | CR         | CR   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum tetrapterum</i> Miq. var. <i>tetrapterum</i>                                                  | VU         | VU   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum teysmannii</i> Miq. var. <i>teysmannii</i>                                                    | VU         | VU   |
| Angiosperm  | Calophyllaceae | <i>Calophyllum wallichianum</i> Planch. & Triana var. <i>incrassatum</i> (M.R.Hend. & Wyatt-Sm.) P.F.Stevens | VU         | VU   |
| Angiosperm  | Calophyllaceae | <i>Kayea elegans</i> King                                                                                    | CR         | CR   |
| Angiosperm  | Calophyllaceae | <i>Kayea ferruginea</i> Pierre                                                                               | Not Listed | NEx  |
| Angiosperm  | Campanulaceae  | <i>Lobelia zeylanica</i> L.                                                                                  | Not Listed | CR   |
| Angiosperm  | Cannabaceae    | <i>Girroniera hirta</i> Ridl.                                                                                | NEx        | NEx  |
| Angiosperm  | Cannabaceae    | <i>Girroniera nervosa</i> Planch.                                                                            | Not Listed | LC   |
| Angiosperm  | Cannabaceae    | <i>Girroniera parvifolia</i> Planch.                                                                         | EN         | EN   |

| Major Group | Family            | Taxon Name                                                                 | RDB2       | RDB3 |
|-------------|-------------------|----------------------------------------------------------------------------|------------|------|
| Angiosperm  | Cannabaceae       | <i>Gironniera subaequalis</i> Planch.                                      | EN         | EN   |
| Angiosperm  | Cannabaceae       | <i>Trema angustifolium</i> (Planch.) Blume                                 | NEx        | CR   |
| Angiosperm  | Cannabaceae       | <i>Trema cannabina</i> Lour.                                               | Not Listed | LC   |
| Angiosperm  | Cannabaceae       | <i>Trema tomentosum</i> (Roxb.) H.Hara                                     | Not Listed | VU   |
| Angiosperm  | Capparaceae       | <i>Capparis micracantha</i> DC. subsp. <i>korthalsiana</i> (Miq.) M.Jacobs | CR         | CR   |
| Angiosperm  | Cardiopteridaceae | <i>Gonocaryum gracile</i> Miq.                                             | EN         | CR   |
| Angiosperm  | Casuarinaceae     | <i>Casuarina equisetifolia</i> L.                                          | Not Listed | LC   |
| Angiosperm  | Celastraceae      | <i>Celastrus monospermoides</i> Loes.                                      | Not Listed | CR   |
| Angiosperm  | Celastraceae      | <i>Elaeodendron viburnifolium</i> (Juss.) Merr.                            | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Euonymus indicus</i> B.Heyne ex Wall.                                   | NEx        | NEx  |
| Angiosperm  | Celastraceae      | <i>Glyptopetalum quadrangulare</i> Prain ex King                           | NEx        | NEx  |
| Angiosperm  | Celastraceae      | <i>Gymnosporia littoralis</i> (Backer) Jordaan                             | NEx        | CR   |
| Angiosperm  | Celastraceae      | <i>Kokoona littoralis</i> M.A.Lawson                                       | NEx        | NEx  |
| Angiosperm  | Celastraceae      | <i>Kokoona reflexa</i> (M.A.Lawson) Ding Hou                               | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Loeseneriella macrantha</i> (Korth.) A.C.Sm.                            | NEx        | CR   |
| Angiosperm  | Celastraceae      | <i>Lophopetalum beccarianum</i> Pierre                                     | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Lophopetalum multinervium</i> Ridl.                                     | EN         | EN   |
| Angiosperm  | Celastraceae      | <i>Lophopetalum pallidum</i> M.A.Lawson                                    | Not Listed | CR   |
| Angiosperm  | Celastraceae      | <i>Lophopetalum wightianum</i> Arn.                                        | VU         | EN   |
| Angiosperm  | Celastraceae      | <i>Reissantia indica</i> (Willd.) N.Hallé                                  | NEx        | NEx  |
| Angiosperm  | Celastraceae      | <i>Salacia chinensis</i> L.                                                | VU         | CR   |
| Angiosperm  | Celastraceae      | <i>Salacia exsculpta</i> Korth.                                            | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Salacia grandiflora</i> Kurz                                            | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Salacia korthalsiana</i> Miq.                                           | CR         | CR   |
| Angiosperm  | Celastraceae      | <i>Salacia macrophylla</i> Blume                                           | VU         | VU   |
| Angiosperm  | Celastraceae      | <i>Salacia maingayi</i> M.A.Lawson                                         | NEx        | CR   |
| Angiosperm  | Celastraceae      | <i>Salacia viminea</i> Wall. ex M.A.Lawson                                 | CR         | CR   |
| Angiosperm  | Centroplacaceae   | <i>Bhesa paniculata</i> Arn.                                               | Not Listed | LC   |
| Angiosperm  | Centroplacaceae   | <i>Bhesa robusta</i> (Roxb.) Ding Hou                                      | VU         | VU   |
| Angiosperm  | Chloranthaceae    | <i>Chloranthus officinalis</i> Blume                                       | CR         | CR   |
| Angiosperm  | Chrysobalanaceae  | <i>Angelesia splendens</i> Korth.                                          | Not Listed | VU   |
| Angiosperm  | Chrysobalanaceae  | <i>Atuna excelsa</i> (Jack) Kosterm. subsp. <i>excelsa</i>                 | CR         | CR   |
| Angiosperm  | Chrysobalanaceae  | <i>Maranthes corymbosa</i> Blume                                           | EN         | VU   |
| Angiosperm  | Chrysobalanaceae  | <i>Parastemon urophyllus</i> (Wall. ex A.DC.) A.DC.                        | EN         | CR   |
| Angiosperm  | Chrysobalanaceae  | <i>Parinari costata</i> (Korth.) Blume subsp. <i>costata</i>               | CR         | NEx  |
| Angiosperm  | Chrysobalanaceae  | <i>Parinari elmeri</i> Merr.                                               | Not Listed | CR   |
| Angiosperm  | Chrysobalanaceae  | <i>Parinari oblongifolia</i> Hook.f.                                       | CR         | CR   |
| Angiosperm  | Clusiaceae        | <i>Garcinia atroviridis</i> Griff. ex T.Anderson                           | CR         | CR   |
| Angiosperm  | Clusiaceae        | <i>Garcinia bancana</i> Miq. var. <i>bancana</i>                           | CR         | CR   |
| Angiosperm  | Clusiaceae        | <i>Garcinia bancana</i> Miq. var. <i>curtisii</i> (Ridl.) Whitmore         | Not Listed | DD   |
| Angiosperm  | Clusiaceae        | <i>Garcinia brevirostris</i> Scheff.                                       | VU         | VU   |
| Angiosperm  | Clusiaceae        | <i>Garcinia celebica</i> L.                                                | EN         | EN   |
| Angiosperm  | Clusiaceae        | <i>Garcinia forbesii</i> King                                              | CR         | EN   |
| Angiosperm  | Clusiaceae        | <i>Garcinia griffithii</i> T.Anderson                                      | EN         | EN   |
| Angiosperm  | Clusiaceae        | <i>Garcinia maingayi</i> Hook.f. var. <i>stylosa</i> King                  | CR         | CR   |
| Angiosperm  | Clusiaceae        | <i>Garcinia mangostana</i> L. var. <i>malaccensis</i> (Hook.f.) Nazre      | Not Listed | CR   |
| Angiosperm  | Clusiaceae        | <i>Garcinia merguensis</i> Wight                                           | Not Listed | NEx  |

| Major Group | Family         | Taxon Name                                                | RDB2       | RDB3 |
|-------------|----------------|-----------------------------------------------------------|------------|------|
| Angiosperm  | Clusiaceae     | <i>Garcinia nervosa</i> (Miq.) Miq.                       | CR         | CR   |
| Angiosperm  | Clusiaceae     | <i>Garcinia nigrolineata</i> Planch. ex T.Anderson        | CR         | CR   |
| Angiosperm  | Clusiaceae     | <i>Garcinia parvifolia</i> (Miq.) Miq.                    | Not Listed | LC   |
| Angiosperm  | Clusiaceae     | <i>Garcinia pyrifera</i> Ridl.                            | NEx        | NEx  |
| Angiosperm  | Clusiaceae     | <i>Garcinia rostrata</i> (Hassk.) Miq.                    | CR         | CR   |
| Angiosperm  | Clusiaceae     | <i>Garcinia scortechinii</i> King                         | CR         | EN   |
| Angiosperm  | Clusiaceae     | <i>Garcinia urophylla</i> Scort. ex King                  | Not Listed | DD   |
| Angiosperm  | Combretaceae   | <i>Combretum sundaicum</i> Miq.                           | VU         | VU   |
| Angiosperm  | Combretaceae   | <i>Combretum tetralophum</i> C.B.Clarke                   | CR         | CR   |
| Angiosperm  | Combretaceae   | <i>Lumnitzera littorea</i> (Jack) Voigt                   | EN         | EN   |
| Angiosperm  | Combretaceae   | <i>Lumnitzera racemosa</i> Willd.                         | EN         | EN   |
| Angiosperm  | Combretaceae   | <i>Terminalia catappa</i> L.                              | Not Listed | LC   |
| Angiosperm  | Combretaceae   | <i>Terminalia citrina</i> (Gaertn.) Roxb.                 | Not Listed | CR   |
| Angiosperm  | Combretaceae   | <i>Terminalia phellocarpa</i> King                        | CR         | NEx  |
| Angiosperm  | Combretaceae   | <i>Terminalia subspatulata</i> King                       | CR         | CR   |
| Angiosperm  | Commelinaceae  | <i>Amischotolype gracilis</i> (Ridl.) I.M.Turner          | Not Listed | LC   |
| Angiosperm  | Commelinaceae  | <i>Amischotolype marginata</i> (Blume) Hassk.             | CR         | CR   |
| Angiosperm  | Commelinaceae  | <i>Commelina attenuata</i> Vahl                           | NEx        | NEx  |
| Angiosperm  | Commelinaceae  | <i>Floscopa scandens</i> Lour.                            | Not Listed | NEx  |
| Angiosperm  | Commelinaceae  | <i>Murdannia vaginata</i> (L.) G.Brückn.                  | Not Listed | NEx  |
| Angiosperm  | Commelinaceae  | <i>Pollia secundiflora</i> (Blume) Bakh.f.                | NEx        | NEx  |
| Angiosperm  | Connaraceae    | <i>Agelaea borneensis</i> (Hook.f.) Merr.                 | VU         | LC   |
| Angiosperm  | Connaraceae    | <i>Agelaea macrophylla</i> (Zoll.) Leenh.                 | CR         | LC   |
| Angiosperm  | Connaraceae    | <i>Cnestis palala</i> (Lour.) Merr.                       | Not Listed | VU   |
| Angiosperm  | Connaraceae    | <i>Connarus ferrugineus</i> Jack                          | CR         | CR   |
| Angiosperm  | Connaraceae    | <i>Connarus grandis</i> Jack                              | CR         | CR   |
| Angiosperm  | Connaraceae    | <i>Connarus monocarpus</i> L.                             | CR         | CR   |
| Angiosperm  | Connaraceae    | <i>Connarus paniculatus</i> Roxb.                         | NEx        | CR   |
| Angiosperm  | Connaraceae    | <i>Connarus semidecandrus</i> Jack                        | CR         | CR   |
| Angiosperm  | Connaraceae    | <i>Ellipanthus tomentosus</i> Kurz var. <i>tomentosus</i> | CR         | CR   |
| Angiosperm  | Connaraceae    | <i>Rourea acutipetala</i> Miq.                            | NEx        | CR   |
| Angiosperm  | Connaraceae    | <i>Rourea aspleniifolia</i> (G.Schellenb.) Jongkind       | CR         | LC   |
| Angiosperm  | Connaraceae    | <i>Rourea fulgens</i> Planch.                             | VU         | EN   |
| Angiosperm  | Connaraceae    | <i>Rourea mimosoides</i> (Vahl) Planch.                   | EN         | LC   |
| Angiosperm  | Connaraceae    | <i>Rourea minor</i> (Gaertn.) Merr.                       | CR         | VU   |
| Angiosperm  | Connaraceae    | <i>Rourea rugosa</i> Planch.                              | NEx        | NEx  |
| Angiosperm  | Convolvulaceae | <i>Argyreia ridleyi</i> (Prain) Prain ex Ooststr.         | CR         | CR   |
| Angiosperm  | Convolvulaceae | <i>Bonamia semidigyna</i> (Roxb.) Hallier f.              | Not Listed | CR   |
| Angiosperm  | Convolvulaceae | <i>Camonea pilosa</i> (Houtt.) A.R.Simões & Staples       | Not Listed | CR   |
| Angiosperm  | Convolvulaceae | <i>Cuscuta australis</i> R.Br.                            | Not Listed | NEx  |
| Angiosperm  | Convolvulaceae | <i>Erycibe festiva</i> Prain                              | NEx        | CR   |
| Angiosperm  | Convolvulaceae | <i>Erycibe griffithii</i> C.B.Clarke                      | CR         | CR   |
| Angiosperm  | Convolvulaceae | <i>Erycibe leucoxyloides</i> King ex Ridl.                | Not Listed | VU   |
| Angiosperm  | Convolvulaceae | <i>Erycibe maingayi</i> C.B.Clarke                        | NEx        | DD   |
| Angiosperm  | Convolvulaceae | <i>Erycibe malaccensis</i> C.B.Clarke                     | CR         | CR   |
| Angiosperm  | Convolvulaceae | <i>Erycibe tomentosa</i> Blume                            | Not Listed | LC   |
| Angiosperm  | Convolvulaceae | <i>Evolvulus alsinoides</i> (L.) L.                       | Not Listed | NEx  |
| Angiosperm  | Convolvulaceae | <i>Ipomoea aquatica</i> Forssk.                           | Not Listed | LC   |
| Angiosperm  | Convolvulaceae | <i>Ipomoea littoralis</i> Blume                           | Not Listed | DD   |



| Major Group | Family           | Taxon Name                                                                              | RDB2       | RDB3 |
|-------------|------------------|-----------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Convolvulaceae   | <i>Ipomoea mauritiana</i> Jacq.                                                         | Not Listed | LC   |
| Angiosperm  | Convolvulaceae   | <i>Ipomoea obscura</i> (L.) Ker Gawl.                                                   | Not Listed | LC   |
| Angiosperm  | Convolvulaceae   | <i>Ipomoea pes-caprae</i> (L.) R.Br.                                                    | Not Listed | LC   |
| Angiosperm  | Convolvulaceae   | <i>Ipomoea pes-tigridis</i> L.                                                          | Not Listed | CR   |
| Angiosperm  | Convolvulaceae   | <i>Ipomoea sagittifolia</i> Burm.f.                                                     | Not Listed | NEx  |
| Angiosperm  | Convolvulaceae   | <i>Ipomoea violacea</i> L.                                                              | Not Listed | DD   |
| Angiosperm  | Convolvulaceae   | <i>Lepistemon</i> cf. <i>binectarifer</i> (Wall.) Kuntze                                | Not Listed | DD   |
| Angiosperm  | Convolvulaceae   | <i>Merremia hederacea</i> (Burm.f.) Hallier f.                                          | Not Listed | LC   |
| Angiosperm  | Convolvulaceae   | <i>Merremia hirta</i> (L.) Merr.                                                        | Not Listed | LC   |
| Angiosperm  | Convolvulaceae   | <i>Neuropeltis</i> cf. <i>racemosa</i> Wall.                                            | CR         | DD   |
| Angiosperm  | Convolvulaceae   | <i>Xenostegia tridentata</i> (L.) D.F.Austin & Staples                                  | Not Listed | LC   |
| Angiosperm  | Cornaceae        | <i>Alangium denudatum</i> (Bloemb.) W.J.de Wilde & Duyfjes                              | Not Listed | CR   |
| Angiosperm  | Cornaceae        | <i>Alangium frutescens</i> Zoll. & Moritz var. <i>frutescens</i>                        | CR         | CR   |
| Angiosperm  | Cornaceae        | <i>Alangium griffithii</i> (C.B.Clarke) Harms                                           | CR         | EN   |
| Angiosperm  | Cornaceae        | <i>Alangium longiflorum</i> Merr. var. <i>hirsutum</i> (Bloemb.) W.J.de Wilde & Duyfjes | Not Listed | CR   |
| Angiosperm  | Cornaceae        | <i>Alangium meyeri</i> Merr. var. <i>meyerii</i>                                        | CR         | NEx  |
| Angiosperm  | Cornaceae        | <i>Alangium nobile</i> (C.B.Clarke) Harms                                               | CR         | CR   |
| Angiosperm  | Cornaceae        | <i>Alangium ridleyi</i> King                                                            | NEx        | CR   |
| Angiosperm  | Costaceae        | <i>Cheilocostus globosus</i> (Blume) C.D.Specht                                         | NEx        | CR   |
| Angiosperm  | Costaceae        | <i>Cheilocostus speciosus</i> (J.Koenig) C.D.Specht                                     | Not Listed | CR   |
| Angiosperm  | Crypteroniaceae  | <i>Crypteronia rubiflora</i> (Griff.) Ormerod                                           | CR         | CR   |
| Angiosperm  | Ctenolophonaceae | <i>Ctenolophon parvifolius</i> Oliv.                                                    | CR         | CR   |
| Angiosperm  | Cucurbitaceae    | <i>Gymnopetalum scabrum</i> (Lour.) W.J.de Wilde & Duyfjes                              | Not Listed | LC   |
| Angiosperm  | Cucurbitaceae    | <i>Trichosanthes borneensis</i> Cogn.                                                   | VU         | NEx  |
| Angiosperm  | Cucurbitaceae    | <i>Trichosanthes elmeri</i> Merr.                                                       | VU         | EN   |
| Angiosperm  | Cucurbitaceae    | <i>Trichosanthes quinquangulata</i> A.Gray                                              | VU         | EN   |
| Angiosperm  | Cucurbitaceae    | <i>Trichosanthes tricuspidata</i> Lour. subsp. <i>javanica</i> Duyfjes & Pruesapan      | VU         | EN   |
| Angiosperm  | Cucurbitaceae    | <i>Trichosanthes wawrae</i> Cogn.                                                       | VU         | EN   |
| Angiosperm  | Cymodoceaceae    | <i>Cymodocea rotundata</i> Asch. & Schweinf.                                            | CR         | CR   |
| Angiosperm  | Cymodoceaceae    | <i>Cymodocea serrulata</i> (R.Br.) Asch. & Magnus                                       | EN         | EN   |
| Angiosperm  | Cymodoceaceae    | <i>Halodule uninervis</i> (Forssk.) Asch.                                               | VU         | VU   |
| Angiosperm  | Cymodoceaceae    | <i>Syringodium isoetifolium</i> (Asch.) Dandy                                           | EN         | EN   |
| Angiosperm  | Cyperaceae       | <i>Actinoscirpus grossus</i> (L.f.) Goetgh. & D.A.Simpson                               | Not Listed | CR   |
| Angiosperm  | Cyperaceae       | <i>Bulbostylis barbata</i> (Rottb.) C.B.Clarke                                          | Not Listed | CR   |
| Angiosperm  | Cyperaceae       | <i>Bulbostylis thouarsii</i> (Roem. & Schult.) Lye ex Veldkamp & Verloove               | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Carex cryptostachys</i> Brongn.                                                      | CR         | CR   |
| Angiosperm  | Cyperaceae       | <i>Cyperus albescens</i> (Steud.) Larridon & Govaerts                                   | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Cyperus brevifolius</i> (Rottb.) Endl. ex Hassk.                                     | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Cyperus compactus</i> Retz.                                                          | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Cyperus compressus</i> L.                                                            | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Cyperus cuspidatus</i> Kunth                                                         | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Cyperus cyperinus</i> (Retz.) Valck.Sur.                                             | Not Listed | EN   |
| Angiosperm  | Cyperaceae       | <i>Cyperus cyperoides</i> (L.) Kuntze                                                   | Not Listed | NEx  |

| Major Group | Family     | Taxon Name                                            | RDB2       | RDB3 |
|-------------|------------|-------------------------------------------------------|------------|------|
| Angiosperm  | Cyperaceae | <i>Cyperus difformis</i> L.                           | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus diffusus</i> Vahl                          | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus digitatus</i> Roxb.                        | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus distans</i> L.f.                           | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus dubius</i> Rottb.                          | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus elatus</i> L.                              | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus flavidus</i> Retz.                         | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus haspan</i> L.                              | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus imbricatus</i> Retz.                       | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus iria</i> L.                                | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus javanicus</i> Houtt.                       | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus leptocarpus</i> (F.Muell.) Bauters         | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Cyperus malaccensis</i> Lam.                       | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus mindorensis</i> (Steud.) Huygh             | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus neochinensis</i> (Tang & F.T.Wang) Bauters | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus pedunculatus</i> (R.Br.) J.Kern            | Not Listed | VU   |
| Angiosperm  | Cyperaceae | <i>Cyperus pilosus</i> Vahl                           | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Cyperus polystachyos</i> Rottb.                    | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus procerus</i> Rottb.                        | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Cyperus pumilus</i> L.                             | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus radians</i> Nees & Meyen ex Kunth          | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus rotundus</i> L.                            | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus sanguinolentus</i> Vahl                    | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Cyperus stolonifer</i> Retz.                       | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Cyperus tenuiculmis</i> Boeckeler                  | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Cyperus tenuifolius</i> (Steud.) Dandy             | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Cyperus tenuispica</i> Steud.                      | Not Listed | DD   |
| Angiosperm  | Cyperaceae | <i>Cyperus trialatus</i> (Boeckeler) J.Kern           | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Diplacrum caricinum</i> R.Br.                      | Not Listed | VU   |
| Angiosperm  | Cyperaceae | <i>Eleocharis dulcis</i> (Burm.f.) Trin. ex Hensch.   | Not Listed | VU   |
| Angiosperm  | Cyperaceae | <i>Eleocharis geniculata</i> (L.) Roem. & Schult.     | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Eleocharis ochrostachys</i> Steud.                 | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Eleocharis retroflexa</i> (Poir.) Urb. subsp.      | Not Listed | CR   |
|             |            | <i>chaetaria</i> (Roem. & Schult.) T.Koyama           |            |      |
| Angiosperm  | Cyperaceae | <i>Eleocharis spiralis</i> (Rottb.) Roem. & Schult.   | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Fimbristylis acuminata</i> Vahl                    | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis complanata</i> (Retz.) Link           | Not Listed | VU   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis cymosa</i> R.Br.                      | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis dichotoma</i> (L.) Vahl               | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis dura</i> (Zoll. & Moritz) Merr.       | CR         | CR   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis ferruginea</i> (L.) Vahl              | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis fusca</i> (Nees) Benth. ex C.B.Clarke | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Fimbristylis griffithii</i> Boeckeler              | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis leptoclada</i> Benth.                 | Not Listed | NEx  |
| Angiosperm  | Cyperaceae | <i>Fimbristylis littoralis</i> Gaudich.               | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis nutans</i> (Retz.) Vahl               | NEx        | NEx  |
| Angiosperm  | Cyperaceae | <i>Fimbristylis obtusata</i> (C.B.Clarke) Ridl.       | Not Listed | CR   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis ovata</i> (Burm.f.) J.Kern            | Not Listed | LC   |
| Angiosperm  | Cyperaceae | <i>Fimbristylis pauciflora</i> R.Br.                  | CR         | LC   |

| Major Group | Family           | Taxon Name                                                                              | RDB2       | RDB3 |
|-------------|------------------|-----------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Cyperaceae       | <i>Fimbristylis polytrichoides</i> (Retz.) R.Br.                                        | VU         | VU   |
| Angiosperm  | Cyperaceae       | <i>Fimbristylis schoenoides</i> (Retz.) Vahl                                            | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Fimbristylis tetragona</i> R.Br.                                                     | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Fimbristylis tristachya</i> R.Br.                                                    | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Fimbristylis umbellaris</i> (Lam.) Vahl                                              | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Fuirena ciliaris</i> (L.) Roxb.                                                      | Not Listed | CR   |
| Angiosperm  | Cyperaceae       | <i>Fuirena umbellata</i> Rottb.                                                         | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Gahnia tristis</i> Nees                                                              | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Hypolytrum nemorum</i> (Vahl) P.Beauv. var. <i>nemorum</i>                           | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Hypolytrum nemorum</i> (Vahl) P.Beauv. var. <i>proliferum</i> (Boeckeler) J.Kern     | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Lepironia articulata</i> (Retz.) Domin                                               | NEx        | CR   |
| Angiosperm  | Cyperaceae       | <i>Machaerina rubiginosa</i> (Biehler) T.Koyama                                         | NEx        | NEx  |
| Angiosperm  | Cyperaceae       | <i>Mapania bancana</i> (Miq.) Ridl.                                                     | CR         | NEx  |
| Angiosperm  | Cyperaceae       | <i>Mapania cuspidata</i> (Miq.) Uittien                                                 | VU         | VU   |
| Angiosperm  | Cyperaceae       | <i>Mapania enodis</i> (Miq.) C.B.Clarke                                                 | CR         | NEx  |
| Angiosperm  | Cyperaceae       | <i>Mapania kurzii</i> C.B.Clarke                                                        | EN         | EN   |
| Angiosperm  | Cyperaceae       | <i>Mapania lorea</i> Uittien                                                            | NEx        | CR   |
| Angiosperm  | Cyperaceae       | <i>Mapania palustris</i> (Hassk. ex Steud.) Fern.-Vill. var. <i>palustris</i>           | EN         | CR   |
| Angiosperm  | Cyperaceae       | <i>Mapania squamata</i> (Kurz) C.B.Clarke                                               | NEx        | CR   |
| Angiosperm  | Cyperaceae       | <i>Mapania wallichii</i> C.B.Clarke                                                     | NEx        | NEx  |
| Angiosperm  | Cyperaceae       | <i>Rhynchospora corymbosa</i> (L.) Britton                                              | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Rhynchospora malasica</i> C.B.Clarke                                                 | NEx        | NEx  |
| Angiosperm  | Cyperaceae       | <i>Rhynchospora rubra</i> (Lour.) Makino                                                | Not Listed | VU   |
| Angiosperm  | Cyperaceae       | <i>Rhynchospora rugosa</i> (Vahl) Gale subsp. <i>brownii</i> (Roem. & Schult.) T.Koyama | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Schoenoplectiella mucronata</i> (L.) J.Jung & H.K.Choi                               | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Schoenus calostachyus</i> (R.Br.) Roem. & Schult.                                    | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Scirpodendron ghaeri</i> (Gaertn.) Merr.                                             | NEx        | NEx  |
| Angiosperm  | Cyperaceae       | <i>Scleria biflora</i> Roxb.                                                            | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Scleria ciliaris</i> Nees                                                            | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Scleria corymbosa</i> Roxb.                                                          | NEx        | NEx  |
| Angiosperm  | Cyperaceae       | <i>Scleria levis</i> Retz.                                                              | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Scleria oblata</i> S.T.Blake ex J.Kern                                               | Not Listed | LC   |
| Angiosperm  | Cyperaceae       | <i>Scleria poiformis</i> Retz.                                                          | Not Listed | NEx  |
| Angiosperm  | Cyperaceae       | <i>Scleria purpurascens</i> Steud.                                                      | Not Listed | CR   |
| Angiosperm  | Cyperaceae       | <i>Scleria rugosa</i> R.Br.                                                             | Not Listed | CR   |
| Angiosperm  | Cyperaceae       | <i>Scleria sumatrensis</i> Retz.                                                        | VU         | LC   |
| Angiosperm  | Cyperaceae       | <i>Scleria terrestris</i> (L.) Fassett                                                  | EN         | EN   |
| Angiosperm  | Daphniphyllaceae | <i>Daphniphyllum griffithianum</i> (Wight) Noltie                                       | CR         | CR   |
| Angiosperm  | Dichapetalaceae  | <i>Dichapetalum sordidum</i> (Hook.f.) Leenh.                                           | NEx        | CR   |
| Angiosperm  | Dilleniaceae     | <i>Dillenia excelsa</i> (Jack) Gilg var. <i>tomentella</i> (Martelli) Masam.            | CR         | CR   |
| Angiosperm  | Dilleniaceae     | <i>Dillenia grandifolia</i> Wall. ex Hook.f. & Thomson                                  | EN         | EN   |
| Angiosperm  | Dilleniaceae     | <i>Dillenia pulchella</i> (Jack) Gilg                                                   | CR         | CR   |
| Angiosperm  | Dilleniaceae     | <i>Dillenia reticulata</i> King                                                         | CR         | CR   |

| Major Group | Family           | Taxon Name                                                                                 | RDB2       | RDB3 |
|-------------|------------------|--------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Dilleniaceae     | <i>Dillenia suffruticosa</i> (Griff. ex Hook.f. & Thomson) Martelli                        | Not Listed | LC   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera akara</i> (Burm.f.) Merr.                                                     | VU         | VU   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera arborescens</i> Jack                                                          | EN         | CR   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera fagifolia</i> Blume var. <i>borneensis</i> (Miq.) Hoogland                    | VU         | CR   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera indica</i> (Christm. & Panz.) Merr.                                           | Not Listed | LC   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera macrophylla</i> Wall. ex Hook.f. & Thomson                                    | VU         | VU   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera maingayi</i> Hoogland                                                         | Not Listed | VU   |
| Angiosperm  | Dilleniaceae     | <i>Tetracera scandens</i> (L.) Merr.                                                       | Not Listed | EN   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea hispida</i> Dennst.                                                           | CR         | CR   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea kingii</i> R.Knuth                                                            | Not Listed | CR   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea laurifolia</i> Wall. ex Hook.f.                                               | Not Listed | LC   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea polyclades</i> Hook.f.                                                        | CR         | CR   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea prainiana</i> R.Knuth                                                         | CR         | NEx  |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea pyrifolia</i> Kunth                                                           | Not Listed | LC   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea stenomeriflora</i> Prain & Burkill                                            | NEx        | CR   |
| Angiosperm  | Dioscoreaceae    | <i>Dioscorea tenuifolia</i> Ridl.                                                          | NEx        | LC   |
| Angiosperm  | Dipterocarpaceae | <i>Anisoptera laevis</i> Ridl.                                                             | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Anisoptera marginata</i> Korth.                                                         | Not Listed | NEx  |
| Angiosperm  | Dipterocarpaceae | <i>Anisoptera megistocarpa</i> Slooten                                                     | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Anthoshorea bracteolata</i> (Dyer) P.S.Ashton & J.Heck.                                 | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Anthoshorea gratissima</i> (Wall. ex Kurz) P.S.Ashton & J.Heck.                         | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Cotylelobium lanceolatum</i> Craib                                                      | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus chartaceus</i> Symington                                                  | Not Listed | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus condorensis</i> Pierre subsp. <i>penangianus</i> (Foxw.) P.S.Ashton & Luu | CR         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus cornutus</i> Dyer                                                         | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus elongatus</i> Korth.                                                      | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus grandiflorus</i> (Blanco) Blanco                                          | VU         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus kerrii</i> King                                                           | VU         | NEx  |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus kunstleri</i> King                                                        | CR         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus palembanicus</i> Slooten                                                  | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus sublamellatus</i> Foxw.                                                   | VU         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Dipterocarpus tempehes</i> Slooten                                                      | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Hopea ferruginea</i> Parijs                                                             | Not Listed | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Hopea griffithii</i> Kurz                                                               | CR         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Hopea mengarawan</i> Miq.                                                               | EN         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Hopea sangal</i> Korth.                                                                 | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Neobalanocarpus heimii</i> (King) P.S.Ashton                                            | NEx        | NEx  |
| Angiosperm  | Dipterocarpaceae | <i>Richetia gibbosa</i> (Brandis) P.S.Ashton & J.Heck.                                     | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea curtisii</i> (Dyer ex King) P.S.Ashton & J.Heck. subsp. <i>curtisii</i>     | VU         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea johorensis</i> (Foxw.) P.S.Ashton & J.Heck.                                 | Not Listed | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea leprosula</i> (Miq.) P.S.Ashton & J.Heck.                                   | VU         | EN   |

| Major Group | Family           | Taxon Name                                                                         | RDB2       | RDB3 |
|-------------|------------------|------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea macroptera</i> (Dyer) P.S.Ashton & J.Heck. subsp. <i>macroptera</i> | VU         | VU   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea ovalis</i> (Korth.) P.S.Ashton & J.Heck. subsp. <i>ovalis</i>       | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea parvifolia</i> (Dyer) P.S.Ashton & J.Heck.                          | EN         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea pauciflora</i> (King) P.S.Ashton & J.Heck.                          | VU         | EN   |
| Angiosperm  | Dipterocarpaceae | <i>Rubroshorea platycarpa</i> (F.Heim) P.S.Ashton & J.Heck.                        | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Shorea ochrophloia</i> Strugnell ex Symington                                   | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Shorea sumatrana</i> (Slooten ex Thorenaar) Desch                               | Not Listed | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Vatica maingayi</i> Dyer                                                        | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Vatica odorata</i> (Griff.) Symington subsp. <i>odorata</i>                     | Not Listed | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Vatica pauciflora</i> (Korth.) Blume                                            | CR         | CR   |
| Angiosperm  | Dipterocarpaceae | <i>Vatica ridleyana</i> Brandis                                                    | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros argentea</i> Griff.                                                   | EN         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros buxifolia</i> (Blume) Hiern                                           | VU         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros clavigera</i> C.B.Clarke                                              | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros coriacea</i> Hiern                                                    | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros diepenhorstii</i> Miq.                                                | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros ferrea</i> (Willd.) Bakh.                                             | CR         | NEx  |
| Angiosperm  | Ebenaceae        | <i>Diospyros lanceifolia</i> Roxb.                                                 | Not Listed | LC   |
| Angiosperm  | Ebenaceae        | <i>Diospyros latisejala</i> Ridl.                                                  | NEx        | NEx  |
| Angiosperm  | Ebenaceae        | <i>Diospyros maingayi</i> (Hiern) Bakh.                                            | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros oblonga</i> Wall. ex G.Don                                            | VU         | EN   |
| Angiosperm  | Ebenaceae        | <i>Diospyros siamang</i> Bakh.                                                     | NEx        | NEx  |
| Angiosperm  | Ebenaceae        | <i>Diospyros styraciformis</i> King & Gamble                                       | VU         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros subrhomboidea</i> King & Gamble                                       | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros sumatrana</i> Miq.                                                    | CR         | CR   |
| Angiosperm  | Ebenaceae        | <i>Diospyros venosa</i> Wall. ex A.DC.                                             | CR         | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus acmosepalus</i> Stapf ex Ridl.                                      | CR         | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus ferrugineus</i> (Jack) Steud. subsp. <i>ferrugineus</i>             | Not Listed | VU   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus floribundus</i> Blume                                               | EN         | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus griffithii</i> (Wight) A.Gray                                       | NEx        | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus macrocerus</i> (Turcz.) Merr. subsp. <i>macrocerus</i>              | CR         | NEx  |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus mastersii</i> King                                                  | Not Listed | LC   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus nitidus</i> Jack var. <i>nitidus</i>                                | VU         | VU   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus obtusus</i> Blume subsp. <i>apiculatus</i> (Mast.) Coode            | CR         | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus palembanicus</i> (Miq.) Corner                                      | CR         | CR   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus pedunculatus</i> Wall. ex Mast.                                     | Not Listed | LC   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus petiolatus</i> (Jack) Wall.                                         | Not Listed | LC   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus polystachyus</i> Wall. ex Müll.Berol.                               | VU         | VU   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus salicifolius</i> King                                               | Not Listed | VU   |
| Angiosperm  | Elaeocarpaceae   | <i>Elaeocarpus stipularis</i> Blume var. <i>stipularis</i>                         | VU         | VU   |
| Angiosperm  | Elaeocarpaceae   | <i>Sloanea javanica</i> (Miq.) Szyszyl. ex K.Schum.                                | CR         | CR   |
| Angiosperm  | Ericaceae        | <i>Rhododendron longiflorum</i> Lindl.                                             | NEx        | NEx  |

| Major Group | Family          | Taxon Name                                                                        | RDB2       | RDB3 |
|-------------|-----------------|-----------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Ericaceae       | <i>Styphelia malayana</i> (Jack) J.J.Sm.                                          | NEx        | NEx  |
| Angiosperm  | Ericaceae       | <i>Vaccinium leptanthum</i> Miq. f. <i>malayanum</i><br>Sleumer                   | NEx        | NEx  |
| Angiosperm  | Ericaceae       | <i>Vaccinium bracteatum</i> Thunb.                                                | NEx        | NEx  |
| Angiosperm  | Ericaceae       | <i>Vaccinium littoreum</i> Miq.                                                   | NEx        | NEx  |
| Angiosperm  | Eriocaulaceae   | <i>Eriocaulon truncatum</i> Buch.-Ham. ex Mart. var. <i>florensense</i> Z.X.Zhang | Not Listed | CR   |
| Angiosperm  | Eriocaulaceae   | <i>Eriocaulon truncatum</i> Buch.-Ham. ex Mart. var. <i>truncatum</i>             | Not Listed | LC   |
| Angiosperm  | Eriocaulaceae   | <i>Eriocaulon willdenovianum</i> Moldenke                                         | Not Listed | VU   |
| Angiosperm  | Erythroxylaceae | <i>Erythroxylum cuneatum</i> (Miq.) Kurz                                          | Not Listed | LC   |
| Angiosperm  | Escalloniaceae  | <i>Polyosma fragrans</i> (Wall.) Benn.                                            | NEx        | NEx  |
| Angiosperm  | Escalloniaceae  | <i>Polyosma kingiana</i> Schltr.                                                  | CR         | CR   |
| Angiosperm  | Escalloniaceae  | <i>Polyosma ridleii</i> King                                                      | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Agrostistachys gaudichaudii</i> Müll.Arg.                                      | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Agrostistachys sessilifolia</i> (Kurz) Pax & K.Hoffm.                          | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Alchornea rugosa</i> (Lour.) Müll.Arg.                                         | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Alchornea tiliifolia</i> (Benth.) Müll.Arg.                                    | CR         | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Blumeodendron kurzii</i> (Hook.f.) J.J.Sm.                                     | Not Listed | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Blumeodendron subrotundifolium</i> (Elmer) Merr.                               | Not Listed | EN   |
| Angiosperm  | Euphorbiaceae   | <i>Blumeodendron tokbrai</i> (Blume) Kurz                                         | VU         | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Cheilosa montana</i> Blume                                                     | NEx        | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Claoxylon indicum</i> (Reinw. ex Blume) Hassk.                                 | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Claoxylon longifolium</i> (Blume) Endl. ex Hassk.                              | NEx        | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Croton adumbratus</i> Croizat                                                  | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Croton caudatus</i> Geiseler                                                   | Not Listed | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Croton erythrostachys</i> Hook.f.                                              | Not Listed | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Croton griffithii</i> Hook.f.                                                  | Not Listed | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Croton heterocarpus</i> Müll.Arg.                                              | CR         | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Croton laevifolius</i> Blume                                                   | EN         | EN   |
| Angiosperm  | Euphorbiaceae   | <i>Endospermum diadenum</i> (Miq.) Airy Shaw                                      | VU         | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Endospermum peltatum</i> Merr.                                                 | VU         | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Endospermum quadriloculare</i> Pax & K.Hoffm.                                  | Not Listed | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Euphorbia atoto</i> G.Forst.                                                   | Not Listed | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Excoecaria agallocha</i> L.                                                    | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Gymnanthes borneensis</i> (Pax & K.Hoffm.) Esser                               | Not Listed | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Hancea penangensis</i> (Müll.Arg.) S.E.C.Sierra et al.                         | CR         | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Koilocarpus longifolium</i> Hook.f.                                            | VU         | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga bancana</i> (Miq.) Müll.Arg.                                         | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga conifera</i> (Rchb.f. & Zoll.) Müll.Arg.                             | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga gigantea</i> (Rchb.f. & Zoll.) Müll.Arg.                             | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga griffithiana</i> Müll.Arg.                                           | VU         | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga heynei</i> I.M.Johnst.                                               | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga hullettii</i> King ex Hook.f.                                        | CR         | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga hypoleuca</i> (Rchb.f. & Zoll.) Müll.Arg.                            | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga lowii</i> King ex Hook.f.                                            | VU         | VU   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga puncticulata</i> Gage                                                | Not Listed | NEx  |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga recurvata</i> Gage                                                   | CR         | CR   |
| Angiosperm  | Euphorbiaceae   | <i>Macaranga trichocarpa</i> (Zoll.) Müll.Arg.                                    | EN         | CR   |



| Major Group | Family        | Taxon Name                                                                     | RDB2       | RDB3 |
|-------------|---------------|--------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Euphorbiaceae | <i>Mallotus macrostachyus</i> (Miq.) Müll.Arg.                                 | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae | <i>Mallotus paniculatus</i> (Lam.) Müll.Arg.                                   | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae | <i>Megistostigma glabratum</i> (Kurz) Govaerts                                 | NEx        | NEx  |
| Angiosperm  | Euphorbiaceae | <i>Micrococca mercurialis</i> (L.) Benth.                                      | Not Listed | CR   |
| Angiosperm  | Euphorbiaceae | <i>Neoscortechinia kingii</i> (Hook.f.) Pax & K.Hoffm.                         | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Neoscortechinia philippinensis</i> (Merr.) Welzen                           | Not Listed | CR   |
| Angiosperm  | Euphorbiaceae | <i>Neoscortechinia sumatrensis</i> S.Moore                                     | Not Listed | CR   |
| Angiosperm  | Euphorbiaceae | <i>Paracroton pendulus</i> (Hassk.) Miq.                                       | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Pimelodendron griffithianum</i> (Müll.Arg.) Benth.<br>ex Hook.f.            | VU         | VU   |
| Angiosperm  | Euphorbiaceae | <i>Plukenetia corniculata</i> Sm.                                              | NEx        | CR   |
| Angiosperm  | Euphorbiaceae | <i>Ptychopyxis bacciformis</i> Croizat                                         | Not Listed | NEx  |
| Angiosperm  | Euphorbiaceae | <i>Ptychopyxis caput-medusae</i> (Hook.f.) Ridl.                               | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Ptychopyxis costata</i> Miq. var. <i>oblanceolata</i> Airy<br>Shaw          | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Shirakiopsis indica</i> (Willd.) Esser                                      | NEx        | CR   |
| Angiosperm  | Euphorbiaceae | <i>Suregada glomerulata</i> (Blume) Baill.                                     | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Triadica cochinchinensis</i> Lour.                                          | Not Listed | LC   |
| Angiosperm  | Euphorbiaceae | <i>Trigonostemon longifolius</i> Baill. ex Müll.Arg.                           | CR         | CR   |
| Angiosperm  | Euphorbiaceae | <i>Trigonostemon scopulatus</i> R.Y.Yu & Welzen                                | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Adenantha malayana</i> Kosterm. subsp.<br><i>malayana</i>                   | VU         | EN   |
| Angiosperm  | Fabaceae      | <i>Aganope heptaphylla</i> (L.) Polhill                                        | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Aganope thyrsoflora</i> (Benth.) Polhill                                    | VU         | EN   |
| Angiosperm  | Fabaceae      | <i>Albizia pedicellata</i> Baker ex Benth.                                     | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Albizia retusa</i> Benth. subsp. <i>retusa</i>                              | NEx        | CR   |
| Angiosperm  | Fabaceae      | <i>Albizia splendens</i> Miq.                                                  | EN         | EN   |
| Angiosperm  | Fabaceae      | <i>Alysicarpus vaginalis</i> (L.) DC.                                          | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Archidendron clypearia</i> (Jack) I.C.Nielsen var.<br><i>clypearia</i>      | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Archidendron contortum</i> (Mart.) I.C.Nielsen                              | VU         | EN   |
| Angiosperm  | Fabaceae      | <i>Archidendron ellipticum</i> (Blume) I.C.Nielsen<br>subsp. <i>ellipticum</i> | VU         | EN   |
| Angiosperm  | Fabaceae      | <i>Archidendron globosum</i> (Blume) I.C.Nielsen                               | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Archidendron jiringa</i> (Jack) I.C.Nielsen                                 | VU         | VU   |
| Angiosperm  | Fabaceae      | <i>Archidendron microcarpum</i> (Benth.) I.C.Nielsen                           | EN         | EN   |
| Angiosperm  | Fabaceae      | <i>Brachypterum scandens</i> (Roxb.) Wight & Arn. ex<br>Miq.                   | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Canavalia cathartica</i> Thouars                                            | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Canavalia rosea</i> (Sw.) DC.                                               | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Crotalaria quinquefolia</i> L.                                              | Not Listed | NEx  |
| Angiosperm  | Fabaceae      | <i>Crotalaria uncinella</i> Lam.                                               | Not Listed | NEx  |
| Angiosperm  | Fabaceae      | <i>Cynometra ramiflora</i> L.                                                  | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Dalbergia candanensis</i> (Dennst.) Prain                                   | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Dalbergia havilandii</i> Prain                                              | Not Listed | NEx  |
| Angiosperm  | Fabaceae      | <i>Dalbergia hullettii</i> Prain                                               | NEx        | NEx  |
| Angiosperm  | Fabaceae      | <i>Dalbergia junghuhnii</i> Benth.                                             | CR         | CR   |
| Angiosperm  | Fabaceae      | <i>Dalbergia parviflora</i> Roxb.                                              | NEx        | CR   |
| Angiosperm  | Fabaceae      | <i>Dalbergia rostrata</i> Hassk.                                               | Not Listed | LC   |
| Angiosperm  | Fabaceae      | <i>Dalbergia velutina</i> Benth. var. <i>maingayi</i> Prain                    | CR         | EN   |

| Major Group | Family   | Taxon Name                                                                                            | RDB2       | RDB3 |
|-------------|----------|-------------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Fabaceae | <i>Dendrolobium umbellatum</i> (L.) Benth.                                                            | Not Listed | LC   |
| Angiosperm  | Fabaceae | <i>Derris amoena</i> Benth.                                                                           | VU         | LC   |
| Angiosperm  | Fabaceae | <i>Derris montana</i> Benth.                                                                          | Not Listed | NEx  |
| Angiosperm  | Fabaceae | <i>Derris trifoliata</i> Lour.                                                                        | Not Listed | LC   |
| Angiosperm  | Fabaceae | <i>Dialium indum</i> L. var. <i>bursa</i> (de Wit) Rojo ex Kessler & Sidiy.                           | Not Listed | NEx  |
| Angiosperm  | Fabaceae | <i>Dialium indum</i> L. var. <i>indum</i>                                                             | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Dialium platysepalum</i> Baker                                                                     | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Entada spiralis</i> Ridl.                                                                          | CR         | VU   |
| Angiosperm  | Fabaceae | <i>Flemingia strobilifera</i> (L.) W.T.Aiton                                                          | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Grona heterocarpos</i> (L.) H.Ohashi & K.Ohashi var. <i>heterocarpos</i>                           | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Grona heterocarpos</i> (L.) H.Ohashi & K.Ohashi var. <i>strigosa</i> (Meeuwen) H.Ohashi & K.Ohashi | Not Listed | VU   |
| Angiosperm  | Fabaceae | <i>Grona heterophylla</i> (Willd.) H.Ohashi & K.Ohashi                                                | Not Listed | LC   |
| Angiosperm  | Fabaceae | <i>Grona ovalifolia</i> (Prain) H.Ohashi et al.                                                       | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Grona triflora</i> (L.) H.Ohashi & K.Ohashi                                                        | Not Listed | LC   |
| Angiosperm  | Fabaceae | <i>Guilandina bonduc</i> L.                                                                           | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Indigofera zollingeriana</i> Miq.                                                                  | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Intsia bijuga</i> (Colebr.) Kuntze                                                                 | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Intsia palembanica</i> Miq.                                                                        | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Koompassia malaccensis</i> Maingay ex Benth.                                                       | EN         | EN   |
| Angiosperm  | Fabaceae | <i>Kunstleria ridleyi</i> Prain                                                                       | EN         | EN   |
| Angiosperm  | Fabaceae | <i>Mezoneuron andamanicum</i> Prain                                                                   | Not Listed | NEx  |
| Angiosperm  | Fabaceae | <i>Mezoneuron sumatranum</i> (Roxb.) Wight & Arn. ex Voigt                                            | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Millettia borneensis</i> Adema                                                                     | Not Listed | NEx  |
| Angiosperm  | Fabaceae | <i>Millettia pinnata</i> (L.) Panigrahi                                                               | EN         | EN   |
| Angiosperm  | Fabaceae | <i>Millettia xylocarpa</i> Miq.                                                                       | Not Listed | NEx  |
| Angiosperm  | Fabaceae | <i>Mucuna acuminata</i> Graham ex Baker                                                               | NEx        | NEx  |
| Angiosperm  | Fabaceae | <i>Mucuna biplicata</i> Teijsm. & Binn. ex Kurz                                                       | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Mucuna gigantea</i> (Willd.) DC. subsp. <i>gigantea</i>                                            | NEx        | CR   |
| Angiosperm  | Fabaceae | <i>Ormocarpum cochinchinense</i> (Lour.) Merr.                                                        | NEx        | CR   |
| Angiosperm  | Fabaceae | <i>Ormosia bancana</i> (Miq.) Prain                                                                   | EN         | CR   |
| Angiosperm  | Fabaceae | <i>Ormosia macrodisca</i> Baker                                                                       | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Ormosia sumatrana</i> (Miq.) Prain                                                                 | NEx        | CR   |
| Angiosperm  | Fabaceae | <i>Padbruggea dasyphylla</i> Miq.                                                                     | NEx        | CR   |
| Angiosperm  | Fabaceae | <i>Parkia speciosa</i> Hassk.                                                                         | VU         | VU   |
| Angiosperm  | Fabaceae | <i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne                                                | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Phanera semibifida</i> (Roxb.) Benth. var. <i>semibifida</i>                                       | VU         | LC   |
| Angiosperm  | Fabaceae | <i>Senegalia kekapur</i> (I.C.Nielsen) Maslin et al.                                                  | NEx        | CR   |
| Angiosperm  | Fabaceae | <i>Serianthes grandiflora</i> Benth.                                                                  | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Sindora coriacea</i> (Baker) Prain                                                                 | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Sindora echinocalyx</i> Prain                                                                      | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Sindora velutina</i> Baker                                                                         | Not Listed | CR   |
| Angiosperm  | Fabaceae | <i>Sindora wallichii</i> Benth.                                                                       | CR         | CR   |
| Angiosperm  | Fabaceae | <i>Sophora tomentosa</i> L.                                                                           | CR         | CR   |

| Major Group | Family          | Taxon Name                                                                         | RDB2       | RDB3 |
|-------------|-----------------|------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Fabaceae        | <i>Spatholobus acuminatus</i> Benth.                                               | Not Listed | NEx  |
| Angiosperm  | Fabaceae        | <i>Spatholobus dubius</i> Prain                                                    | Not Listed | NEx  |
| Angiosperm  | Fabaceae        | <i>Spatholobus ferrugineus</i> (Zoll. & Moritzi) Benth.<br>var. <i>ferrugineus</i> | Not Listed | LC   |
| Angiosperm  | Fabaceae        | <i>Spatholobus maingayi</i> Prain                                                  | NEx        | CR   |
| Angiosperm  | Fabaceae        | <i>Spatholobus ridleyi</i> Prain                                                   | CR         | CR   |
| Angiosperm  | Fabaceae        | <i>Ticanto crista</i> (L.) R.Clark & Gagnon                                        | VU         | LC   |
| Angiosperm  | Fabaceae        | <i>Vigna marina</i> (Burm.) Merr.                                                  | Not Listed | LC   |
| Angiosperm  | Fabaceae        | <i>Whitfordiodendron erianthum</i> (Benth.) Dunn                                   | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis inermis</i> (Lindl.) Benth. & Hook.f.                               | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis javanica</i> (Blume) A.DC.                                          | NEx        | NEx  |
| Angiosperm  | Fagaceae        | <i>Castanopsis lucida</i> (Nees) Soepadmo                                          | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis malaccensis</i> Gamble                                              | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis megacarpa</i> Gamble                                                | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis nephelioides</i> King ex Hook.f.                                    | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis schefferiana</i> Hance                                              | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Castanopsis wallichii</i> King ex Hook.f.                                       | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus bennettii</i> (Miq.) Rehder                                         | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus cantleyanus</i> (King ex Hook.f.) Rehder                            | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus conocarpus</i> (Oudem.) Rehder                                      | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus cyclophorus</i> (Endl.) A.Camus                                     | NEx        | NEx  |
| Angiosperm  | Fagaceae        | <i>Lithocarpus elegans</i> (Blume) Hatus. ex                                       | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus encleisacarpus</i> (Korth.) A.Camus                                 | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus ewyckii</i> (Korth.) Rehder                                         | EN         | EN   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus gracilis</i> (Korth.) Soepadmo                                      | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus hystrix</i> (Korth.) Rehder                                         | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus lucidus</i> (Roxb.) Rehder                                          | EN         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus sundaicus</i> (Blume) Rehder                                        | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Lithocarpus wallichianus</i> (Lindl. ex Hance)<br>Rehder                        | CR         | CR   |
| Angiosperm  | Fagaceae        | <i>Quercus argentata</i> Korth.                                                    | CR         | CR   |
| Angiosperm  | Flagellariaceae | <i>Flagellaria indica</i> L.                                                       | Not Listed | LC   |
| Angiosperm  | Gelsemiaceae    | <i>Pteleocarpa lamponga</i> (Miq.) Bakh. ex K.Heyne                                | NEx        | NEx  |
| Angiosperm  | Gentianaceae    | <i>Cyrtophyllum fragrans</i> (Roxb.) DC.                                           | Not Listed | LC   |
| Angiosperm  | Gentianaceae    | <i>Cyrtophyllum giganteum</i> (Ridl.) Ridl.                                        | NEx        | CR   |
| Angiosperm  | Gentianaceae    | <i>Fagraea auriculata</i> Jack                                                     | CR         | CR   |
| Angiosperm  | Gentianaceae    | <i>Fagraea ridleyi</i> King & Gamble                                               | NEx        | CR   |
| Angiosperm  | Gentianaceae    | <i>Fagraea splendens</i> Blume                                                     | NEx        | CR   |
| Angiosperm  | Gentianaceae    | <i>Limahlania crenulata</i> (Maingay ex C.B.Clarke)<br>K.M.Wong & Sugumaran        | Not Listed | NEx  |
| Angiosperm  | Gentianaceae    | <i>Utania austromalayensis</i> Sugumaran                                           | Not Listed | NEx  |
| Angiosperm  | Gentianaceae    | <i>Utania nervosa</i> K.M.Wong & Sugumaran                                         | Not Listed | VU   |
| Angiosperm  | Gentianaceae    | <i>Utania racemosa</i> (Jack ex Wall.) Sugumaran                                   | EN         | CR   |
| Angiosperm  | Gentianaceae    | <i>Utania volubilis</i> (Wall.) Sugumaran var. <i>volubilis</i>                    | Not Listed | EN   |
| Angiosperm  | Gesneriaceae    | <i>Aeschynanthus albidus</i> (Blume) Steud.                                        | CR         | CR   |
| Angiosperm  | Gesneriaceae    | <i>Aeschynanthus pulcher</i> (Blume) G.Don                                         | NEx        | CR   |
| Angiosperm  | Gesneriaceae    | <i>Aeschynanthus radicans</i> Jack                                                 | NEx        | NEx  |
| Angiosperm  | Gesneriaceae    | <i>Aeschynanthus wallichii</i> R.Br.                                               | CR         | CR   |
| Angiosperm  | Gesneriaceae    | <i>Codonoboea platypus</i> (C.B.Clarke) C.L.Lim                                    | CR         | CR   |

| Major Group | Family           | Taxon Name                                                                   | RDB2       | RDB3 |
|-------------|------------------|------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Gesneriaceae     | <i>Codonoboea puncticulata</i> (Ridl.) C.L.Lim                               | NEx        | NEx  |
| Angiosperm  | Gesneriaceae     | <i>Cyrtandra pendula</i> Blume                                               | CR         | CR   |
| Angiosperm  | Goodeniaceae     | <i>Scaevola taccada</i> (Gaertn.) Roxb.                                      | Not Listed | LC   |
| Angiosperm  | Hanguanaceae     | <i>Hanguana neglecta</i> Škorničk. & Niissalo                                | VU         | EN   |
| Angiosperm  | Hanguanaceae     | <i>Hanguana nitens</i> Siti Nurfazilah et al.                                | Not Listed | CR   |
| Angiosperm  | Hanguanaceae     | <i>Hanguana podzolicola</i> Siti Nurfazilah et al.                           | VU         | CR   |
| Angiosperm  | Hanguanaceae     | <i>Hanguana rubinea</i> Škorničk. & P.C.Boyce                                | VU         | CR   |
| Angiosperm  | Hanguanaceae     | <i>Hanguana triangulata</i> Škorničk. & P.C.Boyce                            | VU         | CR   |
| Angiosperm  | Hernandiaceae    | <i>Hernandia nymphaeifolia</i> (C.Presl) Kubitzki                            | NEx        | NEx  |
| Angiosperm  | Hernandiaceae    | <i>Illigera trifoliata</i> (Griff.) Dunn                                     | NEx        | NEx  |
| Angiosperm  | Hydrocharitaceae | <i>Blyxa japonica</i> (Miq.) Maxim. ex Asch. & Gürke<br>var. <i>japonica</i> | Not Listed | CR   |
| Angiosperm  | Hydrocharitaceae | <i>Enhalus acoroides</i> (L.f.) Royle                                        | VU         | CR   |
| Angiosperm  | Hydrocharitaceae | <i>Halophila beccarii</i> Asch.                                              | CR         | EN   |
| Angiosperm  | Hydrocharitaceae | <i>Halophila decipiens</i> Ostenf.                                           | Not Listed | CR   |
| Angiosperm  | Hydrocharitaceae | <i>Halophila minor</i> (Zoll.) Hartog                                        | VU         | CR   |
| Angiosperm  | Hydrocharitaceae | <i>Halophila ovalis</i> (R.Br.) Hook.f.                                      | VU         | LC   |
| Angiosperm  | Hydrocharitaceae | <i>Halophila spinulosa</i> (R.Br.) Asch.                                     | CR         | CR   |
| Angiosperm  | Hydrocharitaceae | <i>Thalassia hemprichii</i> (Ehrenb.) Asch.                                  | CR         | EN   |
| Angiosperm  | Hydroleaceae     | <i>Hydrolea zeylanica</i> (L.) Vahl                                          | NEx        | NEx  |
| Angiosperm  | Hypericaceae     | <i>Cratoxylum arborescens</i> (Vahl) Blume                                   | VU         | EN   |
| Angiosperm  | Hypericaceae     | <i>Cratoxylum cochinchinense</i> (Lour.) Blume                               | EN         | EN   |
| Angiosperm  | Hypericaceae     | <i>Cratoxylum formosum</i> (Jack) Benth. & Hook.f. ex<br>Dyer                | EN         | EN   |
| Angiosperm  | Hypericaceae     | <i>Cratoxylum maingayi</i> Dyer                                              | CR         | CR   |
| Angiosperm  | Hypoxidaceae     | <i>Curculigo capitulata</i> (Lour.) Kuntze                                   | CR         | CR   |
| Angiosperm  | Hypoxidaceae     | <i>Curculigo latifolia</i> W.T.Aiton                                         | VU         | VU   |
| Angiosperm  | Icacinaceae      | <i>Iodes cirrhosa</i> Turcz.                                                 | CR         | CR   |
| Angiosperm  | Icacinaceae      | <i>Iodes ovalis</i> Blume                                                    | EN         | VU   |
| Angiosperm  | Icacinaceae      | <i>Iodes velutina</i> King                                                   | Not Listed | CR   |
| Angiosperm  | Icacinaceae      | <i>Phytocrene bracteata</i> Wall.                                            | VU         | VU   |
| Angiosperm  | Icacinaceae      | <i>Phytocrene oblonga</i> Wall.                                              | Not Listed | CR   |
| Angiosperm  | Irvingiaceae     | <i>Irvingia malayana</i> Oliv. ex A.W.Benn.                                  | CR         | CR   |
| Angiosperm  | Ixonanthaceae    | <i>Ixonanthes icosandra</i> Jack                                             | VU         | VU   |
| Angiosperm  | Ixonanthaceae    | <i>Ixonanthes reticulata</i> Jack                                            | Not Listed | LC   |
| Angiosperm  | Juglandaceae     | <i>Engelhardia serrata</i> Blume                                             | NEx        | CR   |
| Angiosperm  | Lamiaceae        | <i>Anisomeles indica</i> (L.) Kuntze                                         | Not Listed | CR   |
| Angiosperm  | Lamiaceae        | <i>Callicarpa longifolia</i> Lam.                                            | NEx        | VU   |
| Angiosperm  | Lamiaceae        | <i>Callicarpa pentandra</i> Roxb.                                            | Not Listed | NEx  |
| Angiosperm  | Lamiaceae        | <i>Clerodendrum deflexum</i> Wall.                                           | VU         | LC   |
| Angiosperm  | Lamiaceae        | <i>Clerodendrum disparifolium</i> Blume                                      | Not Listed | LC   |
| Angiosperm  | Lamiaceae        | <i>Clerodendrum myrmecophilum</i> Ridl.                                      | NEx        | NEx  |
| Angiosperm  | Lamiaceae        | <i>Clerodendrum villosum</i> Blume                                           | VU         | LC   |
| Angiosperm  | Lamiaceae        | <i>Coleus scutellarioides</i> (L.) Benth.                                    | Not Listed | CR   |
| Angiosperm  | Lamiaceae        | <i>Gmelina elliptica</i> Sm.                                                 | EN         | EN   |
| Angiosperm  | Lamiaceae        | <i>Peronema canescens</i> Jack                                               | NEx        | NEx  |
| Angiosperm  | Lamiaceae        | <i>Premna serratifolia</i> L.                                                | VU         | LC   |
| Angiosperm  | Lamiaceae        | <i>Premna trichostoma</i> Miq.                                               | NEx        | NEx  |
| Angiosperm  | Lamiaceae        | <i>Sphenodesme pentandra</i> Jack var. <i>pentandra</i>                      | NEx        | CR   |

| Major Group | Family    | Taxon Name                                                                  | RDB2       | RDB3 |
|-------------|-----------|-----------------------------------------------------------------------------|------------|------|
| Angiosperm  | Lamiaceae | <i>Teijsmanniodendron coriaceum</i> (C.B.Clarke) Kosterm.                   | CR         | CR   |
| Angiosperm  | Lamiaceae | <i>Teijsmanniodendron pteropodum</i> (Miq.) Bakh.                           | NEx        | CR   |
| Angiosperm  | Lamiaceae | <i>Vitex gamosepala</i> Griff.                                              | CR         | NEx  |
| Angiosperm  | Lamiaceae | <i>Vitex pinnata</i> L.                                                     | Not Listed | LC   |
| Angiosperm  | Lamiaceae | <i>Vitex rotundifolia</i> L.f.                                              | Not Listed | NEx  |
| Angiosperm  | Lamiaceae | <i>Vitex trifolia</i> L.                                                    | Not Listed | CR   |
| Angiosperm  | Lamiaceae | <i>Vitex vestita</i> Wall. ex Walp.                                         | CR         | CR   |
| Angiosperm  | Lamiaceae | <i>Volkameria inermis</i> L.                                                | Not Listed | LC   |
| Angiosperm  | Lauraceae | <i>Actinodaphne glomerata</i> (Blume) Nees                                  | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Actinodaphne macrophylla</i> (Blume) Nees                                | NEx        | CR   |
| Angiosperm  | Lauraceae | <i>Actinodaphne malaccensis</i> Hook.f.                                     | EN         | EN   |
| Angiosperm  | Lauraceae | <i>Actinodaphne pruinosa</i> Nees                                           | EN         | EN   |
| Angiosperm  | Lauraceae | <i>Alseodaphne bancana</i> Miq.                                             | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Alseodaphne intermedia</i> Kosterm.                                      | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Alseodaphne nigrescens</i> (Gamble) Kosterm.                             | NEx        | NEx  |
| Angiosperm  | Lauraceae | <i>Beilschmiedia kunstleri</i> Gamble                                       | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Beilschmiedia madang</i> (Blume) Blume                                   | EN         | VU   |
| Angiosperm  | Lauraceae | <i>Cassytha filiformis</i> L.                                               | Not Listed | LC   |
| Angiosperm  | Lauraceae | <i>Cinnamomum iners</i> (Reinw. ex Nees & T.Nees) Blume                     | Not Listed | LC   |
| Angiosperm  | Lauraceae | <i>Cinnamomum javanicum</i> Blume                                           | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Cinnamomum subavenium</i> Miq.                                           | NEx        | NEx  |
| Angiosperm  | Lauraceae | <i>Cryptocarya ferrea</i> Blume                                             | CR         | EN   |
| Angiosperm  | Lauraceae | <i>Cryptocarya griffithiana</i> Wight                                       | CR         | EN   |
| Angiosperm  | Lauraceae | <i>Cryptocarya impressa</i> Miq.                                            | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Cryptocarya kurzii</i> Hook.f.                                           | NEx        | CR   |
| Angiosperm  | Lauraceae | <i>Cryptocarya malayana</i> de Kok                                          | NEx        | NEx  |
| Angiosperm  | Lauraceae | <i>Cryptocarya nitens</i> (Blume) Koord. & Valetton                         | Not Listed | CR   |
| Angiosperm  | Lauraceae | <i>Cryptocarya rugulosa</i> Hook.f.                                         | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Dehaasia cuneata</i> (Blume) Blume                                       | Not Listed | CR   |
| Angiosperm  | Lauraceae | <i>Dehaasia incrassata</i> (Jack) Nees                                      | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Endiandra maingayi</i> Hook.f.                                           | Not Listed | CR   |
| Angiosperm  | Lauraceae | <i>Lindera lucida</i> (Blume) Boerl.                                        | VU         | VU   |
| Angiosperm  | Lauraceae | <i>Litsea accedens</i> (Blume) Boerl.                                       | EN         | EN   |
| Angiosperm  | Lauraceae | <i>Litsea</i> aff. <i>maingayi</i> Hook.f.                                  | Not Listed | DD   |
| Angiosperm  | Lauraceae | <i>Litsea castanea</i> Hook.f.                                              | EN         | EN   |
| Angiosperm  | Lauraceae | <i>Litsea cordata</i> (Jack) Hook.f.                                        | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea costalis</i> (Nees) Kosterm.                                      | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea elliptica</i> Blume                                               | Not Listed | LC   |
| Angiosperm  | Lauraceae | <i>Litsea erectinervia</i> Kosterm.                                         | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea ferruginea</i> (Blume) Blume                                      | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea gracilipes</i> Hook.f.                                            | NEx        | NEx  |
| Angiosperm  | Lauraceae | <i>Litsea grandis</i> (Nees) Hook.f.                                        | EN         | EN   |
| Angiosperm  | Lauraceae | <i>Litsea lanceolata</i> (Blume) Kosterm.                                   | NEx        | NEx  |
| Angiosperm  | Lauraceae | <i>Litsea lancifolia</i> (Roxb. ex Nees) Fern.-Vill. var. <i>lancifolia</i> | CR         | EN   |
| Angiosperm  | Lauraceae | <i>Litsea machilifolia</i> Gamble                                           | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea myristicifolia</i> (Wall. ex Nees) Hook.f.                        | CR         | CR   |
| Angiosperm  | Lauraceae | <i>Litsea resinosa</i> Blume                                                | Not Listed | CR   |

| Major Group | Family           | Taxon Name                                            | RDB2       | RDB3 |
|-------------|------------------|-------------------------------------------------------|------------|------|
| Angiosperm  | Lauraceae        | <i>Litsea ridleyi</i> Gamble                          | EN         | EN   |
| Angiosperm  | Lauraceae        | <i>Litsea robusta</i> Blume                           | CR         | NEx  |
| Angiosperm  | Lauraceae        | <i>Litsea sphaerocarpa</i> Blume                      | Not Listed | DD   |
| Angiosperm  | Lauraceae        | <i>Litsea tomentosa</i> Blume                         | Not Listed | NEx  |
| Angiosperm  | Lauraceae        | <i>Litsea umbellata</i> (Lour.) Merr.                 | VU         | VU   |
| Angiosperm  | Lauraceae        | <i>Machilus declinatus</i> (Blume) de Kok             | CR         | NEx  |
| Angiosperm  | Lauraceae        | <i>Machilus rimosus</i> (Blume) Blume                 | Not Listed | NEx  |
| Angiosperm  | Lauraceae        | <i>Neolitsea cassia</i> (L.) Kosterm.                 | VU         | LC   |
| Angiosperm  | Lauraceae        | <i>Nothaphoebe coriacea</i> (Kosterm.) Kosterm.       | NEx        | NEx  |
| Angiosperm  | Lauraceae        | <i>Nothaphoebe umbelliflora</i> (Blume) Blume         | Not Listed | LC   |
| Angiosperm  | Lauraceae        | <i>Phoebe grandis</i> (Nees) Merr.                    | CR         | CR   |
| Angiosperm  | Lauraceae        | <i>Phoebe macrophylla</i> (Nees) Blume                | Not Listed | NEx  |
| Angiosperm  | Lecythidaceae    | <i>Barringtonia asiatica</i> (L.) Kurz                | CR         | CR   |
| Angiosperm  | Lecythidaceae    | <i>Barringtonia conoidea</i> Griff.                   | NEx        | NEx  |
| Angiosperm  | Lecythidaceae    | <i>Barringtonia macrostachya</i> (Jack) Kurz          | CR         | CR   |
| Angiosperm  | Lecythidaceae    | <i>Barringtonia racemosa</i> (L.) Spreng.             | CR         | CR   |
| Angiosperm  | Lecythidaceae    | <i>Barringtonia reticulata</i> (Blume) Miq.           | CR         | CR   |
| Angiosperm  | Lecythidaceae    | <i>Planchonia grandis</i> Ridl.                       | NEx        | CR   |
| Angiosperm  | Lentibulariaceae | <i>Utricularia punctata</i> Wall. ex A.DC.            | Not Listed | NEx  |
| Angiosperm  | Lentibulariaceae | <i>Utricularia uliginosa</i> Vahl                     | NEx        | CR   |
| Angiosperm  | Linaceae         | <i>Indorouchera griffithiana</i> (Planch.) Hallier f. | Not Listed | LC   |
| Angiosperm  | Linderniaceae    | <i>Artanema longifolium</i> (L.) Vatke                | Not Listed | NEx  |
| Angiosperm  | Linderniaceae    | <i>Lindernia anagallis</i> (Burm.f.) Pennell          | Not Listed | CR   |
| Angiosperm  | Linderniaceae    | <i>Lindernia ruellioidea</i> (Colsm.) Pennell         | Not Listed | NEx  |
| Angiosperm  | Loganiaceae      | <i>Mitrasacme pygmaea</i> R.Br. var. <i>pygmaea</i>   | Not Listed | CR   |
| Angiosperm  | Loganiaceae      | <i>Norrisia major</i> Soler.                          | CR         | CR   |
| Angiosperm  | Loganiaceae      | <i>Strychnos</i> cf. <i>axillaris</i> Colebr.         | NEx        | DD   |
| Angiosperm  | Loganiaceae      | <i>Strychnos ignatii</i> P.J.Bergius                  | VU         | LC   |
| Angiosperm  | Loganiaceae      | <i>Strychnos maingayi</i> C.B.Clarke                  | CR         | CR   |
| Angiosperm  | Loganiaceae      | <i>Strychnos pubescens</i> C.B.Clarke                 | NEx        | CR   |
| Angiosperm  | Loganiaceae      | <i>Strychnos ridleyi</i> King & Gamble                | NEx        | EX   |
| Angiosperm  | Loranthaceae     | <i>Amylothea duthieana</i> (King) Danser              | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Barathranthus axanthus</i> (Korth.) Miq.           | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Dendrophthoe curvata</i> (Blume) Miq.              | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Dendrophthoe pentandra</i> (L.) Miq.               | Not Listed | LC   |
| Angiosperm  | Loranthaceae     | <i>Elytranthe albida</i> (Blume) Blume                | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Elytranthe arnottiana</i> (Korth.) Miq.            | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Helixanthera coccinea</i> (Jack) Danser            | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Helixanthera parasitica</i> Lour.                  | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Macrosolen cochinchinensis</i> (Lour.) Tiegh.      | Not Listed | LC   |
| Angiosperm  | Loranthaceae     | <i>Macrosolen papillosus</i> (Gamble) Danser          | NEx        | NEx  |
| Angiosperm  | Loranthaceae     | <i>Macrosolen retusus</i> (Jack) Miq.                 | Not Listed | CR   |
| Angiosperm  | Loranthaceae     | <i>Scurrula ferruginea</i> (Roxb. ex Jack) Danser     | Not Listed | VU   |
| Angiosperm  | Loranthaceae     | <i>Scurrula parasitica</i> L.                         | CR         | CR   |
| Angiosperm  | Loranthaceae     | <i>Taxillus chinensis</i> (DC.) Danser                | CR         | CR   |
| Angiosperm  | Lythraceae       | <i>Pemphis acidula</i> J.R.Forst. & G.Forst.          | CR         | CR   |
| Angiosperm  | Lythraceae       | <i>Sonneratia alba</i> Sm.                            | Not Listed | LC   |
| Angiosperm  | Lythraceae       | <i>Sonneratia caseolaris</i> (L.) Engl.               | CR         | CR   |
| Angiosperm  | Lythraceae       | <i>Sonneratia ovata</i> Backer                        | CR         | CR   |



| Major Group | Family        | Taxon Name                                                                          | RDB2       | RDB3 |
|-------------|---------------|-------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Magnoliaceae  | <i>Magnolia elegans</i> (Blume) H.Keng                                              | CR         | CR   |
| Angiosperm  | Magnoliaceae  | <i>Magnolia macklottii</i> (Korth.) Dandy var. <i>beccariana</i> (A.Agostini) Noot. | NEx        | NEx  |
| Angiosperm  | Magnoliaceae  | <i>Magnolia singaporensis</i> (Ridl.) H.Keng                                        | EN         | CR   |
| Angiosperm  | Magnoliaceae  | <i>Magnolia villosa</i> (Miq.) H.Keng                                               | CR         | CR   |
| Angiosperm  | Malpighiaceae | <i>Aspidopterys concava</i> (Wall.) A.Juss.                                         | EN         | EN   |
| Angiosperm  | Malpighiaceae | <i>Hiptage sericea</i> Hook.f.                                                      | CR         | CR   |
| Angiosperm  | Malpighiaceae | <i>Tristellateia australasiae</i> A.Rich.                                           | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Abutilon indicum</i> (L.) Sweet                                                  | Not Listed | CR   |
| Angiosperm  | Malvaceae     | <i>Brownlowia argentata</i> Kurz                                                    | NEx        | NEx  |
| Angiosperm  | Malvaceae     | <i>Brownlowia tersa</i> (L.) Kosterm.                                               | EN         | CR   |
| Angiosperm  | Malvaceae     | <i>Byttneria maingayi</i> Mast.                                                     | CR         | EN   |
| Angiosperm  | Malvaceae     | <i>Coelostegia griffithii</i> Benth.                                                | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Commersonia bartramia</i> (L.) Merr.                                             | Not Listed | LC   |
| Angiosperm  | Malvaceae     | <i>Durio griffithii</i> (Mast.) Bakh.                                               | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Durio singaporensis</i> Ridl.                                                    | VU         | CR   |
| Angiosperm  | Malvaceae     | <i>Grewia laevigata</i> Vahl                                                        | VU         | VU   |
| Angiosperm  | Malvaceae     | <i>Heritiera borneensis</i> (Merr.) Kosterm.                                        | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Heritiera elata</i> Ridl.                                                        | EN         | CR   |
| Angiosperm  | Malvaceae     | <i>Heritiera littoralis</i> Aiton                                                   | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Heritiera simplicifolia</i> (Mast.) Kosterm.                                     | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Hibiscus tiliaceus</i> L.                                                        | Not Listed | LC   |
| Angiosperm  | Malvaceae     | <i>Kleinhovia hospita</i> L.                                                        | NEx        | NEx  |
| Angiosperm  | Malvaceae     | <i>Melochia corchorifolia</i> L.                                                    | Not Listed | LC   |
| Angiosperm  | Malvaceae     | <i>Melochia umbellata</i> (Houtt.) Stapf                                            | Not Listed | CR   |
| Angiosperm  | Malvaceae     | <i>Microcos antidesmifolia</i> (King) Burret var. <i>antidesmifolia</i>             | Not Listed | CR   |
| Angiosperm  | Malvaceae     | <i>Microcos globulifera</i> (Mast.) Burret                                          | NEx        | NEx  |
| Angiosperm  | Malvaceae     | <i>Microcos hirsuta</i> (Korth.) Burret                                             | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Microcos latifolia</i> Burret                                                    | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Microcos tomentosa</i> Sm.                                                       | Not Listed | CR   |
| Angiosperm  | Malvaceae     | <i>Neesia altissima</i> (Blume) Blume                                               | NEx        | NEx  |
| Angiosperm  | Malvaceae     | <i>Neesia malayana</i> Bakh.                                                        | NEx        | CR   |
| Angiosperm  | Malvaceae     | <i>Neesia synandra</i> Mast.                                                        | VU         | CR   |
| Angiosperm  | Malvaceae     | <i>Pentace triptera</i> Mast.                                                       | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Pterocymbium tubulatum</i> (Mast.) Pierre                                        | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Pterospermum diversifolium</i> Blume                                             | NEx        | CR   |
| Angiosperm  | Malvaceae     | <i>Pterospermum sumatranum</i> Miq.                                                 | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Scaphium affine</i> (Mast.) Pierre                                               | EN         | EN   |
| Angiosperm  | Malvaceae     | <i>Scaphium linearicarpum</i> (Mast.) Pierre                                        | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Sida cordifolia</i> L.                                                           | Not Listed | LC   |
| Angiosperm  | Malvaceae     | <i>Sida rhombifolia</i> L. subsp. <i>rhombifolia</i>                                | Not Listed | LC   |
| Angiosperm  | Malvaceae     | <i>Sterculia coccinea</i> Jack                                                      | VU         | EN   |
| Angiosperm  | Malvaceae     | <i>Sterculia cordata</i> Blume                                                      | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Sterculia gilva</i> Miq.                                                         | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Sterculia macrophylla</i> Vent.                                                  | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Sterculia parviflora</i> Roxb. ex G.Don                                          | CR         | CR   |
| Angiosperm  | Malvaceae     | <i>Sterculia rubiginosa</i> Vent.                                                   | VU         | VU   |
| Angiosperm  | Malvaceae     | <i>Thespesia populnea</i> (L.) Sol. ex Corrêa                                       | Not Listed | LC   |

| Major Group | Family          | Taxon Name                                             | RDB2       | RDB3 |
|-------------|-----------------|--------------------------------------------------------|------------|------|
| Angiosperm  | Marantaceae     | <i>Donax canniformis</i> (G.Forst.) K.Schum.           | EN         | CR   |
| Angiosperm  | Marantaceae     | <i>Phrynium hirtum</i> Ridl.                           | Not Listed | CR   |
| Angiosperm  | Marantaceae     | <i>Stachyphrynium latifolium</i> (Blume) K.Schum.      | EN         | EN   |
| Angiosperm  | Marantaceae     | <i>Stachyphrynium parvum</i> Ridl.                     | EN         | CR   |
| Angiosperm  | Melastomataceae | <i>Diplectria divaricata</i> (Willd.) Kuntze           | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Diplectria stipularis</i> (Blume) Kuntze            | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Diplectria viminalis</i> (Jack) Kuntze              | CR         | EN   |
| Angiosperm  | Melastomataceae | <i>Dissochaeta annulata</i> Hook.f. ex Triana          | VU         | CR   |
| Angiosperm  | Melastomataceae | <i>Dissochaeta biligulata</i> Korth.                   | VU         | CR   |
| Angiosperm  | Melastomataceae | <i>Dissochaeta gracilis</i> (Jack) Blume               | VU         | VU   |
| Angiosperm  | Melastomataceae | <i>Dissochaeta pallida</i> (Jack) Blume                | EN         | EN   |
| Angiosperm  | Melastomataceae | <i>Dissochaeta punctulata</i> Hook.f. ex Triana        | VU         | EN   |
| Angiosperm  | Melastomataceae | <i>Lijndenia laurina</i> Zoll. & Moritzi               | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Macrolenes echinulata</i> (Naudin) Bakh.f.          | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Medinilla crassifolia</i> (Reinw. ex Blume) Blume   | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Medinilla radicans</i> (Blume) Blume                | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Medinilla rubicunda</i> (Jack) Blume                | Not Listed | NEx  |
| Angiosperm  | Melastomataceae | <i>Melastoma malabathricum</i> L.                      | Not Listed | LC   |
| Angiosperm  | Melastomataceae | <i>Melastoma molle</i> (C.B.Clarke) Wall. ex Cogn.     | Not Listed | NEx  |
| Angiosperm  | Melastomataceae | <i>Memecylon acuminatissimum</i> Blume                 | Not Listed | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon acuminatum</i> Sm. var. <i>acuminatum</i> | NEx        | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon amplexicaule</i> Roxb.                    | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon campanulatum</i> C.B.Clarke               | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon cantleyi</i> Ridl.                        | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon durum</i> Cogn.                           | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Memecylon edule</i> Roxb. var. <i>edule</i>         | EN         | EN   |
| Angiosperm  | Melastomataceae | <i>Memecylon excelsum</i> Blume                        | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon floridum</i> Ridl.                        | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon fruticosum</i> King                       | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon garcinioides</i> Blume                    | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon lancifolium</i> Ridl.                     | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Memecylon lilacinum</i> Zoll. & Moritzi             | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon minutiflorum</i> Miq.                     | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon oleifolium</i> Blume                      | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon ovatum</i> Sm.                            | EN         | EN   |
| Angiosperm  | Melastomataceae | <i>Memecylon paniculatum</i> Jack                      | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon pseudomegacarpum</i> M.Hughes             | EN         | CR   |
| Angiosperm  | Melastomataceae | <i>Memecylon pubescens</i> (C.B.Clarke) King           | NEx        | CR   |
| Angiosperm  | Melastomataceae | <i>Ochthocharis bornensis</i> Blume                    | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Ochthocharis javanica</i> Blume                     | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Ochthocharis paniculata</i> Korth.                  | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Pachycentria constricta</i> (Blume) Blume           | CR         | NEx  |
| Angiosperm  | Melastomataceae | <i>Pachycentria maingayi</i> (C.B.Clarke) J.F.Maxwell  | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Pachycentria pulverulenta</i> (Jack) Clausing       | CR         | CR   |
| Angiosperm  | Melastomataceae | <i>Plethiandra sessiliflora</i> (Cogn.) Merr.          | NEx        | NEx  |
| Angiosperm  | Melastomataceae | <i>Pternandra coerulea</i> Jack                        | VU         | VU   |
| Angiosperm  | Melastomataceae | <i>Pternandra echinata</i> Jack                        | VU         | LC   |
| Angiosperm  | Melastomataceae | <i>Pternandra tuberculata</i> (Korth.) M.P.Nayar       | CR         | NEx  |
| Angiosperm  | Melastomataceae | <i>Sonerila moluccana</i> Roxb.                        | CR         | CR   |

| Major Group | Family          | Taxon Name                                                                         | RDB2       | RDB3 |
|-------------|-----------------|------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Melastomataceae | <i>Sonerila obliqua</i> Korth.                                                     | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia crassinervia</i> Kurz ex Hiern                                           | Not Listed | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia cucullata</i> (Roxb.) Pellegr.                                           | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia edulis</i> (Roxb.) Wall.                                                 | Not Listed | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia elliptica</i> Blume subsp. <i>elliptica</i>                              | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia erythrosperma</i> Pannell                                                | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia exstipulata</i> (Griff.) W.Theob.                                        | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia glabriflora</i> Hiern                                                    | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia lawii</i> (Wight) C.J.Saldanha subsp. <i>oligocarpa</i> (Miq.) Pannell   | Not Listed | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia macrocarpa</i> (Miq.) Pannell                                            | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia meliosmoides</i> Craib                                                   | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia multinervis</i> Pannell                                                  | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia odoratissima</i> Blume                                                   | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia oligophylla</i> Miq.                                                     | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia palembanica</i> Miq.                                                     | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia rubiginosa</i> (Hiern) Pannell                                           | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia rufinervis</i> (Blume) Benth.                                            | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia sexipetala</i> Griff.                                                    | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia teysmanniana</i> (Miq.) Miq.                                             | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aglaia tomentosa</i> Teijsm. & Binn. subsp. <i>cordata</i> (Hiern) Pannell      | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Aphanamixis polystachya</i> (Wall.) R.Parker                                    | EN         | LC   |
| Angiosperm  | Meliaceae       | <i>Aphanamixis sumatrana</i> (Miq.) Harms                                          | NEx        | NEx  |
| Angiosperm  | Meliaceae       | <i>Chisocheton erythrocarpus</i> Hiern                                             | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Chisocheton macrophyllus</i> King subsp. <i>macrophyllus</i>                    | NEx        | NEx  |
| Angiosperm  | Meliaceae       | <i>Chisocheton patens</i> Blume                                                    | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Chisocheton pauciflorus</i> King                                                | NEx        | NEx  |
| Angiosperm  | Meliaceae       | <i>Chisocheton pentandrus</i> (Blanco) Merr. subsp. <i>paucijugus</i> (Miq.) Mabb. | CR         | NEx  |
| Angiosperm  | Meliaceae       | <i>Chisocheton sarawakanus</i> (C.DC.) Harms                                       | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Dysoxylum acutangulum</i> Miq.                                                  | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Dysoxylum carolinae</i> Mabb.                                                   | NEx        | NEx  |
| Angiosperm  | Meliaceae       | <i>Dysoxylum cyrtobotryum</i> Miq.                                                 | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Dysoxylum flavescens</i> Hiern                                                  | CR         | NEx  |
| Angiosperm  | Meliaceae       | <i>Dysoxylum grande</i> Hiern                                                      | Not Listed | CR   |
| Angiosperm  | Meliaceae       | <i>Epicharis cuneata</i> (Hiern) Harms                                             | VU         | VU   |
| Angiosperm  | Meliaceae       | <i>Epicharis densiflora</i> Blume                                                  | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Munronia breviflora</i> (Ridl.) Mabb. & Muellner                                | NEx        | NEx  |
| Angiosperm  | Meliaceae       | <i>Prasoxylon alliaceum</i> (Blume) M.Roem.                                        | NEx        | CR   |
| Angiosperm  | Meliaceae       | <i>Prasoxylon excelsum</i> (Spreng.) Mabb.                                         | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Pseudoclausena chrysogyne</i> (Miq.) T.P.Clark                                  | CR         | CR   |
| Angiosperm  | Meliaceae       | <i>Sandoricum beccarianum</i> Baill.                                               | CR         | EN   |
| Angiosperm  | Meliaceae       | <i>Sandoricum koetjape</i> (Burm.f.) Merr.                                         | EN         | VU   |
| Angiosperm  | Meliaceae       | <i>Xylocarpus granatum</i> J.Koenig                                                | Not Listed | LC   |
| Angiosperm  | Meliaceae       | <i>Xylocarpus moluccensis</i> (Lam.) M.Roem.                                       | EN         | EN   |
| Angiosperm  | Meliaceae       | <i>Xylocarpus rumphii</i> (Kostel.) Mabb.                                          | CR         | CR   |
| Angiosperm  | Menispermaceae  | <i>Albertisia crassa</i> Forman                                                    | Not Listed | EN   |
| Angiosperm  | Menispermaceae  | <i>Arcangelisia flava</i> (L.) Merr.                                               | Not Listed | CR   |

| Major Group | Family         | Taxon Name                                                       | RDB2       | RDB3 |
|-------------|----------------|------------------------------------------------------------------|------------|------|
| Angiosperm  | Menispermaceae | <i>Coscinium fenestratum</i> (Gaertn.) Colebr.                   | EN         | EN   |
| Angiosperm  | Menispermaceae | <i>Cyclea laxiflora</i> Miers                                    | CR         | CR   |
| Angiosperm  | Menispermaceae | <i>Fibraurea tinctoria</i> Lour.                                 | Not Listed | LC   |
| Angiosperm  | Menispermaceae | <i>Hypserpa nitida</i> Miers                                     | NEx        | EN   |
| Angiosperm  | Menispermaceae | <i>Limacia scandens</i> Lour.                                    | VU         | LC   |
| Angiosperm  | Menispermaceae | <i>Nephroia orbiculata</i> (L.) L.Lian & Wei Wang                | NEx        | CR   |
| Angiosperm  | Menispermaceae | <i>Pycnarrhena fasciculata</i> (Miers) Diels                     | Not Listed | CR   |
| Angiosperm  | Menispermaceae | <i>Stephania capitata</i> (Blume) Spreng.                        | CR         | CR   |
| Angiosperm  | Menispermaceae | <i>Tinomiscium petiolare</i> Miers ex Hook.f. & Thomson          | EN         | VU   |
| Angiosperm  | Menispermaceae | <i>Tinospora krispura</i> I.M.Turner                             | Not Listed | EN   |
| Angiosperm  | Menispermaceae | <i>Tinospora macrocarpa</i> Diels                                | CR         | VU   |
| Angiosperm  | Menispermaceae | <i>Tinospora singapura</i> I.M.Turner                            | Not Listed | CR   |
| Angiosperm  | Metteniusaceae | <i>Platea latifolia</i> Blume                                    | NEx        | CR   |
| Angiosperm  | Monimiaceae    | <i>Matthaea sancta</i> Blume                                     | EN         | EN   |
| Angiosperm  | Moraceae       | <i>Antiaris toxicaria</i> (J.F.Gmel.) Lesch.                     | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus anisophyllus</i> Miq.                              | EN         | EN   |
| Angiosperm  | Moraceae       | <i>Artocarpus dadah</i> Miq.                                     | EN         | EN   |
| Angiosperm  | Moraceae       | <i>Artocarpus elasticus</i> Reinw. ex Blume                      | Not Listed | LC   |
| Angiosperm  | Moraceae       | <i>Artocarpus fulvicortex</i> F.M.Jarrett                        | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus gomezianus</i> Wall. ex Trécul                     | CR         | NEx  |
| Angiosperm  | Moraceae       | <i>Artocarpus griffithii</i> (King) Merr.                        | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus hispidus</i> F.M.Jarrett                           | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus kemando</i> Miq.                                   | EN         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus lanceifolius</i> Roxb.                             | CR         | EN   |
| Angiosperm  | Moraceae       | <i>Artocarpus lowii</i> King                                     | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Artocarpus rigidus</i> Blume                                  | VU         | EN   |
| Angiosperm  | Moraceae       | <i>Artocarpus scortechinii</i> King                              | EN         | VU   |
| Angiosperm  | Moraceae       | <i>Ficus albipila</i> (Miq.) King                                | NEx        | NEx  |
| Angiosperm  | Moraceae       | <i>Ficus annulata</i> Blume                                      | NEx        | NEx  |
| Angiosperm  | Moraceae       | <i>Ficus apiocarpa</i> (Miq.) Miq.                               | EN         | EN   |
| Angiosperm  | Moraceae       | <i>Ficus aurata</i> (Miq.) Miq.                                  | VU         | LC   |
| Angiosperm  | Moraceae       | <i>Ficus binnendijkii</i> (Miq.) Miq.                            | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Ficus bracteata</i> (Miq.) Wall. ex Miq.                      | CR         | NEx  |
| Angiosperm  | Moraceae       | <i>Ficus callophylla</i> Blume                                   | VU         | NEx  |
| Angiosperm  | Moraceae       | <i>Ficus caulocarpa</i> (Miq.) Miq.                              | Not Listed | EN   |
| Angiosperm  | Moraceae       | <i>Ficus chartacea</i> (Kurz) Wall. ex King                      | VU         | VU   |
| Angiosperm  | Moraceae       | <i>Ficus consociata</i> Blume                                    | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Ficus crassiramea</i> (Miq.) Miq. subsp. <i>crassiramea</i>   | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Ficus delosyae</i> Corner                                     | NEx        | CR   |
| Angiosperm  | Moraceae       | <i>Ficus deltoidea</i> Jack                                      | CR         | CR   |
| Angiosperm  | Moraceae       | <i>Ficus excavata</i> King                                       | NEx        | NEx  |
| Angiosperm  | Moraceae       | <i>Ficus fistulosa</i> Reinw. ex Blume                           | Not Listed | LC   |
| Angiosperm  | Moraceae       | <i>Ficus glandulifera</i> (Miq.) Wall. ex King                   | CR         | EN   |
| Angiosperm  | Moraceae       | <i>Ficus globosa</i> Blume                                       | EN         | VU   |
| Angiosperm  | Moraceae       | <i>Ficus grossularioides</i> Burm.f. var. <i>grossularioides</i> | Not Listed | LC   |
| Angiosperm  | Moraceae       | <i>Ficus heteropleura</i> Blume                                  | Not Listed | LC   |

| Major Group | Family        | Taxon Name                                                                                                            | RDB2       | RDB3 |
|-------------|---------------|-----------------------------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Moraceae      | <i>Ficus kerkhovenii</i> Koord. & Valetton                                                                            | CR         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus kochummeniana</i> C.C.Berg                                                                                   | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus laevis</i> Blume                                                                                             | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus lamponga</i> Miq.                                                                                            | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus lindsayana</i> Beentje                                                                                       | CR         | NEx  |
| Angiosperm  | Moraceae      | <i>Ficus microcarpa</i> L.f.                                                                                          | Not Listed | LC   |
| Angiosperm  | Moraceae      | <i>Ficus microsyce</i> Ridl.                                                                                          | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus pallescens</i> (Weiblen) C.C.Berg                                                                            | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus pellucidopunctata</i> Griff.                                                                                 | NEx        | NEx  |
| Angiosperm  | Moraceae      | <i>Ficus pisocarpa</i> Blume                                                                                          | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus punctata</i> Thunb.                                                                                          | Not Listed | LC   |
| Angiosperm  | Moraceae      | <i>Ficus recurva</i> Blume var. <i>ribesioides</i> (Miq.) King                                                        | CR         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus rosulata</i> C.C.Berg                                                                                        | NEx        | CR   |
| Angiosperm  | Moraceae      | <i>Ficus ruginervia</i> Corner                                                                                        | NEx        | CR   |
| Angiosperm  | Moraceae      | <i>Ficus sagittata</i> Vahl                                                                                           | CR         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus scaberrima</i> Blume                                                                                         | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus scortechinii</i> King                                                                                        | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus sinuata</i> Thunb.                                                                                           | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus stricta</i> (Miq.) Miq.                                                                                      | Not Listed | CR   |
| Angiosperm  | Moraceae      | <i>Ficus subgelderii</i> Corner                                                                                       | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus subulata</i> Blume                                                                                           | Not Listed | CR   |
| Angiosperm  | Moraceae      | <i>Ficus sumatrana</i> (Miq.) Miq.                                                                                    | Not Listed | NEx  |
| Angiosperm  | Moraceae      | <i>Ficus sundaica</i> Blume                                                                                           | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus superba</i> (Miq.) Miq.                                                                                      | EN         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus trichocarpa</i> Blume                                                                                        | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Ficus variegata</i> Blume                                                                                          | Not Listed | LC   |
| Angiosperm  | Moraceae      | <i>Ficus vasculosa</i> Wall. ex Miq.                                                                                  | VU         | VU   |
| Angiosperm  | Moraceae      | <i>Ficus villosa</i> Blume                                                                                            | CR         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus virens</i> Aiton                                                                                             | CR         | EN   |
| Angiosperm  | Moraceae      | <i>Ficus xylophylla</i> (Miq.) Wall. ex Miq.                                                                          | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Malaisia scandens</i> (Lour.) Planch.                                                                              | Not Listed | CR   |
| Angiosperm  | Moraceae      | <i>Parartocarpus bracteatus</i> (King) Becc.                                                                          | CR         | CR   |
| Angiosperm  | Moraceae      | <i>Parartocarpus venenosus</i> (Zoll. & Moritzi) Becc.                                                                | NEx        | NEx  |
| Angiosperm  | Moraceae      | <i>Sloetia elongata</i> (Miq.) Koord.                                                                                 | VU         | LC   |
| Angiosperm  | Myricaceae    | <i>Morella esculenta</i> (Buch.-Ham. ex D.Don) I.M.Turner                                                             | Not Listed | LC   |
| Angiosperm  | Myristicaceae | <i>Endocomia canarioides</i> (King) W.J.de Wilde                                                                      | NEx        | CR   |
| Angiosperm  | Myristicaceae | <i>Gymnacranthera bancana</i> (Miq.) J.Sinclair                                                                       | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Gymnacranthera farquhariana</i> (Wall. ex Hook.f. & Thomson) Warb. var. <i>eugeniifolia</i> (A.DC.) R.T.A.Schouten | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Gymnacranthera farquhariana</i> (Wall. ex Hook.f. & Thomson) Warb. var. <i>farquhariana</i>                        | CR         | EN   |
| Angiosperm  | Myristicaceae | <i>Gymnacranthera forbesii</i> (King) Warb. var. <i>forbesii</i>                                                      | CR         | NEx  |
| Angiosperm  | Myristicaceae | <i>Horsfieldia crassifolia</i> (Hook.f. & Thomson) Warb.                                                              | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia grandis</i> (Hook.f.) Warb.                                                                            | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia irya</i> (Gaertn.) Warb.                                                                               | CR         | CR   |

| Major Group | Family        | Taxon Name                                                                                           | RDB2       | RDB3 |
|-------------|---------------|------------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Myristicaceae | <i>Horsfieldia polyspherula</i> (Hook.f.) J.Sinclair var. <i>polyspherula</i>                        | VU         | VU   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia punctatifolia</i> J.Sinclair                                                          | CR         | EN   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia sparsa</i> W.J.de Wilde                                                               | NEx        | EN   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia superba</i> (Hook.f. & Thomson) Warb.                                                 | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Horsfieldia tomentosa</i> (Kuntze) Warb.                                                          | CR         | NEx  |
| Angiosperm  | Myristicaceae | <i>Horsfieldia wallichii</i> (Hook.f. & Thomson) Warb.                                               | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Knema communis</i> J.Sinclair                                                                     | Not Listed | VU   |
| Angiosperm  | Myristicaceae | <i>Knema conferta</i> (King) Warb.                                                                   | EN         | EN   |
| Angiosperm  | Myristicaceae | <i>Knema corticosa</i> Lour.                                                                         | CR         | VU   |
| Angiosperm  | Myristicaceae | <i>Knema curtisii</i> (King) Warb. var. <i>paludosa</i> J.Sinclair                                   | EN         | CR   |
| Angiosperm  | Myristicaceae | <i>Knema furfuracea</i> (Hook.f. & Thomson) Warb.                                                    | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Knema hookeriana</i> (Wall. ex Hook.f. & Thomson) Warb.                                           | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Knema intermedia</i> (Blume) Warb.                                                                | EN         | EN   |
| Angiosperm  | Myristicaceae | <i>Knema latericia</i> Elmer subsp. <i>ridleyi</i> (Gand.) W.J.de Wilde                              | EN         | EN   |
| Angiosperm  | Myristicaceae | <i>Knema laurina</i> (Blume) Warb. var. <i>laurina</i>                                               | EN         | EN   |
| Angiosperm  | Myristicaceae | <i>Knema malayana</i> Warb.                                                                          | EN         | EN   |
| Angiosperm  | Myristicaceae | <i>Knema rubens</i> (J.Sinclair) W.J.de Wilde                                                        | NEx        | NEx  |
| Angiosperm  | Myristicaceae | <i>Knema sumatrana</i> (Blume) W.J.de Wilde                                                          | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Myristica cinnamomea</i> King                                                                     | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Myristica crassa</i> King                                                                         | CR         | DD   |
| Angiosperm  | Myristicaceae | <i>Myristica elliptica</i> Wall. ex Hook.f. & Thomson                                                | EN         | CR   |
| Angiosperm  | Myristicaceae | <i>Myristica iners</i> Blume                                                                         | CR         | CR   |
| Angiosperm  | Myristicaceae | <i>Myristica lowiana</i> King                                                                        | CR         | NEx  |
| Angiosperm  | Myristicaceae | <i>Myristica maingayi</i> Hook.f.                                                                    | CR         | DD   |
| Angiosperm  | Myristicaceae | <i>Myristica maxima</i> Warb.                                                                        | CR         | CR   |
| Angiosperm  | Myrtaceae     | <i>Decaspermum parviflorum</i> (Lam.) A.J.Scott subsp. <i>parviflorum</i>                            | VU         | VU   |
| Angiosperm  | Myrtaceae     | <i>Decaspermum parviflorum</i> (Lam.) A.J.Scott subsp. <i>quadripartitum</i> J.Parn. & NicLugh.      | VU         | CR   |
| Angiosperm  | Myrtaceae     | <i>Melaleuca cajuputi</i> Maton & Sm. ex R.Powell                                                    | NEx        | DD   |
| Angiosperm  | Myrtaceae     | <i>Rhodamnia cinerea</i> Jack                                                                        | Not Listed | LC   |
| Angiosperm  | Myrtaceae     | <i>Rhodomyrtus tomentosa</i> (Aiton) Hassk.                                                          | Not Listed | VU   |
| Angiosperm  | Myrtaceae     | <i>Syzygium acuminatissimum</i> (Blume) DC.                                                          | EN         | EN   |
| Angiosperm  | Myrtaceae     | <i>Syzygium attenuatum</i> (Miq.) Merr. & L.M.Perry var. <i>attenuatum</i>                           | NEx        | CR   |
| Angiosperm  | Myrtaceae     | <i>Syzygium avene</i> Miq.                                                                           | NEx        | NEx  |
| Angiosperm  | Myrtaceae     | <i>Syzygium borneense</i> (Miq.) Miq.                                                                | Not Listed | LC   |
| Angiosperm  | Myrtaceae     | <i>Syzygium cerasiforme</i> (Blume) Merr. & L.M.Perry                                                | Not Listed | LC   |
| Angiosperm  | Myrtaceae     | <i>Syzygium chloranthum</i> (Duthie) Merr. & L.M.Perry                                               | CR         | EN   |
| Angiosperm  | Myrtaceae     | <i>Syzygium cinereum</i> (Kurz) Chantar. & J.Parn.                                                   | CR         | CR   |
| Angiosperm  | Myrtaceae     | <i>Syzygium claviflorum</i> (Roxb.) Wall. ex Steud. var. <i>claviflorum</i>                          | CR         | CR   |
| Angiosperm  | Myrtaceae     | <i>Syzygium claviflorum</i> (Roxb.) Wall. ex Steud. var. <i>maingayi</i> (Duthie) Chantar. & J.Parn. | CR         | EN   |



| Major Group | Family    | Taxon Name                                                                         | RDB2       | RDB3 |
|-------------|-----------|------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Myrtaceae | <i>Syzygium conglomeratum</i> (Duthie) I.M.Turner<br>var. <i>conglomeratum</i>     | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium duthieanum</i> (King) Masam.                                           | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium filiforme</i> Chantar. & J.Parn.                                       | EN         | EN   |
| Angiosperm  | Myrtaceae | <i>Syzygium flosculiferum</i> (M.R.Hend.) Sreek.                                   | NEx        | NEx  |
| Angiosperm  | Myrtaceae | <i>Syzygium formosum</i> (Wall.) Mason                                             | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium glabratum</i> (DC.) Veldkamp                                           | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium glaucum</i> (King) Chantar. & J.Parn.                                  | VU         | VU   |
| Angiosperm  | Myrtaceae | <i>Syzygium grande</i> (Wight) Walp.                                               | Not Listed | LC   |
| Angiosperm  | Myrtaceae | <i>Syzygium griffithii</i> (Duthie) Merr. & L.M.Perry                              | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium incarnatum</i> (Elmer) Merr. & L.M.Perry                               | EN         | EN   |
| Angiosperm  | Myrtaceae | <i>Syzygium inophyllum</i> DC.                                                     | CR         | NEx  |
| Angiosperm  | Myrtaceae | <i>Syzygium kunstleri</i> (King) Bahadur & R.C.Gaur                                | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium leptostemon</i> (Korth.) Merr. &<br>L.M.Perry                          | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium leucoxydon</i> Korth.                                                  | NEx        | NEx  |
| Angiosperm  | Myrtaceae | <i>Syzygium linoceroideum</i> (King) I.M.Turner                                    | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium maingayi</i> Chantar. & J.Parn.                                        | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium muelleri</i> (Miq.) Miq.                                               | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium myrtifolium</i> Walp.                                                  | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium ngadimanianum</i> (M.R.Hend.)<br>I.M.Turner                            | EN         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium nigricans</i> (King) Merr. & L.M.Perry                                 | EN         | EN   |
| Angiosperm  | Myrtaceae | <i>Syzygium oblatum</i> (Roxb.) Wall. ex A.M.Cowan &<br>Cowan var. <i>oblatum</i>  | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pachyphyllum</i> (Kurz) Merr. & L.M.Perry                              | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium palembanicum</i> Miq.                                                  | VU         | VU   |
| Angiosperm  | Myrtaceae | <i>Syzygium papillosum</i> (Duthie) Merr. & L.M.Perry                              | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pauper</i> (Ridl.) I.M.Turner                                          | EN         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pendens</i> (Duthie) I.M.Turner                                        | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium polyanthum</i> (Wight) Walp.                                           | VU         | LC   |
| Angiosperm  | Myrtaceae | <i>Syzygium prainianum</i> (King) Chantar. & J.Parn.                               | Not Listed | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pustulatum</i> (Duthie) Merr.                                          | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pycnanthum</i> Merr. & L.M.Perry                                       | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium pyrifolium</i> (Blume) DC.                                             | CR         | EN   |
| Angiosperm  | Myrtaceae | <i>Syzygium ridleyi</i> (King) Chantar. & J.Parn.                                  | EN         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium rugosum</i> Korth. var. <i>rugosum</i>                                 | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium scortechinii</i> (King) Chantar. & J.Parn.<br>var. <i>scortechinii</i> | NEx        | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium singaporense</i> (King) Airy Shaw                                      | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium subcrenatum</i> Merr. & L.M.Perry                                      | NEx        | EN   |
| Angiosperm  | Myrtaceae | <i>Syzygium subdecussatum</i> (Duthie) I.M.Turner<br>var. <i>subdecussatum</i>     | CR         | CR   |
| Angiosperm  | Myrtaceae | <i>Syzygium syzygioides</i> (Miq.) Merr. & L.M.Perry                               | VU         | LC   |
| Angiosperm  | Myrtaceae | <i>Syzygium urophyllum</i> Merr.                                                   | NEx        | NEx  |
| Angiosperm  | Myrtaceae | <i>Syzygium valdevenosum</i> (Duthie) Merr. &<br>L.M.Perry                         | Not Listed | NEx  |

| Major Group | Family       | Taxon Name                                                                                     | RDB2       | RDB3 |
|-------------|--------------|------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Myrtaceae    | <i>Syzygium zeylanicum</i> (L.) DC.                                                            | Not Listed | LC   |
| Angiosperm  | Myrtaceae    | <i>Tristaniaopsis merguensis</i> (Griff.) Peter G.Wilson & J.T.Waterh.                         | EN         | CR   |
| Angiosperm  | Myrtaceae    | <i>Tristaniaopsis obovata</i> (Benn.) Peter G.Wilson & J.T.Waterh.                             | CR         | CR   |
| Angiosperm  | Myrtaceae    | <i>Tristaniaopsis whiteana</i> (Griff.) Peter G.Wilson & J.T.Waterh.                           | EN         | EN   |
| Angiosperm  | Nepenthaceae | <i>Nepenthes ampullaria</i> Jack                                                               | VU         | VU   |
| Angiosperm  | Nepenthaceae | <i>Nepenthes gracilis</i> Korth.                                                               | Not Listed | LC   |
| Angiosperm  | Nepenthaceae | <i>Nepenthes rafflesiana</i> Jack                                                              | VU         | VU   |
| Angiosperm  | Nymphaeaceae | <i>Barclaya motleyi</i> Hook.f.                                                                | CR         | CR   |
| Angiosperm  | Nyssaceae    | <i>Mastixia pentandra</i> Blume subsp. <i>scortechinii</i> (King) K.M.Matthew                  | CR         | CR   |
| Angiosperm  | Nyssaceae    | <i>Mastixia trichotoma</i> Blume var. <i>maingayi</i> (C.B.Clarke) Danser                      | CR         | CR   |
| Angiosperm  | Ochnaceae    | <i>Brackenridgea elegantissima</i> (Wall.) Kanis                                               | EN         | EN   |
| Angiosperm  | Ochnaceae    | <i>Brackenridgea palustris</i> Bartell.                                                        | CR         | NEx  |
| Angiosperm  | Ochnaceae    | <i>Campylospermum serratum</i> (Gaertn.) Bittrich & M.C.E.Amaral                               | Not Listed | VU   |
| Angiosperm  | Ochnaceae    | <i>Euthemis leucocarpa</i> Jack                                                                | NEx        | NEx  |
| Angiosperm  | Ochnaceae    | <i>Euthemis minor</i> Jack                                                                     | NEx        | NEx  |
| Angiosperm  | Olacaceae    | <i>Anacolosa frutescens</i> (Blume) Blume                                                      | NEx        | CR   |
| Angiosperm  | Olacaceae    | <i>Erythralium scandens</i> Blume                                                              | VU         | VU   |
| Angiosperm  | Olacaceae    | <i>Ochanostachys amentacea</i> Mast.                                                           | VU         | VU   |
| Angiosperm  | Olacaceae    | <i>Olex imbricata</i> Roxb.                                                                    | NEx        | NEx  |
| Angiosperm  | Olacaceae    | <i>Scorodocarpus borneensis</i> (Baill.) Becc.                                                 | EN         | CR   |
| Angiosperm  | Olacaceae    | <i>Strombosia ceylanica</i> Gardner                                                            | Not Listed | LC   |
| Angiosperm  | Olacaceae    | <i>Strombosia javanica</i> Blume                                                               | Not Listed | VU   |
| Angiosperm  | Olacaceae    | <i>Ximenia americana</i> L.                                                                    | Not Listed | LC   |
| Angiosperm  | Oleaceae     | <i>Chionanthus macrocarpus</i> Blume                                                           | NEx        | NEx  |
| Angiosperm  | Oleaceae     | <i>Chionanthus ramiflorus</i> Roxb.                                                            | CR         | CR   |
| Angiosperm  | Oleaceae     | <i>Jasminum elongatum</i> (P.J.Bergius) Willd.                                                 | EN         | EN   |
| Angiosperm  | Oleaceae     | <i>Jasminum griffithii</i> C.B.Clarke                                                          | NEx        | NEx  |
| Angiosperm  | Oleaceae     | <i>Jasminum longipetalum</i> King & Gamble                                                     | NEx        | NEx  |
| Angiosperm  | Oleaceae     | <i>Olea brachiata</i> (Lour.) Merr.                                                            | VU         | VU   |
| Angiosperm  | Opiliaceae   | <i>Cansjera rheedei</i> J.F.Gmel.                                                              | VU         | LC   |
| Angiosperm  | Opiliaceae   | <i>Champereaia manillana</i> (Blume) Merr.                                                     | Not Listed | LC   |
| Angiosperm  | Opiliaceae   | <i>Lepionurus sylvestris</i> Blume                                                             | CR         | CR   |
| Angiosperm  | Orchidaceae  | <i>Acropsis liliifolia</i> (J.Koenig) Ormerod                                                  | CR         | CR   |
| Angiosperm  | Orchidaceae  | <i>Acropsis ridleyi</i> Hook.f.                                                                | NEx        | CR   |
| Angiosperm  | Orchidaceae  | <i>Adenoncos major</i> Ridl.                                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Adenoncos sumatrana</i> J.J.Sm.                                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Aeridostachya robusta</i> (Blume) Brieger                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Agrostophyllum majus</i> Hook.f.                                                            | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Agrostophyllum stipulatum</i> (Griff.) Schltr. subsp. <i>bicuspidatum</i> (J.J.Sm.) Schuit. | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Agrostophyllum stipulatum</i> (Griff.) Schltr. subsp. <i>stipulatum</i>                     | NEx        | CR   |
| Angiosperm  | Orchidaceae  | <i>Anoetochilus geniculatus</i> Ridl.                                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae  | <i>Aphyllorchis pallida</i> Blume                                                              | NEx        | CR   |
| Angiosperm  | Orchidaceae  | <i>Apostasia nuda</i> R.Br.                                                                    | CR         | CR   |

| Major Group | Family      | Taxon Name                                                                      | RDB2       | RDB3 |
|-------------|-------------|---------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Orchidaceae | <i>Apostasia wallichii</i> R.Br.                                                | Not Listed | NEx  |
| Angiosperm  | Orchidaceae | <i>Appendicula anceps</i> Blume                                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Appendicula cornuta</i> Blume                                                | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Appendicula lucida</i> Ridl.                                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Appendicula uncata</i> Ridl.                                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Arachnis hookeriana</i> (Rchb.f.) Rchb.f.                                    | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Arundina graminifolia</i> (D.Don) Hochr.                                     | Not Listed | VU   |
| Angiosperm  | Orchidaceae | <i>Brachypeza pallida</i> (Blume) Kocyan & Schuit.                              | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Bromheadia alticola</i> Ridl.                                                | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bromheadia aporoides</i> Rchb.f.                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bromheadia borneensis</i> J.J.Sm. var. <i>longiflora</i> Scheind. & de Vogel | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bromheadia finlaysoniana</i> (Lindl.) Miq.                                   | Not Listed | LC   |
| Angiosperm  | Orchidaceae | <i>Bromheadia scirpoidea</i> Ridl.                                              | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bromheadia truncata</i> Seidenf.                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bryobium hyacinthoides</i> (Blume) Y.P.Ng & P.J.Cribb                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bryobium pudicum</i> (Ridl.) Y.P.Ng & P.J.Cribb                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum aberrans</i> Schltr.                                            | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum acuminatum</i> (Ridl.) Ridl.                                    | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum apodum</i> Hook.f.                                              | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum botryophorum</i> Ridl.                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum clandestinum</i> Lindl.                                         | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum cleistogamum</i> Ridl.                                          | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum concinnum</i> Hook.f.                                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum flavescens</i> (Blume) Lindl.                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum gracillimum</i> (Rolfe) Rolfe                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum gusdorfii</i> J.J.Sm.                                           | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum lasianthum</i> Lindl.                                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum lepidum</i> (Blume) J.J.Sm.                                     | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum limbatum</i> Lindl.                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum lobbii</i> Lindl.                                               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum macranthum</i> Lindl.                                           | CR         | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum macrochilum</i> Rolfe                                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum makoyanum</i> (Rchb.f.) Ridl.                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum maxillare</i> (Lindl.) Rchb.f.                                  | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum medusae</i> (Lindl.) Rchb.f.                                    | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum membranaceum</i> Teijsm. & Binn.                                | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum ovalifolium</i> (Blume) Lindl.                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum patens</i> King ex Hook.f.                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum pileatum</i> Lindl.                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum praetervisum</i> J.J.Verm.                                      | Not Listed | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum purpurascens</i> Teijsm. & Binn.                                | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum restrepia</i> (Ridl.) Ridl.                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum ruficaudatum</i> Ridl.                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum rugosum</i> Ridl.                                               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum singaporeanum</i> Schltr.                                       | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum striatellum</i> Ridl.                                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum tenuifolium</i> (Blume) Lindl.                                  | NEx        | NEx  |

| Major Group | Family      | Taxon Name                                                                           | RDB2       | RDB3 |
|-------------|-------------|--------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Orchidaceae | <i>Bulbophyllum trifolium</i> Ridl.                                                  | VU         | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum trigonopus</i> (Rchb.f.) P.T.Ong                                     | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum uniflorum</i> (Blume) Hassk.                                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum vaginatum</i> (Lindl.) Rchb.f.                                       | VU         | VU   |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum vermiculare</i> Hook.f.                                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Bulbophyllum vesiculosum</i> J.J.Sm.                                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Calanthe pulchra</i> (Blume) Lindl.                                               | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Calanthe tankervilleae</i> (Banks) M.W.Chase et al.                               | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Callostylis pulchella</i> (Lindl.) S.C.Chen & Z.H.Tsi                             | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Ceratostylis javanica</i> (Blume) Schuit. et al.                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Ceratostylis subulata</i> Blume                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Chamaeanthus laciniatus</i> Carr                                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Claderia leontocampus</i> Niissalo                                                | Not Listed | CR   |
| Angiosperm  | Orchidaceae | <i>Claderia viridiflora</i> Hook.f.                                                  | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Cleisostoma halophilum</i> (Ridl.) Garay                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cleisostoma scortechinii</i> (Hook.f.) Garay                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cleisostoma subulatum</i> Blume                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne bracteosa</i> (Rchb.f.) M.W.Chase & Schuit.                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne cumingii</i> Lindl.                                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne foerstermannii</i> Rchb.f.                                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne mayeriana</i> Rchb.f.                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne pallidiflavis</i> (Blume) M.W.Chase & Schuit. var. <i>pallidiflavis</i> | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne rochussenii</i> de Vriese                                               | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Coelogyne septemcostata</i> J.J.Sm.                                               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne testacea</i> Lindl.                                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Coelogyne tomentosa</i> Lindl.                                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Corymborkis veratrifolia</i> (Reinw.) Blume                                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Crepidium micranthum</i> (Hook.f.) Szlach.                                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cryptostylis arachnites</i> (Blume) Hassk.                                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cylindrolobus longerepens</i> (Ridl.) Rauschert                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cylindrolobus neglectus</i> (Ridl.) J.J.Wood                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cylindrolobus nutans</i> (Lindl.) J.J.Wood                                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Cymbidium atropurpureum</i> (Lindl.) Rolfe                                        | Not Listed | CR   |
| Angiosperm  | Orchidaceae | <i>Cymbidium bicolor</i> Lindl. subsp. <i>pubescens</i> (Lindl.) Du Puy & P.J.Cribb  | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Cymbidium finlaysonianum</i> Lindl.                                               | CR         | EN   |
| Angiosperm  | Orchidaceae | <i>Cystorchis javanica</i> (Blume) Blume                                             | CR         | NEx  |
| Angiosperm  | Orchidaceae | <i>Cystorchis variegata</i> Blume                                                    | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium acerosum</i> Lindl.                                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium aciculare</i> Lindl.                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium aloifolium</i> (Blume) Rchb.f.                                         | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium angustifolium</i> (Blume) Lindl.                                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium comatum</i> (Blume) Lindl.                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium crocatum</i> Hook.f.                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium crumenatum</i> Sw.                                                     | Not Listed | LC   |
| Angiosperm  | Orchidaceae | <i>Dendrobium dactyliferum</i> Rchb.f.                                               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium flexile</i> Ridl.                                                      | NEx        | NEx  |

| Major Group | Family      | Taxon Name                                                          | RDB2       | RDB3 |
|-------------|-------------|---------------------------------------------------------------------|------------|------|
| Angiosperm  | Orchidaceae | <i>Dendrobium grande</i> Hook.f.                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium hendersonii</i> A.D.Hawkes & A.H.Heller               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium hercoglossum</i> Rchb.f.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium indivisum</i> (Blume) Miq.                            | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium indragiriense</i> Schltr.                             | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium laciniosum</i> Ridl.                                  | NEx        | EX   |
| Angiosperm  | Orchidaceae | <i>Dendrobium lamellatum</i> (Blume) Lindl.                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium leonis</i> (Lindl.) Rchb.f.                           | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium lobatum</i> (Blume) Miq.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium lobbii</i> Teijsm. & Binn.                            | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium longicolle</i> Lindl.                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium microglaphys</i> Rchb.f.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium pachyphyllum</i> (Kuntze) Bakh.f.                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium pensile</i> Ridl.                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium planibulbe</i> Lindl.                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium plicatile</i> Lindl.                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium prostratum</i> Ridl.                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium pulchellum</i> Roxb. ex Lindl.                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium revolutum</i> Lindl.                                  | CR         | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium salaccense</i> (Blume) Lindl.                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium secundum</i> (Blume) Lindl. ex Wall.                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium setifolium</i> Ridl.                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium singaporense</i> A.D.Hawkes & A.H.Heller              | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dendrobium spurium</i> (Blume) J.J.Sm.                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium stuposum</i> Lindl.                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium subulatum</i> (Blume) Lindl.                          | CR         | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium villosulum</i> Wall. ex Lindl.                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dendrobium xantholeucum</i> Rchb.f.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Didymoplexiella ornata</i> (Ridl.) Garay                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Didymoplexis pallens</i> Griff.                                  | CR         | DD   |
| Angiosperm  | Orchidaceae | <i>Dienia ophrydis</i> (J.Koenig) Seidenf.                          | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dilochia wallichii</i> Lindl.                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Dipodium fragrans</i> P.O'Byrne & J.J.Verm. var. <i>fragrans</i> | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Dipodium paludosum</i> (Griff.) Rchb.f.                          | CR         | NEx  |
| Angiosperm  | Orchidaceae | <i>Eria javanica</i> (Sw.) Blume                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Erythrorchis altissima</i> (Blume) Blume                         | Not Listed | NEx  |
| Angiosperm  | Orchidaceae | <i>Eulophia nuda</i> Lindl.                                         | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Galeola nudifolia</i> Lour.                                      | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Gastrodia javanica</i> (Blume) Lindl.                            | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Grammatophyllum speciosum</i> Blume                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Habenaria singapurensis</i> Ridl.                                | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Hetaeria obliqua</i> Blume                                       | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Hetaeria oblongifolia</i> Blume                                  | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Hylophila mollis</i> Lindl.                                      | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Lecanorchis malaccensis</i> Ridl.                                | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Lepidogyne longifolia</i> (Blume) Blume                          | Not Listed | CR   |
| Angiosperm  | Orchidaceae | <i>Liparis barbata</i> Lindl.                                       | NEx        | CR   |

| Major Group | Family      | Taxon Name                                                                             | RDB2       | RDB3 |
|-------------|-------------|----------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Orchidaceae | <i>Liparis elegans</i> Lindl.                                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Liparis ferruginea</i> Lindl.                                                       | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Liparis tricallosa</i> Rchb.f.                                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Macodes petola</i> (Blume) Lindl.                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Micropera fuscolutea</i> (Lindl.) Garay                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Microsaccus ampullaceus</i> J.J.Sm.                                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Microsaccus griffithii</i> (C.S.P.Parish & Rchb.f.) Seidenf.                        | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Microsaccus javensis</i> Blume                                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Microsaccus sumatranus</i> J.J.Sm.                                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Mycaranthes obliqua</i> Lindl.                                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Nephelaphyllum pulchrum</i> Blume                                                   | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Nervilia singaporensis</i> Niissalo                                                 | NEx        | EN   |
| Angiosperm  | Orchidaceae | <i>Neuwiedia griffithii</i> Rchb.f.                                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Neuwiedia veratrifolia</i> Blume                                                    | CR         | EN   |
| Angiosperm  | Orchidaceae | <i>Neuwiedia zollingeri</i> Rchb.f. var. <i>singaporeana</i> (Wall. ex Baker) de Vogel | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia bertoldi</i> King & Pantl.                                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia dissitiflora</i> Ridl.                                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia equitans</i> (G.Forst.) Mutel                                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia lunata</i> (Blume) Lindl.                                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia lycopodioides</i> (J.Koenig) Ormerod                                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia miniata</i> Lindl.                                                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oberonia stenophylla</i> Ridl.                                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oxystophyllum carnosum</i> Blume                                                    | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oxystophyllum excavatum</i> Blume                                                   | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Oxystophyllum sinuatum</i> (Lindl.) M.A.Clem.                                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Peristylus lacertifer</i> (Lindl.) J.J.Sm.                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Peristylus maingayi</i> (King & Pantl.) J.J.Wood & Ormerod                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Phalaenopsis cornu-cervi</i> (Breda) Blume & Rchb.f.                                | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Phreatia plantaginifolia</i> (J.Koenig) Ormerod                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Pinalia bractescens</i> (Lindl.) Kuntze                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Pinalia floribunda</i> (Lindl.) Kuntze                                              | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Pinalia tenuiflora</i> (Ridl.) J.J.Wood                                             | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Plocoglottis gigantea</i> (Hook.f.) J.J.Sm.                                         | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Plocoglottis javanica</i> Blume                                                     | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Plocoglottis lowii</i> Rchb.f.                                                      | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Podochilus microphyllus</i> Lindl.                                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Polystachya concreta</i> (Jacq.) Garay & H.R.Sweet                                  | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Pomatocalpa diffusum</i> Breda                                                      | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Renanthera elongata</i> (Blume) Lindl.                                              | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Renanthera histrionica</i> Rchb.f.                                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Rhynchostylis gigantea</i> (Lindl.) Ridl.                                           | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Robiquetia spathulata</i> (Blume) J.J.Sm.                                           | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Schoenorchis micrantha</i> Reinw. ex Blume                                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Schoenorchis secundiflora</i> (Ridl.) J.J.Sm.                                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Spathoglottis plicata</i> Blume                                                     | Not Listed | LC   |
| Angiosperm  | Orchidaceae | <i>Stereosandra javanica</i> Blume                                                     | NEx        | NEx  |



| Major Group | Family      | Taxon Name                                                                  | RDB2       | RDB3 |
|-------------|-------------|-----------------------------------------------------------------------------|------------|------|
| Angiosperm  | Orchidaceae | <i>Stichorkis gibbosa</i> (Finet) J.J.Wood                                  | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Strongyleria pannea</i> (Lindl.) Schuit. et al.                          | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Strongyleria pellipes</i> (Rchb.f. ex Hook.f.) Schuit. et al.            | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Taeniophyllum filiforme</i> J.J.Sm.                                      | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Taeniophyllum pusillum</i> (Willd.) Seidenf. & Ormerod                   | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Thelasis carinata</i> Blume                                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thelasis micrantha</i> (Brongn.) J.J.Sm.                                 | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thelasis pygmaea</i> (Griff.) Lindl.                                     | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum acuminatissimum</i> (Blume) Rchb.f.                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum amplexicaule</i> (Blume) Rchb.f.                            | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Thrixspermum calceolus</i> (Lindl.) Rchb.f.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum centipeda</i> Lour.                                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum clavatum</i> (J.Koenig) Garay                               | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum filiforme</i> (Hook.f.) Kuntze                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum scopa</i> (Rchb.f. ex Hook.f.) Holtum                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Thrixspermum trichoglottis</i> (Hook.f.) Kuntze                          | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Trichotosia gracilis</i> (Hook.f.) Kraenzl.                              | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Trichotosia velutina</i> (Lodd. ex Lindl.) Kraenzl.                      | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Trichotosia vestita</i> (Wall. ex Lindl.) Kraenzl.                       | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Tropidia curculigoides</i> Lindl.                                        | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Vanilla griffithii</i> Rchb.f.                                           | VU         | EN   |
| Angiosperm  | Orchidaceae | <i>Vrydagzynea albida</i> (Blume) Blume                                     | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Vrydagzynea lancifolia</i> Ridl.                                         | NEx        | CR   |
| Angiosperm  | Orchidaceae | <i>Vrydagzynea tristriata</i> Ridl.                                         | NEx        | NEx  |
| Angiosperm  | Orchidaceae | <i>Zeuxine clandestina</i> Blume                                            | CR         | CR   |
| Angiosperm  | Orchidaceae | <i>Zeuxine parvifolia</i> (Ridl.) K.Schum. & Fedde                          | CR         | DD   |
| Angiosperm  | Orchidaceae | <i>Zeuxine strateumatica</i> (L.) Schltr.                                   | NEx        | CR   |
| Angiosperm  | Oxalidaceae | <i>Dapania racemosa</i> Korth.                                              | NEx        | CR   |
| Angiosperm  | Oxalidaceae | <i>Sarcotheca griffithii</i> (Planch. ex Hook.f.) Hallier f.                | CR         | CR   |
| Angiosperm  | Oxalidaceae | <i>Sarcotheca laxa</i> (Ridl.) R.Knuth var. <i>sericea</i> (Ridl.) Veldkamp | CR         | CR   |
| Angiosperm  | Pandaceae   | <i>Galearia fulva</i> (Tul.) Miq.                                           | VU         | VU   |
| Angiosperm  | Pandaceae   | <i>Galearia maingayi</i> Hook.f.                                            | CR         | CR   |
| Angiosperm  | Pandaceae   | <i>Microdesmis caseariifolia</i> Planch. ex Hook.                           | Not Listed | VU   |
| Angiosperm  | Pandanaceae | <i>Benstonea affinis</i> (Kurz) Callm. & Buerki                             | NEx        | CR   |
| Angiosperm  | Pandanaceae | <i>Benstonea atrocarpa</i> (Griff.) Callm. & Buerki                         | EN         | EN   |
| Angiosperm  | Pandanaceae | <i>Benstonea ornata</i> (Kurz) Callm. & Buerki                              | EN         | EN   |
| Angiosperm  | Pandanaceae | <i>Benstonea parva</i> (Ridl.) Callm. & Buerki                              | CR         | EN   |
| Angiosperm  | Pandanaceae | <i>Freycinetia angustifolia</i> Blume                                       | CR         | CR   |
| Angiosperm  | Pandanaceae | <i>Freycinetia confusa</i> Ridl.                                            | NEx        | CR   |
| Angiosperm  | Pandanaceae | <i>Freycinetia corneri</i> B.C.Stone                                        | NEx        | NEx  |
| Angiosperm  | Pandanaceae | <i>Freycinetia javanica</i> Blume                                           | NEx        | CR   |
| Angiosperm  | Pandanaceae | <i>Freycinetia sumatrana</i> Hemsl.                                         | Not Listed | VU   |
| Angiosperm  | Pandanaceae | <i>Pandanus houlletii</i> Carrière                                          | CR         | CR   |
| Angiosperm  | Pandanaceae | <i>Pandanus nitidus</i> (Miq.) Kurz                                         | CR         | NEx  |

| Major Group | Family             | Taxon Name                                                                                      | RDB2       | RDB3 |
|-------------|--------------------|-------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Pandanaceae        | <i>Pandanus odorifer</i> (Forssk.) Kuntze                                                       | Not Listed | LC   |
| Angiosperm  | Pandanaceae        | <i>Pandanus rostratus</i> Martelli                                                              | NEx        | NEx  |
| Angiosperm  | Pandanaceae        | <i>Pandanus yvonii</i> Solms                                                                    | CR         | CR   |
| Angiosperm  | Passifloraceae     | <i>Adenia cordifolia</i> (Blume) Engl.                                                          | EN         | EN   |
| Angiosperm  | Passifloraceae     | <i>Adenia macrophylla</i> (Blume) Koord. var. <i>singaporiana</i> (Wall. ex G.Don) W.J.de Wilde | VU         | EN   |
| Angiosperm  | Pentaphragmataceae | <i>Pentaphragma ellipticum</i> Poulsen var. <i>ellipticum</i>                                   | VU         | CR   |
| Angiosperm  | Pentaphylacaceae   | <i>Adinandra acuminata</i> Korth.                                                               | CR         | NEx  |
| Angiosperm  | Pentaphylacaceae   | <i>Adinandra dumosa</i> Jack                                                                    | Not Listed | LC   |
| Angiosperm  | Pentaphylacaceae   | <i>Adinandra integerrima</i> T.Anderson ex Dyer                                                 | NEx        | CR   |
| Angiosperm  | Pentaphylacaceae   | <i>Eurya acuminata</i> DC.                                                                      | Not Listed | LC   |
| Angiosperm  | Pentaphylacaceae   | <i>Ternstroemia coriacea</i> Scheff.                                                            | CR         | CR   |
| Angiosperm  | Pentaphylacaceae   | <i>Ternstroemia palembangensis</i> Kobuski                                                      | CR         | CR   |
| Angiosperm  | Pentaphylacaceae   | <i>Ternstroemia penangiana</i> Choisy                                                           | NEx        | NEx  |
| Angiosperm  | Pentaphylacaceae   | <i>Ternstroemia wallichiana</i> (Griff.) Engl.                                                  | NEx        | NEx  |
| Angiosperm  | Peraceae           | <i>Chaetocarpus castanicarpus</i> (Roxb.) Thwaites                                              | NEx        | NEx  |
| Angiosperm  | Philydraceae       | <i>Philydrum lanuginosum</i> Banks ex Gaertn.                                                   | NEx        | CR   |
| Angiosperm  | Phrymaceae         | <i>Cyrtandromoea subsessilis</i> (Miq.) B.L.Burt                                                | Not Listed | NEx  |
| Angiosperm  | Phyllanthaceae     | <i>Actephila excelsa</i> (Dalzell) Müll.Arg.                                                    | VU         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Antidesma coriaceum</i> Tul.                                                                 | VU         | EN   |
| Angiosperm  | Phyllanthaceae     | <i>Antidesma cuspidatum</i> Müll.Arg.                                                           | Not Listed | LC   |
| Angiosperm  | Phyllanthaceae     | <i>Antidesma neurocarpum</i> Miq.                                                               | EN         | EN   |
| Angiosperm  | Phyllanthaceae     | <i>Antidesma velutinosum</i> Blume                                                              | EN         | EN   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa benthamiana</i> Hook.f.                                                              | VU         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa confusa</i> Gage                                                                     | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa falcifera</i> Hook.f.                                                                | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa frutescens</i> Blume                                                                 | Not Listed | LC   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa globifera</i> Hook.f.                                                                | Not Listed | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa lucida</i> (Miq.) Airy Shaw var. <i>lucida</i>                                       | CR         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa lunata</i> (Miq.) Kurz                                                               | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa maingayi</i> Hook.f.                                                                 | EN         | EN   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa nervosa</i> Hook.f.                                                                  | VU         | EN   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa nigricans</i> Hook.f.                                                                | EN         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa prainiana</i> King ex Gage                                                           | VU         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa subcaudata</i> Merr.                                                                 | EN         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Aporosa symplocoides</i> (Hook.f.) Gage                                                      | Not Listed | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea bracteata</i> Müll.Arg.                                                            | CR         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea brevipes</i> Hook.f.                                                               | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea macrocarpa</i> (Miq.) Müll.Arg.                                                    | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea macrophylla</i> (Müll.Arg.) Müll.Arg.                                              | NEx        | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea maingayi</i> Hook.f.                                                               | CR         | NEx  |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea minor</i> Hook.f.                                                                  | CR         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea motleyana</i> (Müll.Arg.) Müll.Arg.                                                | CR         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea parviflora</i> (Müll.Arg.) Müll.Arg.                                               | Not Listed | LC   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea polyneura</i> Hook.f.                                                              | EN         | VU   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea pyriformis</i> Gage                                                                | NEx        | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea racemosa</i> (Reinw.) Müll.Arg.                                                    | EN         | CR   |
| Angiosperm  | Phyllanthaceae     | <i>Baccaurea reticulata</i> Hook.f.                                                             | CR         | CR   |

| Major Group | Family          | Taxon Name                                                                                          | RDB2       | RDB3 |
|-------------|-----------------|-----------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Phyllanthaceae  | <i>Baccaurea sumatrana</i> (Miq.) Müll.Arg.                                                         | VU         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Breynia androgyna</i> (L.) Chakrab. & N.P.Balacr.                                                | Not Listed | VU   |
| Angiosperm  | Phyllanthaceae  | <i>Breynia discigera</i> Müll.Arg.                                                                  | CR         | EN   |
| Angiosperm  | Phyllanthaceae  | <i>Breynia racemosa</i> (Blume) Müll.Arg.                                                           | EN         | LC   |
| Angiosperm  | Phyllanthaceae  | <i>Breynia vitis-idaea</i> (Burm.f.) C.E.C.Fisch.                                                   | Not Listed | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Bridelia cinnamomea</i> Hook.f.                                                                  | NEx        | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Bridelia pustulata</i> Hook.f.                                                                   | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Bridelia stipularis</i> (L.) Blume                                                               | VU         | LC   |
| Angiosperm  | Phyllanthaceae  | <i>Bridelia tomentosa</i> Blume                                                                     | Not Listed | LC   |
| Angiosperm  | Phyllanthaceae  | <i>Cleistanthus hirsutulus</i> Hook.f.                                                              | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Cleistanthus macrophyllus</i> Hook.f.                                                            | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Cleistanthus malaccensis</i> Hook.f.                                                             | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Cleistanthus myrianthus</i> (Hassk.) Kurz                                                        | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Cleistanthus sumatranus</i> (Miq.) Müll.Arg.                                                     | VU         | VU   |
| Angiosperm  | Phyllanthaceae  | <i>Emblica officinalis</i> Gaertn.                                                                  | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Emblica pachyphylla</i> (Müll.Arg.) R.W.Bouman                                                   | Not Listed | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion borneense</i> (Müll.Arg.) Boerl.                                                      | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion glomerulatum</i> (Miq.) Boerl.                                                        | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion kunstlerianum</i> Gage                                                                | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion littorale</i> Blume                                                                   | EN         | EN   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion lutescens</i> Blume                                                                   | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion obscurum</i> (Roxb. ex Willd.) Blume                                                  | Not Listed | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion perakense</i> Hook.f.                                                                 | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion rubrum</i> Blume                                                                      | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion sericeum</i> (Blume) Zoll. & Moritzi                                                  | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion singaporense</i> Gage                                                                 | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion superbum</i> Baill.                                                                   | Not Listed | LC   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion varians</i> Miq.                                                                      | NEx        | NEx  |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion wallichianum</i> Müll.Arg.                                                            | NEx        | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion zeylanicum</i> (Gaertn.) A.Juss. var. <i>arborescens</i> (Blume) Chakrab. & M.Gangop. | CR         | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Glochidion zeylanicum</i> (Gaertn.) A.Juss. var. <i>zeylanicum</i>                               | VU         | VU   |
| Angiosperm  | Phyllanthaceae  | <i>Kirganelia reticulata</i> (Poir.) Baill.                                                         | Not Listed | DD   |
| Angiosperm  | Phyllanthaceae  | <i>Margaritaria indica</i> (Dalzell) Airy Shaw                                                      | Not Listed | CR   |
| Angiosperm  | Phyllanthaceae  | <i>Synostemon bacciformis</i> (L.) G.L.Webster                                                      | CR         | CR   |
| Angiosperm  | Picrodendraceae | <i>Austrobuxus nitidus</i> Miq.                                                                     | NEx        | NEx  |
| Angiosperm  | Piperaceae      | <i>Piper baccatum</i> Blume                                                                         | NEx        | CR   |
| Angiosperm  | Piperaceae      | <i>Piper crassipes</i> Korth. ex Miq.                                                               | CR         | LC   |
| Angiosperm  | Piperaceae      | <i>Piper curtisii</i> C.DC.                                                                         | Not Listed | CR   |
| Angiosperm  | Piperaceae      | <i>Piper lanatum</i> Roxb.                                                                          | NEx        | VU   |
| Angiosperm  | Piperaceae      | <i>Piper macropiper</i> Pennant                                                                     | CR         | EN   |
| Angiosperm  | Piperaceae      | <i>Piper maingayi</i> Hook.f.                                                                       | NEx        | CR   |
| Angiosperm  | Piperaceae      | <i>Piper muricatum</i> Blume                                                                        | CR         | CR   |
| Angiosperm  | Piperaceae      | <i>Piper obtusissimum</i> Miq.                                                                      | Not Listed | CR   |
| Angiosperm  | Piperaceae      | <i>Piper porphyrophyllum</i> (Lindl. ex Blandy) N.E.Br.                                             | EN         | CR   |
| Angiosperm  | Piperaceae      | <i>Piper protractum</i> C.DC.                                                                       | CR         | CR   |
| Angiosperm  | Piperaceae      | <i>Piper ramipilum</i> C.DC.                                                                        | Not Listed | EN   |
| Angiosperm  | Piperaceae      | <i>Piper ribesioides</i> Wall.                                                                      | NEx        | CR   |

| Major Group | Family         | Taxon Name                                                                    | RDB2       | RDB3 |
|-------------|----------------|-------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Piperaceae     | <i>Piper ridleyi</i> C.DC.                                                    | Not Listed | CR   |
| Angiosperm  | Piperaceae     | <i>Piper rostratum</i> Roxb.                                                  | Not Listed | CR   |
| Angiosperm  | Piperaceae     | <i>Piper sarmentosum</i> Roxb.                                                | Not Listed | LC   |
| Angiosperm  | Piperaceae     | <i>Piper schizonephros</i> C.DC.                                              | Not Listed | CR   |
| Angiosperm  | Pittosporaceae | <i>Pittosporum ridleyi</i> L.W.Cayzer & G.Chandler                            | VU         | VU   |
| Angiosperm  | Plantaginaceae | <i>Adenosma caerulea</i> R.Br.                                                | Not Listed | NEx  |
| Angiosperm  | Plantaginaceae | <i>Adenosma indiana</i> (Lour.) Merr.                                         | Not Listed | NEx  |
| Angiosperm  | Plantaginaceae | <i>Adenosma inopinata</i> Prain                                               | Not Listed | CR   |
| Angiosperm  | Plantaginaceae | <i>Adenosma javanica</i> (Blume) Koord.                                       | Not Listed | EN   |
| Angiosperm  | Plantaginaceae | <i>Limnophila laxa</i> Benth.                                                 | Not Listed | LC   |
| Angiosperm  | Plantaginaceae | <i>Limnophila sessiliflora</i> Blume                                          | Not Listed | LC   |
| Angiosperm  | Plantaginaceae | <i>Microcarpaea minima</i> (Retz.) Merr.                                      | Not Listed | NEx  |
| Angiosperm  | Poaceae        | <i>Acroceras munroanum</i> (Balansa) Henrard                                  | Not Listed | NEx  |
| Angiosperm  | Poaceae        | <i>Acroceras tonkinense</i> (Balansa) C.E.Hubb. ex Bor                        | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Alloteropsis cimicina</i> (L.) Stapf                                       | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Centotheca lappacea</i> (L.) Desv.                                         | CR         | LC   |
| Angiosperm  | Poaceae        | <i>Chrysopogon aciculatus</i> (Retz.) Trin.                                   | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Cyrtococcum accrescens</i> (Trin.) Stapf                                   | CR         | VU   |
| Angiosperm  | Poaceae        | <i>Cyrtococcum patens</i> (L.) A.Camus                                        | CR         | VU   |
| Angiosperm  | Poaceae        | <i>Dactyloctenium aegyptium</i> (L.) Willd.                                   | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria bicornis</i> (Lam.) Roem. & Schult.                              | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Digitaria ciliaris</i> (Retz.) Koeler                                      | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria fuscescens</i> (J.Presl) Henrard                                 | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria longiflora</i> (Retz.) Pers.                                     | Not Listed | VU   |
| Angiosperm  | Poaceae        | <i>Digitaria mollicoma</i> (Kunth) Henrard                                    | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria nuda</i> Schumach.                                               | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Digitaria radicata</i> (J.Presl) Miq.                                      | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria setigera</i> Roth var. <i>calliblepharata</i> (Henrard) Veldkamp | Not Listed | EN   |
| Angiosperm  | Poaceae        | <i>Digitaria setigera</i> Roth var. <i>setigera</i>                           | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Digitaria violascens</i> Link                                              | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Dimeria ornithopoda</i> Trin.                                              | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Dinebra chinensis</i> (L.) P.M.Peterson & N.Snow                           | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Dinebra panicea</i> (Retz.) P.M.Peterson & N.Snow                          | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Echinochloa colona</i> (L.) Link                                           | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Echinochloa crus-galli</i> (L.) P.Beauv.                                   | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Echinochloa picta</i> (J.Koenig) P.W.Michael                               | NEx        | NEx  |
| Angiosperm  | Poaceae        | <i>Eleusine indica</i> (L.) Gaertn.                                           | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Eragrostis atrovirens</i> (Desf.) Trin. ex Steud.                          | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Eragrostis brownii</i> (Kunth) Nees                                        | Not Listed | VU   |
| Angiosperm  | Poaceae        | <i>Eragrostis cumingii</i> Steud.                                             | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Eragrostis montana</i> Balansa                                             | Not Listed | CR   |
| Angiosperm  | Poaceae        | <i>Eragrostis pilosa</i> (L.) P.Beauv.                                        | Not Listed | VU   |
| Angiosperm  | Poaceae        | <i>Eragrostis tenella</i> (L.) P.Beauv.                                       | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Eragrostis unioides</i> (Retz.) Nees ex Steud.                             | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Eriachne pallescens</i> R.Br.                                              | VU         | LC   |
| Angiosperm  | Poaceae        | <i>Eriochloa procera</i> (Retz.) C.E.Hubb.                                    | Not Listed | LC   |

| Major Group | Family  | Taxon Name                                                                 | RDB2       | RDB3 |
|-------------|---------|----------------------------------------------------------------------------|------------|------|
| Angiosperm  | Poaceae | <i>Eustachys tenera</i> (J.Presl) A.Camus                                  | NEx        | NEx  |
| Angiosperm  | Poaceae | <i>Gigantochloa ligulata</i> Gamble                                        | CR         | CR   |
| Angiosperm  | Poaceae | <i>Heteropogon contortus</i> (L.) P.Beauv.                                 | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Hymenachne amplexicaulis</i> (Rudge) Nees                               | Not Listed | CR   |
| Angiosperm  | Poaceae | <i>Imperata conferta</i> (J.Presl) Ohwi                                    | Not Listed | DD   |
| Angiosperm  | Poaceae | <i>Imperata cylindrica</i> (L.) P.Beauv.                                   | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Isachne confusa</i> Ohwi                                                | Not Listed | CR   |
| Angiosperm  | Poaceae | <i>Isachne globosa</i> (Thunb.) Kuntze                                     | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Isachne minutula</i> (Gaudich.) Kunth                                   | Not Listed | DD   |
| Angiosperm  | Poaceae | <i>Isachne schmidtii</i> Hack.                                             | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Ischaemum barbatum</i> Retz.                                            | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Ischaemum ciliare</i> Retz.                                             | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Ischaemum feildingianum</i> Rendle                                      | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Ischaemum muticum</i> L.                                                | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Ischaemum rugosum</i> Salisb.                                           | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Ischaemum timorense</i> Kunth                                           | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Leersia hexandra</i> Sw.                                                | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Lepturus repens</i> (G.Forst.) R.Br.                                    | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Lophatherum gracile</i> Brongn.                                         | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Mnesithea glandulosa</i> (Trin.) de Koning & Sosef                      | VU         | VU   |
| Angiosperm  | Poaceae | <i>Ottochloa nodosa</i> (Kunth) Dandy                                      | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Panicum auritum</i> J.Presl ex Nees                                     | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Panicum luzonense</i> J.Presl                                           | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Panicum paludosum</i> Roxb.                                             | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Panicum sarmentosum</i> Roxb.                                           | Not Listed | DD   |
| Angiosperm  | Poaceae | <i>Paspalum orbiculare</i> G.Forst.                                        | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Paspalum scrobiculatum</i> L. var. <i>bispicatum</i> Hack. ex Merr.     | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Paspalum sumatrense</i> Roth                                            | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Paspalum vaginatum</i> Sw.                                              | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Perotis indica</i> (L.) Kuntze                                          | Not Listed | CR   |
| Angiosperm  | Poaceae | <i>Phragmites karka</i> (Retz.) Trin. ex Steud.                            | Not Listed | DD   |
| Angiosperm  | Poaceae | <i>Pogonatherum crinitum</i> (Thunb.) Kunth                                | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Saccharum arundinaceum</i> Retz.                                        | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Sacciolepis indica</i> (L.) Chase                                       | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Sacciolepis myosuroides</i> (R.Br.) Chase ex E.G.Camus & A.Camus        | Not Listed | NEx  |
| Angiosperm  | Poaceae | <i>Schizachyrium sanguineum</i> (Retz.) Alston                             | NEx        | CR   |
| Angiosperm  | Poaceae | <i>Schizostachyum gracile</i> (Kurz ex Munro) Holttum                      | NEx        | CR   |
| Angiosperm  | Poaceae | <i>Schizostachyum latifolium</i> Gamble                                    | NEx        | NEx  |
| Angiosperm  | Poaceae | <i>Schizostachyum lengguanii</i> K.M.Wong                                  | Not Listed | CR   |
| Angiosperm  | Poaceae | <i>Scrotochloa urceolata</i> (Roxb.) Judz.                                 | VU         | VU   |
| Angiosperm  | Poaceae | <i>Setaria parviflora</i> (Poir.) Kerguelen                                | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Soejatmia ridleyi</i> (Gamble) K.M.Wong                                 | CR         | CR   |
| Angiosperm  | Poaceae | <i>Sphaerocaryum malaccense</i> (Trin.) Pilg.                              | NEx        | NEx  |
| Angiosperm  | Poaceae | <i>Sporobolus indicus</i> (L.) R.Br. var. <i>flaccidus</i> (Roth) Veldkamp | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Sporobolus indicus</i> (L.) R.Br. var. <i>major</i> (Buse) Baaijens     | Not Listed | LC   |
| Angiosperm  | Poaceae | <i>Sporobolus virginicus</i> (L.) Kunth                                    | Not Listed | NEx  |

| Major Group | Family         | Taxon Name                                                                                    | RDB2       | RDB3 |
|-------------|----------------|-----------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Poaceae        | <i>Themeda arguens</i> (L.) Hack.                                                             | Not Listed | DD   |
| Angiosperm  | Poaceae        | <i>Themeda villosa</i> (Poir.) A.Camus                                                        | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Thuarea involuta</i> (G.Forst.) R.Br. ex Sm.                                               | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Urochloa glumaris</i> (Trin.) Veldkamp                                                     | Not Listed | NEx  |
| Angiosperm  | Poaceae        | <i>Urochloa subquadrifida</i> (Trin.) R.D.Webster                                             | Not Listed | LC   |
| Angiosperm  | Poaceae        | <i>Zoysia matrella</i> (L.) Merr.                                                             | Not Listed | LC   |
| Angiosperm  | Polygalaceae   | <i>Epirixanthes papuana</i> J.J.Sm.                                                           | Not Listed | NEx  |
| Angiosperm  | Polygalaceae   | <i>Polygala glaucoidea</i> L.                                                                 | Not Listed | CR   |
| Angiosperm  | Polygalaceae   | <i>Securidaca philippinensis</i> Chodat                                                       | Not Listed | CR   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum discolor</i> Chodat                                                          | EN         | EN   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum ellipticum</i> Korth. ex Miq.                                                | CR         | CR   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum eurhynchum</i> Miq.                                                          | VU         | VU   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum flavescens</i> Roxb.                                                         | EN         | EN   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum obscurum</i> A.W.Benn.                                                       | EN         | CR   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum stipitatum</i> A.W.Benn. var. <i>amoenum</i> (Chodat) W.J.de Wilde & Duyfjes | CR         | CR   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum stipitatum</i> A.W.Benn. var. <i>stipitatum</i>                              | EN         | CR   |
| Angiosperm  | Polygalaceae   | <i>Xanthophyllum vitellinum</i> (Blume) D.Dietr.                                              | VU         | VU   |
| Angiosperm  | Primulaceae    | <i>Aegiceras corniculatum</i> (L.) Blanco                                                     | EN         | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia complanata</i> Wall.                                                               | Not Listed | LC   |
| Angiosperm  | Primulaceae    | <i>Ardisia crassa</i> C.B.Clarke                                                              | NEx        | NEx  |
| Angiosperm  | Primulaceae    | <i>Ardisia crenata</i> Sims                                                                   | CR         | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia cymosa</i> Blume                                                                   | NEx        | NEx  |
| Angiosperm  | Primulaceae    | <i>Ardisia demissa</i> Miq. var. <i>demissa</i>                                               | Not Listed | NEx  |
| Angiosperm  | Primulaceae    | <i>Ardisia elliptica</i> Thunb.                                                               | EN         | LC   |
| Angiosperm  | Primulaceae    | <i>Ardisia eximia</i> Miq.                                                                    | Not Listed | NEx  |
| Angiosperm  | Primulaceae    | <i>Ardisia miqueliana</i> Scheff.                                                             | CR         | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia purpurea</i> Reinw. ex Blume                                                       | CR         | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia ridleyi</i> King & Gamble                                                          | NEx        | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia sessilis</i> Scheff.                                                               | NEx        | NEx  |
| Angiosperm  | Primulaceae    | <i>Ardisia teysmanniana</i> Scheff.                                                           | EN         | EN   |
| Angiosperm  | Primulaceae    | <i>Ardisia tuberculata</i> Wall. ex A.DC.                                                     | CR         | CR   |
| Angiosperm  | Primulaceae    | <i>Ardisia villosa</i> Roxb.                                                                  | CR         | NEx  |
| Angiosperm  | Primulaceae    | <i>Embelia amentacea</i> C.B.Clarke                                                           | NEx        | EN   |
| Angiosperm  | Primulaceae    | <i>Embelia canescens</i> Jack ex Wall. var. <i>glabrescens</i> Ridl.                          | EN         | EN   |
| Angiosperm  | Primulaceae    | <i>Embelia coriacea</i> Wall. ex A.DC.                                                        | CR         | CR   |
| Angiosperm  | Primulaceae    | <i>Embelia fulva</i> Mez                                                                      | NEx        | NEx  |
| Angiosperm  | Primulaceae    | <i>Embelia lampani</i> Scheff.                                                                | EN         | CR   |
| Angiosperm  | Primulaceae    | <i>Embelia ribes</i> Burm.f.                                                                  | NEx        | LC   |
| Angiosperm  | Primulaceae    | <i>Embelia rugosa</i> (King & Gamble) Ridl.                                                   | Not Listed | NEx  |
| Angiosperm  | Primulaceae    | <i>Labisia pumila</i> (Blume) Fern.-Vill.                                                     | VU         | VU   |
| Angiosperm  | Primulaceae    | <i>Maesa leptobotrya</i> Hance                                                                | Not Listed | CR   |
| Angiosperm  | Primulaceae    | <i>Maesa sumatrana</i> Scheff.                                                                | Not Listed | VU   |
| Angiosperm  | Primulaceae    | <i>Myrsine capitellata</i> Wall.                                                              | VU         | EN   |
| Angiosperm  | Proteaceae     | <i>Helicia excelsa</i> (Roxb.) Blume                                                          | NEx        | CR   |
| Angiosperm  | Proteaceae     | <i>Helicia petiolaris</i> Benn.                                                               | CR         | NEx  |
| Angiosperm  | Proteaceae     | <i>Helicia robusta</i> (Roxb.) R.Br. ex Wall.                                                 | NEx        | NEx  |
| Angiosperm  | Putranjivaceae | <i>Drypetes crassipes</i> Pax & K.Hoffm.                                                      | Not Listed | CR   |



| Major Group | Family         | Taxon Name                                                                  | RDB2       | RDB3 |
|-------------|----------------|-----------------------------------------------------------------------------|------------|------|
| Angiosperm  | Putranjivaceae | <i>Drypetes laevis</i> (Miq.) Pax & K.Hoffm.                                | CR         | CR   |
| Angiosperm  | Putranjivaceae | <i>Drypetes longifolia</i> (Blume) Pax & K.Hoffm.                           | CR         | CR   |
| Angiosperm  | Putranjivaceae | <i>Drypetes pendula</i> Ridl.                                               | CR         | CR   |
| Angiosperm  | Rhamnaceae     | <i>Colubrina asiatica</i> (L.) Brongn.                                      | Not Listed | LC   |
| Angiosperm  | Rhamnaceae     | <i>Smythea lanceata</i> (Tul.) Summerh.                                     | CR         | CR   |
| Angiosperm  | Rhamnaceae     | <i>Smythea macrocarpa</i> Hemsl.                                            | Not Listed | CR   |
| Angiosperm  | Rhamnaceae     | <i>Ventilago ferruginea</i> Cahen & Utteridge                               | Not Listed | CR   |
| Angiosperm  | Rhamnaceae     | <i>Ventilago maingayi</i> M.A.Lawson                                        | Not Listed | CR   |
| Angiosperm  | Rhamnaceae     | <i>Ventilago malaccensis</i> Ridl.                                          | EN         | VU   |
| Angiosperm  | Rhamnaceae     | <i>Ziziphus calophylla</i> Wall.                                            | VU         | VU   |
| Angiosperm  | Rhamnaceae     | <i>Ziziphus elegans</i> Wall.                                               | CR         | CR   |
| Angiosperm  | Rhamnaceae     | <i>Ziziphus horsfieldii</i> Miq.                                            | EN         | CR   |
| Angiosperm  | Rhamnaceae     | <i>Ziziphus oenopolia</i> (L.) Mill.                                        | NEx        | NEx  |
| Angiosperm  | Rhizophoraceae | <i>Bruguiera cylindrica</i> (L.) Blume                                      | Not Listed | LC   |
| Angiosperm  | Rhizophoraceae | <i>Bruguiera gymnorhiza</i> (L.) Lam. ex Savigny                            | Not Listed | LC   |
| Angiosperm  | Rhizophoraceae | <i>Bruguiera parviflora</i> (Roxb.) Wight & Arn. ex Griff.                  | EN         | EN   |
| Angiosperm  | Rhizophoraceae | <i>Bruguiera sexangula</i> (Lour.) Poir.                                    | CR         | CR   |
| Angiosperm  | Rhizophoraceae | <i>Carallia brachiata</i> (Lour.) Merr.                                     | EN         | VU   |
| Angiosperm  | Rhizophoraceae | <i>Ceriops tagal</i> (Perr.) C.B.Rob.                                       | VU         | VU   |
| Angiosperm  | Rhizophoraceae | <i>Ceriops zippeliana</i> Blume                                             | EN         | EN   |
| Angiosperm  | Rhizophoraceae | <i>Gynotroches axillaris</i> Blume                                          | Not Listed | LC   |
| Angiosperm  | Rhizophoraceae | <i>Kandelia candel</i> (L.) Druce                                           | CR         | CR   |
| Angiosperm  | Rhizophoraceae | <i>Pellacalyx axillaris</i> Korth.                                          | EN         | VU   |
| Angiosperm  | Rhizophoraceae | <i>Pellacalyx saccardianus</i> Scort.                                       | EN         | VU   |
| Angiosperm  | Rhizophoraceae | <i>Rhizophora apiculata</i> Blume                                           | Not Listed | LC   |
| Angiosperm  | Rhizophoraceae | <i>Rhizophora mucronata</i> Poir.                                           | Not Listed | LC   |
| Angiosperm  | Rhizophoraceae | <i>Rhizophora stylosa</i> Griff.                                            | VU         | VU   |
| Angiosperm  | Rosaceae       | <i>Prunus arborea</i> (Blume) Kalkman var. <i>arborea</i>                   | CR         | CR   |
| Angiosperm  | Rosaceae       | <i>Prunus arborea</i> (Blume) Kalkman var. <i>stipulacea</i> (King) Kalkman | CR         | CR   |
| Angiosperm  | Rosaceae       | <i>Prunus grisea</i> (Blume ex Müll.Berol.) Kalkman                         | CR         | CR   |
| Angiosperm  | Rosaceae       | var. <i>tomentosa</i> (Koord. & Valeton) Kalkman                            |            |      |
| Angiosperm  | Rosaceae       | <i>Prunus polystachya</i> (Hook.f.) Kalkman                                 | Not Listed | LC   |
| Angiosperm  | Rosaceae       | <i>Rubus moluccanus</i> L. var. <i>angulosus</i> Kalkman                    | NEx        | VU   |
| Angiosperm  | Rosaceae       | <i>Rubus moluccanus</i> L. var. <i>moluccanus</i>                           | VU         | NEx  |
| Angiosperm  | Rubiaceae      | <i>Adina eurhyncha</i> (Miq.) Å.Krüger & Löfstrand                          | VU         | VU   |
| Angiosperm  | Rubiaceae      | <i>Aidia auriculata</i> (Wall.) Ridsdale var. <i>auriculata</i>             | CR         | CR   |
| Angiosperm  | Rubiaceae      | <i>Aidia densiflora</i> (Wall.) Masam.                                      | VU         | LC   |
| Angiosperm  | Rubiaceae      | <i>Aidia lancifolia</i> K.M.Wong                                            | Not Listed | NEx  |
| Angiosperm  | Rubiaceae      | <i>Canthium malayense</i> K.M.Wong                                          | EN         | CR   |
| Angiosperm  | Rubiaceae      | <i>Canthium molle</i> King & Gamble                                         | NEx        | CR   |
| Angiosperm  | Rubiaceae      | <i>Canthiumera robusta</i> K.M.Wong & X.Y.Ng                                | EN         | EN   |
| Angiosperm  | Rubiaceae      | <i>Chassalia curviflora</i> (Wall.) Thwaites                                | EN         | VU   |
| Angiosperm  | Rubiaceae      | <i>Chassalia griffithii</i> (Hook.f.) A.P.Davis                             | Not Listed | NEx  |
| Angiosperm  | Rubiaceae      | <i>Chassalia pubescens</i> Ridl.                                            | NEx        | NEx  |
| Angiosperm  | Rubiaceae      | <i>Chassalia singaporensis</i> (Ridl.) A.P.Davis                            | CR         | NEx  |
| Angiosperm  | Rubiaceae      | <i>Coelospermum truncatum</i> (Wall.) Baill. ex K.Schum.                    | CR         | CR   |
| Angiosperm  | Rubiaceae      | <i>Coptosapelta flavescens</i> Korth.                                       | NEx        | CR   |

| Major Group | Family    | Taxon Name                                                           | RDB2       | RDB3 |
|-------------|-----------|----------------------------------------------------------------------|------------|------|
| Angiosperm  | Rubiaceae | <i>Coptosapelta griffithii</i> Hook.f.                               | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Dentella repens</i> (L.) J.R.Forst. & G.Forst.                    | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Dibridsonia conferta</i> (Korth.) K.M.Wong                        | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Discospermum malaccense</i> (Hook.f.) Kuntze                      | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Eumachia montana</i> (Blume) I.M.Turner                           | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Eumachia rostrata</i> (Blume) I.M.Turner                          | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Gaertnera grisea</i> Hook.f. ex C.B.Clarke                        | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Gaertnera junghuhniana</i> Miq.                                   | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Gaertnera obesa</i> Hook.f. ex C.B.Clarke                         | EN         | VU   |
| Angiosperm  | Rubiaceae | <i>Gaertnera viminea</i> Hook.f. ex C.B.Clarke                       | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Gardenia elata</i> Ridl. var. <i>elata</i>                        | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Gardenia griffithii</i> Hook.f.                                   | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Gardenia subcarinata</i> (Corner) Y.W.Low var. <i>subcarinata</i> | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Gardenia tubifera</i> Wall.                                       | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Gardeniopsis longifolia</i> Miq.                                  | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Geophila herbacea</i> (Jacq.) K.Schum.                            | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Geophila pilosa</i> H.Pearson                                     | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Guettarda speciosa</i> L.                                         | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Gynochthodes coriacea</i> Blume                                   | VU         | LC   |
| Angiosperm  | Rubiaceae | <i>Gynochthodes praetermissa</i> W.W.Seah & K.M.Wong                 | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Gynochthodes ridleyi</i> (King & Gamble) Razafim. & B.Bremer      | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Gynochthodes rigida</i> (Miq.) Razafim. & B.Bremer                | NEx        | VU   |
| Angiosperm  | Rubiaceae | <i>Gynochthodes umbellata</i> (L.) Razafim. & B.Bremer               | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis affinis</i> Roem. & Schult.                              | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis angustifolia</i> Cham. & Schltdl.                        | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Hedyotis auricularia</i> L.                                       | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Hedyotis biflora</i> (L.) Lam.                                    | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis capitellata</i> Wall. ex G.Don                           | CR         | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis corymbosa</i> (L.) Lam.                                  | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis diffusa</i> Willd.                                       | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis herbacea</i> L.                                          | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Hedyotis pinifolia</i> Wall. ex G.Don                             | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Hedyotis prostrata</i> Blume                                      | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Hedyotis pumila</i> L.f.                                          | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis trinervia</i> (Retz.) Forsyth f.                         | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Hedyotis verticillata</i> (L.) Lam.                               | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Hedyotis vestita</i> R.Br. ex G.Don                               | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Hydnophytum formicarum</i> Jack                                   | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Hypobathrum coniferum</i> (Ridl.) Kiew                            | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Ixora concinna</i> R.Br. ex Hook.f.                               | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Ixora congesta</i> Roxb.                                          | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Ixora grandifolia</i> Zoll. & Moritz var. <i>grandifolia</i>      | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Ixora javanica</i> (Blume) DC. var. <i>retinervia</i> Corner      | Not Listed | EN   |
| Angiosperm  | Rubiaceae | <i>Ixora lobbii</i> Loudon ex King & Gamble var. <i>lobbii</i>       | EN         | EN   |

| Major Group | Family    | Taxon Name                                                                                  | RDB2       | RDB3 |
|-------------|-----------|---------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Rubiaceae | <i>Ixora pendula</i> Jack var. <i>pendula</i>                                               | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Ixora umbellata</i> Valetton var. <i>umbellata</i>                                       | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Jackiopsis ornata</i> (Wall.) Ridsdale                                                   | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Lasianthus attenuatus</i> Jack var. <i>attenuatus</i>                                    | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus attenuatus</i> Jack var. <i>minor</i> H.Zhu                                   | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus chryseus</i> Ridl.                                                            | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus constrictus</i> Wight                                                         | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus ellipticus</i> Wight                                                          | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Lasianthus griffithii</i> Wight                                                          | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Lasianthus hirsutus</i> (Roxb.) Merr.                                                    | CR         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus reticulatus</i> Blume                                                         | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Lasianthus ridleyi</i> King & Gamble                                                     | VU         | EN   |
| Angiosperm  | Rubiaceae | <i>Lasianthus scabridus</i> King & Gamble                                                   | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Lasianthus stipularis</i> Blume                                                          | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Lasianthus venosus</i> Blume                                                             | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Lecananthus erubescens</i> Jack                                                          | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Morinda citrifolia</i> L.                                                                | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Morinda elliptica</i> (Hook.f.) Ridl.                                                    | Not Listed | EN   |
| Angiosperm  | Rubiaceae | <i>Mussaenda glabra</i> Vahl                                                                | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Mussaenda maingayi</i> (Hook.f.) Hemsl. ex T.Durand & B.D.Jacks.                         | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Mussaendopsis beccariana</i> Baill.                                                      | EN         | CR   |
| Angiosperm  | Rubiaceae | <i>Mycetia malayana</i> (G.Don) Craib                                                       | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Myrmecodia tuberosa</i> Jack                                                             | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Nauclea officinalis</i> (Pierre ex Pit.) Merr. & Chun                                    | CR         | EN   |
| Angiosperm  | Rubiaceae | <i>Neonauclea excelsa</i> (Blume) Merr.                                                     | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Neonauclea kranjiensis</i> K.M.Wong & W.W.Seah                                           | NEx        | EX   |
| Angiosperm  | Rubiaceae | <i>Ochreinauclea maingayi</i> (Hook.f.) Ridsdale                                            | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Ophiorrhiza singapurensis</i> Ridl.                                                      | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Oxyceros bispinosus</i> (Griff.) Tirveng.                                                | EN         | LC   |
| Angiosperm  | Rubiaceae | <i>Oxyceros drupaceus</i> (C.F.Gaertn.) Ridsdale                                            | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Oxyceros longiflorus</i> (Lam.) T.Yamaz.                                                 | VU         | LC   |
| Angiosperm  | Rubiaceae | <i>Oxyceros penangianus</i> (King & Gamble) Tirveng.                                        | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Paederia foetida</i> L.                                                                  | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Paederia verticillata</i> Blume                                                          | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Pavetta wallichiana</i> Steud. ex Craib                                                  | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Porterandia anisophylla</i> (Jack ex Wall.) Ridl.                                        | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Prismatomeris glabra</i> (Korth.) Valetton                                               | EN         | CR   |
| Angiosperm  | Rubiaceae | <i>Prismatomeris tetrandra</i> (Roxb.) K.Schum. subsp. <i>malayana</i> (Ridl.) J.T.Johanss. | EN         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria angulata</i> Korth.                                                           | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Psychotria deltata</i> I.M.Turner                                                        | Not Listed | EN   |
| Angiosperm  | Rubiaceae | <i>Psychotria griffithii</i> Hook.f.                                                        | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria helferiana</i> Kurz                                                           | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria maingayi</i> Hook.f.                                                          | CR         | EN   |
| Angiosperm  | Rubiaceae | <i>Psychotria malayana</i> Jack                                                             | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Psychotria megacoma</i> Miq.                                                             | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Psychotria morindiflora</i> Wall. ex Hook.f.                                             | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria ovoidea</i> Wall. ex Hook.f.                                                  | VU         | EN   |

| Major Group | Family    | Taxon Name                                                                    | RDB2       | RDB3 |
|-------------|-----------|-------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Rubiaceae | <i>Psychotria pachyphylla</i> (King & Gamble) Ridl.                           | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria penangensis</i> Hook.f.                                         | VU         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria polycarpa</i> (Miq.) Hook.f.                                    | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria ridleyi</i> King & Gamble                                       | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Psychotria sarmentosoides</i> Valetton                                     | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Psychotria scortechinii</i> King & Gamble                                  | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Psydrax approximatus</i> (Korth.) Mahyuni & K.M.Wong                       | CR         | VU   |
| Angiosperm  | Rubiaceae | <i>Psydrax lucidulus</i> (Miq.) Mahyuni & K.M.Wong                            | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Psydrax sumatranus</i> (Miq.) Mahyuni                                      | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Psydrax undulatifolius</i> K.M.Wong & Mahyuni                              | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Saprosma glomerulata</i> King & Gamble                                     | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Schradera membranacea</i> (King) Puff et al. subsp. <i>membranacea</i>     | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Schradera polysperma</i> (Jack) Puff et al.                                | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Scyphiphora hydrophylacea</i> C.F.Gaertn.                                  | Not Listed | EN   |
| Angiosperm  | Rubiaceae | <i>Singaporandia macrophylla</i> (Hook.f.) K.M.Wong                           | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Spermacoce hispida</i> L.                                                  | Not Listed | DD   |
| Angiosperm  | Rubiaceae | <i>Spermacoce ocymoides</i> Burm.f.                                           | Not Listed | NEx  |
| Angiosperm  | Rubiaceae | <i>Spermacoce parviceps</i> (Ridl.) I.M.Turner                                | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Tarenna adpressa</i> (King) Merr.                                          | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Tarenna costata</i> (Miq.) Merr.                                           | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Tarenna fragrans</i> (Blume) Koord. & Valetton                             | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Tarenna mollis</i> (Hook.f.) B.L.Rob.                                      | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Tarenna odorata</i> (Roxb.) B.L.Rob.                                       | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Tarenna ridleyi</i> (H.Pearson ex Ridl.) Ridl.                             | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Tarenna stellulata</i> (Hook.f.) Ridl.                                     | CR         | NEx  |
| Angiosperm  | Rubiaceae | <i>Timonius finlaysonianus</i> (Wall. ex G.Don) Hook.f.                       | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Timonius flavescens</i> (Jack) Baker                                       | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Timonius wallichianus</i> Valetton                                         | Not Listed | LC   |
| Angiosperm  | Rubiaceae | <i>Timonius wrayi</i> King & Gamble                                           | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Uncaria acida</i> (W.Hunter) W.Hunter ex Roxb. var. <i>acida</i>           | NEx        | EN   |
| Angiosperm  | Rubiaceae | <i>Uncaria attenuata</i> Korth.                                               | NEx        | CR   |
| Angiosperm  | Rubiaceae | <i>Uncaria borneensis</i> Havil.                                              | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Uncaria callophylla</i> Blume ex Korth.                                    | NEx        | VU   |
| Angiosperm  | Rubiaceae | <i>Uncaria canescens</i> Korth.                                               | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Uncaria cordata</i> (Lour.) Merr.                                          | EN         | EN   |
| Angiosperm  | Rubiaceae | <i>Uncaria elliptica</i> R.Br. ex G.Don                                       | Not Listed | CR   |
| Angiosperm  | Rubiaceae | <i>Uncaria lanosa</i> Wall. var. <i>glabrata</i> (Blume) Ridsdale             | CR         | CR   |
| Angiosperm  | Rubiaceae | <i>Uncaria longiflora</i> (Poir.) Merr. var. <i>pteropoda</i> (Miq.) Ridsdale | CR         | EN   |
| Angiosperm  | Rubiaceae | <i>Uncaria roxburghiana</i> Korth.                                            | NEx        | EN   |
| Angiosperm  | Rubiaceae | <i>Urophyllum arboreum</i> (Reinw.) Korth.                                    | CR         | VU   |
| Angiosperm  | Rubiaceae | <i>Urophyllum corymbosum</i> (Blume) Korth.                                   | NEx        | NEx  |
| Angiosperm  | Rubiaceae | <i>Urophyllum glabrum</i> Wall.                                               | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Urophyllum griffithianum</i> (Wight) Hook.f.                               | VU         | VU   |
| Angiosperm  | Rubiaceae | <i>Urophyllum hirsutum</i> (Wight) Hook.f.                                    | EN         | VU   |
| Angiosperm  | Rubiaceae | <i>Urophyllum malayense</i> K.M.Wong                                          | NEx        | CR   |

| Major Group | Family      | Taxon Name                                                                           | RDB2       | RDB3 |
|-------------|-------------|--------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Rubiaceae   | <i>Urophyllum streptopodium</i> Wall. ex Hook.f.                                     | VU         | VU   |
| Angiosperm  | Rutaceae    | <i>Clausena excavata</i> Burm.f.                                                     | Not Listed | LC   |
| Angiosperm  | Rutaceae    | <i>Glycosmis chlorosperma</i> (Blume) Spreng. var. <i>chlorosperma</i>               | VU         | VU   |
| Angiosperm  | Rutaceae    | <i>Glycosmis lanceolata</i> (Blume) D.Dietr.                                         | NEx        | NEx  |
| Angiosperm  | Rutaceae    | <i>Glycosmis puberula</i> Lindl. ex Oliv.                                            | Not Listed | NEx  |
| Angiosperm  | Rutaceae    | <i>Luvunga crassifolia</i> Tanaka                                                    | CR         | EN   |
| Angiosperm  | Rutaceae    | <i>Maclurodendron porteri</i> (Hook.f.) T.G.Hartley                                  | VU         | EN   |
| Angiosperm  | Rutaceae    | <i>Melicope glabra</i> (Blume) T.G.Hartley                                           | VU         | EN   |
| Angiosperm  | Rutaceae    | <i>Melicope hookeri</i> T.G.Hartley                                                  | CR         | NEx  |
| Angiosperm  | Rutaceae    | <i>Melicope lunu-ankenda</i> (Gaertn.) T.G.Hartley                                   | CR         | EN   |
| Angiosperm  | Rutaceae    | <i>Merope angulata</i> (Willd.) Swingle                                              | CR         | CR   |
| Angiosperm  | Rutaceae    | <i>Paramignya scandens</i> (Griff.) Craib var. <i>ridleyi</i> (Burkill) Swingle      | CR         | CR   |
| Angiosperm  | Rutaceae    | <i>Tetractomia tetrandra</i> (Roxb.) Merr.                                           | Not Listed | NEx  |
| Angiosperm  | Rutaceae    | <i>Zanthoxylum myriacanthum</i> Wall. ex Hook.f.                                     | Not Listed | NEx  |
| Angiosperm  | Rutaceae    | <i>Zanthoxylum nitidum</i> (Roxb.) DC.                                               | Not Listed | NEx  |
| Angiosperm  | Sabiaceae   | <i>Meliosma lanceolata</i> Blume                                                     | CR         | CR   |
| Angiosperm  | Sabiaceae   | <i>Meliosma pinnata</i> (Roxb.) Maxim. subsp. <i>ridleyi</i> (King) Beusekom         | NEx        | CR   |
| Angiosperm  | Sabiaceae   | <i>Meliosma simplicifolia</i> (Roxb.) Walp. subsp. <i>fruticosa</i> (Blume) Beusekom | CR         | CR   |
| Angiosperm  | Sabiaceae   | <i>Sabia erratica</i> Water                                                          | NEx        | CR   |
| Angiosperm  | Salicaceae  | <i>Casearia capitellata</i> Blume                                                    | CR         | CR   |
| Angiosperm  | Salicaceae  | <i>Casearia lobbiana</i> Turcz.                                                      | CR         | CR   |
| Angiosperm  | Salicaceae  | <i>Casearia macrocarpa</i> C.B.Clarke                                                | NEx        | CR   |
| Angiosperm  | Salicaceae  | <i>Flacourtia rukam</i> Zoll. & Moritzi                                              | VU         | VU   |
| Angiosperm  | Salicaceae  | <i>Homalium grandiflorum</i> Benth.                                                  | CR         | CR   |
| Angiosperm  | Salicaceae  | <i>Osmelia grandistipulata</i> Slooten                                               | NEx        | EN   |
| Angiosperm  | Salicaceae  | <i>Scolopia macrophylla</i> (Wight & Arn.) Clos                                      | NEx        | CR   |
| Angiosperm  | Santalaceae | <i>Dendrotrophe buxifolia</i> (Blume) Miq.                                           | VU         | CR   |
| Angiosperm  | Santalaceae | <i>Dendrotrophe varians</i> (Blume) Miq.                                             | VU         | EN   |
| Angiosperm  | Santalaceae | <i>Scleropyrum pentandrum</i> (Dennst.) Mabb.                                        | CR         | CR   |
| Angiosperm  | Santalaceae | <i>Viscum articulatum</i> Burm.f.                                                    | Not Listed | EN   |
| Angiosperm  | Santalaceae | <i>Viscum ovalifolium</i> Wall. ex DC.                                               | Not Listed | EN   |
| Angiosperm  | Sapindaceae | <i>Acer laurinum</i> Hassk.                                                          | Not Listed | CR   |
| Angiosperm  | Sapindaceae | <i>Allophylus cobbe</i> (L.) Forsyth f.                                              | Not Listed | LC   |
| Angiosperm  | Sapindaceae | <i>Arytera litoralis</i> Blume                                                       | CR         | CR   |
| Angiosperm  | Sapindaceae | <i>Dimocarpus lichi</i> Lour.                                                        | Not Listed | DD   |
| Angiosperm  | Sapindaceae | <i>Dodonaea viscosa</i> Jacq.                                                        | NEx        | CR   |
| Angiosperm  | Sapindaceae | <i>Guioa bijuga</i> (Hiern) Radlk.                                                   | CR         | CR   |
| Angiosperm  | Sapindaceae | <i>Guioa pleuropteris</i> (Blume) Radlk.                                             | VU         | LC   |
| Angiosperm  | Sapindaceae | <i>Guioa pubescens</i> (Zoll. & Moritzi) Radlk.                                      | VU         | LC   |
| Angiosperm  | Sapindaceae | <i>Lepisanthes fruticosa</i> (Roxb.) Leenh.                                          | Not Listed | CR   |
| Angiosperm  | Sapindaceae | <i>Lepisanthes rubiginosa</i> (Roxb.) Leenh.                                         | Not Listed | LC   |
| Angiosperm  | Sapindaceae | <i>Lepisanthes senegalensis</i> (Juss. ex Poir.) Leenh.                              | CR         | CR   |
| Angiosperm  | Sapindaceae | <i>Mischocarpus pentapetalus</i> (Roxb.) Radlk.                                      | NEx        | CR   |
| Angiosperm  | Sapindaceae | <i>Mischocarpus sundaicus</i> Blume                                                  | VU         | CR   |
| Angiosperm  | Sapindaceae | <i>Nephelium costatum</i> Hiern                                                      | CR         | DD   |

| Major Group | Family         | Taxon Name                                                              | RDB2       | RDB3 |
|-------------|----------------|-------------------------------------------------------------------------|------------|------|
| Angiosperm  | Sapindaceae    | <i>Nephelium cuspidatum</i> Blume var. <i>eriopetalum</i> (Miq.) Leenh. | EN         | CR   |
| Angiosperm  | Sapindaceae    | <i>Nephelium laurinum</i> Blume                                         | NEx        | CR   |
| Angiosperm  | Sapindaceae    | <i>Nephelium maingayi</i> Hiern                                         | Not Listed | CR   |
| Angiosperm  | Sapindaceae    | <i>Paranephelium macrophyllum</i> King                                  | CR         | CR   |
| Angiosperm  | Sapindaceae    | <i>Pometia pinnata</i> J.R.Forst. & G.Forst.                            | EN         | EN   |
| Angiosperm  | Sapindaceae    | <i>Trigonachras acuta</i> (Hiern) Radlk.                                | EN         | CR   |
| Angiosperm  | Sapindaceae    | <i>Xerospermum laevigatum</i> Radlk. subsp. <i>laevigatum</i>           | CR         | NEx  |
| Angiosperm  | Sapindaceae    | <i>Xerospermum noronhianum</i> (Blume) Blume                            | CR         | EN   |
| Angiosperm  | Sapotaceae     | <i>Donella lanceolata</i> (Blume) Aubrév.                               | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca decipiens</i> J.Sinclair                                     | NEx        | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca kingiana</i> (Brace ex King & Gamble) H.J.Lam                | EN         | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca malaccensis</i> (C.B.Clarke) H.J.Lam                         | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca motleyana</i> (de Vriese) J.F.Macbr.                         | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca sericea</i> (Miq.) H.J.Lam                                   | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Madhuca sessilis</i> (King & Gamble) Baehni                          | NEx        | NEx  |
| Angiosperm  | Sapotaceae     | <i>Palaquium gutta</i> (Hook.) Baill.                                   | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium hexandrum</i> (Griff.) Baill.                              | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium impressinervium</i> Ng                                     | Not Listed | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium microphyllum</i> King & Gamble                             | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium obovatum</i> (Griff.) Engl. var. <i>obovatum</i>           | VU         | VU   |
| Angiosperm  | Sapotaceae     | <i>Palaquium oxleyanum</i> Pierre                                       | NEx        | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium ridleyi</i> King & Gamble                                  | NEx        | NEx  |
| Angiosperm  | Sapotaceae     | <i>Palaquium rostratum</i> (Miq.) Burck                                 | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Palaquium xanthochymum</i> (de Vriese) Pierre ex Burck               | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Payena lucida</i> A.DC.                                              | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Payena maingayi</i> C.B.Clarke                                       | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Payena obscura</i> Burck                                             | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Planchonella chartacea</i> (F.Muell. ex Benth.) H.J.Lam              | CR         | CR   |
| Angiosperm  | Sapotaceae     | <i>Planchonella maingayi</i> (C.B.Clarke) P.Royen                       | EN         | CR   |
| Angiosperm  | Sapotaceae     | <i>Planchonella malaccensis</i> (C.B.Clarke) Swenson                    | VU         | EN   |
| Angiosperm  | Sapotaceae     | <i>Planchonella obovata</i> (R.Br.) Pierre                              | VU         | LC   |
| Angiosperm  | Sapotaceae     | <i>Sarcosperma paniculatum</i> (King) Stapf & King                      | NEx        | CR   |
| Angiosperm  | Schisandraceae | <i>Kadsura scandens</i> (Blume) Blume                                   | CR         | CR   |
| Angiosperm  | Schisandraceae | <i>Kadsura verrucosa</i> (Gagnep.) A.C.Sm.                              | CR         | CR   |
| Angiosperm  | Simaroubaceae  | <i>Ailanthus integrifolia</i> Lam.                                      | CR         | CR   |
| Angiosperm  | Simaroubaceae  | <i>Brucea javanica</i> (L.) Merr.                                       | VU         | CR   |
| Angiosperm  | Simaroubaceae  | <i>Eurycoma longifolia</i> Jack                                         | CR         | EN   |
| Angiosperm  | Simaroubaceae  | <i>Samadera indica</i> Gaertn.                                          | NEx        | CR   |
| Angiosperm  | Smilacaceae    | <i>Smilax calophylla</i> Wall. ex A.DC.                                 | EN         | EN   |
| Angiosperm  | Smilacaceae    | <i>Smilax corbularia</i> Kunth var. <i>woodii</i> (Merr.) T.Koyama      | Not Listed | NEx  |
| Angiosperm  | Smilacaceae    | <i>Smilax leucophylla</i> Blume                                         | EN         | EN   |
| Angiosperm  | Smilacaceae    | <i>Smilax megacarpa</i> A.DC.                                           | NEx        | EN   |
| Angiosperm  | Smilacaceae    | <i>Smilax myosotiflora</i> A.DC.                                        | VU         | VU   |

| Major Group | Family         | Taxon Name                                                                                                   | RDB2       | RDB3 |
|-------------|----------------|--------------------------------------------------------------------------------------------------------------|------------|------|
| Angiosperm  | Smilacaceae    | <i>Smilax setosa</i> Miq.                                                                                    | Not Listed | LC   |
| Angiosperm  | Smilacaceae    | <i>Smilax sumatrensis</i> (A.DC.) P.Li & C.X.Fu                                                              | NEx        | CR   |
| Angiosperm  | Solanaceae     | <i>Lycianthes biflora</i> (Lour.) Bitter                                                                     | Not Listed | NEx  |
| Angiosperm  | Staphyleaceae  | <i>Turpinia sphaerocarpa</i> Hassk.                                                                          | CR         | CR   |
| Angiosperm  | Stemonaceae    | <i>Stemona curtisii</i> Hook.f.                                                                              | Not Listed | CR   |
| Angiosperm  | Stemonuraceae  | <i>Cantleya corniculata</i> (Becc.) R.A.Howard                                                               | NEx        | NEx  |
| Angiosperm  | Stemonuraceae  | <i>Gomphandra quadrifida</i> (Blume) Sleumer                                                                 | VU         | LC   |
| Angiosperm  | Stemonuraceae  | <i>Stemonurus malaccensis</i> (Mast.) Sleumer                                                                | CR         | CR   |
| Angiosperm  | Stemonuraceae  | <i>Stemonurus scorpioides</i> Becc.                                                                          | CR         | CR   |
| Angiosperm  | Styracaceae    | <i>Styrax benzoin</i> Dryand. var. <i>benzoin</i>                                                            | CR         | CR   |
| Angiosperm  | Styracaceae    | <i>Styrax crotonoides</i> C.B.Clarke subsp. <i>crotonoides</i>                                               | NEx        | NEx  |
| Angiosperm  | Symplocaceae   | <i>Symplocos adenophylla</i> Wall. ex G.Don                                                                  | EN         | EN   |
| Angiosperm  | Symplocaceae   | <i>Symplocos barringtoniifolia</i> Brand                                                                     | NEx        | NEx  |
| Angiosperm  | Symplocaceae   | <i>Symplocos celastriifolia</i> Griff. ex C.B.Clarke                                                         | NEx        | NEx  |
| Angiosperm  | Symplocaceae   | <i>Symplocos fasciculata</i> Zoll.                                                                           | VU         | VU   |
| Angiosperm  | Symplocaceae   | <i>Symplocos henschelii</i> (Moritzi) Benth. ex C.B.Clarke var. <i>maingayi</i> (Benth. ex C.B.Clarke) Noot. | Not Listed | NEx  |
| Angiosperm  | Symplocaceae   | <i>Symplocos lucida</i> Wall. ex G.Don                                                                       | NEx        | NEx  |
| Angiosperm  | Symplocaceae   | <i>Symplocos odoratissima</i> (Blume) Choisy ex Zoll. var. <i>odoratissima</i>                               | NEx        | CR   |
| Angiosperm  | Symplocaceae   | <i>Symplocos rubiginosa</i> Wall. ex A.DC.                                                                   | EN         | EN   |
| Angiosperm  | Taccaceae      | <i>Tacca cristata</i> Jack                                                                                   | VU         | VU   |
| Angiosperm  | Taccaceae      | <i>Tacca leontopetaloides</i> (L.) Kuntze                                                                    | CR         | CR   |
| Angiosperm  | Theaceae       | <i>Polyspora multinervis</i> (King) Orel et al.                                                              | EN         | EN   |
| Angiosperm  | Theaceae       | <i>Polyspora penangensis</i> (Ridl.) Niissalo & L.M.Choo                                                     | CR         | EN   |
| Angiosperm  | Theaceae       | <i>Polyspora singaporeana</i> (Wall. ex Ridl.) Niissalo & L.M.Choo                                           | EN         | EN   |
| Angiosperm  | Theaceae       | <i>Pyrenaria acuminata</i> Planch. ex Choisy                                                                 | EN         | CR   |
| Angiosperm  | Thismiaceae    | <i>Thismia aseroe</i> Becc.                                                                                  | NEx        | CR   |
| Angiosperm  | Thismiaceae    | <i>Thismia fumida</i> Ridl.                                                                                  | NEx        | NEx  |
| Angiosperm  | Thymelaeaceae  | <i>Aquilaria hirta</i> Ridl.                                                                                 | NEx        | CR   |
| Angiosperm  | Thymelaeaceae  | <i>Aquilaria malaccensis</i> Lam.                                                                            | VU         | VU   |
| Angiosperm  | Thymelaeaceae  | <i>Aquilaria microcarpa</i> Baill.                                                                           | CR         | CR   |
| Angiosperm  | Thymelaeaceae  | <i>Enkleia malaccensis</i> Griff.                                                                            | CR         | CR   |
| Angiosperm  | Thymelaeaceae  | <i>Gonystylus confusus</i> Airy Shaw                                                                         | EN         | EN   |
| Angiosperm  | Thymelaeaceae  | <i>Gonystylus maingayi</i> Hook.f.                                                                           | CR         | CR   |
| Angiosperm  | Thymelaeaceae  | <i>Linostoma pauciflorum</i> Griff.                                                                          | EN         | EN   |
| Angiosperm  | Toricelliaceae | <i>Aralidium pinnatifidum</i> (Jungh. & de Vriese) Miq.                                                      | NEx        | CR   |
| Angiosperm  | Trigoniaceae   | <i>Trigoniastrum hypoleucum</i> Miq.                                                                         | NEx        | CR   |
| Angiosperm  | Triuridaceae   | <i>Sciaphila maculata</i> Miers                                                                              | NEx        | NEx  |
| Angiosperm  | Triuridaceae   | <i>Sciaphila tenella</i> Blume                                                                               | NEx        | NEx  |
| Angiosperm  | Urticaceae     | <i>Laportea interrupta</i> (L.) Chew                                                                         | Not Listed | LC   |
| Angiosperm  | Urticaceae     | <i>Nothocnide mollissima</i> (Wedd.) Chew                                                                    | NEx        | NEx  |
| Angiosperm  | Urticaceae     | <i>Poikilospermum cordifolium</i> (Barg.-Petr.) Merr.                                                        | NEx        | CR   |
| Angiosperm  | Urticaceae     | <i>Poikilospermum microstachys</i> (Barg.-Petr.) Merr.                                                       | NEx        | NEx  |
| Angiosperm  | Urticaceae     | <i>Poikilospermum suaveolens</i> (Blume) Merr.                                                               | VU         | VU   |
| Angiosperm  | Urticaceae     | <i>Procris repens</i> (Lour.) B.J.Conn & Hadijah                                                             | NEx        | NEx  |



| Major Group | Family        | Taxon Name                                                             | RDB2       | RDB3 |
|-------------|---------------|------------------------------------------------------------------------|------------|------|
| Angiosperm  | Violaceae     | <i>Rinorea anguifera</i> (Lour.) Kuntze                                | CR         | CR   |
| Angiosperm  | Violaceae     | <i>Rinorea javanica</i> (Blume) Kuntze                                 | Not Listed | NEx  |
| Angiosperm  | Violaceae     | <i>Rinorea lanceolata</i> (Roxb.) Kuntze                               | NEx        | CR   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus ascendiflora</i> Latiff                                | NEx        | CR   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus cinnamomea</i> (Wall.) Planch.                         | NEx        | CR   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus elegans</i> Gagnep.                                    | EN         | VU   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus gracilis</i> (Wall.) Planch.                           | EN         | EN   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus polystachya</i> (Wall. ex M.A.Lawson) Planch.          | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Ampelocissus thyrsiflora</i> (Blume) Planch.                        | NEx        | CR   |
| Angiosperm  | Vitaceae      | <i>Causonis japonica</i> (Thunb.) Raf.                                 | Not Listed | EN   |
| Angiosperm  | Vitaceae      | <i>Causonis maritima</i> (Jackes) Jackes                               | Not Listed | LC   |
| Angiosperm  | Vitaceae      | <i>Causonis trifolia</i> (L.) Mabb. & J.Wen                            | VU         | DD   |
| Angiosperm  | Vitaceae      | <i>Cayratia mollissima</i> (Wall.) Gagnep.                             | EN         | EN   |
| Angiosperm  | Vitaceae      | <i>Cayratia novemfolia</i> (Wall. ex M.A.Lawson) Gagnep.               | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Cissus hastata</i> Miq.                                             | Not Listed | LC   |
| Angiosperm  | Vitaceae      | <i>Cissus nodosa</i> Blume                                             | CR         | VU   |
| Angiosperm  | Vitaceae      | <i>Cissus repens</i> Lam.                                              | CR         | VU   |
| Angiosperm  | Vitaceae      | <i>Cissus rostrata</i> (Miq.) Korth. ex Planch.                        | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Leea aequata</i> L.                                                 | NEx        | NEx  |
| Angiosperm  | Vitaceae      | <i>Leea angulata</i> Korth. ex Miq.                                    | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Leea indica</i> (Burm.f.) Merr.                                     | Not Listed | LC   |
| Angiosperm  | Vitaceae      | <i>Leea rubra</i> Blume                                                | NEx        | NEx  |
| Angiosperm  | Vitaceae      | <i>Nothocissus spicifera</i> (Griff.) Latiff                           | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Pterisanthes cissioides</i> Blume                                   | NEx        | CR   |
| Angiosperm  | Vitaceae      | <i>Pterisanthes eriopoda</i> (Miq.) Planch.                            | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Pterisanthes polita</i> (Miq.) M.A.Lawson                           | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Tetrastigma curtisii</i> (Ridl.) Suess.                             | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Tetrastigma dichotomum</i> (Blume) Planch.                          | Not Listed | CR   |
| Angiosperm  | Vitaceae      | <i>Tetrastigma latiffii</i> Veldkamp                                   | CR         | CR   |
| Angiosperm  | Vitaceae      | <i>Tetrastigma leucostaphylum</i> (Dennst.) Alston                     | NEx        | CR   |
| Angiosperm  | Xyridaceae    | <i>Xyris complanata</i> R.Br.                                          | Not Listed | CR   |
| Angiosperm  | Xyridaceae    | <i>Xyris pauciflora</i> Willd.                                         | NEx        | CR   |
| Angiosperm  | Zingiberaceae | <i>Alpinia aquatica</i> (Retz.) Roscoe                                 | CR         | CR   |
| Angiosperm  | Zingiberaceae | <i>Alpinia conchigera</i> Griff.                                       | NEx        | NEx  |
| Angiosperm  | Zingiberaceae | <i>Alpinia rafflesiana</i> Wall. ex Baker                              | NEx        | CR   |
| Angiosperm  | Zingiberaceae | <i>Amomum latiflorum</i> (Ridl.) Škorničk. & Hlavatá                   | CR         | EN   |
| Angiosperm  | Zingiberaceae | <i>Conamomum xanthophlebium</i> (Baker) Škorničk. & A.D.Poulsen        | CR         | CR   |
| Angiosperm  | Zingiberaceae | <i>Etlingera maingayi</i> (Baker) R.M.Sm.                              | Not Listed | CR   |
| Angiosperm  | Zingiberaceae | <i>Etlingera punicea</i> (Roxb.) R.M.Sm.                               | CR         | CR   |
| Angiosperm  | Zingiberaceae | <i>Globba leucantha</i> Miq. var. <i>peninsularis</i> Holttum          | CR         | CR   |
| Angiosperm  | Zingiberaceae | <i>Globba pendula</i> Roxb.                                            | NEx        | CR   |
| Angiosperm  | Zingiberaceae | <i>Hornstedtia conica</i> Ridl.                                        | CR         | CR   |
| Angiosperm  | Zingiberaceae | <i>Hornstedtia leonurus</i> (J.Koenig) Retz.                           | CR         | VU   |
| Angiosperm  | Zingiberaceae | <i>Hornstedtia scyphifera</i> (J.Koenig) Steud. var. <i>scyphifera</i> | VU         | VU   |
| Angiosperm  | Zingiberaceae | <i>Plagiostachys lateralis</i> (Ridl.) Ridl.                           | NEx        | CR   |

| Major Group | Family        | Taxon Name                                                           | RDB2       | RDB3 |
|-------------|---------------|----------------------------------------------------------------------|------------|------|
| Angiosperm  | Zingiberaceae | <i>Plagiostachys mucida</i> Holttum                                  | NEx        | NEx  |
| Angiosperm  | Zingiberaceae | <i>Sundamomum hastilabium</i> (Ridl.) A.D.Poulsen & M.F.Newman       | NEx        | CR   |
| Angiosperm  | Zingiberaceae | <i>Zingiber griffithii</i> Baker                                     | EN         | CR   |
| Angiosperm  | Zingiberaceae | <i>Zingiber puberulum</i> Ridl. var. <i>chryseum</i> (Ridl.) Holttum | EN         | NEx  |
| Angiosperm  | Zingiberaceae | <i>Zingiber puberulum</i> Ridl. var. <i>puberulum</i>                | EN         | EN   |
| Angiosperm  | Zingiberaceae | <i>Zingiber singaporense</i> Škorničk.                               | Not Listed | CR   |

# Checklist of Fungi Species with their Category of Threat Status for Singapore

Prepared by Serena M.L. Lee, Amy M.F. Choong

| Family                     | Taxon Name                                                                        | Common Name                                     | RDB2       | RDB3 |
|----------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------|------------|------|
| Agaricaceae                | <i>Agaricus trisulphuratus</i> Berk                                               | Scaly Tangerine Fungus                          | Not Listed | LC   |
| Agaricaceae                | <i>Chlorophyllum molybdites</i> (G.Mey.) Massee                                   | Green-spored Parasol;<br>False Parasol          | Not Listed | LC   |
| Agaricaceae                | <i>Clarkeinda trachodes</i> (Berk.) Singer                                        |                                                 | Not Listed | VU   |
| Agaricaceae                | <i>Coniolepiota spongodes</i> (Berk. & Broome)<br>Vellinga                        |                                                 | Not Listed | LC   |
| Agaricaceae                | <i>Leucocoprinus fragilissimus</i> (Ravenel ex Berk.<br>& M.A.Curtis) Pat         | Fragile Dapperling                              | Not Listed | LC   |
| Agaricaceae                | <i>Tulostoma exasperatum</i> Mont                                                 | Spiny-stalked Puffball                          | Not Listed | LC   |
| Amanitaceae                | <i>Amanita cinctipes</i> Corner & Bas                                             |                                                 | Not Listed | VU   |
| Amanitaceae                | <i>Amanita hemibapha</i> subsp. <i>similis</i> (Boedijn)<br>Corner & Bas          | Boedijn's Slender<br>Caesar                     | Not Listed | VU   |
| Amanitaceae                | <i>Amanita malayensis</i> L.P.Tang, Zhu L.Yang &<br>S.S.Lee                       | Malayan Amanita                                 | Not Listed | VU   |
| Amanitaceae                | <i>Amanita mira</i> Corner & Bas                                                  |                                                 | Not Listed | LC   |
| Amanitaceae                | <i>Amanita obsita</i> Corner & Bas                                                |                                                 | Not Listed | LC   |
| Amanitaceae                | <i>Amanita pilosella</i> Corner & Bas                                             |                                                 | Not Listed | VU   |
| Amanitaceae                | <i>Amanita princeps</i> Corner & Bas                                              |                                                 | Not Listed | VU   |
| Amanitaceae                | <i>Amanita sculpta</i> Corner & Bas                                               | Sculptured Toadstool                            | Not Listed | CR   |
| Amanitaceae                | <i>Amanita synchopyramis</i> Corner & Bas                                         |                                                 | Not Listed | VU   |
| Auriculariaceae            | <i>Auricularia mesenterica</i> (Dicks.) Pers                                      | Tripe Fungus                                    | Not Listed | LC   |
| Auriculariales<br>[in.sed] | <i>Elmerina sclerodontia</i> (Mont. & Berk.)<br>Miettinen & Spirin                | Rambutan Fungus                                 | Not Listed | LC   |
| Boletaceae                 | <i>Austroboletus mucosus</i> (Corner) Wolfe                                       | Mucus Bolete                                    | Not Listed | VU   |
| Boletaceae                 | <i>Boletellus dissiliens</i> (Corner) Pegler &<br>T.W.K.Young                     |                                                 | Not Listed | CR   |
| Boletaceae                 | <i>Boletellus emodensis</i> (Berk.) Singer                                        | Shaggy Cop Bolete                               | Not Listed | LC   |
| Boletaceae                 | <i>Fistulinella nana</i> (Massee) E.Horak                                         |                                                 | Not Listed | CR   |
| Boletaceae                 | <i>Heimioporus retisporus</i> (Pat. & C.F.Baker)<br>E.Horak                       |                                                 | Not Listed | VU   |
| Boletaceae                 | <i>Ionosporus longipes</i> (Massee) O.Khmelnitsky,<br>Davoodian, Raspé, S.M.L.Lee |                                                 | Not Listed | LC   |
| Boletaceae                 | <i>Pseudoaustroboletus valens</i> (Corner) Y.C.Li &<br>Zhu L.Yang                 | Ghost Bolete                                    | Not Listed | EN   |
| Boletaceae                 | <i>Pulveroboletus frians</i> (Corner) Singer                                      |                                                 | Not Listed | CR   |
| Boletaceae                 | <i>Pulveroboletus icterinus</i> Berk. & M.A.Curtis                                | Chrome-yellow Bolete                            | Not Listed | LC   |
| Boletaceae                 | <i>Spongispora temasekensis</i> G.Wu, S.M.L.Lee,<br>E.Horak & Zhu L.Yang          | Singapore Bolete                                | Not Listed | VU   |
| Boletaceae                 | <i>Strobilomyces velutipes</i> Cooke & Massee                                     | Velvet Old Man of the<br>Woods                  | Not Listed | VU   |
| Boletaceae                 | <i>Tylopilus ballouii</i> (Peck) Singer                                           | Burnt-orange Bolete                             | Not Listed | VU   |
| Boletaceae                 | <i>Tylopilus cervinicoccineus</i> (Corner) E.Horak                                |                                                 | Not Listed | VU   |
| Boletinellaceae            | <i>Boletinellus merulioides</i> (Schwein.) Murrill                                | Ash-tree Bolete                                 | Not Listed | LC   |
| Bondarzewiaceae            | <i>Stecchericium seriatum</i> (Lloyd) Maas Geest                                  |                                                 | Not Listed | VU   |
| Cantharellaceae            | <i>Cantharellus lateritius</i> (Berk.) Singer                                     | Smooth Chanterelle                              | Not Listed | LC   |
| Coniophoraceae             | <i>Gyrodontium sacchari</i> (Spreng.) Hjortstam                                   |                                                 | Not Listed | LC   |
| Dacrymycetaceae            | <i>Dacryopinax spathularia</i> (Schwein.)<br>G.W.Martin                           | Sweet Osmanthus Ear;<br>Fan-shaped Jelly Fungus | Not Listed | LC   |

| Family            | Taxon Name                                                                         | Common Name                                           | RDB2       | RDB3 |
|-------------------|------------------------------------------------------------------------------------|-------------------------------------------------------|------------|------|
| Diplocystidiaceae | <i>Astraeus odoratus</i> Phosri, Watling,<br>M.P.Martín & Whalley                  |                                                       | Not Listed | VU   |
| Entolomataceae    | <i>Entoloma burkilliae</i> Massee                                                  |                                                       | Not Listed | LC   |
| Entolomataceae    | <i>Entoloma columbinum</i> Corner & E.Horak                                        |                                                       | Not Listed | LC   |
| Entolomataceae    | <i>Entoloma flavidum</i> (Massee) Corner &<br>E.Horak                              |                                                       | Not Listed | LC   |
| Entolomataceae    | <i>Entoloma murrayi</i> (Berk. & M.A.Curtis) Sacc.<br>& P.Syd                      |                                                       | Not Listed | CR   |
| Entolomataceae    | <i>Entoloma purpureum</i> Petch                                                    |                                                       | Not Listed | DD   |
| Fomitopsidaceae   | <i>Rhodofomitopsis feei</i> (Fr.) B.K.Cui, M.L.Han &<br>Y.C.Dai                    |                                                       | Not Listed | LC   |
| Ganodermataceae   | <i>Ganoderma boninense</i> Pat                                                     |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma ellipsoideum</i> Hapuar., T.C.Wen &<br>K.D.Hyde                       |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma mastoporum</i> (Lév.) Pat                                             |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma nasalanense</i> Hapuar., Pheng. &<br>K.D.Hyde                         |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma philippii</i> (Bres. & Henn. ex Sacc.)<br>Bres                        |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma sichuanense</i> J.D.Zhao &<br>X.Q.Zhang                               |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma subresinosum</i> (Murrill)<br>C.J.Humphrey                            |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma tropicum</i> (Jungh.) Bres                                            |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma weberianum</i> (Bres. & Henn. ex<br>Sacc.) Steyaert                   |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Ganoderma williamsianum</i> Murrill                                             |                                                       | Not Listed | DD   |
| Ganodermataceae   | <i>Sanguinoderma rugosum</i> (Blume & T.Nees)<br>Y.F.Sun, D.H.Costa & B.K.Cui      |                                                       | Not Listed | LC   |
| Ganodermataceae   | <i>Tomophagus colossus</i> (Fr.) Murrill                                           |                                                       | Not Listed | LC   |
| Geastraceae       | <i>Geastrum mirabile</i> Mont                                                      |                                                       | Not Listed | LC   |
| Geoglossaceae     | <i>Trichoglossum variabile</i> (E.J.Durand) Nannf                                  | Earth Tongue                                          | Not Listed | VU   |
| Gomphaceae        | <i>Gloeocantharellus echinosporus</i> Corner                                       |                                                       | Not Listed | CR   |
| Hydnaceae         | <i>Craterellus cf. tubaeformis</i> (Fr.) Quél                                      | Yellowfoot; Winter<br>Mushroom; Funnel<br>Chanterelle | Not Listed | DD   |
| Hydnaceae         | <i>Craterellus cornucopioides</i> var. <i>mediosporus</i><br>Corner                | Tropical Black Trumpet                                | Not Listed | VU   |
| Hydnaceae         | <i>Hydnum elatum</i> Massé                                                         |                                                       | Not Listed | LC   |
| Hygrophoraceae    | <i>Hygrocybe firma</i> (Berk. & Broome) Singer                                     |                                                       | Not Listed | LC   |
| Hygrophoraceae    | <i>Hygrocybe griseonigricans</i> C.Q.Wang & T.H.Li                                 |                                                       | Not Listed | VU   |
| Hymenogastraceae  | <i>Hebeloma parvisporum</i> O.S.Pedersen,<br>Læssøe, Beker & U.Eberh               |                                                       | Not Listed | VU   |
| Hypocreaceae      | <i>Trichoderma cornu-damae</i> (Pat.) Z.X.Zhu &<br>W.Y.Zhuang                      | Poison Fire Coral                                     | Not Listed | LC   |
| Hypoxylaceae      | <i>Daldinia concentrica</i> (Bolton) Ces. & De Not                                 | King Alfred's Cake                                    | Not Listed | LC   |
| Lycoperdaceae     | <i>Calvatia cyathiformis</i> (Bosc) Morgan                                         | Purple-spored Puffball                                | Not Listed | LC   |
| Lycoperdaceae     | <i>Calvatia holothurioides</i> Rebriev                                             |                                                       | Not Listed | LC   |
| Lyophyllaceae     | <i>Praearthromyces corneri</i> D.Stubbe, T.J.Baroni,<br>T.W.Kuyper & van de Peppel |                                                       | Not Listed | CR   |
| Marasmiaceae      | <i>Crinipellis actinophora</i> (Berk. & Broome)<br>Singer                          |                                                       | Not Listed | VU   |

| Family               | Taxon Name                                                                              | Common Name                               | RDB2       | RDB3 |
|----------------------|-----------------------------------------------------------------------------------------|-------------------------------------------|------------|------|
| Marasmiaceae         | <i>Crinipellis brunneipurpurea</i> Corner                                               | Purple Crinipellis                        | Not Listed | VU   |
| Marasmiaceae         | <i>Crinipellis malesiana</i> Kerekes, Desjardin & Vikinesw                              |                                           | Not Listed | VU   |
| Marasmiaceae         | <i>Marasmius elaeocephalus</i> Singer                                                   |                                           | Not Listed | LC   |
| Marasmiaceae         | <i>Marasmius guyanensis</i> Mont                                                        |                                           | Not Listed | LC   |
| Marasmiaceae         | <i>Marasmius neotrichotus</i> Niveiro, N.A.Ramírez & Antonín                            |                                           | Not Listed | VU   |
| Marasmiaceae         | <i>Marasmius palmivorus</i> Sharples                                                    | Oil Palm Bunch Rot                        | Not Listed | LC   |
| Marasmiaceae         | <i>Marasmius pellucidus</i> Berk. & Broome                                              |                                           | Not Listed | LC   |
| Marasmiaceae         | <i>Marasmius tenuissimus</i> (Sacc.) Singer                                             |                                           | Not Listed | VU   |
| Meripilaceae         | <i>Rigidoporus microporus</i> (Sw.) Overeem                                             |                                           | Not Listed | LC   |
| Meripilaceae         | <i>Rigidoporus pendulus</i> Ryvarden                                                    |                                           | Not Listed | LC   |
| Meruliaceae          | <i>Climacodon dubitativus</i> (Lloyd) Ryvarden                                          |                                           | Not Listed | LC   |
| Mycenaceae           | <i>Mycena chlorophos</i> (Berk. & M.A.Curtis) Sacc                                      | Green Pepe                                | Not Listed | LC   |
| Mycenaceae           | <i>Mycena roseilignicola</i> Corner                                                     | Rosy Mycena                               | Not Listed | LC   |
| Mycenaceae           | <i>Filoboletus manipularis</i> (Berk.) Singer                                           | Luminous Porecap                          | Not Listed | LC   |
| Mycenaceae           | <i>Panellus luminescens</i> (Corner) Corner                                             |                                           | Not Listed | LC   |
| Nidulariaceae        | <i>Cyathus stercoreus</i> (Schwein.) De Toni                                            | Dung-loving Bird's Nest Fungus            | Not Listed | CR   |
| Nidulariaceae        | <i>Cyathus subglobisporus</i> R.L.Zhao, Desjardin & K.D.Hyde                            | Common Bird's Nest Fungus                 | Not Listed | LC   |
| Omphalotaceae        | <i>Neonothopanus nambi</i> (Speg.) R.H.Petersen & Krisai                                |                                           | Not Listed | LC   |
| Ophiocordycipitaceae | <i>Ophiocordyceps sphecocephala</i> (Klotzsch ex Berk.) G.H.Sung, J.M.Sung, Hywel-Jones |                                           | Not Listed | VU   |
| Panaceae             | <i>Panus ciliatus</i> (Lév.) T.W.May & A.E.Wood                                         |                                           | Not Listed | VU   |
| Panaceae             | <i>Panus kinabaluensis</i> Corner                                                       |                                           | Not Listed | VU   |
| Panaceae             | <i>Panus lecomtei</i> (Fr.) Corner                                                      | Hairy Oyster                              | Not Listed | VU   |
| Panaceae             | <i>Panus natarajanianus</i> Senthil                                                     |                                           | Not Listed | VU   |
| Panaceae             | <i>Panus similis</i> (Berk. & Broome) T.W.May & A.E.Wood                                |                                           | Not Listed | VU   |
| Panaceae             | <i>Panus velutinus</i> (Fr.) Sacc                                                       |                                           | Not Listed | VU   |
| Phallaceae           | <i>Lysurus mokusin</i> (L.) Fr                                                          | Lantern Stinkhorn                         | Not Listed | LC   |
| Phallaceae           | <i>Mutinus bambusinus</i> (Zoll.) E.Fisch                                               | Bamboo Stinkhorn                          | Not Listed | VU   |
| Phallaceae           | <i>Phallus atrovolutus</i> Kreisel & Calonge                                            |                                           | Not Listed | LC   |
| Phallaceae           | <i>Phallus indusiatus</i> Vent                                                          | Bridal Veil Stinkhorn; Bamboo Pith Fungus | Not Listed | LC   |
| Phallaceae           | <i>Phallus multicolor</i> (Berk. & Broome) Cooke                                        |                                           | Not Listed | LC   |
| Physalacriaceae      | <i>Cyptotrama asprata</i> (Berk.) Redhead & Ginns                                       | Golden-scruffy Collybia                   | Not Listed | CR   |
| Physalacriaceae      | <i>Oudemansiella canarii</i> (Jungh.) Höhn                                              | Tropical Porcelain Fungus                 | Not Listed | NE   |
| Physalacriaceae      | <i>Physalacria sulphurea</i> (Corner) Singer                                            |                                           | Not Listed | LC   |
| Pleurotaceae         | <i>Pleurotus djamor</i> (Rumph. ex Fr.) Boedijn                                         | Pink Oyster Mushroom                      | Not Listed | LC   |
| Pleurotaceae         | <i>Pleurotus giganteus</i> (Berk.) Karun. & K.D.Hyde                                    |                                           | Not Listed | LC   |
| Polyporaceae         | <i>Lentinus concentricus</i> Karun., K.D.Hyde & Zhu L.Yang                              |                                           | Not Listed | VU   |
| Polyporaceae         | <i>Lentinus polychrous</i> Lév                                                          |                                           | Not Listed | VU   |
| Polyporaceae         | <i>Lentinus sajor-caju</i> (Fr.) Fr                                                     | Vegetable-wood                            | Not Listed | LC   |
| Polyporaceae         | <i>Lentinus squarrosulus</i> Mont                                                       |                                           | Not Listed | LC   |

| Family            | Taxon Name                                                              | Common Name                                        | RDB2       | RDB3 |
|-------------------|-------------------------------------------------------------------------|----------------------------------------------------|------------|------|
| Polyporaceae      | <i>Lentinus tuberregium</i> (Fr.) Fr                                    |                                                    | Not Listed | CR   |
| Polyporaceae      | <i>Cubamycetes menziesii</i> (Berk.) Lücking                            |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Earliella scabrosa</i> (Pers.) Gilb. & Ryvardeen                     |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Favolus acervatus</i> (Lloyd) Sotome & T.Hatt                        |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Favolus eos</i> (Corner) Zmitr                                       |                                                    | Not Listed | CR   |
| Polyporaceae      | <i>Funalia aspera</i> (Jungh.) Zmitr. & Malysheva                       |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Hexagonia apiaria</i> (Pers.) Fr                                     |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Hexagonia tenuis</i> Speg                                            |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Microporus affinis</i> (Blume & T.Nees) Kuntze                       |                                                    | Not Listed | LC   |
| Polyporaceae      | <i>Microporus xanthopus</i> (Fr.) Kuntze                                | Yellow Stemmed<br>Micropore                        | Not Listed | LC   |
| Polyporaceae      | <i>Pycnoporus sanguineus</i> (L.) Murrill                               | Cinnabar Bracket                                   | Not Listed | LC   |
| Polyporaceae      | <i>Trametes elegans</i> (Spreng.) Fr                                    | White Maze Polypore                                | Not Listed | LC   |
| Polyporaceae      | <i>Truncospora ochroleuca</i> (Berk.) Pilát                             |                                                    | Not Listed | LC   |
| Psathyrellaceae   | <i>Coprinellus disseminatus</i> (Pers.) J.E.Lange                       | Fairy Inkcap                                       | Not Listed | LC   |
| Psathyrellaceae   | <i>Coprinopsis pachyderma</i> (Bogart) Redhead,<br>Vilgalys & Moncalvo  |                                                    | Not Listed | LC   |
| Psathyrellaceae   | <i>Lacrymaria malayana</i> S.M.L. Lee & Voto                            |                                                    | Not Listed | LC   |
| Psathyrellaceae   | <i>Narcissea cardiaspora</i> (Bender) Voto                              | Ticker Inkcap                                      | Not Listed | LC   |
| Psathyrellaceae   | <i>Parasola psathyrelloides</i> K.G.G.Ganga &<br>Manim                  |                                                    | Not Listed | LC   |
| Psathyrellaceae   | <i>Psathyrella floriformis</i> (Hauskn.) Voto                           |                                                    | Not Listed | LC   |
| Pyronemataceae    | <i>Trichaleurina javanica</i> (Rehm) M.Carbone,<br>Agnello & P.Alvarado | Peanut Butter Cup<br>Fungus                        | Not Listed | LC   |
| Pyronemataceae    | <i>Scutellinia scutellata</i> (L.) Lambotte                             | Eyelash Fungi                                      | Not Listed | LC   |
| Russulaceae       | <i>Lactarius brunneocinnamomeus</i> Paloi,<br>Verbeken & K.Acharya      | Milkcap                                            | Not Listed | LC   |
| Russulaceae       | <i>Lactarius politus</i> Wisitr. & K.D.Hyde                             | Milkcap                                            | Not Listed | LC   |
| Russulaceae       | <i>Lactifluus bicolor</i> (Masse) Verbeken                              | Milkcap                                            | Not Listed | CR   |
| Russulaceae       | <i>Russula alboareolata</i> Hongo                                       | Brittle-gill                                       | Not Listed | VU   |
| Russulaceae       | <i>Russula bellissima</i> Manz & F.Hampe                                | Pink Brittle-gill                                  | Not Listed | LC   |
| Sarcoscyphaceae   | <i>Cookeina speciosa</i> (Fr.) Dennis                                   | Tropical Elf Cup                                   | Not Listed | VU   |
| Sarcoscyphaceae   | <i>Cookeina tricholoma</i> (Mont.) Kuntze                               | Bristly Tropical Cup                               | Not Listed | EN   |
| Schizophyllaceae  | <i>Schizophyllum commune</i> Fr                                         | Split-gill Fungus                                  | Not Listed | LC   |
| Sclerodermataceae | <i>Pisolithus albus</i> (Cooke & Masse) Priest                          |                                                    | Not Listed | CR   |
| Sclerodermataceae | <i>Scleroderma columnare</i> Berk. & Broome                             | Earthball                                          | Not Listed | VU   |
| Sclerodermataceae | <i>Scleroderma leptopodium</i> Pat. & Har                               | Earthball                                          | Not Listed | VU   |
| Sclerodermataceae | <i>Scleroderma sinamariense</i> Mont                                    | Yellow Earthball                                   | Not Listed | LC   |
| Serpulaceae       | <i>Serpula similis</i> (Berk. & Broome) Ginns                           |                                                    | Not Listed | LC   |
| Sirobasidiaceae   | <i>Sirobasidium magnum</i> Boedijn                                      | Tropical Witches' Butter                           | Not Listed | LC   |
| Steccherinaceae   | <i>Nigroporus vinosus</i> (Berk.) Murrill                               |                                                    | Not Listed | LC   |
| Stereaceae        | <i>Stereum lobatum</i> (Kunze ex Fr.) Fr                                |                                                    | Not Listed | LC   |
| Tremellaceae      | <i>Tremella fuciformis</i> Berk                                         | Snow Fungus; White<br>Jelly Mushroom; Bai Mu<br>Er | Not Listed | LC   |

# Checklist of Porifera Species with their Category of Threat Status for Singapore

Prepared by Lim Swee Cheng

| Family            | Genus                    | Species              | Authority              | Common Name | RDB2       | RDB3 |
|-------------------|--------------------------|----------------------|------------------------|-------------|------------|------|
| Chondrosiidae     | <i>Chondrosia</i>        | <i>corticata</i>     | Thiele, 1900           |             | Not Listed | LC   |
| Chondrosiidae     | <i>Chondrilla</i>        | <i>australiensis</i> | Carter, 1873           |             | Not Listed | LC   |
| Chondrosiidae     | <i>Chondrilla</i>        | <i>mixta</i>         | Schulze, 1877          |             | Not Listed | LC   |
| Ianthellidae      | <i>Hexadella</i>         | <i>indica</i>        | Dendy, 1905            |             | Not Listed | LC   |
| Pseudoceratinidae | <i>Pseudoceratina</i>    | <i>purpurea</i>      | (Carter, 1880)         |             | Not Listed | LC   |
| Darwinellidae     | <i>Chelonaplysilla</i>   | <i>erecta</i>        | (Row, 1911)            |             | Not Listed | LC   |
| Dysideidae        | <i>Dysidea</i>           | <i>frondosa</i>      | Bergquist, 1995        |             | Not Listed | LC   |
| Dysideidae        | <i>Lamellodysidea</i>    | <i>herbacea</i>      | (Keller, 1889)         |             | Not Listed | LC   |
| Irciniidae        | <i>Ircinia</i>           | <i>irregularis</i>   | (Poléjaeff, 1884)      |             | Not Listed | LC   |
| Irciniidae        | <i>Ircinia</i>           | <i>ramosa</i>        | (Keller, 1889)         |             | Not Listed | LC   |
| Spongiidae        | <i>Coscinoderma</i>      | <i>matthewsi</i>     | (Lendenfeld, 1886)     |             | Not Listed | LC   |
| Spongiidae        | <i>Hippospongia</i>      | <i>mollissima</i>    | Lendenfeld, 1889       |             | Not Listed | DD   |
| Spongiidae        | <i>Hyattella</i>         | <i>intestinalis</i>  | (Lamarck, 1814)        |             | Not Listed | LC   |
| Spongiidae        | <i>Hyattella</i>         | <i>tubaria</i>       | (Lamarck, 1814)        |             | Not Listed | LC   |
| Spongiidae        | <i>Spongia (Spongia)</i> | <i>ceylonensis</i>   | Dendy, 1905            | Bath Sponge | Not Listed | LC   |
| Thorectidae       | <i>Dactylospongia</i>    | <i>elegans</i>       | (Thiele, 1899)         |             | Not Listed | LC   |
| Thorectidae       | <i>Hyrrios</i>           | <i>erectus</i>       | (Keller, 1889)         |             | Not Listed | LC   |
| Thorectidae       | <i>Lendenfeldia</i>      | <i>chondrodes</i>    | (De Laubenfels, 1954)  |             | Not Listed | LC   |
| Thorectidae       | <i>Luffariella</i>       | <i>variabilis</i>    | (Poléjaeff, 1884)      |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>ramosa</i>        | (Gray, 1843)           |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>serpentina</i>    | (Lamarck, 1814)        |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>diffusa</i>       | (Ridley, 1884)         |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>fibrosa</i>       | (Ridley & Dendy, 1886) |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>samarensis</i>    | (Wilson, 1925)         |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>spinosissima</i>  | (Dendy, 1887)          |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>cf. communis</i>  | (Carter, 1881)         |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>dendyi</i>        | (Burton, 1931)         |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>folioides</i>     | (Bowerbank, 1875)      |             | Not Listed | LC   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>aurantiaca</i>    | (Lendenfeld, 1887)     |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>euplax</i>        | (Lendenfeld, 1887)     |             | Not Listed | DD   |
| Callyspongiidae   | <i>Callyspongia</i>      | <i>globosa</i>       | Pulitzer-Finali, 1982  |             | Not Listed | LC   |



| Family          | Genus                                      | Species              | Authority                  | Common Name   | RDB2       | RDB3 |
|-----------------|--------------------------------------------|----------------------|----------------------------|---------------|------------|------|
| Callyspongiidae | <i>Callyspongia</i>                        | <i>joubini</i>       | (Topsent, 1897)            |               | Not Listed | LC   |
| Callyspongiidae | <i>Callyspongia</i>                        | <i>spinulosa</i>     | (Lendenfeld, 1887)         |               | Not Listed | DD   |
| Chalinidae      | <i>Haliclona</i> (Gellius)                 | <i>amboinensis</i>   | (Lévi, 1961)               |               | Not Listed | LC   |
| Chalinidae      | <i>Haliclona</i> (Gellius)                 | <i>cymaeiformis</i>  | (Esper, 1794)              |               | Not Listed | LC   |
| Chalinidae      | <i>Haliclona</i> ( <i>Rhizoniera</i> )     | <i>australis</i>     | (Lendenfeld, 1888)         |               | Not Listed | DD   |
| Chalinidae      | <i>Haliclona</i>                           | <i>baeri</i>         | (Wilson, 1925)             |               | Not Listed | LC   |
| Chalinidae      | <i>Haliclona</i>                           | <i>koremella</i>     | De Laubenfels, 1954        |               | Not Listed | DD   |
| Niphatidae      | <i>Gelliodes</i>                           | <i>fibulata</i>      | (Carter, 1881)             |               | Not Listed | LC   |
| Niphatidae      | <i>Gelliodes</i>                           | <i>spinosella</i>    | Thiele, 1899               |               | Not Listed | DD   |
| Petrosiidae     | <i>Acanthostrongylophora</i>               | <i>ingens</i>        | (Thiele, 1899)             |               | Not Listed | LC   |
| Petrosiidae     | <i>Neopetrosia</i>                         | <i>carbonaria</i>    | (Lamarck, 1814)            |               | Not Listed | LC   |
| Petrosiidae     | <i>Neopetrosia</i>                         | <i>compacta</i>      | (Ridley & Dendy, 1886)     |               | Not Listed | DD   |
| Petrosiidae     | <i>Neopetrosia</i>                         | <i>chaliniformis</i> | (Thiele, 1899)             |               | Not Listed | LC   |
| Petrosiidae     | <i>Neopetrosia</i>                         | <i>similis</i>       | (Ridley & Dendy, 1886)     |               | Not Listed | DD   |
| Petrosiidae     | <i>Petrosia</i> ( <i>Petrosia</i> )        | <i>hoeksemai</i>     | De Voogd & Van Soest, 2002 |               | Not Listed | LC   |
| Petrosiidae     | <i>Xestospongia</i>                        | <i>testudinaria</i>  | (Lamarck, 1815)            | Barrel Sponge | Not Listed | LC   |
| Petrosiidae     | <i>Xestospongia</i>                        | <i>vansoesti</i>     | Nishiyama & Bakus, 2000    |               | Not Listed | LC   |
| Phloeodictyidae | <i>Oceanapia</i>                           | <i>sagittaria</i>    | (Sollas, 1902)             |               | Not Listed | LC   |
| Phloeodictyidae | <i>Siphonodictyon</i>                      | <i>maldiviense</i>   | (Calcinai et al., 2007)    |               | Not Listed | LC   |
| Phloeodictyidae | <i>Siphonodictyon</i>                      | <i>mucosum</i>       | Bergquist, 1965            |               | Not Listed | LC   |
| Scopaliniidae   | <i>Stylissa</i>                            | <i>carteri</i>       | (Dendy, 1889)              |               | Not Listed | LC   |
| Scopaliniidae   | <i>Stylissa</i>                            | <i>massa</i>         | (Carter, 1887)             |               | Not Listed | LC   |
| Raspailiidae    | <i>Echinodictyum</i>                       | <i>asperum</i>       | Ridley & Dendy, 1886       |               | Not Listed | LC   |
| Raspailiidae    | <i>Echinodictyum</i>                       | <i>conulosum</i>     | Kieschnick, 1900           |               | Not Listed | LC   |
| Raspailiidae    | <i>Echinodictyum</i>                       | <i>lacunosum</i>     | Kieschnick, 1901           |               | Not Listed | DD   |
| Raspailiidae    | <i>Echinodictyum</i>                       | <i>mesenterinum</i>  | (Lamarck, 1814)            |               | Not Listed | LC   |
| Raspailiidae    | <i>Raspailia</i> ( <i>Parasyringella</i> ) | <i>nuda</i>          | Hentschel, 1911            |               | Not Listed | LC   |
| Raspailiidae    | <i>Thrinacophora</i>                       | <i>cervicornis</i>   | Ridley & Dendy, 1886       |               | Not Listed | LC   |
| Desmanthidae    | <i>Desmanthus</i>                          | <i>rhabdophorus</i>  | (Hentschel, 1912)          |               | Not Listed | LC   |
| Dictyonellidae  | <i>Acanthella</i>                          | <i>cavernosa</i>     | Dendy, 1922                |               | Not Listed | LC   |
| Biemnidae       | <i>Biemna</i>                              | <i>fortis</i>        | (Topsent, 1897)            |               | Not Listed | LC   |
| Ancorinidae     | <i>Ecionemia</i>                           | <i>acervus</i>       | Bowerbank, 1864            |               | Not Listed | LC   |
| Ancorinidae     | <i>Jaspis</i>                              | <i>splendens</i>     | (De Laudenfels, 1954)      |               | Not Listed | LC   |
| Ancorinidae     | <i>Rhabdastrella</i>                       | <i>globostellata</i> | (Carter, 1883)             |               | Not Listed | LC   |

| Family          | Genus                                 | Species               | Authority               | Common Name | RDB2       | RDB3 |
|-----------------|---------------------------------------|-----------------------|-------------------------|-------------|------------|------|
| Anconinidae     | <i>Stelletta</i>                      | <i>clavosa</i>        | Ridley, 1884            |             | Not Listed | LC   |
| Geodiidae       | <i>Geodia</i>                         | <i>distincta</i>      | Lindgren, 1897          |             | Not Listed | LC   |
| Geodiidae       | <i>Geodia</i>                         | <i>picteti</i>        | (Topsent, 1897)         |             | Not Listed | LC   |
| Theonellidae    | <i>Theonella</i>                      | <i>cylindrica</i>     | Wilson, 1925            |             | Not Listed | LC   |
| Theonellidae    | <i>Theonella</i>                      | <i>laena</i>          | Lim & Tan, 2016         |             | Not Listed | LC   |
| Tetillidae      | <i>Cinachyrella</i>                   | <i>arabica</i>        | (Carter, 1869)          |             | Not Listed | DD   |
| Tetillidae      | <i>Cinachyrella</i>                   | <i>australiensis</i>  | (Carter, 1886)          |             | Not Listed | LC   |
| Tetillidae      | <i>Craniella</i>                      | <i>abracadabra</i>    | De Laubenfels, 1954     |             | Not Listed | LC   |
| Tetillidae      | <i>Paratetilla</i>                    | <i>bacca</i>          | (Selenka, 1867)         |             | Not Listed | LC   |
| Agelasidae      | <i>Agelas</i>                         | <i>cavernosa</i>      | Thiele, 1903            |             | Not Listed | LC   |
| Agelasidae      | <i>Prosuberites</i>                   | <i>oleteira</i>       | De Laubenfels, 1957     |             | Not Listed | LC   |
| Acanthidae      | <i>Acanth</i>                         | <i>primigenius</i>    | Hiemstra & Hooper, 1991 |             | Not Listed | LC   |
| Acanthidae      | <i>Acanth</i>                         | <i>ternatus</i>       | Ridley, 1884            |             | Not Listed | LC   |
| Acanthidae      | <i>Acanth</i>                         | <i>wolfgangi</i>      | Keller, 1889            |             | Not Listed | LC   |
| Acanthidae      | <i>Damiria</i>                        | <i>simplex</i>        | Keller, 1891            |             | Not Listed | LC   |
| Crambeidae      | <i>Monanchora</i>                     | <i>clathrata</i>      | Carter, 1883            |             | Not Listed | LC   |
| Crambeidae      | <i>Monanchora</i>                     | <i>unguiculata</i>    | (Dendy, 1922)           |             | Not Listed | LC   |
| Coelosphaeridae | <i>Forcepia</i>                       | <i>vansoesti</i>      | Lim et al., 2012        |             | Not Listed | LC   |
| Guitarridae     | <i>Tetrapocillon</i>                  | <i>patbergquistae</i> | Fromont et al., 2011    |             | Not Listed | LC   |
| Iotrochotidae   | <i>Iotrochota</i>                     | <i>baculifera</i>     | Ridley, 1884            |             | Not Listed | LC   |
| Iotrochotidae   | <i>Iotrochota</i>                     | <i>purpurea</i>       | (Bowerbank, 1875)       |             | Not Listed | LC   |
| Isodictyidae    | <i>Coelocarteria</i>                  | <i>singaporensis</i>  | (Carter, 1883)          |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Clathria</i> )   | <i>transiens</i>      | Hallmann, 1912          |             | Not Listed | DD   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>cervicornis</i>    | (Thiele, 1903)          |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>filifera</i>       | (Ridley & Dendy, 1886)  |             | Not Listed | DD   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>reinwardti</i>     | Vosmaer, 1880           |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>robusta</i>        | (Dendy, 1922)           |             | Not Listed | DD   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>toxifera</i>       | (Hentschel, 1912)       |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Thalysias</i> )  | <i>vulpina</i>        | (Lamarck, 1814)         |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Wilsonella</i> ) | <i>foraminifera</i>   | (Burton & Rao, 1932)    |             | Not Listed | LC   |
| Microcionidae   | <i>Clathria</i> ( <i>Wilsonella</i> ) | <i>tuberosa</i>       | (Bowerbank, 1875)       |             | Not Listed | LC   |
| Microcionidae   | <i>Holopsamma</i>                     | <i>laminaefavosa</i>  | (Carter, 1885)          |             | Not Listed | DD   |
| Mycalidae       | <i>Mycale</i> ( <i>Aegogropila</i> )  | <i>crassissima</i>    | (Dendy, 1905)           |             | Not Listed | LC   |
| Mycalidae       | <i>Mycale</i> ( <i>Aegogropila</i> )  | <i>sulevoidea</i>     | Sollas, 1902            |             | Not Listed | LC   |

| Family          | Genus                              | Species              | Authority                             | Common Name          | RDB2       | RDB3 |
|-----------------|------------------------------------|----------------------|---------------------------------------|----------------------|------------|------|
| Mycalidae       | <i>Mycale (Carmia)</i>             | <i>murrayi</i>       | (Ridley & Dendy, 1886)                |                      | Not Listed | DD   |
| Mycalidae       | <i>Mycale (Mycale)</i>             | <i>grandis</i>       | Gray, 1867                            |                      | Not Listed | LC   |
| Mycalidae       | <i>Mycale (Mycale)</i>             | <i>indica</i>        | (Carter, 1887)                        |                      | Not Listed | LC   |
| Mycalidae       | <i>Mycale (Mycale)</i>             | <i>sulcata</i>       | Hentschel, 1911                       |                      | Not Listed | LC   |
| Mycalidae       | <i>Mycale (Zygomycale)</i>         | <i>parishii</i>      | (Bowerbank, 1875)                     |                      | Not Listed | LC   |
| Myxillidae      | <i>Psammochela</i>                 | <i>psammodes</i>     | (Hentschel, 1911)                     |                      | Not Listed | LC   |
| Clionaidae      | <i>Cliona</i>                      | <i>orientalis</i>    | Thiele, 1900                          |                      | Not Listed | LC   |
| Clionaidae      | <i>Cliona</i>                      | <i>patera</i>        | (Hardwicke, 1820)                     | Neptune's Cup Sponge | Not Listed | CR   |
| Clionaidae      | <i>Cliona</i>                      | <i>utricularis</i>   | Calcinai, Bavestrello & Cerrano, 2005 |                      | Not Listed | LC   |
| Clionaidae      | <i>Spheciospongia</i>              | <i>inconstans</i>    | (Dendy, 1887)                         |                      | Not Listed | LC   |
| Clionaidae      | <i>Spheciospongia</i>              | <i>lacunosa</i>      | (Kieschnick, 1898)                    |                      | Not Listed | DD   |
| Clionaidae      | <i>Spheciospongia</i>              | <i>purpurea</i>      | (Lamarck, 1815)                       |                      | Not Listed | DD   |
| Clionaidae      | <i>Spheciospongia</i>              | <i>vagabunda</i>     | (Ridley, 1884)                        |                      | Not Listed | LC   |
| Spirastrellidae | <i>Spirastrella</i>                | <i>decumbens</i>     | Ridley, 1884                          |                      | Not Listed | LC   |
| Placospongiidae | <i>Placospongia</i>                | <i>carinata</i>      | (Bowerbank, 1858)                     |                      | Not Listed | LC   |
| Placospongiidae | <i>Placospongia</i>                | <i>melobesioides</i> | Gray, 1867                            |                      | Not Listed | LC   |
| Tethyidae       | <i>Tethya</i>                      | <i>robusta</i>       | (Bowerbank, 1873)                     |                      | Not Listed | LC   |
| Tethyidae       | <i>Tethycometes</i>                | <i>radicosa</i>      | Lim & Tan, 2008                       |                      | Not Listed | LC   |
| Suberitidae     | <i>Aptos</i>                       | <i>suberitoides</i>  | (Brøndsted, 1934)                     |                      | Not Listed | LC   |
| Suberitidae     | <i>Pseudosuberites</i>             | <i>cava</i>          | Sollas, 1902                          |                      | Not Listed | LC   |
| Suberitidae     | <i>Suberites</i>                   | <i>diversicolor</i>  | Becking & Lim, 2009                   |                      | Not Listed | LC   |
| Suberitidae     | <i>Terpios</i>                     | <i>cruciata</i>      | (Dendy, 1905)                         |                      | Not Listed | LC   |
| Suberitidae     | <i>Terpios</i>                     | <i>granulosa</i>     | Bergquist, 1967                       |                      | Not Listed | LC   |
| Halichondriidae | <i>Amorphinopsis</i>               | <i>excavans</i>      | Carter, 1887                          |                      | Not Listed | LC   |
| Halichondriidae | <i>Axinyssa</i>                    | <i>pitys</i>         | (De Laubenfels, 1954)                 |                      | Not Listed | DD   |
| Halichondriidae | <i>Epipolasis</i>                  | <i>suluensis</i>     | (Wilson, 1925)                        |                      | Not Listed | LC   |
| Halichondriidae | <i>Halichondria (Halichondria)</i> | <i>cartilaginea</i>  | (Esper, 1794)                         |                      | Not Listed | LC   |
| Spongillidae    | <i>Eunapius</i>                    | <i>conifer</i>       | (Annandale, 1916)                     |                      | Not Listed | LC   |
| Clathrinidae    | <i>Clathrina</i>                   | <i>flexilis</i>      | (Haeckel, 1872)                       |                      | Not Listed | DD   |
| Clathrinidae    | <i>Clathrina</i>                   | <i>sororcula</i>     | Van Soest & De Voogd, 2015            |                      | Not Listed | LC   |
| Jenkinidae      | <i>Anamixilla</i>                  | <i>singaporensis</i> | Van Soest & De Voogd, 2015            |                      | Not Listed | LC   |
| Jenkinidae      | <i>Uteopsis</i>                    | <i>argentea</i>      | (Poléjaeff, 1883)                     |                      | Not Listed | LC   |

## Checklist of Cnidaria (non-Scleractinia) Species with their Category of Threat Status for Singapore

Prepared by Yap Wei Liang Nicholas, Oh Ren Min, Iffah Iesa

| Family           | Genus                  | Species             | Authority                                 | Common Name                     | RDB2       | RDB3 |
|------------------|------------------------|---------------------|-------------------------------------------|---------------------------------|------------|------|
| Discosomidae     | <i>Rhodactis</i>       | <i>indosinensis</i> | Carlgren, 1943                            | Carpet / White-tip Corallimorph | Not Listed | LC   |
| Discosomidae     | <i>Rhodactis</i>       | <i>inchoata</i>     | Carlgren, 1943                            | Fripped Corallimorph            | Not Listed | LC   |
| Discosomidae     | <i>Discosoma</i>       | <i>nummiforme</i>   | Rüppell & Leuckart, 1828                  | Beaded / Stubby Corallimorph    | Not Listed | LC   |
| Discosomidae     | <i>Discosoma</i>       | spp.                |                                           | Striped Corallimorph            | Not Listed | DD   |
| Corallimorphidae | <i>Corynactis</i>      | spp.                |                                           | Ball-tip Corallimorph           | Not Listed | DD   |
| Discosomidae     | <i>Platyzoanthus</i>   | <i>mussoides</i>    | Saville-Kent, 1893                        | Ridged Corallimorph             | Not Listed | DD   |
| Ricordeidae      | <i>Ricordea</i>        | <i>yuma</i>         | Carlgren, 1900                            | Stubby Corallimorph             | Not Listed | DD   |
| Capneidae        | <i>Actinoporus</i>     | <i>elongatus</i>    | Gosse, 1860                               | Very Long Anemone               | Not Listed | DD   |
| Actinodendridae  | <i>Actinodendron</i>   | <i>arboresum</i>    | (Quoy & Gaimard, 1833)                    | Christmas Tree / Fire Anemone   | Not Listed | LC   |
| Actinodendridae  | <i>Actinostephanus</i> | <i>haeckeli</i>     | Kwietniewski, 1897                        | Haeckel's Anemone               | Not Listed | LC   |
| Aliciidae        | <i>Alicia</i>          | sp.                 |                                           | Alicia Anemone                  | Not Listed | DD   |
| Actiniidae       | <i>Anthopleura</i>     | <i>buddemeieri</i>  | Fautin, 2005                              | Pink-spotted Bead Anemone       | Not Listed | EN   |
| Actiniidae       | <i>Anthopleura</i>     | <i>dixoniana</i>    | (Haddon & Shackleton, 1893)               | Banded Bead Anemone             | Not Listed | LC   |
| Actiniidae       | <i>Anthopleura</i>     | <i>handi</i>        | Dunn, 1978                                | Banded Bead                     | Not Listed | LC   |
| Actiniidae       | <i>Anthopleura</i>     | <i>nigrescens</i>   | (Verrill, 1928)                           | Banded Bead                     | Not Listed | LC   |
| Boloceroiidae    | <i>Boloceroides</i>    | <i>mcmurrici</i>    | (Kwietniewski, 1898)                      | Swimming Anemone                | Not Listed | LC   |
| Actiniidae       | <i>Bunodosoma</i>      | <i>goanense</i>     | den Hartog & Vennam, 1993                 | Burgundy Anemone                | Not Listed | LC   |
| Actiniidae       | <i>Cancrisocia</i>     | <i>expansa</i>      | Stimpson, 1856                            |                                 | Not Listed | DD   |
| Thalassianthidae | <i>Cryptodendrum</i>   | <i>adhaesivum</i>   | Milne Edwards, 1857                       | Pizza Anemone                   | Not Listed | CR   |
| Diadumenidae     | <i>Diadumene</i>       | <i>lineata</i>      | (Verrill, 1869)                           | Lined Bead Anemone              | Not Listed | LC   |
| Diadumenidae     | <i>Diadumene</i>       | sp.                 |                                           | Lined Bead Anemone              | Not Listed | DD   |
| Actiniidae       | <i>Dofleinia</i>       | <i>armata</i>       | Wassilieff, 1908                          | Glass Anemone                   | Not Listed | LC   |
| Actiniidae       | <i>Entacmaea</i>       | <i>quadricolor</i>  | (Leuckart in Rüppell & Leuckart, 1828)    | Bubble-tipped Anemone           | Not Listed | LC   |
| Stichodactylidae | <i>Heteractis</i>      | <i>crispa</i>       | (Hemprich & Ehrenberg in Ehrenberg, 1834) | Leathery Anemone                | Not Listed | EN   |
| Stichodactylidae | <i>Heteractis</i>      | <i>magnifica</i>    | (Quoy & Gaimard, 1833)                    | Magnificent Anemone             | Not Listed | LC   |
| Heteranthidae    | <i>Heteranthus</i>     | <i>verruculatus</i> | Klunzinger, 1877                          | Sand Anemone                    | Not Listed | VU   |
| Hormathidae      | <i>Calliactis</i>      | sp.                 |                                           | Big Hermit Hitching Anemone     | Not Listed | DD   |
| Actiniidae       | <i>Isactinia</i>       | <i>citrina</i>      | (Haddon & Shackleton, 1893)               | Neon / Posy Anemone             | Not Listed | LC   |
| Actiniidae       | <i>Macroactyla</i>     | <i>aspera</i>       | (Haddon & Shackleton, 1893)               | Glass Anemome                   | Not Listed | DD   |

| Family           | Genus                  | Species               | Authority                                 | Common Name                                                   | RDB2       | RDB3 |
|------------------|------------------------|-----------------------|-------------------------------------------|---------------------------------------------------------------|------------|------|
| Actiniidae       | <i>Macroactyla</i>     | <i>doreensis</i>      | (Quoy & Gaimard, 1833)                    | Snaky Anemone                                                 | Not Listed | EN   |
| Haloclavidae     | <i>Metapeachia</i>     | <i>tropica</i>        | (Panikkar, 1938)                          | White Peachia Anemone                                         | Not Listed | LC   |
| Nemanthidae      | <i>Nemanthus</i>       | sp.                   |                                           | Wrapper Anemone                                               | Not Listed | DD   |
| Actiniidae       | <i>Paracondylactis</i> | <i>hertwigi</i>       | (Wassilieff, 1908)                        | Striped Sand Anemone                                          | Not Listed | DD   |
| Actiniidae       | <i>Paracondylactis</i> | <i>sinensis</i>       | Carlgren, 1934                            | Pearly Anemone                                                | Not Listed | DD   |
| Actiniidae       | <i>Paracondylactis</i> | <i>singaporensis</i>  | (England, 1987)                           | Striped Bead Anemone                                          | Not Listed | DD   |
| Aiptasiidae      | <i>Paraipasia</i>      | <i>radiata</i>        | (Stimpson, 1856)                          | Snail Hitching Anemone                                        | Not Listed | LC   |
| Haliactiidae     | <i>Pelocoetes</i>      | <i>exul</i>           | (Annandale, 1907)                         | Branched Tentacle Mangrove Anemone                            | Not Listed | CR   |
| Phymanthidae     | <i>Phymanthus</i>      | <i>pinnulatus</i>     | Martens in Klunzinger, 1877               | Banded Frilly / Frilly / Plain Frilly / Sand / Smooth Anemone | Not Listed | LC   |
| Phymanthidae     | <i>Phymanthus</i>      | <i>rhizophorae</i>    | (Mitchell, 1890)                          | Filly / Six-Point Frilly / Sand Anemone                       | Not Listed | LC   |
| Haliactiidae     | <i>Stephensonactis</i> | <i>ornata</i>         | Panikkar, 1936                            | Petal-Mouthed Mangrove Anemone                                | Not Listed | DD   |
| Stichodactylidae | <i>Stichodactyla</i>   | <i>gigantea</i>       | (Forssakål, 1775)                         | Carpet / Giant Carpet Anemone                                 | Not Listed | LC   |
| Stichodactylidae | <i>Stichodactyla</i>   | <i>mertensii</i>      | Brandt, 1835                              | Merten's Carpet Anemone                                       | Not Listed | EN   |
| Stichodactylidae | <i>Stichodactyla</i>   | <i>haddoni</i>        | (Saville-Kent, 1893)                      | Carpet / Haddon's Carpet Anemone                              | Not Listed | LC   |
| Stichodactylidae | <i>Stichodactyla</i>   | <i>tapetum</i>        | (Hemprich & Ehrenberg in Ehrenberg, 1834) | Carpet / Mini Carpet Anemone                                  | Not Listed | LC   |
| Haloclavidae     | <i>Synpeachia</i>      | <i>temasek</i>        | Yap, Fautin, Ramos & Tan, 2014            | Brown Peachia Anemone                                         | Not Listed | CR   |
| Thalassianthidae | <i>Thalassianthus</i>  | sp.                   |                                           |                                                               | Not Listed | DD   |
| Edwardsiidae     | <i>Edwardsianthus</i>  | <i>pudicus</i>        | (Klunzinger, 1877)                        |                                                               | Not Listed | DD   |
| Edwardsiidae     | <i>Scolanthus</i>      | <i>armatus</i>        | (Carlgren, 1931)                          |                                                               | Not Listed | DD   |
| Aliciidae        | <i>Triactis</i>        | <i>producta</i>       | Klunzinger, 1877                          |                                                               | Not Listed | DD   |
| Actiniidae       | <i>Gyractis</i>        | <i>excavata</i>       | Boveri, 1893                              |                                                               | Not Listed | DD   |
| Actiniidae       | <i>Mesactinia</i>      | <i>ganensis</i>       | England, 1987                             |                                                               | Not Listed | DD   |
| Helioporidae     | <i>Heliopora</i>       | <i>coeruluea</i>      | Pallas, 1766                              | Blue Coral                                                    | Not Listed | LC   |
| Alcyoniidae      | <i>Cladiella</i>       | <i>hartogi</i>        | Benayahu & Chou, 2010                     |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Cladiella</i>       | <i>pachyclados</i>    | Klunzinger, 1887                          |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Lobophytum</i>      | <i>crassum</i>        | von Marenzeller, 1886                     |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Lobophytum</i>      | <i>pauciflorum</i>    | Ehrenberg, 1834                           |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Lobophytum</i>      | <i>sarcophytoides</i> | Moser, 1919                               |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Sarcophyton</i>     | <i>crassocaule</i>    | Moser, 1919                               |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Sarcophyton</i>     | <i>ehrenbergi</i>     | von Marenzeller, 1886                     |                                                               | Not Listed | DD   |
| Alcyoniidae      | <i>Sarcophyton</i>     | <i>glaucum</i>        | Quoy & Gaimard, 1833                      |                                                               | Not Listed | DD   |

| Family           | Genus                | Species                | Authority                     | Common Name               | RDB2       | RDB3 |
|------------------|----------------------|------------------------|-------------------------------|---------------------------|------------|------|
| Alcyoniidae      | <i>Sarcophyton</i>   | <i>tenuispiculatum</i> | Thomson & Dean, 1931          |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sarcophyton</i>   | <i>trocheliophorum</i> | von Marenzeller, 1886         |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>abrupta</i>         | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>brassica</i>        | May, 1898                     | Starry Leathery Coral     | Not Listed | LC   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>capillosa</i>       | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>compressa</i>       | Tixier Durivault, 1945        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>depressa</i>        | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>erecta</i>          | Tixier Durivault, 1945        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>exilis</i>          | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>gibberosa</i>       | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>hirta</i>           | Pratt, 1903                   |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>lochmodes</i>       | Kolonko, 1926                 |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>microclavata</i>    | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Sinularia</i>     | <i>triangula</i>       | Tixier Durivault, 1970        |                           | Not Listed | DD   |
| Alcyoniidae      | <i>Studeriotis</i>   | <i>spinosa</i>         | Thomson & Dean, 1931          |                           | Not Listed | DD   |
| Xeniidae         | <i>Sansiba</i>       | <i>flava</i>           | May, 1898                     | Broad Feathery Soft Coral | Not Listed | LC   |
| Briareidae       | <i>Briareum</i>      | <i>excavatum</i>       | Natting, 1911                 |                           | Not Listed | DD   |
| Bougainvilliidae | <i>Thamnostoma</i>   | <i>macrostomum</i>     | Haeckel, 1879                 |                           | Not Listed | DD   |
| Porpitidae       | <i>Porpita</i>       | <i>porpita</i>         | (Linnaeus, 1758)              | Blue Button Jellyfish     | Not Listed | DD   |
| Zancleidae       | <i>Zanclea</i>       | sp.                    |                               |                           | Not Listed | DD   |
| Aequoreidae      | <i>Aequorea</i>      | <i>conica</i>          | Browne, 1905                  |                           | Not Listed | DD   |
| Aequoreidae      | <i>Aequorea</i>      | <i>parva</i>           | Browne, 1905                  |                           | Not Listed | DD   |
| Aequoreidae      | <i>Aequorea</i>      | <i>pensilis</i>        | (Haeckel, 1879)               |                           | Not Listed | DD   |
| Campanulariidae  | <i>Clytia</i>        | sp.                    |                               |                           | Not Listed | DD   |
| Eirenidae        | <i>Eirene</i>        | <i>hexanemalis</i>     | (Goette, 1886)                | Eirene Jellyfish          | Not Listed | DD   |
| Phialuciidae     | <i>Phialucium</i>    | <i>mbengha</i>         | (Agassiz & Mayer, 1899)       |                           | Not Listed | DD   |
| Abylidae         | <i>Ceratocymba</i>   | <i>leuckarti</i>       | (Huxley, 1859)                |                           | Not Listed | DD   |
| Diphyidae        | <i>Diphyes</i>       | <i>bojani</i>          | (Eschscholtz, 1825)           |                           | Not Listed | DD   |
| Diphyidae        | <i>Diphyes</i>       | <i>chamissonis</i>     | Huxley, 1859                  |                           | Not Listed | DD   |
| Diphyidae        | <i>Lensia</i>        | sp.                    | Totton, 1932                  |                           | Not Listed | DD   |
| Physaliidae      | <i>Physalia</i>      | sp.                    |                               | Blue Bottle Jellyfish     | Not Listed | DD   |
| Geryoniidae      | <i>Liriope</i>       | <i>tetraphylla</i>     | (Chamisso & Eysenhardt, 1821) | Jewel Jellyfish           | Not Listed | DD   |
| Olindiasidae     | <i>Craspedacusta</i> | <i>sowerbii</i>        | Lankester, 1880               | Freshwater Jellyfish      | Not Listed | LC   |
| Solmundaeginidae | <i>Solmundella</i>   | sp.                    |                               |                           | Not Listed | DD   |
| Cuninidae        | <i>Cunina</i>        | <i>duplicata</i>       | Maas, 1893                    |                           | Not Listed | DD   |

| Family         | Genus               | Species            | Authority               | Common Name                   | RDB2       | RDB3 |
|----------------|---------------------|--------------------|-------------------------|-------------------------------|------------|------|
| Nausithoidae   | <i>Nausithoe</i>    | <i>punctata</i>    | Kölliker, 1853          |                               | Not Listed | DD   |
| Linuchidae     | <i>Linuche</i>      | <i>unguiculata</i> | (Swartz, 1788)          | Thimble Jellyfish             | Not Listed | DD   |
| Pelagiidae     | <i>Chrysaora</i>    | <i>chinensis</i>   | Vanhöffen, 1888         | Ribbon Jellyfish              | Not Listed | LC   |
| Pelagiidae     | <i>Chrysaora</i>    | <i>melanaster</i>  | Brandt, 1835            | Ribbon Jellyfish              | Not Listed | NE   |
| Pelagiidae     | <i>Pelagia</i>      | sp.                |                         | Purple-striped Jellyfish      | Not Listed | DD   |
| Pelagiidae     | <i>Sanderia</i>     | <i>malayensis</i>  | Goette, 1886            |                               | Not Listed | DD   |
| Cyaneidae      | <i>Cyanea</i>       | <i>lamarckii</i>   | Péron & Lesueur, 1810   | Lion's Mane Jellyfish         | Not Listed | DD   |
| Ulmaridae      | <i>Aurelia</i>      | <i>aurita</i>      | (Linnaeus, 1758)        | Moon Jellyfish                | Not Listed | DD   |
| Ulmaridae      | <i>Ulmaris</i>      | <i>snelliusi</i>   | Stiasny, 1935           |                               | Not Listed | DD   |
| Cassiopeidae   | <i>Cassiopea</i>    | <i>andromeda</i>   | (Forsskål, 1775)        | Upside-down Jellyfish         | Not Listed | DD   |
| Cassiopeidae   | <i>Cassiopea</i>    | <i>xamachana</i>   | Bigelow, 1892           | Upside-down Jellyfish         | Not Listed | NE   |
| Cepheidae      | <i>Cephea</i>       | <i>octostyla</i>   | (Forskål, 1775)         | Crown Jellyfish               | Not Listed | DD   |
| Cepheidae      | <i>Netrostoma</i>   | <i>dumokuroa</i>   | (Agassiz & Mayer, 1899) | Crown Jellyfish               | Not Listed | DD   |
| Mastigiidae    | <i>Mastigias</i>    | <i>ocellatus</i>   | (Modeer, 1791)          | Golden Jellyfish              | Not Listed | DD   |
| Mastigiidae    | <i>Mastigias</i>    | <i>papua</i>       | (Lesson, 1830)          | Golden Jellyfish              | Not Listed | DD   |
| Mastigiidae    | <i>Mastigias</i>    | <i>sidereus</i>    | Chun, 1896              | Golden Jellyfish              | Not Listed | DD   |
| Mastigiidae    | <i>Phyllorhiza</i>  | <i>punctata</i>    | von Lendenfeld, 1884    | White-spotted Jellyfish       | Not Listed | VU   |
| Leptobrachidae | <i>Thysanostoma</i> | sp.                | Agassiz, 1862           | Lavender Tiger Jellyfish      | Not Listed | NE   |
| Catostylidae   | <i>Acromitus</i>    | <i>hardenbergi</i> | Stiasny, 1934           | River Jellyfish               | Not Listed | DD   |
| Catostylidae   | <i>Acromitus</i>    | sp.                |                         | Mangrove Jellyfish            | Not Listed | VU   |
| Catostylidae   | <i>Catostylus</i>   | sp.                | Agassiz, 1862           | Fat-armed Jellyfish           | Not Listed | DD   |
| Carukiidae     | <i>Morbakka</i>     | sp.                | Gershwin, 2008          |                               | Not Listed | DD   |
| Carybdeidae    | <i>Carybdea</i>     | sp.                | Péron & Lesueur, 1810   | Sea Wasp                      | Not Listed | DD   |
| Tripedaliidae  | <i>Tripedalia</i>   | <i>cystophora</i>  | Conant, 1897            | Mangrove Box Jellyfish        | Not Listed | DD   |
| Chirodropidae  | <i>Chironex</i>     | sp.                |                         | Multi-tentacled Box Jellyfish | Not Listed | DD   |
| Chiropsalmidae | <i>Chiropsoides</i> | <i>quadrigatus</i> | (Haeckel, 1880)         | Multi-tentacled Box Jellyfish | Not Listed | NE   |
| Chiropsalmidae | <i>Chiropsella</i>  | sp.                |                         | Multi-tentacled Box Jellyfish | Not Listed | DD   |



**Checklist of Cnidaria (Scleractinia) Species with their Category of Threat Status for Singapore**

Prepared by Lionel Ng Chin Soon, Samuel Chan Yong Kit, Rosa Cecilia Poquita-Du, Huang Danwei

| Family         | Genus               | Species                  | Authority             | Common Name              | RDB2       | RDB3 |
|----------------|---------------------|--------------------------|-----------------------|--------------------------|------------|------|
| Lobophylliidae | <i>Acanthastrea</i> | <i>echinata</i>          | (Dana, 1846)          | Brain coral              | Not Listed | LC   |
| Lobophylliidae | <i>Acanthastrea</i> | <i>rotundoflora</i>      | Chevalier, 1975       | Brain coral              | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>abrotanoides</i>      | (Lamarck, 1816)       |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>aculeus</i>           | (Dana, 1846)          | Bottlebrush coral        | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>acuminata</i>         | (Verrill, 1864)       |                          | Not Listed | VU   |
| Acroporidae    | <i>Acropora</i>     | <i>anthocercis</i>       | (Brook, 1893)         |                          | Not Listed | VU   |
| Acroporidae    | <i>Acropora</i>     | <i>aspera</i>            | (Dana, 1846)          | Green staghorn coral     | Not Listed | EN   |
| Acroporidae    | <i>Acropora</i>     | <i>austera</i>           | (Dana, 1846)          |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>cerealis</i>          | (Dana, 1846)          |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>chesterfieldensis</i> | Veron & Wallace, 1984 |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>cytherea</i>          | (Dana, 1846)          | Table coral              | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>dendrum</i>           | (Bassett-Smith, 1890) |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>digitifera</i>        | (Dana, 1846)          | Staghorn coral           | Not Listed | EN   |
| Acroporidae    | <i>Acropora</i>     | <i>divaricata</i>        | (Dana, 1846)          |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>donei</i>             | Veron & Wallace, 1984 | Purple-tipped acropora   | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>elseyi</i>            | (Brook, 1892)         | Bottlebrush coral        | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>florida</i>           | (Dana, 1846)          |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>glauca</i>            | (Brook, 1893)         |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>grandis</i>           | (Brook, 1892)         |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>granulosa</i>         | (Milne Edwards, 1860) | Tubular table coral      | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>horrida</i>           | (Dana, 1846)          | Blue staghorn coral      | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>humilis</i>           | (Dana, 1846)          | Finger coral             | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>hyacinthus</i>        | (Dana, 1846)          | Brush coral              | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>intermedia</i>        | (Brook, 1891)         |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>latistella</i>        | (Brook, 1892)         |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>longicyathus</i>      | (Milne Edwards, 1860) |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>loripes</i>           | (Brook, 1892)         | Blue tip coral           | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>lutkeni</i>           | Crossland, 1952       |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>microclados</i>       | (Ehrenberg, 1834)     |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>microphthalma</i>     | (Verrill, 1869)       | Small staghorn coral     | Not Listed | LC   |
| Acroporidae    | <i>Acropora</i>     | <i>millepora</i>         | (Ehrenberg, 1834)     | Plate acropora           | Not Listed | EN   |
| Acroporidae    | <i>Acropora</i>     | <i>muricata</i>          | (Linnaeus, 1758)      | Staghorn coral           | Not Listed | LC   |
| Acroporidae    | <i>Acropora</i>     | <i>nana</i>              | (Studer, 1879)        |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>nasuta</i>            | (Dana, 1846)          | Branching staghorn coral | Not Listed | EN   |
| Acroporidae    | <i>Acropora</i>     | <i>palmerae</i>          | Wells, 1954           |                          | Not Listed | DD   |
| Acroporidae    | <i>Acropora</i>     | <i>polystoma</i>         | (Brook, 1891)         |                          | Not Listed | DD   |

| Family           | Genus               | Species              | Authority                     | Common Name               | RDB2       | RDB3 |
|------------------|---------------------|----------------------|-------------------------------|---------------------------|------------|------|
| Acroporidae      | <i>Acropora</i>     | <i>pulchra</i>       | (Brook, 1891)                 |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>robusta</i>       | (Dana, 1846)                  |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>samoensis</i>     | (Brook, 1891)                 |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>secale</i>        | (Studer, 1878)                | Purple tip acropora       | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>selago</i>        | (Studer, 1879)                |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>solitaryensis</i> | Veron & Wallace, 1984         |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>spicifera</i>     | (Dana, 1846)                  |                           | Not Listed | EN   |
| Acroporidae      | <i>Acropora</i>     | <i>subglabra</i>     | (Brook, 1891)                 |                           | Not Listed | EN   |
| Acroporidae      | <i>Acropora</i>     | <i>subulata</i>      | (Dana, 1846)                  |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>tenuis</i>        | (Dana, 1846)                  |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>valenciennesi</i> | (Milne Edwards, 1860)         |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>valida</i>        | (Dana, 1846)                  |                           | Not Listed | LC   |
| Acroporidae      | <i>Acropora</i>     | <i>verweyi</i>       | Veron & Wallace, 1984         |                           | Not Listed | DD   |
| Acroporidae      | <i>Acropora</i>     | <i>willisae</i>      | Veron & Wallace, 1984         |                           | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>allingi</i>       | Hoffmeister, 1925             | Net coral                 | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>catalai</i>       | Wells, 1968                   | Branching flowerpot coral | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>excelsa</i>       | Verrill, 1864                 |                           | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>fenestrata</i>    | (Lamarck, 1816)               | Flower coral              | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>marionensis</i>   | Veron & Pichon, 1982          |                           | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>spongiosa</i>     | Dana, 1846                    |                           | Not Listed | DD   |
| Acroporidae      | <i>Alveopora</i>    | <i>tizardi</i>       | Bassett-Smith, 1890           |                           | Not Listed | DD   |
| Merulinidae      | <i>Astrea</i>       | <i>annuligera</i>    | Milne Edwards & Haime, 1849   |                           | Not Listed | DD   |
| Merulinidae      | <i>Astrea</i>       | <i>curta</i>         | Dana, 1846                    |                           | Not Listed | DD   |
| Acroporidae      | <i>Astreopora</i>   | <i>cucullata</i>     | Lamberts, 1980                |                           | Not Listed | DD   |
| Acroporidae      | <i>Astreopora</i>   | <i>expansa</i>       | (Brüggemann, 1877)            |                           | Not Listed | DD   |
| Acroporidae      | <i>Astreopora</i>   | <i>gracilis</i>      | Bernard, 1896                 |                           | Not Listed | NT   |
| Acroporidae      | <i>Astreopora</i>   | <i>incrustans</i>    | Bernard, 1896                 |                           | Not Listed | DD   |
| Acroporidae      | <i>Astreopora</i>   | <i>listeri</i>       | Bernard, 1896                 | Starflower coral          | Not Listed | NT   |
| Acroporidae      | <i>Astreopora</i>   | <i>myriophthalma</i> | (Lamarck, 1816)               | Porous star coral         | Not Listed | LC   |
| Poritidae        | <i>Bernardopora</i> | <i>stutchburyi</i>   | (Wells, 1955)                 | Anemone coral             | Not Listed | LC   |
| Merulinidae      | <i>Caulastrea</i>   | <i>echinulata</i>    | (Milne Edwards & Haime, 1849) |                           | Not Listed | NT   |
| Merulinidae      | <i>Caulastrea</i>   | <i>furcata</i>       | Dana, 1846                    |                           | Not Listed | DD   |
| Dendrophylliidae | <i>Cladopsammia</i> | <i>gracilis</i>      | (Milne Edwards & Haime, 1848) |                           | Not Listed | DD   |
| Merulinidae      | <i>Coelastrea</i>   | <i>aspera</i>        | (Verrill, 1866)               |                           | Not Listed | LC   |
| Merulinidae      | <i>Coelastrea</i>   | <i>palauensis</i>    | (Yabe & Sugiyama, 1936)       |                           | Not Listed | DD   |
| Coscinaraeidae   | <i>Coscinaraea</i>  | <i>columna</i>       | (Dana, 1846)                  |                           | Not Listed | LC   |
| Coscinaraeidae   | <i>Coscinaraea</i>  | <i>exesa</i>         | (Dana, 1846)                  | Wrinkle coral             | Not Listed | DD   |

| Family         | Genus                | Species                | Authority                            | Common Name            | RDB2       | RDB3 |
|----------------|----------------------|------------------------|--------------------------------------|------------------------|------------|------|
| Fungiidae      | <i>Ctenactis</i>     | <i>albitentaculata</i> | Hoeksema, 1989                       | Feather mushroom coral | Not Listed | DD   |
| Fungiidae      | <i>Ctenactis</i>     | <i>crassa</i>          | (Dana, 1846)                         | Feather mushroom coral | Not Listed | NT   |
| Fungiidae      | <i>Ctenactis</i>     | <i>echinata</i>        | (Pallas, 1766)                       | Feather mushroom coral | Not Listed | LC   |
| Fungiidae      | <i>Cycloseris</i>    | <i>costulata</i>       | (Ortmann, 1889)                      |                        | Not Listed | DD   |
| Fungiidae      | <i>Cycloseris</i>    | <i>explanulata</i>     | (van der Horst, 1922)                |                        | Not Listed | DD   |
| Fungiidae      | <i>Cycloseris</i>    | <i>mokai</i>           | (Hoeksema, 1989)                     |                        | Not Listed | DD   |
| Fungiidae      | <i>Cycloseris</i>    | <i>vaughani</i>        | (Boschma, 1923)                      |                        | Not Listed | DD   |
| Merulinidae    | <i>Cyphastrea</i>    | <i>chalcidicum</i>     | (Forskål, 1775)                      | Meteor coral           | Not Listed | LC   |
| Merulinidae    | <i>Cyphastrea</i>    | <i>microphthalma</i>   | (Lamarck, 1816)                      | Meteor coral           | Not Listed | LC   |
| Merulinidae    | <i>Cyphastrea</i>    | <i>serailia</i>        | (Forskål, 1775)                      |                        | Not Listed | LC   |
| Fungiidae      | <i>Danafungia</i>    | <i>horrida</i>         | (Dana, 1846)                         |                        | Not Listed | DD   |
| Fungiidae      | <i>Danafungia</i>    | <i>scruposa</i>        | (Klunzinger, 1879)                   |                        | Not Listed | LC   |
| Diploastreidae | <i>Diploastrea</i>   | <i>heliopora</i>       | (Lamarck, 1816)                      | Double-star coral      | Not Listed | LC   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>amicorum</i>        | (Milne Edwards & Haime, 1849)        | Basket coral           | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>danai</i>           | (Milne Edwards & Haime, 1857)        |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>favus</i>           | (Forskål, 1775)                      |                        | Not Listed | LC   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>helianthoides</i>   | (Wells, 1954)                        |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>laxa</i>            | (Klunzinger, 1879)                   |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>lizardensis</i>     | (Veron, Pichon & Wijsman-Best, 1977) |                        | Not Listed | LC   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>maritima</i>        | (Nemanzo, 1971)                      |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>matthaii</i>        | (Vaughan, 1918)                      |                        | Not Listed | LC   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>maxima</i>          | (Veron, Pichon & Wijsman-Best, 1977) |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>mirabilis</i>       | (Yabe & Sugiyama, 1941)              |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>pallida</i>         | (Dana, 1846)                         | Knob coral             | Not Listed | VU   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>rotumana</i>        | (Gardiner, 1899)                     |                        | Not Listed | DD   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>speciosa</i>        | (Dana, 1846)                         |                        | Not Listed | LC   |
| Merulinidae    | <i>Dipsastraea</i>   | <i>veroni</i>          | (Moll & Best, 1984)                  |                        | Not Listed | DD   |
| Lobophylliidae | <i>Echinophyllia</i> | <i>aspera</i>          | (Ellis & Solander, 1786)             | Flat lettuce coral     | Not Listed | LC   |
| Lobophylliidae | <i>Echinophyllia</i> | <i>echinoporoides</i>  | Veron & Pichon, 1980                 | Red stone coral        | Not Listed | LC   |
| Lobophylliidae | <i>Echinophyllia</i> | <i>glabra</i>          | Nemanzo, 1959                        | Chalice coral          | Not Listed | VU   |
| Merulinidae    | <i>Echinopora</i>    | <i>gemmacea</i>        | (Lamarck, 1816)                      | Hedgehog coral         | Not Listed | LC   |
| Merulinidae    | <i>Echinopora</i>    | <i>hirsutissima</i>    | Milne Edwards & Haime, 1849          | Prickly-pored coral    | Not Listed | DD   |
| Merulinidae    | <i>Echinopora</i>    | <i>horrida</i>         | Dana, 1846                           | Hedgehog coral         | Not Listed | LC   |
| Merulinidae    | <i>Echinopora</i>    | <i>lamellosa</i>       | (Esper, 1795)                        | Blue chalice coral     | Not Listed | LC   |
| Merulinidae    | <i>Echinopora</i>    | <i>pacifica</i>        | Veron, 1990                          | Hedgehog coral         | Not Listed | DD   |

| Family       | Genus                 | Species              | Authority                          | Common Name               | RDB2       | RDB3 |
|--------------|-----------------------|----------------------|------------------------------------|---------------------------|------------|------|
| Euphylliidae | <i>Euphyllia</i>      | <i>glabrescens</i>   | (Chamisso & Eysenhardt, 1821)      | Torch anchor coral        | Not Listed | DD   |
| Merulinidae  | <i>Favites</i>        | <i>abdit</i>         | (Ellis & Solander, 1786)           | Large star coral          | Not Listed | LC   |
| Merulinidae  | <i>Favites</i>        | <i>chinensis</i>     | (Verrill, 1866)                    |                           | Not Listed | LC   |
| Merulinidae  | <i>Favites</i>        | <i>colemani</i>      | (Veron, 2000)                      |                           | Not Listed | DD   |
| Merulinidae  | <i>Favites</i>        | <i>complanata</i>    | (Ehrenberg, 1834)                  | Large star coral          | Not Listed | LC   |
| Merulinidae  | <i>Favites</i>        | <i>flexuosa</i>      | (Dana, 1846)                       |                           | Not Listed | VU   |
| Merulinidae  | <i>Favites</i>        | <i>halicora</i>      | (Ehrenberg, 1834)                  |                           | Not Listed | LC   |
| Merulinidae  | <i>Favites</i>        | <i>magnistellata</i> | (Milne Edwards & Haime, 1849)      |                           | Not Listed | NT   |
| Merulinidae  | <i>Favites</i>        | <i>paraflexuosus</i> | Veron, 2000                        |                           | Not Listed | DD   |
| Merulinidae  | <i>Favites</i>        | <i>pentagona</i>     | (Esper, 1795)                      |                           | Not Listed | LC   |
| Merulinidae  | <i>Favites</i>        | <i>rotundata</i>     | Veron, Pichon & Wijsman-Best, 1977 |                           | Not Listed | DD   |
| Merulinidae  | <i>Favites</i>        | <i>valenciennesi</i> | (Milne Edwards & Haime, 1849)      |                           | Not Listed | LC   |
| Euphylliidae | <i>Fimbriaphyllia</i> | <i>ancora</i>        | (Veron & Pichon, 1980)             | Brain anchor coral        | Not Listed | LC   |
| Euphylliidae | <i>Fimbriaphyllia</i> | <i>divisa</i>        | (Veron & Pichon, 1980)             | Frogspawn coral           | Not Listed | VU   |
| Euphylliidae | <i>Fimbriaphyllia</i> | <i>paraancora</i>    | (Veron, 1990)                      | Branching anchor coral    | Not Listed | DD   |
| Euphylliidae | <i>Fimbriaphyllia</i> | <i>paradivisa</i>    | (Veron, 1990)                      | Frogspawn coral           | Not Listed | DD   |
| Fungiidae    | <i>Fungia</i>         | <i>fungites</i>      | (Linnaeus, 1758)                   | Common mushroom coral     | Not Listed | LC   |
| Euphylliidae | <i>Galaxea</i>        | <i>astreata</i>      | (Lamarck, 1816)                    | Galaxy coral              | Not Listed | LC   |
| Euphylliidae | <i>Galaxea</i>        | <i>fascicularis</i>  | (Linnaeus, 1767)                   | Galaxy coral              | Not Listed | LC   |
| Agariciidae  | <i>Gardineroseria</i> | <i>planulata</i>     | (Dana, 1846)                       | Honeycomb coral           | Not Listed | DD   |
| Merulinidae  | <i>Goniastrea</i>     | <i>edwardsi</i>      | Chevalier, 1971                    |                           | Not Listed | LC   |
| Merulinidae  | <i>Goniastrea</i>     | <i>favulus</i>       | (Dana, 1846)                       |                           | Not Listed | LC   |
| Merulinidae  | <i>Goniastrea</i>     | <i>minuta</i>        | Veron, 2000                        |                           | Not Listed | DD   |
| Merulinidae  | <i>Goniastrea</i>     | <i>pectinata</i>     | (Ehrenberg, 1834)                  |                           | Not Listed | LC   |
| Merulinidae  | <i>Goniastrea</i>     | <i>retiformis</i>    | (Lamarck, 1816)                    |                           | Not Listed | LC   |
| Merulinidae  | <i>Goniastrea</i>     | <i>stelligera</i>    | (Dana, 1846)                       |                           | Not Listed | DD   |
| Poritidae    | <i>Goniopora</i>      | <i>columna</i>       | Dana, 1846                         | Anemone coral             | Not Listed | LC   |
| Poritidae    | <i>Goniopora</i>      | <i>djiboutiensis</i> | Vaughan, 1907                      | Flowerpot coral           | Not Listed | NT   |
| Poritidae    | <i>Goniopora</i>      | <i>eclipsensis</i>   | Veron & Pichon, 1982               |                           | Not Listed | DD   |
| Poritidae    | <i>Goniopora</i>      | <i>fruticosa</i>     | Saville-Kent, 1891                 |                           | Not Listed | DD   |
| Poritidae    | <i>Goniopora</i>      | <i>lobata</i>        | Milne Edwards, 1860                | Flowerpot true red coral  | Not Listed | LC   |
| Poritidae    | <i>Goniopora</i>      | <i>pandoraensis</i>  | Veron & Pichon, 1982               | Branching flowerpot coral | Not Listed | LC   |
| Poritidae    | <i>Goniopora</i>      | <i>pedunculata</i>   | Quoy & Giscard, 1833               |                           | Not Listed | DD   |
| Poritidae    | <i>Goniopora</i>      | <i>pendulus</i>      | Veron, 1985                        |                           | Not Listed | DD   |
| Poritidae    | <i>Goniopora</i>      | <i>somaliensis</i>   | Vaughan, 1907                      |                           | Not Listed | DD   |

| Family         | Genus               | Species                 | Authority                     | Common Name              | RDB2       | RDB3 |
|----------------|---------------------|-------------------------|-------------------------------|--------------------------|------------|------|
| Poritidae      | <i>Goniopora</i>    | <i>stokesi</i>          | Milne Edwards & Haime, 1851   | Daisy coral              | Not Listed | NT   |
| Poritidae      | <i>Goniopora</i>    | <i>tenuidens</i>        | (Quelch, 1886)                | Blue purple goniopora    | Not Listed | DD   |
| Fungiidae      | <i>Heliofungia</i>  | <i>actiniformis</i>     | (Quoy & Gaimard, 1833)        | Sunflower mushroom coral | Not Listed | NT   |
| Fungiidae      | <i>Herpolitha</i>   | <i>limax</i>            | (Esper, 1797)                 | Tongue mushroom coral    | Not Listed | LC   |
| Lobophylliidae | <i>Homophyllia</i>  | <i>bowerbanki</i>       | (Milne Edwards & Haime, 1857) | Brain coral              | Not Listed | DD   |
| Merulinidae    | <i>Hydnophora</i>   | <i>exesa</i>            | (Pallas, 1766)                |                          | Not Listed | LC   |
| Merulinidae    | <i>Hydnophora</i>   | <i>grandis</i>          | Gardiner, 1904                | Spine coral              | Not Listed | NT   |
| Merulinidae    | <i>Hydnophora</i>   | <i>microconos</i>       | (Lamarck, 1816)               |                          | Not Listed | DD   |
| Merulinidae    | <i>Hydnophora</i>   | <i>rigida</i>           | (Dana, 1846)                  |                          | Not Listed | NT   |
| Acroporidae    | <i>Isopora</i>      | <i>brueggemanni</i>     | (Brook, 1893)                 |                          | Not Listed | DD   |
| Acroporidae    | <i>Isopora</i>      | <i>palifera</i>         | (Lamarck, 1816)               | Catch bowl coral         | Not Listed | DD   |
| Leptastreidae  | <i>Leptastrea</i>   | <i>purpurea</i>         | (Dana, 1846)                  |                          | Not Listed | LC   |
| Leptastreidae  | <i>Leptastrea</i>   | <i>transversa</i>       | Klunzinger, 1879              | Crust coral              | Not Listed | LC   |
| Merulinidae    | <i>Leptoria</i>     | <i>phrygia</i>          | (Ellis & Solander, 1786)      |                          | Not Listed | LC   |
| Agariciidae    | <i>Leptoseris</i>   | <i>explanata</i>        | Yabe & Sugiyama, 1941         |                          | Not Listed | VU   |
| Agariciidae    | <i>Leptoseris</i>   | <i>hawaiiensis</i>      | Vaughan, 1907                 | Porcelain coral          | Not Listed | DD   |
| Agariciidae    | <i>Leptoseris</i>   | <i>scabra</i>           | Vaughan, 1907                 | Rough plate coral        | Not Listed | DD   |
| Fungiidae      | <i>Lithophyllon</i> | <i>concinna</i>         | (Verrill, 1864)               |                          | Not Listed | LC   |
| Fungiidae      | <i>Lithophyllon</i> | <i>repanda</i>          | (Dana, 1846)                  |                          | Not Listed | LC   |
| Fungiidae      | <i>Lithophyllon</i> | <i>scabra</i>           | (Döderlein, 1901)             |                          | Not Listed | LC   |
| Fungiidae      | <i>Lithophyllon</i> | <i>undulatum</i>        | Rehberg, 1892                 |                          | Not Listed | LC   |
| Fungiidae      | <i>Lobactis</i>     | <i>scutaria</i>         | (Lamarck, 1801)               |                          | Not Listed | DD   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>agaricia</i>         | (Milne Edwards & Haime, 1849) | Grooved brain coral      | Not Listed | LC   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>corymbosa</i>        | (Forskål, 1775)               | Lobed brain coral        | Not Listed | LC   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>flabelliformis</i>   | Veron, 2000                   |                          | Not Listed | DD   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>hataii</i>           | Yabe, Sugiyama & Eguchi, 1936 | Lobed brain coral        | Not Listed | VU   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>hemprichii</i>       | (Ehrenberg, 1834)             | Lobed brain coral        | Not Listed | LC   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>radians</i>          | (Milne Edwards & Haime, 1849) | Grooved brain coral      | Not Listed | LC   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>recta</i>            | (Dana, 1846)                  | Grooved brain coral      | Not Listed | LC   |
| Lobophylliidae | <i>Lobophyllia</i>  | <i>valenciennesii</i>   | (Milne Edwards & Haime, 1849) | Grooved brain coral      | Not Listed | DD   |
| Pocilloporidae | <i>Madracis</i>     | <i>kirbyi</i>           | Veron & Pichon, 1976          | Ten coral                | Not Listed | DD   |
| Merulinidae    | <i>Merulina</i>     | <i>ampliata</i>         | (Ellis & Solander, 1786)      |                          | Not Listed | LC   |
| Merulinidae    | <i>Merulina</i>     | <i>scabricula</i>       | Dana, 1846                    |                          | Not Listed | LC   |
| Lobophylliidae | <i>Micromussa</i>   | <i>amakusensis</i>      | (Veron, 1990)                 |                          | Not Listed | DD   |
| Acroporidae    | <i>Montipora</i>    | <i>aequituberculata</i> | Bernard, 1897                 |                          | Not Listed | DD   |

| Family        | Genus                 | Species                  | Authority                            | Common Name               | RDB2       | RDB3 |
|---------------|-----------------------|--------------------------|--------------------------------------|---------------------------|------------|------|
| Acroporidae   | <i>Montipora</i>      | <i>angulata</i>          | (Lamarck, 1816)                      |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>capricornis</i>       | Veron, 1985                          |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>corbettensis</i>      | Veron & Wallace, 1984                |                           | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>crassituberculata</i> | Bernard, 1897                        |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>danae</i>             | Milne Edwards & Haime, 1851          | Poker star montipora      | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>digitata</i>          | (Dana, 1846)                         |                           | Not Listed | VU   |
| Acroporidae   | <i>Montipora</i>      | <i>efflorescens</i>      | Bernard, 1897                        |                           | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>foliosa</i>           | (Pallas, 1766)                       | Cabbage coral             | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>grisea</i>            | Bernard, 1897                        |                           | Not Listed | VU   |
| Acroporidae   | <i>Montipora</i>      | <i>hispida</i>           | (Dana, 1846)                         |                           | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>hoffmeisteri</i>      | Wells, 1954                          |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>informis</i>          | Bernard, 1897                        |                           | Not Listed | LC   |
| Acroporidae   | <i>Montipora</i>      | <i>millepora</i>         | Crossland, 1952                      |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>mollis</i>            | Bernard, 1897                        |                           | Not Listed | LC   |
| Acroporidae   | <i>Montipora</i>      | <i>monasteriata</i>      | (Forskål, 1775)                      |                           | Not Listed | LC   |
| Acroporidae   | <i>Montipora</i>      | <i>peltiformis</i>       | Bernard, 1897                        |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>spongodes</i>         | Bernard, 1897                        |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>spumosa</i>           | (Lamarck, 1816)                      |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>stellata</i>          | Bernard, 1897                        | Velvet branch coral       | Not Listed | LC   |
| Acroporidae   | <i>Montipora</i>      | <i>tuberculosa</i>       | (Lamarck, 1816)                      |                           | Not Listed | NT   |
| Acroporidae   | <i>Montipora</i>      | <i>turgescens</i>        | Bernard, 1897                        |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>undata</i>            | Bernard, 1897                        |                           | Not Listed | VU   |
| Acroporidae   | <i>Montipora</i>      | <i>venosa</i>            | (Ehrenberg, 1834)                    |                           | Not Listed | DD   |
| Acroporidae   | <i>Montipora</i>      | <i>verrucosa</i>         | (Lamarck, 1816)                      |                           | Not Listed | LC   |
| Merulinidae   | <i>Mycedium</i>       | <i>elephantotus</i>      | (Pallas, 1766)                       |                           | Not Listed | LC   |
| Oulastreidae  | <i>Oulastrea</i>      | <i>crispata</i>          | (Lamarck, 1816)                      | Zebra coral               | Not Listed | LC   |
| Merulinidae   | <i>Oulophyllia</i>    | <i>bennettiae</i>        | (Veron, Pichon & Wijsman-Best, 1977) | Intermediate valley coral | Not Listed | DD   |
| Merulinidae   | <i>Oulophyllia</i>    | <i>crispa</i>            | (Lamarck, 1816)                      |                           | Not Listed | LC   |
| Lobophyllidae | <i>Oxypora</i>        | <i>crassispinosa</i>     | Nemanzo, 1979                        | Porous lettuce coral      | Not Listed | DD   |
| Lobophyllidae | <i>Oxypora</i>        | <i>echinata</i>          | (Saville Kent, 1871)                 |                           | Not Listed | LC   |
| Lobophyllidae | <i>Oxypora</i>        | <i>lacera</i>            | (Verrill, 1864)                      | Ragged chalice coral      | Not Listed | NT   |
| Agariciidae   | <i>Pachyseris</i>     | <i>rugosa</i>            | (Lamarck, 1801)                      | Castle coral              | Not Listed | LC   |
| Agariciidae   | <i>Pachyseris</i>     | <i>speciosa</i>          | (Dana, 1846)                         | Castle coral              | Not Listed | LC   |
| Merulinidae   | <i>Paragoniastrea</i> | <i>australensis</i>      | (Milne Edwards & Haime, 1857)        |                           | Not Listed | LC   |
| Merulinidae   | <i>Paragoniastrea</i> | <i>russelli</i>          | (Wells, 1954)                        |                           | Not Listed | DD   |
| Agariciidae   | <i>Pavona</i>         | <i>cactus</i>            | (Forskål, 1775)                      | Cactus coral              | Not Listed | VU   |
| Agariciidae   | <i>Pavona</i>         | <i>clavus</i>            | Dana, 1846                           | Shoulderblade coral       | Not Listed | DD   |
| Agariciidae   | <i>Pavona</i>         | <i>decussata</i>         | (Dana, 1846)                         | Cactus coral              | Not Listed | NT   |
| Agariciidae   | <i>Pavona</i>         | <i>explanulata</i>       | (Lamarck, 1816)                      | Peacock coral             | Not Listed | LC   |
| Agariciidae   | <i>Pavona</i>         | <i>frondifera</i>        | (Lamarck, 1816)                      | Leaf coral                | Not Listed | LC   |

| Family         | Genus               | Species              | Authority                     | Common Name             | RDB2       | RDB3 |
|----------------|---------------------|----------------------|-------------------------------|-------------------------|------------|------|
| Agariciidae    | <i>Pavona</i>       | <i>varians</i>       | (Verrill, 1864)               | Fungus coral            | Not Listed | VU   |
| Merulinidae    | <i>Pectinia</i>     | <i>alcicornis</i>    | (Saville Kent, 1871)          | Antler coral            | Not Listed | NT   |
| Merulinidae    | <i>Pectinia</i>     | <i>crassa</i>        | Ditlev, 2003                  |                         | Not Listed | LC   |
| Merulinidae    | <i>Pectinia</i>     | <i>lactuca</i>       | (Pallas, 1766)                | Carnation coral         | Not Listed | NT   |
| Merulinidae    | <i>Pectinia</i>     | <i>paeonia</i>       | (Dana, 1846)                  |                         | Not Listed | LC   |
| Plerogyridae   | <i>Physogyra</i>    | <i>lichtensteini</i> | (Milne Edwards & Haime, 1851) | Pearl bubble coral      | Not Listed | VU   |
| Merulinidae    | <i>Physophyllia</i> | <i>ayleni</i>        | (Wells, 1934)                 |                         | Not Listed | DD   |
| Merulinidae    | <i>Platygyra</i>    | <i>daedalea</i>      | (Ellis & Solander, 1786)      | Brain coral             | Not Listed | LC   |
| Merulinidae    | <i>Platygyra</i>    | <i>lamellina</i>     | (Ehrenberg, 1834)             | Lesser valley coral     | Not Listed | VU   |
| Merulinidae    | <i>Platygyra</i>    | <i>pini</i>          | Chevalier, 1975               |                         | Not Listed | LC   |
| Merulinidae    | <i>Platygyra</i>    | <i>ryukyuensis</i>   | Yabe & Sugiyama, 1935         | Maze brain coral        | Not Listed | DD   |
| Merulinidae    | <i>Platygyra</i>    | <i>sinensis</i>      | (Milne Edwards & Haime, 1849) |                         | Not Listed | LC   |
| Merulinidae    | <i>Platygyra</i>    | <i>verweyi</i>       | Wijsman-Best, 1976            |                         | Not Listed | NT   |
| Euphylliidae   | <i>Plerogyra</i>    | <i>sinuosa</i>       | (Dana, 1846)                  | Pearl bubble coral      | Not Listed | VU   |
| Plesiastreidae | <i>Plesiastrea</i>  | <i>versipora</i>     | (Lamarck, 1816)               | Pock-marked coral       | Not Listed | DD   |
| Fungiidae      | <i>Pleuractis</i>   | <i>granulosa</i>     | (Klunzinger, 1879)            |                         | Not Listed | DD   |
| Fungiidae      | <i>Pleuractis</i>   | <i>moluccensis</i>   | (Van der Horst, 1919)         |                         | Not Listed | NT   |
| Fungiidae      | <i>Pleuractis</i>   | <i>paumotensis</i>   | (Stutchbury, 1833)            | Elongate mushroom coral | Not Listed | NT   |
| Pocilloporidae | <i>Pocillopora</i>  | <i>acuta</i>         | Lamarck, 1816                 | Cauliflower coral       | Not Listed | LC   |
| Pocilloporidae | <i>Pocillopora</i>  | <i>cf. verrucosa</i> | (Ellis and Solander, 1786)    | Cauliflower coral       | Not Listed | DD   |
| Fungiidae      | <i>Podabacia</i>    | <i>crustacea</i>     | (Pallas, 1766)                | Bracket mushroom coral  | Not Listed | LC   |
| Fungiidae      | <i>Podabacia</i>    | <i>kunzmanni</i>     | Hoeksema, 2009                | Bracket mushroom coral  | Not Listed | DD   |
| Fungiidae      | <i>Podabacia</i>    | <i>motuporensis</i>  | Veron, 1990                   | Bracket mushroom coral  | Not Listed | DD   |
| Fungiidae      | <i>Polyphyllia</i>  | <i>talpina</i>       | (Lamarck, 1801)               | Mole mushroom coral     | Not Listed | VU   |
| Poritidae      | <i>Porites</i>      | <i>australiensis</i> | Vaughan, 1918                 |                         | Not Listed | LC   |
| Poritidae      | <i>Porites</i>      | <i>cylindrica</i>    | Dana, 1846                    | Yellow finger coral     | Not Listed | VU   |
| Poritidae      | <i>Porites</i>      | <i>deformis</i>      | Nemanzo, 1955                 |                         | Not Listed | DD   |
| Poritidae      | <i>Porites</i>      | <i>lichen</i>        | (Dana, 1846)                  | Lichen coral            | Not Listed | DD   |
| Poritidae      | <i>Porites</i>      | <i>lobata</i>        | Dana, 1846                    | Lobe coral              | Not Listed | LC   |
| Poritidae      | <i>Porites</i>      | <i>lutea</i>         | Milne Edwards & Haime, 1851   |                         | Not Listed | LC   |
| Poritidae      | <i>Porites</i>      | <i>monticulosa</i>   | Dana, 1846                    |                         | Not Listed | DD   |
| Poritidae      | <i>Porites</i>      | <i>murrayensis</i>   | Vaughan, 1918                 |                         | Not Listed | DD   |
| Poritidae      | <i>Porites</i>      | <i>nigrescens</i>    | Dana, 1846                    |                         | Not Listed | DD   |
| Poritidae      | <i>Porites</i>      | <i>rus</i>           | (Forskål, 1775)               |                         | Not Listed | NT   |
| Poritidae      | <i>Porites</i>      | <i>solida</i>        | (Forskål, 1775)               |                         | Not Listed | DD   |



| Family           | Genus                    | Species              | Authority                   | Common Name              | RDB2       | RDB3 |
|------------------|--------------------------|----------------------|-----------------------------|--------------------------|------------|------|
| Poritidae        | <i>Porites</i>           | <i>stephensoni</i>   | Crossland, 1952             |                          | Not Listed | DD   |
| Poritidae        | <i>Porites</i>           | <i>vaughani</i>      | Crossland, 1952             |                          | Not Listed | DD   |
| Psammocoridae    | <i>Psammocora</i>        | <i>contigua</i>      | (Esper, 1794)               | Crinkled sandpaper coral | Not Listed | NT   |
| Psammocoridae    | <i>Psammocora</i>        | <i>haimiana</i>      | Milne Edwards & Haime, 1851 | Boulder sandpaper coral  | Not Listed | LC   |
| Psammocoridae    | <i>Psammocora</i>        | <i>nierstraszi</i>   | Van der Horst, 1921         | Boulder sandpaper coral  | Not Listed | VU   |
| Psammocoridae    | <i>Psammocora</i>        | <i>profundacella</i> | Gardiner, 1898              | Boulder sandpaper coral  | Not Listed | DD   |
| Rhizangiidae     | <i>Pseudosiderastrea</i> | <i>tayamai</i>       | Yabe & Sugiyama, 1935       | Neat hexagonal coral     | Not Listed | LC   |
| Merulinidae      | <i>Scapophyllia</i>      | <i>cylindrica</i>    | Milne Edwards & Haime, 1849 | Columniform crust coral  | Not Listed | VU   |
| Pocilloporidae   | <i>Seriatopora</i>       | <i>hystrix</i>       | Dana, 1846                  | Thin bird's nest coral   | CR         | NEx  |
| Astrocoeniidae   | <i>Stylocoeniella</i>    | <i>armata</i>        | (Ehrenberg, 1834)           | Thorn coral              | Not Listed | DD   |
| Pocilloporidae   | <i>Stylophora</i>        | <i>pistillata</i>    | Esper, 1792                 | Smooth cauliflower coral | CR         | CR   |
| Merulinidae      | <i>Trachyphyllia</i>     | <i>geoffroyi</i>     | (Audouin, 1826)             | Open brain coral         | Not Listed | EN   |
| Dendrophylliidae | <i>Tubastraea</i>        | <i>aurea</i>         | (Quoy & Gaimard, 1833)      |                          | Not Listed | DD   |
| Dendrophylliidae | <i>Tubastraea</i>        | <i>coccinea</i>      | Lesson, 1830                | Orange cup coral         | Not Listed | DD   |
| Dendrophylliidae | <i>Tubastraea</i>        | <i>diaphana</i>      | (Dana, 1846)                | Black cup coral          | Not Listed | LC   |
| Dendrophylliidae | <i>Tubastraea</i>        | <i>micranthus</i>    | (Ehrenberg, 1834)           | Black turret coral       | Not Listed | LC   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>frondens</i>      | (Dana, 1846)                | Yellow cup coral         | Not Listed | LC   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>irregularis</i>   | Bernard, 1896               |                          | Not Listed | DD   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>mesenterina</i>   | (Lamarck, 1816)             | Vase coral               | Not Listed | LC   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>peltata</i>       | (Esper, 1794)               | Pagoda coral             | Not Listed | LC   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>radicalis</i>     | Bernard, 1896               |                          | Not Listed | DD   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>reniformis</i>    | Bernard, 1896               | Yellow scroll coral      | Not Listed | NT   |
| Dendrophylliidae | <i>Turbinaria</i>        | <i>stellulata</i>    | (Lamarck, 1816)             |                          | Not Listed | DD   |

# Checklist of Polycladida Species with their Category of Threat Status for Singapore

Prepared by Tan Koh Siang, Samantha J.W. Tong, Rene S.L. Ong

| Family          | Genus                | Species                  | Authority                              | Common Name                   | RDB2       | RDB3 |
|-----------------|----------------------|--------------------------|----------------------------------------|-------------------------------|------------|------|
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>bifurcus</i>          | Prudhoe, 1989                          | Racing-stripe Flatworm        | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>caeruleocinctus</i>   | Hyman, 1959                            |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>concinus</i>          | (Collingwood, 1876)                    | Blue-lined Flatworm           | Not Listed | VU   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>cf. cruentus</i>      | Newman & Cannon, 1998                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>duplicinctus</i>      | Prudhoe, 1989                          |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>indicus</i>           | Newman & Schupp, 2002                  | Blue-dotted Margined Flatworm | Not Listed | VU   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>laingensis</i>        | Newman & Cannon, 1998                  | Purple-spotted Flatworm       | Not Listed | VU   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>microcelis</i>        | Prudhoe, 1989                          |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>meenae</i>            | Dixit, Sivaperuman & Raghunathan, 2018 |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>paralaticlavus</i>    | Newman & Cannon, 1994                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>cf. prudhoei</i>      | Newman & Cannon, 1994                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>cf. rubronanus</i>    | Newman & Cannon, 1998                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>rubrotentaculatus</i> | Kaburaki, 1923                         |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>scintillatus</i>      | Newman & Cannon, 1994                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>cf. stimpsoni</i>     | Newman & Cannon, 1998                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>cf. gamblei</i>       | Laidlaw, 1902                          |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudoceros</i>   | <i>susanae</i>           | Newman & Anderson, 1997                |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>bajae</i>             | (Hyman, 1953)                          |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>bedfordi</i>          | (Laidlaw, 1903)                        | Persian Carpet Flatworm       | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>damawan</i>           | Newman & Cannon, 1994                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>flowersi</i>          | Newman & Cannon, 1997                  | Olive Flatworm                | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>fulgor</i>            | Newman & Cannon, 1994                  | Fine-lined Flatworm           | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>hancockanus</i>       | (Collingwood, 1876)                    |                               | Not Listed | VU   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>hymanae</i>           | Newman & Cannon, 1997                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>stellae</i>           | Newman & Cannon, 1994                  |                               | Not Listed | VU   |
| Pseudocerotidae | <i>Pseudobiceros</i> | <i>cf. kryptos</i>       | Newman & Cannon, 1997                  |                               | Not Listed | DD   |
| Pseudocerotidae | <i>Acanthozoon</i>   | sp. 1                    |                                        | Golden-speckled Flatworm      | Not Listed | VU   |

| Family           | Genus                 | Species                 | Authority              | Common Name             | RDB2       | RDB3 |
|------------------|-----------------------|-------------------------|------------------------|-------------------------|------------|------|
| Pseudocerotidae  | <i>Thysanozoon</i>    | <i>lagidium</i>         | Marcus, 1949           |                         | Not Listed | DD   |
| Pseudocerotidae  | <i>Thysanozoon</i>    | <i>nigropapillosum</i>  | (Hyman, 1959)          | Golden-spotted Flatworm | Not Listed | DD   |
| Pseudocerotidae  | <i>Thysanozoon</i>    | <i>nigrum</i>           | Girard, 1851           |                         | Not Listed | DD   |
| Pseudocerotidae  | <i>Tytthosoceros</i>  | <i>lizardensis</i>      | Newman & Cannon, 1996  | Olive Flatworm          | Not Listed | VU   |
| Pseudocerotidae  | <i>Nymphozoon</i>     | <i>bayeri</i>           | Hyman, 1959            | Bayeri's Flatworm       | Not Listed | DD   |
| Pseudocerotidae  | <i>Nymphozoon</i>     | <i>orsaki</i>           | Newman & Cannon, 1996  |                         | Not Listed | DD   |
| Pseudocerotidae  | <i>Phrikoceros</i>    | <i>baibaiye</i>         | Newman & Cannon, 1996  | Ruby Flatworm           | Not Listed | DD   |
| Euryleptidae     | <i>Cycloporus</i>     | <i>venetus</i>          | Newman & Cannon, 2002  |                         | Not Listed | DD   |
| Euryleptidae     | <i>Eurylepta</i>      | <i>aurantiaca</i>       | Heath & McGregor, 1912 |                         | Not Listed | DD   |
| Euryleptidae     | <i>Maritigrella</i>   | <i>fuscapunctata</i>    | (Prudhoe, 1978)        |                         | Not Listed | DD   |
| Euryleptidae     | <i>Maritigrella</i>   | <i>virgulata</i>        | Newman & Cannon, 2000  |                         | Not Listed | DD   |
| Pericelididae    | <i>Pericelis</i>      | <i>beyerleyana</i>      | (Collingwood, 1876)    |                         | Not Listed | DD   |
| Callioplanidae   | <i>Meixneria</i>      | cf. <i>furva</i>        | Bock, 1913             |                         | DD         | DD   |
| Limnostylochidae | <i>Limnostylochus</i> | sp.                     |                        | Mangrove Flatworm       | Not Listed | DD   |
| Gnesiocerotidae  | <i>Gnesioceros</i>    | cf. <i>sargassicola</i> | (Mertens, 1833)        | Sargassum Flatworm      | Not Listed | DD   |

**Checklist of Marine Annelida Species with their Category of Threat Status for Singapore**

Prepared by Lee Yen-Ling, Ang Hwee Peng, Chuar Cheah Hoay, Gayathri D/O Sivananthan

| Family           | Genus                                             | Species                  | Authority                                 | Common Name    | RDB2       | RDB3 |
|------------------|---------------------------------------------------|--------------------------|-------------------------------------------|----------------|------------|------|
| Alciopidae       | <i>Naiades</i>                                    | <i>cantrainii</i>        | Delle Chiaje, 1830                        |                | Not Listed | NE   |
| Amphinomidae     | <i>Chloeia</i>                                    | <i>flava</i>             | (Pallas, 1766)                            |                | Not Listed | NE   |
| Amphinomidae     | <i>Chloeia</i>                                    | <i>parva</i>             | Baird, 1870                               |                | Not Listed | NE   |
| Amphinomidae     | <i>Eurythoe</i>                                   | <i>complanata</i>        | (Pallas, 1766)                            |                | Not Listed | NE   |
| Aphroditidae     | <i>Pontogenia</i>                                 | <i>indica</i>            | Grube, 1878                               |                | Not Listed | NE   |
| Aspidosiphonidae | <i>Aspidosiphon</i><br>( <i>Aspidosiphon</i> )    | <i>muelleri muelleri</i> | Diesing, 1851                             |                | Not Listed | NE   |
| Aspidosiphonidae | <i>Aspidosiphon</i><br>( <i>Paraspidosiphon</i> ) | <i>steenstrupii</i>      | Diesing, 1859                             |                | Not Listed | NE   |
| Chaetopteridae   | <i>Chaetopterus</i>                               | <i>appendiculatus</i>    | Grube, 1874                               | Fairy Tubeworm | EN         | NT   |
| Eunicidae        | <i>Eunice</i>                                     | <i>aphroditois</i>       | (Pallas, 1788)                            |                | Not Listed | NE   |
| Eunicidae        | <i>Eunice</i>                                     | <i>coccinioides</i>      | Augener, 1922                             |                | Not Listed | NE   |
| Eunicidae        | <i>Eunice</i>                                     | <i>grubei</i>            | Gravier, 1900                             |                | Not Listed | NE   |
| Eunicidae        | <i>Eunice</i>                                     | <i>hirschi</i>           | Fauchald, 1992                            |                | Not Listed | NE   |
| Eunicidae        | <i>Eunice</i>                                     | <i>nesiotes</i>          | (Chamberlin, 1919)                        |                | Not Listed | NE   |
| Eunicidae        | <i>Euniphysa</i>                                  | <i>aculeata</i>          | Wesenberg-Lund, 1949                      |                | Not Listed | NE   |
| Eunicidae        | <i>Leodice</i>                                    | <i>antennata</i>         | (Savigny in Lamarck, 1818)                |                | Not Listed | NE   |
| Eunicidae        | <i>Lysidice</i>                                   | <i>collaris</i>          | Grube, 1870                               |                | Not Listed | NE   |
| Eunicidae        | <i>Marphysa</i>                                   | <i>disjuncta</i>         | Hartman, 1961                             |                | Not Listed | NE   |
| Eunicidae        | <i>Marphysa</i>                                   | <i>macintoshi</i>        | Crossland, 1903                           |                | Not Listed | NE   |
| Eunicidae        | <i>Marphysa</i>                                   | <i>mossambica</i>        | (Peters, 1854)                            |                | Not Listed | NE   |
| Flabelligeridae  | <i>Pherusa</i>                                    | <i>monroi</i>            | (Day, 1957)                               |                | Not Listed | NE   |
| Glyceridae       | <i>Glycera</i>                                    | <i>nicobarica</i>        | Grube, 1868                               |                | Not Listed | NE   |
| Glyceridae       | <i>Glycera</i>                                    | <i>tridactyla</i>        | Schmarda, 1861                            |                | Not Listed | NE   |
| Goniadidae       | <i>Goniada</i>                                    | <i>cf. maculata</i>      | Örsted, 1843                              |                | Not Listed | NE   |
| Goniadidae       | <i>Goniada</i>                                    | <i>japonica</i>          | Izuka, 1912                               |                | Not Listed | NE   |
| Hesionidae       | <i>Leocrates</i>                                  | <i>claparedii</i>        | (Costa in Claparède, 1868)                |                | Not Listed | NE   |
| Hesionidae       | <i>Oxydromus</i>                                  | <i>latifrons</i>         | (Grube, 1878)                             |                | Not Listed | NE   |
| Iphionidae       | <i>Iphione</i>                                    | <i>muricata</i>          | (Savigny in Lamarck, 1818)                |                | Not Listed | NE   |
| Lumbrineridae    | <i>Lumbrineris</i>                                | <i>hartmani</i>          | (Day, 1953)                               |                | Not Listed | NE   |
| Maldanidae       | <i>Euclymene</i>                                  | <i>lombricoides</i>      | (Quatrefages, 1865)                       |                | Not Listed | NE   |
| Myzostomatidae   | <i>Contramyzostoma</i>                            | <i>bialatum</i>          | Eeckhaut & Jangoux, 1995                  |                | Not Listed | NE   |
| Myzostomatidae   | <i>Myzostoma</i>                                  | <i>brachiatum</i>        | Graff, 1877                               |                | Not Listed | NE   |
| Myzostomatidae   | <i>Myzostoma</i>                                  | <i>capitocutis</i>       | Eeckhaut, van den Spiegel & Grygier, 1994 |                | Not Listed | NE   |
| Myzostomatidae   | <i>Myzostoma</i>                                  | <i>elegans</i>           | Graff, 1877                               |                | Not Listed | NE   |
| Myzostomatidae   | <i>Myzostoma</i>                                  | <i>horologium</i>        | Graff, 1884                               |                | Not Listed | NE   |

| Family            | Genus                          | Species               | Authority                                 | Common Name | RDB2       | RDB3 |
|-------------------|--------------------------------|-----------------------|-------------------------------------------|-------------|------------|------|
| Myzostomatidae    | <i>Myzostoma</i>               | <i>jagersteni</i>     | Eeckhaut, van den Spiegel & Grygier, 1994 |             | Not Listed | NE   |
| Myzostomatidae    | <i>Myzostoma</i>               | <i>longicirrum</i>    | Graff, 1887                               |             | Not Listed | NE   |
| Myzostomatidae    | <i>Myzostoma</i>               | <i>singaporense</i>   | Eeckhaut, van den Spiegel & Grygier, 1994 |             | Not Listed | NE   |
| Myzostomatidae    | <i>Myzostoma</i>               | <i>stochoeides</i>    | Atkins, 1927                              |             | Not Listed | NE   |
| Nephtyidae        | <i>Aglaophamus</i>             | <i>dibranchis</i>     | (Grube, 1877)                             |             | Not Listed | NE   |
| Nephtyidae        | <i>Micronephtys</i>            | <i>sphaerocirrata</i> | (Wesenberg-Lund, 1949)                    |             | Not Listed | NE   |
| Nereididae        | <i>Ceratonereis</i>            | <i>mirabilis</i>      | Kinberg, 1866                             |             | Not Listed | NE   |
| Nereididae        | <i>Composetia</i>              | <i>hircinicola</i>    | (Eisig, 1870)                             |             | Not Listed | NE   |
| Nereididae        | <i>Dendronereides</i>          | <i>heteropoda</i>     | Southern, 1921                            |             | Not Listed | NE   |
| Nereididae        | <i>Dendronereides</i>          | <i>zululandica</i>    | Day, 1951                                 |             | Not Listed | NE   |
| Nereididae        | <i>Dendronereis</i>            | <i>arborifera</i>     | (Peters, 1855)                            |             | Not Listed | NE   |
| Nereididae        | <i>Gymnonereis</i>             | <i>fauveli</i>        | (Pillai, 1961)                            |             | Not Listed | NE   |
| Nereididae        | <i>Leonnates</i>               | <i>decipiens</i>      | Fauvel, 1929                              |             | Not Listed | NE   |
| Nereididae        | <i>Leonnates</i>               | <i>jousseausemei</i>  | Gravier, 1911                             |             | Not Listed | NE   |
| Nereididae        | <i>Leonnates</i>               | <i>stephensoni</i>    | Rullier, 1965                             |             | Not Listed | NE   |
| Nereididae        | <i>Neanthes</i>                | <i>glandicincta</i>   | Southern, 1921                            |             | Not Listed | NE   |
| Nereididae        | <i>Neanthes</i>                | <i>wilsonchani</i>    | Lee & Glasby, 2015                        |             | Not Listed | NE   |
| Nereididae        | <i>Paraleonnates</i>           | <i>uschakovi</i>      | Khlebovitch & Wu, 1967                    |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>aibuhitensis</i>   | Grube, 1878                               |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>barbara</i>        | Monro, 1926                               |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>brevicirris</i>    | (Grube, 1878)                             |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>perspicillata</i>  | Grube, 1878                               |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>rhombodonta</i>    | Wu, Sun & Yang, 1981                      |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>singaporiensis</i> | (Grube, 1878)                             |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>striolata</i>      | Grube, 1878                               |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>vancaurica</i>     | (Ehlers, 1868)                            |             | Not Listed | NE   |
| Nereididae        | <i>Perinereis</i>              | <i>viridis</i>        | Glasby & Hsieh, 2006                      |             | Not Listed | NE   |
| Nereididae        | <i>Tylonereis</i>              | <i>bogoyawlenskyi</i> | Fauvel, 1911                              |             | Not Listed | NE   |
| Nereididae        | <i>Tylonereis</i>              | <i>heterochaeta</i>   | Tan & Chou, 1994                          |             | Not Listed | NE   |
| Oeononidae        | <i>Arabella</i>                | <i>iricolor</i>       | (Montague, 1804)                          |             | Not Listed | NE   |
| Oeononidae        | <i>Oenone</i>                  | <i>fulgida</i>        | (Savigny in Lamarck, 1818)                |             | Not Listed | NE   |
| Onuphidae         | <i>Diopatra</i>                | <i>claparedii</i>     | Grube, 1878                               |             | Not Listed | NE   |
| Onuphidae         | <i>Diopatra</i>                | <i>neapolitana</i>    | Delle Chiaje, 1841                        |             | Not Listed | NE   |
| Onuphidae         | <i>Onuphis</i>                 | <i>punggolensis</i>   | Tan & Chou, 1998                          |             | Not Listed | NE   |
| Opheliidae        | <i>Ophelina</i>                | <i>acuminata</i>      | Örsted, 1843                              |             | Not Listed | NE   |
| Oweniidae         | <i>Owenia</i>                  | <i>fusiformis</i>     | Delle Chiaje, 1841                        |             | Not Listed | NE   |
| Phascolionidae    | <i>Phascolion (Isomya)</i>     | <i>convestitum</i>    | Sluiter, 1902                             |             | Not Listed | NE   |
| Phascolionidae    | <i>Phascolion (Phascolion)</i> | <i>hibridum</i>       | Murina, 1981                              |             | Not Listed | NE   |
| Phascolosomatidae | <i>Antillesoma</i>             | <i>antillarum</i>     | (Grube, 1858)                             |             | Not Listed | NE   |

| Family            | Genus                                          | Species                | Authority                      | Common Name | RDB2       | RDB3 |
|-------------------|------------------------------------------------|------------------------|--------------------------------|-------------|------------|------|
| Phascolosomatidae | <i>Apionsoma</i><br>( <i>Apionsoma</i> )       | <i>trichocephalus</i>  | Sluiter, 1902                  |             | Not Listed | NE   |
| Phascolosomatidae | <i>Phascolosoma</i><br>( <i>Phascolosoma</i> ) | <i>arcuatum</i>        | (Gray, 1828)                   |             | Not Listed | NE   |
| Phascolosomatidae | <i>Phascolosoma</i><br>( <i>Phascolosoma</i> ) | <i>nigrescens</i>      | (Keferstein, 1865)             |             | Not Listed | NE   |
| Phascolosomatidae | <i>Phascolosoma</i><br>( <i>Phascolosoma</i> ) | <i>scolops</i>         | (Selenka & de Man, 1883)       |             | Not Listed | NE   |
| Phyllodocidae     | <i>Eteone</i>                                  | <i>siphodonta</i>      | (Delle Chiaje, 1822)           |             | Not Listed | NE   |
| Phyllodocidae     | <i>Eulalia</i>                                 | <i>magalhaensis</i>    | Kinberg (1866)                 |             | Not Listed | NE   |
| Phyllodocidae     | <i>Phyllodoce</i>                              | <i>madeirensis</i>     | Langerhans, 1880               |             | Not Listed | NE   |
| Pilargidae        | <i>Sigambra</i>                                | <i>pettiboneae</i>     | Hartmann-Schröder, 1979        |             | Not Listed | NE   |
| Poecilochaetidae  | <i>Poecilochaetus</i>                          | <i>serpens</i>         | Allen, 1904                    |             | Not Listed | NE   |
| Polynoidae        | <i>Gaudichaudius</i>                           | <i>cimex</i>           | (de Quatrefages, 1866)         |             | Not Listed | NE   |
| Polynoidae        | <i>Lepidonotus</i>                             | <i>squamatus</i>       | (Linnaeus, 1767)               |             | Not Listed | NE   |
| Polynoidae        | <i>Paralepidonotus</i>                         | <i>ampulliferus</i>    | (Grube, 1878)                  |             | Not Listed | NE   |
| Sabellidae        | <i>Hypsicomus</i>                              | <i>phaeotaenia</i>     | (Schmarda, 1861)               |             | Not Listed | NE   |
| Sabellidae        | <i>Potamilla</i>                               | <i>leptochaeta</i>     | Southern, 1921                 |             | Not Listed | NE   |
| Sabellidae        | <i>Pseudopotamilla</i>                         | <i>reniformis</i>      | Bruguière, 1789                |             | Not Listed | NE   |
| Sabellidae        | <i>Sabellastarte</i>                           | <i>spectabilis</i>     | (Grube, 1878)                  |             | Not Listed | NE   |
| Sipunculidae      | <i>Siphonosoma</i>                             | <i>cumanense</i>       | (Keferstein, 1867)             |             | Not Listed | NE   |
| Sipunculidae      | <i>Sipunculus</i><br>( <i>Sipunculus</i> )     | <i>nudus</i>           | Linnaeus, 1766                 |             | Not Listed | NE   |
| Sipunculidae      | <i>Sipunculus</i><br>( <i>Sipunculus</i> )     | <i>robustus</i>        | Keferstein, 1865               |             | Not Listed | NE   |
| Spionidae         | <i>Malacoceros</i>                             | <i>indicus</i>         | (Fauvel, 1928)                 |             | Not Listed | NE   |
| Spionidae         | <i>Prionospio</i>                              | <i>komaeti</i>         | Hylleberg & Nateewathana, 1991 |             | Not Listed | NE   |
| Spionidae         | <i>Prionospio</i>                              | <i>malayensis</i>      | Hylleberg & Nateewathana, 1991 |             | Not Listed | NE   |
| Spionidae         | <i>Prionospio</i>                              | <i>malmgreni</i>       | Claparède, 1870                |             | Not Listed | NE   |
| Syllidae          | <i>Haplosyllis</i>                             | <i>spongicola</i>      | (Grube, 1855)                  |             | Not Listed | NE   |
| Syllidae          | <i>Syllis</i>                                  | <i>gracilis</i>        | Grube, 1840                    |             | Not Listed | NE   |
| Syllidae          | <i>Syllis</i>                                  | <i>solida</i>          | Grube, 1878                    |             | Not Listed | NE   |
| Terebellidae      | <i>Nicolea</i>                                 | <i>gracilibranchis</i> | (Grube, 1878)                  |             | Not Listed | NE   |
| Thelepodidae      | <i>Thelepus</i>                                | <i>gracilis</i>        | (Kinberg, 1855)                |             | Not Listed | NE   |
| Trichobranchidae  | <i>Terebellides</i>                            | <i>stroemi</i>         | Sars, 1835                     |             | Not Listed | NE   |

**Checklist of Mollusca Species with their Category of Threat Status for Singapore**

Prepared by Tan Siong Kiat, Tan Koh Siang

| <b>Family</b> | <b>Genus</b>         | <b>Species</b>         | <b>Authority</b>               | <b>Common Name</b>                                                                       | <b>RDB2</b> | <b>RDB3</b> |
|---------------|----------------------|------------------------|--------------------------------|------------------------------------------------------------------------------------------|-------------|-------------|
| Chitonidae    | <i>Acanthopleura</i> | <i>gemmata</i>         | (Blainville, 1825)             | Gemmate chiton;<br>Jewelled chiton                                                       | EN          | NT          |
| Arcidae       | <i>Arca</i>          | <i>navicularis</i>     | Bruguière, 1789                | Indo-Pacific ark                                                                         | Not Listed  | DD          |
| Arcidae       | <i>Barbatia</i>      | <i>amygdalumtostum</i> | (Röding, 1798)                 | Burnt-almond ark                                                                         | Not Listed  | LC          |
| Arcidae       | <i>Tegillarca</i>    | <i>granosa</i>         | (Linnaeus, 1758)               | Granular ark; Blood<br>cockle; Bloody<br>cockle; Si Ham<br>[Cantonese]; Ham<br>[Hokkien] | Not Listed  | DD          |
| Arcidae       | <i>Tegillarca</i>    | <i>nodifera</i>        | (von Martens, 1860)            |                                                                                          | Not Listed  | LC          |
| Arcidae       | <i>Trisidos</i>      | <i>tortuosa</i>        | (Linnaeus, 1758)               | Twisted ark;<br>Propellor ark                                                            | Not Listed  | LC          |
| Noetiidae     | <i>Striarca</i>      | <i>symmetrica</i>      | (Reeve, 1844)                  | Symmetrical ark                                                                          | Not Listed  | LC          |
| Limopsidae    | <i>Limopsis</i>      | <i>excancellata</i>    | Sacco, 1898                    |                                                                                          | Not Listed  | NEx         |
| Mytilidae     | <i>Arcuatula</i>     | <i>senhousia</i>       | (Benson in Cantor,<br>1842)    |                                                                                          | Not Listed  | DD          |
| Mytilidae     | <i>Modiolus</i>      | <i>moduloides</i>      | (Röding, 1798)                 |                                                                                          | Not Listed  | DD          |
| Mytilidae     | <i>Perna</i>         | <i>viridis</i>         | (Linnaeus, 1758)               | Green mussel;<br>Green-lipped<br>mussel; Asian green<br>mussel                           | Not Listed  | LC          |
| Mytilidae     | <i>Septifer</i>      | <i>bilocularis</i>     | (Linnaeus, 1758)               |                                                                                          | Not Listed  | LC          |
| Mytilidae     | <i>Vignadula</i>     | <i>mangle</i>          | (Ockelmann, 1983)              | Black mussel                                                                             | Not Listed  | DD          |
| Nuculidae     | <i>Ennucula</i>      | <i>cumingii</i>        | (Hinds, 1843)                  |                                                                                          | Not Listed  | DD          |
| Yoldiidae     | <i>Orthoyoldia</i>   | <i>serotina</i>        | (Hinds, 1843)                  |                                                                                          | Not Listed  | DD          |
| Yoldiidae     | <i>Orthoyoldia</i>   | <i>tenella</i>         | (Hinds, 1843)                  |                                                                                          | Not Listed  | DD          |
| Ostreidae     | <i>Saccostrea</i>    | <i>cuccullata</i>      | (Born, 1778)                   | Hooded oyster;<br>Hooded rock oyster;<br>Tiram [Malay];<br>Tiram batu [Malay]            | Not Listed  | LC          |
| Ostreidae     | <i>Magallana</i>     | <i>bilineata</i>       | (Röding, 1798)                 | Slipper oyster                                                                           | Not Listed  | LC          |
| Isognomonidae | <i>Isognomon</i>     | <i>ephippium</i>       | (Linnaeus, 1758)               | Saddle tree oyster                                                                       | Not Listed  | LC          |
| Isognomonidae | <i>Isognomon</i>     | <i>isognomum</i>       | (Linnaeus, 1758)               | Wader tree oyster                                                                        | Not Listed  | LC          |
| Isognomonidae | <i>Isognomon</i>     | <i>spathulatus</i>     | (Reeve, 1858)                  |                                                                                          | Not Listed  | LC          |
| Pteriidae     | <i>Pinctada</i>      | <i>nigra</i>           | (Gould, 1850)                  | Black pearl oyster                                                                       | Not Listed  | DD          |
| Malleidae     | <i>Malleus</i>       | <i>malleus</i>         | (Linnaeus, 1758)               | Hammer oyster;<br>Black hammer<br>oyster                                                 | Not Listed  | DD          |
| Malleidae     | <i>Malleus</i>       | <i>albus</i>           | Lamarck, 1819                  | White hammer<br>oyster; Ukas keris<br>[Malay]                                            | Not Listed  | LC          |
| Malleidae     | <i>Malleus</i>       | <i>regula</i>          | (Forsskål in Niebuhr,<br>1775) |                                                                                          | Not Listed  | LC          |
| Pinnidae      | <i>Pinna</i>         | <i>atropurpurea</i>    | G. B. Sowerby I, 1825          |                                                                                          | VU          | NT          |
| Pinnidae      | <i>Atrina</i>        | <i>vexillum</i>        | (Born, 1778)                   | Flag pen-shell                                                                           | VU          | NT          |



| Family         | Genus                | Species              | Authority                   | Common Name                                 | RDB2       | RDB3 |
|----------------|----------------------|----------------------|-----------------------------|---------------------------------------------|------------|------|
| Anomiidae      | <i>Enigmonia</i>     | <i>aenigmatica</i>   | (Holten, 1802)              |                                             | Not Listed | NT   |
| Limidae        | <i>Lima</i>          | <i>vulgaris</i>      | (Link, 1807)                | Common file clam                            | Not Listed | LC   |
| Limidae        | <i>Limaria</i>       | <i>fragilis</i>      | (Gmelin, 1791)              | Fragile file clam                           | Not Listed | LC   |
| Pectinidae     | <i>Amusium</i>       | <i>pleuronectes</i>  | (Linnaeus, 1758)            | Asian moon scallop                          | Not Listed | NEx  |
| Pectinidae     | <i>Volachlamys</i>   | <i>singaporina</i>   | (G. B. Sowerby II, 1842)    | Singapore scallop                           | Not Listed | LC   |
| Pectinidae     | <i>Coralichlamys</i> | <i>madreporarum</i>  | (G.B. Sowerby II, 1842)     |                                             | Not Listed | NT   |
| Pectinidae     | <i>Decatopecten</i>  | <i>radula</i>        | (Linnaeus, 1758)            | Flatribbed scallop                          | Not Listed | LC   |
| Pectinidae     | <i>Pedum</i>         | <i>spondyloideum</i> | (Gmelin, 1791)              |                                             | Not Listed | DD   |
| Lucinidae      | <i>Austriella</i>    | <i>corrugata</i>     | (Deshayes, 1843)            |                                             | Not Listed | LC   |
| Carditidae     | <i>Cardita</i>       | <i>variegata</i>     | (Bruguière, 1792)           | Rectangular false cockle; Variegate cardita | Not Listed | LC   |
| Crassatellidae | <i>Bathytormus</i>   | <i>radiatus</i>      | (G. B. Sowerby I, 1825)     |                                             | Not Listed | LC   |
| Cardiidae      | <i>Fragum</i>        | <i>unedo</i>         | (Linnaeus, 1758)            | Strawberry cockle                           | Not Listed | NT   |
| Cardiidae      | <i>Corculum</i>      | <i>cardissa</i>      | (Linnaeus, 1758)            | True heart cockle                           | Not Listed | NT   |
| Cardiidae      | <i>Vasticardium</i>  | <i>flavum</i>        | (Linnaeus, 1758)            | Pacific yellow cockle                       | Not Listed | LC   |
| Cardiidae      | <i>Vasticardium</i>  | <i>pectiniforme</i>  | (Born, 1780)                |                                             | Not Listed | LC   |
| Cardiidae      | <i>Tridacna</i>      | <i>crocea</i>        | Lamarck, 1819               | Crocus giant clam; Boring giant clam        | Not Listed | EN   |
| Cardiidae      | <i>Tridacna</i>      | <i>gigas</i>         | (Linnaeus, 1758)            | Giant clam                                  | Not Listed | NEx  |
| Cardiidae      | <i>Tridacna</i>      | <i>maxima</i>        | (Röding, 1798)              | Elongate giant clam                         | Not Listed | CR   |
| Cardiidae      | <i>Tridacna</i>      | <i>squamosa</i>      | Lamarck, 1819               | Fluted giant clam; Kima [Malay]             | EN         | CR   |
| Cardiidae      | <i>Hippopus</i>      | <i>hippopus</i>      | (Linnaeus, 1758)            | Horse hoof clam; bear paw clam              | Not Listed | NEx  |
| Donacidae      | <i>Donax</i>         | <i>faba</i>          | Gmelin, 1791                | Pacific bean donax                          | Not Listed | LC   |
| Tellinidae     | <i>Dallitellina</i>  | <i>rostrata</i>      | (Linnaeus, 1758)            | Rostrate tellin                             | Not Listed | VU   |
| Tellinidae     | <i>Tellinella</i>    | <i>virgata</i>       | (Linnaeus, 1758)            | Virgate tellin                              | Not Listed | LC   |
| Tellinidae     | <i>Macalia</i>       | <i>bruguieri</i>     | (Hanley, 1844)              |                                             | Not Listed | LC   |
| Psammobiidae   | <i>Asaphis</i>       | <i>violascens</i>    | (Forsskål in Niebuhr, 1775) | Violet asaphis; Pacific asaphis             | Not Listed | LC   |
| Psammobiidae   | <i>Gari</i>          | <i>togata</i>        | (Deshayes, 1855)            |                                             | Not Listed | LC   |
| Semelidae      | <i>Semele</i>        | <i>carnicolor</i>    | (Hanley, 1845)              |                                             | Not Listed | LC   |
| Cyrenidae      | <i>Geloina</i>       | <i>coaxans</i>       | (Gmelin, 1791)              | Lokan (Malay)                               | Not Listed | LC   |
| Mactridae      | <i>Mactra</i>        | <i>grandis</i>       | Gmelin, 1791                |                                             | Not Listed | LC   |
| Mesodesmatidae | <i>Atactodea</i>     | <i>striata</i>       | (Gmelin, 1791)              |                                             | Not Listed | LC   |
| Mesodesmatidae | <i>Coecella</i>      | <i>horsfieldii</i>   | Gray, 1853                  |                                             | Not Listed | NT   |
| Trapezidae     | <i>Neotrapezium</i>  | <i>sublaevigatum</i> | (Lamarck, 1819)             |                                             | Not Listed | LC   |
| Veneridae      | <i>Anomalodiscus</i> | <i>squamosus</i>     | (Linnaeus, 1758)            | Squamose venus                              | Not Listed | LC   |
| Veneridae      | <i>Circe</i>         | <i>undatina</i>      | (Lamarck, 1818)             |                                             | Not Listed | LC   |
| Veneridae      | <i>Gafrarium</i>     | <i>pectinatum</i>    | (Linnaeus, 1758)            | Comb venus                                  | Not Listed | LC   |
| Veneridae      | <i>Gafrarium</i>     | <i>divaricatum</i>   | (Gmelin, 1791)              | Forked venus                                | Not Listed | LC   |
| Veneridae      | <i>Marcia</i>        | <i>hiantina</i>      | (Lamarck, 1818)             |                                             | Not Listed | LC   |
| Veneridae      | <i>Marcia</i>        | <i>japonica</i>      | (Gmelin, 1791)              |                                             | Not Listed | LC   |

| Family           | Genus                 | Species              | Authority                | Common Name                               | RDB2       | RDB3 |
|------------------|-----------------------|----------------------|--------------------------|-------------------------------------------|------------|------|
| Veneridae        | <i>Marcia</i>         | <i>recens</i>        | (Holten, 1802)           |                                           | Not Listed | LC   |
| Veneridae        | <i>Paratapes</i>      | <i>undulatus</i>     | (Born, 1778)             | Undulate venus                            | Not Listed | LC   |
| Veneridae        | <i>Protapes</i>       | <i>gallus</i>        | (Gmelin, 1791)           | Rooster venus                             | Not Listed | LC   |
| Veneridae        | <i>Tapes</i>          | <i>litteratus</i>    | (Linnaeus, 1758)         | Lettered venus                            | Not Listed | LC   |
| Corbulidae       | <i>Potamocorbula</i>  | <i>nimbosa</i>       | (Hanley, 1843)           |                                           | Not Listed | NEx  |
| Pholadidae       | <i>Barnea</i>         | <i>manilensis</i>    | (Philippi, 1847)         | Manila piddock                            | Not Listed | NEx  |
| Gastrochaenidae  | <i>Gastrochaena</i>   | <i>cuneiformis</i>   | Spengler, 1783           |                                           | Not Listed | DD   |
| Penicillidae     | <i>Verpa</i>          | <i>penis</i>         | (Linnaeus, 1758)         | Common watering pot shell                 | NEx        | VU   |
| Cuspidariidae    | <i>Cardiomya</i>      | <i>singaporensis</i> | (Hinds, 1843)            |                                           | Not Listed | DD   |
| Laevidentaliidae | <i>Laevidentalium</i> | <i>eburneum</i>      | (Linnaeus, 1767)         | Ivory tusk                                | Not Listed | LC   |
| Nacellidae       | <i>Cellana</i>        | <i>testudinaria</i>  | (Linnaeus, 1758)         | Turtle limpet                             | Not Listed | DD   |
| Fissurellidae    | <i>Diodora</i>        | <i>singaporensis</i> | (Reeve, 1850)            | Singapore keyhole limpet                  | Not Listed | LC   |
| Fissurellidae    | <i>Scutus</i>         | <i>unguis</i>        | (Linnaeus, 1758)         |                                           | EN         | LC   |
| Haliotidae       | <i>Haliotis</i>       | <i>asinina</i>       | (Linnaeus, 1758)         |                                           | EN         | DD   |
| Haliotidae       | <i>Haliotis</i>       | <i>clathrata</i>     | Reeve, 1846              |                                           | EN         | DD   |
| Haliotidae       | <i>Haliotis</i>       | <i>varia</i>         | (Linnaeus, 1758)         |                                           | EN         | DD   |
| Haliotidae       | <i>Haliotis</i>       | <i>ovina</i>         | (Gmelin, 1791)           |                                           | EN         | DD   |
| Haliotidae       | <i>Haliotis</i>       | <i>planata</i>       | (G.B.Sowerby II, 1882)   |                                           | EN         | DD   |
| Chilodontaidae   | <i>Euchelus</i>       | <i>atratus</i>       | (Gmelin, 1791)           |                                           | Not Listed | LC   |
| Chilodontaidae   | <i>Perrinia</i>       | <i>elisa</i>         | (Gould, 1849)            |                                           | Not Listed | DD   |
| Trochidae        | <i>Trochus</i>        | <i>maculatus</i>     | Linnaeus, 1758           | Maculated top-shell                       | Not Listed | LC   |
| Trochidae        | <i>Trochus</i>        | <i>radiatus</i>      | Gmelin, 1791             | Radiated top-shell                        | Not Listed | LC   |
| Trochidae        | <i>Chrysostoma</i>    | <i>paradoxum</i>     | (Born, 1778)             |                                           | Not Listed | LC   |
| Trochidae        | <i>Monodonta</i>      | <i>labio</i>         | (Linnaeus, 1758)         | Thick-lipped top-shell; Toothed top-shell | Not Listed | LC   |
| Trochidae        | <i>Umbonium</i>       | <i>vestiarium</i>    | (Linnaeus, 1758)         | Button top-shell; Common button top       | VU         | NT   |
| Tegulidae        | <i>Rochia</i>         | <i>maxima</i>        | (Koch in Philippi, 1844) | Great top-shell                           | VU         | LC   |
| Tegulidae        | <i>Tectus</i>         | <i>pyramis</i>       | (Born, 1778)             | Pyramid top-shell; Siput tudong [Malay]   | Not Listed | CR   |
| Angariidae       | <i>Angaria</i>        | <i>delphinus</i>     | (Linnaeus, 1758)         | Common delphinula; Dolphin shell          | Not Listed | LC   |
| Turbinidae       | <i>Turbo</i>          | <i>petholatus</i>    | Linnaeus, 1758           | Tapestry turban                           | EN         | VU   |
| Turbinidae       | <i>Turbo</i>          | <i>bruneus</i>       | (Röding, 1798)           | Brown Pacific turban; Brown dwarf turban  | Not Listed | LC   |
| Turbinidae       | <i>Astrarium</i>      | <i>calcar</i>        | (Linnaeus, 1758)         | Spurred star shell                        | Not Listed | LC   |
| Neritidae        | <i>Nerita</i>         | <i>albicilla</i>     | Linnaeus, 1758           | Ox-palate nerite                          | Not Listed | LC   |
| Neritidae        | <i>Nerita</i>         | <i>articulata</i>    | Gould, 1847              | Lined nerite                              | Not Listed | LC   |
| Neritidae        | <i>Nerita</i>         | <i>chamaeleon</i>    | Linnaeus, 1758           | Chameleon nerite                          | Not Listed | LC   |

| Family        | Genus                  | Species            | Authority                            | Common Name                                                                                            | RDB2       | RDB3 |
|---------------|------------------------|--------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------|------------|------|
| Neritidae     | <i>Nerita</i>          | <i>histrio</i>     | Linnaeus, 1758                       | Scaly nerite                                                                                           | Not Listed | LC   |
| Neritidae     | <i>Nerita</i>          | <i>planospira</i>  | Anton, 1838                          | Flat-spined nerite                                                                                     | VU         | NT   |
| Neritidae     | <i>Neripteron</i>      | <i>cornucopia</i>  | (Benson, 1836)                       |                                                                                                        | Not Listed | LC   |
| Neritidae     | <i>Neripteron</i>      | <i>violaceum</i>   | (Gmelin, 1791)                       | Violet nerite                                                                                          | Not Listed | LC   |
| Neritidae     | <i>Clithon</i>         | <i>faba</i>        | (G.B. Sowerby I, 1836)               | Bean nerite                                                                                            | Not Listed | LC   |
| Neritidae     | <i>Clithon</i>         | <i>oualaniense</i> | (Lesson, 1831)                       | Guamanian nerite                                                                                       | VU         | LC   |
| Cerithiidae   | <i>Cerithium</i>       | <i>coralium</i>    | Kiener, 1841                         | Coral cerith                                                                                           | Not Listed | LC   |
| Cerithiidae   | <i>Cerithium</i>       | <i>traillii</i>    | G.B. Sowerby II, 1855                | Traill's cerith                                                                                        | EN         | NT   |
| Cerithiidae   | <i>Cerithium</i>       | <i>nodulosum</i>   | Bruguière, 1792                      | Giant knobbed cerith                                                                                   | Not Listed | VU   |
| Cerithiidae   | <i>Cerithium</i>       | <i>zonatum</i>     | (W. Wood, 1828)                      |                                                                                                        | Not Listed | LC   |
| Cerithiidae   | <i>Clypeomorus</i>     | <i>petrosa</i>     | (W. Wood, 1828)                      | Stony cerith                                                                                           | Not Listed | NT   |
| Cerithiidae   | <i>Rhinoclavis</i>     | <i>aspera</i>      | (Linnaeus, 1758)                     | Rough vertagus                                                                                         | Not Listed | EN   |
| Cerithiidae   | <i>Rhinoclavis</i>     | <i>vertagus</i>    | (Linnaeus, 1767)                     | Common vertagus                                                                                        | Not Listed | EN   |
| Cerithiidae   | <i>Rhinoclavis</i>     | <i>sinensis</i>    | (Gmelin, 1791)                       | Obelisk vertagus                                                                                       | Not Listed | LC   |
| Planaxidae    | <i>Planaxis</i>        | <i>sulcatus</i>    | (Born, 1778)                         | Furrowed clusterwink                                                                                   | Not Listed | LC   |
| Planaxidae    | <i>Fissilabia</i>      | <i>decollata</i>   | (Quoy & Gaimard, 1833)               |                                                                                                        | Not Listed | DD   |
| Potamididae   | <i>Cerithidea</i>      | <i>obtusa</i>      | (Lamarck, 1822)                      | Obtuse horn-shell; Chut-chut [Hokkien]; Belitong [Malay]                                               | Not Listed | LC   |
| Potamididae   | <i>Cerithidea</i>      | <i>quoyii</i>      | (Hombron & Jacquinot, 1848)          |                                                                                                        | Not Listed | LC   |
| Potamididae   | <i>Pirenella</i>       | <i>alata</i>       | (Philippi, 1849)                     | Winged horn-shell                                                                                      | Not Listed | LC   |
| Potamididae   | <i>Pirenella</i>       | <i>cingulata</i>   | (Gmelin, 1791)                       | Girdled horn-shell                                                                                     | Not Listed | LC   |
| Potamididae   | <i>Telescopium</i>     | <i>telescopium</i> | (Linnaeus, 1758)                     | Telescope snail; Telescope horn-shell; Telescope mud creeper; Berongan [Malay]; K'ua Ca Teng [Hokkien] | Not Listed | LC   |
| Potamididae   | <i>Terebralia</i>      | <i>palustris</i>   | (Linnaeus, 1767)                     | Mud creeper; Mangrove whelk                                                                            | Not Listed | EN   |
| Potamididae   | <i>Terebralia</i>      | <i>sulcata</i>     | (Born, 1778)                         | Sulcate planaxis                                                                                       | Not Listed | LC   |
| Turritellidae | <i>Turritella</i>      | <i>terebra</i>     | (Linnaeus, 1758)                     | Tower screw-shell; screw shell                                                                         | VU         | DD   |
| Littorinidae  | <i>Echinolittorina</i> | <i>malaccana</i>   | (Jonas & Philippi in Philippi, 1847) |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Echinolittorina</i> | <i>melanacme</i>   | (E.A. Smith, 1876)                   |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Echinolittorina</i> | <i>vidua</i>       | (Gould, 1859)                        |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Littoraria</i>      | <i>carinifera</i>  | (Menke, 1830)                        |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Littoraria</i>      | <i>conica</i>      | (Philippi, 1846)                     |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Littoraria</i>      | <i>melanostoma</i> | (J.E. Gray, 1839)                    |                                                                                                        | Not Listed | LC   |
| Littorinidae  | <i>Littoraria</i>      | <i>vespacea</i>    | D.G. Reid, 1986                      |                                                                                                        | Not Listed | LC   |
| Calyptraeidae | <i>Ergaea</i>          | <i>walshi</i>      | (Reeve, 1859)                        |                                                                                                        | Not Listed | LC   |

| Family         | Genus                  | Species               | Authority                 | Common Name                                                                                   | RDB2       | RDB3 |
|----------------|------------------------|-----------------------|---------------------------|-----------------------------------------------------------------------------------------------|------------|------|
| Cypraeidae     | <i>Cypraea</i>         | <i>tigris</i>         | Linnaeus, 1758            | Tiger cowrie                                                                                  | EN         | VU   |
| Cypraeidae     | <i>Eclogavena</i>      | <i>quadrimaculata</i> | (J.E. Gray, 1824)         | Four-spotted cowrie                                                                           | Not Listed | NT   |
| Cypraeidae     | <i>Erronea</i>         | <i>errones</i>        | (Linnaeus, 1758)          |                                                                                               | Not Listed | LC   |
| Cypraeidae     | <i>Erronea</i>         | <i>onyx</i>           | (Linnaeus, 1758)          |                                                                                               | Not Listed | LC   |
| Cypraeidae     | <i>Erronea</i>         | <i>ovum</i>           | (Linnaeus, 1758)          |                                                                                               | Not Listed | LC   |
| Cypraeidae     | <i>Mauritia</i>        | <i>arabica</i>        | (Linnaeus, 1758)          | Arabian cowrie                                                                                | VU         | LC   |
| Cypraeidae     | <i>Monetaria</i>       | <i>moneta</i>         | (Linnaeus, 1758)          | Money cowrie                                                                                  | Not Listed | CR   |
| Cypraeidae     | <i>Monetaria</i>       | <i>annulus</i>        | (Linnaeus, 1758)          | Gold-ring cowrie                                                                              | EN         | CR   |
| Cypraeidae     | <i>Naria</i>           | <i>miliaris</i>       | (Gmelin, 1791)            | Millet cowrie                                                                                 | Not Listed | LC   |
| Naticidae      | <i>Notocochlis</i>     | <i>tigrina</i>        | (Röding, 1798)            | Tiger moon                                                                                    | Not Listed | LC   |
| Naticidae      | <i>Tanea</i>           | <i>lineata</i>        | (Röding, 1798)            | Lined moon                                                                                    | Not Listed | LC   |
| Naticidae      | <i>Polinices</i>       | <i>mammilla</i>       | (Linnaeus, 1758)          | Pear-shaped moon                                                                              | Not Listed | LC   |
| Truncatellidae | <i>Truncatella</i>     | <i>guerinii</i>       | A. Villa & J. Villa, 1841 |                                                                                               | Not Listed | EN   |
| Strombidae     | <i>Lambis</i>          | <i>lambis</i>         | (Linnaeus, 1758)          | Common spider conch                                                                           | VU         | NT   |
| Strombidae     | <i>Euprotomus</i>      | <i>aratum</i>         | (Röding, 1798)            |                                                                                               | CR         | DD   |
| Strombidae     | <i>Laevistrombus</i>   | <i>turturella</i>     | (Röding, 1798)            | Pearl conch;<br>Gonggong [Malay];<br>Siput gonggong [Malay];<br>Gonggong betina [Malay]       | Not Listed | LC   |
| Strombidae     | <i>Canarium</i>        | <i>urceus</i>         | (Linnaeus, 1758)          | Little bear conch;<br>Siput gonggong [Malay];<br>Gonggong [Malay];<br>Gonggong jantan [Malay] | VU         | LC   |
| Cassidae       | <i>Phalium</i>         | <i>glaucum</i>        | (Linnaeus, 1758)          | Grey bonnet                                                                                   | EN         | NT   |
| Bursidae       | <i>Bufonaria</i>       | <i>rana</i>           | (Linnaeus, 1758)          | Common frog shell                                                                             | Not Listed | LC   |
| Cymatiidae     | <i>Gyrineum</i>        | <i>natator</i>        | (Röding, 1798)            |                                                                                               | Not Listed | LC   |
| Triviidae      | <i>Trivirostra</i>     | <i>oryza</i>          | (Lamarck, 1810)           |                                                                                               | EN         | NT   |
| Xenophoridae   | <i>Stellaria</i>       | <i>solaris</i>        | (Linnaeus, 1764)          | Sunburst carrier                                                                              | Not Listed | DD   |
| Pisaniidae     | <i>Engina</i>          | <i>armillata</i>      | (Reeve, 1846)             |                                                                                               | Not Listed | LC   |
| Pisaniidae     | <i>Pollia</i>          | <i>fumosa</i>         | (Dillwyn, 1817)           |                                                                                               | Not Listed | LC   |
| Melongenidae   | <i>Volegalea</i>       | <i>cochlidium</i>     | (Linnaeus, 1758)          | Spiral melongena                                                                              | Not Listed | LC   |
| Melongenidae   | <i>Volema</i>          | <i>myristica</i>      | Röding, 1798              | Nutmeg melongena                                                                              | Not Listed | VU   |
| Columbellidae  | <i>Euplica</i>         | <i>scripta</i>        | (Lamarck, 1822)           |                                                                                               | Not Listed | LC   |
| Columbellidae  | <i>Pardalinops</i>     | <i>testudinaria</i>   | (Link, 1807)              |                                                                                               | Not Listed | LC   |
| Columbellidae  | <i>Pictocolumbella</i> | <i>ocellata</i>       | (Link, 1807)              |                                                                                               | Not Listed | LC   |
| Columbellidae  | <i>Pseudanachis</i>    | <i>basedowi</i>       | (Hedley, 1918)            |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassaria</i>        | <i>acuminata</i>      | (Reeve, 1844)             |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassaria</i>        | <i>pusilla</i>        | (Röding, 1798)            |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassarius</i>       | <i>jacksonianus</i>   | (Quoy & Gaimard, 1833)    |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassarius</i>       | <i>livescens</i>      | (Philippi, 1849)          |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassarius</i>       | <i>olivaceus</i>      | (Bruguière, 1789)         |                                                                                               | Not Listed | LC   |
| Nassariidae    | <i>Nassarius</i>       | <i>pullus</i>         | (Linnaeus, 1758)          |                                                                                               | Not Listed | DD   |

| Family            | Genus                 | Species               | Authority                                     | Common Name                                     | RDB2       | RDB3 |
|-------------------|-----------------------|-----------------------|-----------------------------------------------|-------------------------------------------------|------------|------|
| Muricidae         | <i>Murex</i>          | <i>ternispina</i>     | Lamarck, 1822                                 | Black-spined murex                              | Not Listed | VU   |
| Muricidae         | <i>Murex</i>          | <i>trapa</i>          | Röding, 1798                                  | Rare-spined murex                               | VU         | LC   |
| Muricidae         | <i>Chicoreus</i>      | <i>brunneus</i>       | (Link, 1807)                                  | Burnt murex;<br>Adusta murex                    | Not Listed | LC   |
| Muricidae         | <i>Chicoreus</i>      | <i>capucinus</i>      | (Lamarck, 1822)                               | Mangrove murex                                  | Not Listed | LC   |
| Muricidae         | <i>Chicoreus</i>      | <i>ramosus</i>        | (Linnaeus, 1758)                              | Ramose murex;<br>Giant murex;<br>Branched murex | EN         | NT   |
| Muricidae         | <i>Chicoreus</i>      | <i>torrefactus</i>    | (G. B. Sowerby II, 1841)                      | Firebrand murex;<br>Scorched murex              | Not Listed | NT   |
| Muricidae         | <i>Drupella</i>       | <i>margariticola</i>  | (Broderip in Broderip & G.B. Sowerby I, 1833) |                                                 | Not Listed | LC   |
| Muricidae         | <i>Drupella</i>       | <i>rugosa</i>         | (Born, 1778)                                  | Rugose drupe;<br>Rough rock-shell               | Not Listed | NT   |
| Muricidae         | <i>Ergalatax</i>      | <i>contracta</i>      | (Reeve, 1846)                                 |                                                 | Not Listed | LC   |
| Muricidae         | <i>Tenguella</i>      | <i>musiva</i>         | (Kiener, 1835)                                | Musical drupe                                   | Not Listed | LC   |
| Muricidae         | <i>Indothais</i>      | <i>gradata</i>        | (Jonas, 1846)                                 |                                                 | Not Listed | LC   |
| Muricidae         | <i>Indothais</i>      | <i>rufotincta</i>     | K.S. Tan & Sigurdsson, 1996                   | Red tinted rock shell                           | Not Listed | LC   |
| Muricidae         | <i>Mancinella</i>     | <i>echinata</i>       | (Blainville, 1832)                            | Prickly rock-shell                              | Not Listed | LC   |
| Muricidae         | <i>Reishia</i>        | <i>bitubercularis</i> | (Lamarck, 1822)                               | Bituberculate rock-shell                        | Not Listed | LC   |
| Muricidae         | <i>Reishia</i>        | <i>clavigera</i>      | (Küster, 1860)                                |                                                 | Not Listed | LC   |
| Muricidae         | <i>Reishia</i>        | <i>jubilaea</i>       | (K.S. Tan & Sigurdsson, 1990)                 |                                                 | Not Listed | LC   |
| Volutidae         | <i>Cymbiola</i>       | <i>nobilis</i>        | (Lightfoot, 1786)                             | Noble volute                                    | VU         | NT   |
| Volutidae         | <i>Melo</i>           | <i>melo</i>           | (Lightfoot, 1786)                             | Baler shell; Indian volute                      | EN         | VU   |
| Olividae          | <i>Oliva</i>          | <i>miniacea</i>       | (Röding, 1798)                                | Red-mouthed olive                               | VU         | VU   |
| Conidae           | <i>Conus</i>          | <i>achatinus</i>      | Gmelin, 1791                                  | Turtle cone; Agate cone                         | Not Listed | DD   |
| Conidae           | <i>Conus</i>          | <i>consors</i>        | G. B. Sowerby I, 1833                         | Consort cone                                    | VU         | VU   |
| Conidae           | <i>Conus</i>          | <i>textile</i>        | Linnaeus, 1758                                | Textile cone                                    | VU         | DD   |
| Clavatulidae      | <i>Turricula</i>      | <i>javana</i>         | (Linnaeus, 1767)                              | Javanese turrid                                 | Not Listed | LC   |
| Architectonicidae | <i>Architectonica</i> | <i>perspectiva</i>    | (Linnaeus, 1758)                              | Clear sundial                                   | EN         | DD   |
| Pyramidellidae    | <i>Milda</i>          | <i>ventricosa</i>     | (Guérin, 1830)                                |                                                 | Not Listed | LC   |
| Ellobiidae        | <i>Ellobium</i>       | <i>aurismidae</i>     | (Linnaeus, 1758)                              | Midas ear cassidula                             | Not Listed | LC   |
| Ellobiidae        | <i>Ellobium</i>       | <i>aurisjudae</i>     | (Linnaeus, 1758)                              | Judas ear cassidula                             | Not Listed | LC   |
| Ellobiidae        | <i>Ellobium</i>       | <i>scheepmakeri</i>   | (Petit de la Saussaye, 1850)                  |                                                 | CR         | CR   |
| Ellobiidae        | <i>Pythia</i>         | <i>plicata</i>        | (Férussac, 1821)                              |                                                 | Not Listed | LC   |
| Ellobiidae        | <i>Pythia</i>         | <i>scarabaeus</i>     | (Linnaeus, 1785)                              | Common pythia                                   | Not Listed | VU   |
| Ellobiidae        | <i>Pythia</i>         | <i>trigona</i>        | (Troschel, 1838)                              | Trigonal pythia                                 | Not Listed | LC   |
| Dyakiidae         | <i>Quantula</i>       | <i>striata</i>        | (Gray, 1834)                                  |                                                 | Not Listed | LC   |
| Ariophantidae     | <i>Hemiplecta</i>     | <i>keraudrenii</i>    | (Hombron & Jacquinot, 1841)                   |                                                 | Not Listed | NT   |

| Family      | Genus               | Species           | Authority                                                | Common Name                                            | RDB2       | RDB3 |
|-------------|---------------------|-------------------|----------------------------------------------------------|--------------------------------------------------------|------------|------|
| Camaenidae  | <i>Amphidromus</i>  | <i>temasek</i>    | S.K. Tan, Chan & Panha, 2011                             | Temasek amphidromus; Jade tree snail; Green tree snail | EN         | NT   |
| Camaenidae  | <i>Amphidromus</i>  | <i>inversus</i>   | (O.F. Müller, 1774)                                      | Inverse amphidromus; Brown tree snail                  | CR         | CR   |
| Loliginidae | <i>Sepioteuthis</i> | <i>lessoniana</i> | d'Orbigny, 1826                                          | Bigfin reef squid; Oval squid                          | Not Listed | LC   |
| Sepiidae    | <i>Sepia</i>        | <i>aculeata</i>   | Van Hasselt, 1835 [in Férussac & d'Orbigny, 1834-1848]   | Needle cuttlefish                                      | Not Listed | LC   |
| Sepiidae    | <i>Sepiella</i>     | <i>inermis</i>    | (van Hasselt, 1835 [in Férussac & d'Orbigny, 1834-1848]) | Spineless cuttlefish                                   | Not Listed | LC   |

# Checklist of Termite & Cockroach Species with their Category of Threat Status for Singapore

Prepared by Foo Maosheng, Hwang Wei Song

| Family          | Genus                     | Species                 | Authority                   | Common Name | RDB2       | RDB3 |
|-----------------|---------------------------|-------------------------|-----------------------------|-------------|------------|------|
| Blaberidae      | <i>Apsidopsis</i>         | <i>oxyptera</i>         | Walker, 1868                |             | Not Listed | DD   |
| Blaberidae      | <i>Panesthia</i>          | <i>augustipennis</i>    | Illiger, 1801               |             | Not Listed | LC   |
| Blaberidae      | <i>Panesthia</i>          | <i>sinuata</i>          | Saussure, 1895              |             | Not Listed | DD   |
| Blaberidae      | <i>Perisphaerus</i>       | <i>flexicollis</i>      | Walker, 1868                |             | Not Listed | DD   |
| Blaberidae      | <i>Pycnoscelus</i>        | <i>indicus</i>          | Fabricius, 1775             |             | Not Listed | LC   |
| Blaberidae      | <i>Pycnoscelus</i>        | <i>surinamensis</i>     | Linnaeus, 1758              |             | Not Listed | LC   |
| Blaberidae      | <i>Salganea</i>           | <i>wrayi</i>            | Kirby, 1903                 |             | Not Listed | DD   |
| Blattidae       | <i>Dorylaea</i>           | <i>saundersi</i>        | Hanitsch, 1923              |             | Not Listed | DD   |
| Ectobiidae      | <i>Allacta</i>            | <i>diagrammatica</i>    | Hanitsch, 1923              |             | Not Listed | DD   |
| Ectobiidae      | <i>Allacta</i>            | <i>luteomarginata</i>   | Hanitsch, 1923              |             | Not Listed | DD   |
| Ectobiidae      | <i>Allacta</i>            | <i>picturata</i>        | Shelford, 1907              |             | Not Listed | DD   |
| Ectobiidae      | <i>Anaplectella</i>       | <i>aurea</i>            | Hanitsch, 1931              |             | Not Listed | DD   |
| Ectobiidae      | <i>Balta</i>              | <i>jacobsoni</i>        | Hebard, 1929                |             | Not Listed | DD   |
| Ectobiidae      | <i>Balta</i>              | <i>notulata</i>         | Stål, 1860                  |             | Not Listed | LC   |
| Ectobiidae      | <i>Balta</i>              | <i>reticulata</i>       | Fabricius, 1798             |             | Not Listed | DD   |
| Ectobiidae      | <i>Blattella</i>          | <i>bisignata</i>        | Brunner von Wattenwyl, 1893 |             | Not Listed | DD   |
| Ectobiidae      | <i>Episymploce</i>        | <i>ridleyi</i>          | Shelford, 1907              |             | Not Listed | DD   |
| Ectobiidae      | <i>Euhebardula</i>        | <i>stellata</i>         | Hanitsch, 1923              |             | Not Listed | DD   |
| Ectobiidae      | <i>Haplosymploce</i>      | <i>pica</i>             | Walker, 1868                |             | Not Listed | DD   |
| Ectobiidae      | <i>Haplosymploce</i>      | <i>reversa</i>          | Walker, 1869                |             | Not Listed | DD   |
| Ectobiidae      | <i>Malaccina</i>          | <i>rufella</i>          | Hebard, 1929                |             | Not Listed | DD   |
| Ectobiidae      | <i>Malaccina</i>          | <i>saundersi</i>        | Hanitsch, 1928              |             | Not Listed | DD   |
| Ectobiidae      | <i>Malaccina</i>          | <i>schali</i>           | Roth, 1996                  |             | Not Listed | DD   |
| Ectobiidae      | <i>Prosoplecta</i>        | <i>uniformis</i>        | Hebard, 1929                |             | Not Listed | DD   |
| Ectobiidae      | <i>Pseudophyllodromia</i> | <i>laticeps</i>         | Walker, 1869                |             | Not Listed | DD   |
| Ectobiidae      | <i>Scalida</i>            | <i>latiusvittata</i>    | Brunner von Wattenwyl, 1898 |             | Not Listed | DD   |
| Ectobiidae      | <i>Shelfordina</i>        | <i>lata</i>             | Hanitsch, 1923              |             | Not Listed | DD   |
| Ectobiidae      | <i>Symplocodes</i>        | <i>ridleyi</i>          | Shelford, 1913              |             | Not Listed | DD   |
| Kalotermitidae  | <i>Neotermes</i>          | <i>tectonae</i>         | Dammerman, 1916             |             | Not Listed | DD   |
| Rhinotermitidae | <i>Coptotermes</i>        | <i>curvignathus</i>     | Holmgren, 1913              |             | Not Listed | LC   |
| Rhinotermitidae | <i>Coptotermes</i>        | <i>gestroi</i>          | Wasmann, 1896               |             | Not Listed | LC   |
| Rhinotermitidae | <i>Coptotermes</i>        | <i>sepangensis</i>      | Krishna, 1956               |             | Not Listed | LC   |
| Rhinotermitidae | <i>Coptotermes</i>        | <i>travians</i>         | Haviland, 1898              |             | Not Listed | LC   |
| Rhinotermitidae | <i>Parrhinotermes</i>     | <i>aequalis</i>         | Haviland, 1898              |             | Not Listed | DD   |
| Rhinotermitidae | <i>Parrhinotermes</i>     | <i>microdentiformis</i> | Thapa, 1982                 |             | Not Listed | DD   |
| Rhinotermitidae | <i>Parrhinotermes</i>     | <i>pygmaeus</i>         | John, 1925                  |             | Not Listed | DD   |
| Rhinotermitidae | <i>Prorhinotermes</i>     | <i>flavus</i>           | Bugnion & Popoff, 1910      |             | Not Listed | DD   |
| Rhinotermitidae | <i>Schedorhinotermes</i>  | <i>brevialatus</i>      | Haviland, 1898              |             | Not Listed | DD   |
| Rhinotermitidae | <i>Schedorhinotermes</i>  | <i>malaccensis</i>      | Holmgren, 1913              |             | Not Listed | DD   |



| Family          | Genus                    | Species                | Authority       | Common Name   | RDB2       | RDB3 |
|-----------------|--------------------------|------------------------|-----------------|---------------|------------|------|
| Rhinotermitidae | <i>Schedorhinotermes</i> | <i>medioobscurus</i>   | Holmgren, 1914  |               | Not Listed | LC   |
| Termitidae      | <i>Ancistrotermes</i>    | <i>pakistanicus</i>    | Ahmad, 1955     |               | Not Listed | DD   |
| Termitidae      | <i>Bulbitermes</i>       | <i>borneensis</i>      | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Bulbitermes</i>       | <i>germanus</i>        | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Bulbitermes</i>       | <i>perpusillus</i>     | John, 1925      |               | Not Listed | DD   |
| Termitidae      | <i>Bulbitermes</i>       | <i>singaporiensis</i>  | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Dicuspitermes</i>     | <i>nemorosus</i>       | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Dicuspitermes</i>     | <i>santschii</i>       | Silvestri, 1922 |               | Not Listed | DD   |
| Termitidae      | <i>Globitermes</i>       | <i>globosus</i>        | Haviland, 1898  |               | Not Listed | LC   |
| Termitidae      | <i>Hospitalitermes</i>   | <i>umbrinus</i>        | Haviland, 1898  |               | Not Listed | LC   |
| Termitidae      | <i>Longipitermes</i>     | <i>longipes</i>        | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Macrotermes</i>       | <i>carbonarius</i>     | Hagen, 1858     | Giant Termite | VU         | LC   |
| Termitidae      | <i>Macrotermes</i>       | <i>gilvus</i>          | Hagen, 1858     |               | Not Listed | LC   |
| Termitidae      | <i>Macrotermes</i>       | <i>malaccensis</i>     | Haviland, 1898  |               | Not Listed | LC   |
| Termitidae      | <i>Microcerotermes</i>   | <i>crassus</i>         | Snyder, 1934    |               | Not Listed | DD   |
| Termitidae      | <i>Microcerotermes</i>   | <i>duplex</i>          | Desneux, 1904   |               | Not Listed | DD   |
| Termitidae      | <i>Microcerotermes</i>   | <i>havilandi</i>       | Holmgren, 1913  |               | Not Listed | DD   |
| Termitidae      | <i>Microcerotermes</i>   | <i>sabahensis</i>      | Thapa, 1982     |               | Not Listed | DD   |
| Termitidae      | <i>Microcerotermes</i>   | <i>serratus</i>        | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>atripennis</i>      | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>havilandi</i>       | Desneux, 1904   |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>longinasoides</i>   | Thapa, 1982     |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>matangensis</i>     | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>neoparvus</i>       | Thapa, 1982     |               | Not Listed | DD   |
| Termitidae      | <i>Nasutitermes</i>      | <i>proatripennis</i>   | Ahmad, 1965     |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>denticulatus</i>    | Holmgren, 1913  |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>grandiceps</i>      | Holmgren, 1913  |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>javanicus</i>       | Holmgren, 1912  |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>minutus</i>         | Amir, 1975      |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>oblongatus</i>      | Holmgren, 1913  |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>prodives</i>        | Thapa, 1982     |               | Not Listed | DD   |
| Termitidae      | <i>Odontotermes</i>      | <i>sarawakensis</i>    | Holmgren, 1913  |               | Not Listed | DD   |
| Termitidae      | <i>Pericapritermes</i>   | <i>dolichocephalis</i> | John, 1925      |               | Not Listed | DD   |
| Termitidae      | <i>Pericapritermes</i>   | <i>nitobei</i>         | Shiraki, 1909   |               | Not Listed | DD   |
| Termitidae      | <i>Procapritermes</i>    | <i>sandakanensis</i>   | Thapa, 1982     |               | Not Listed | DD   |
| Termitidae      | <i>Prohamitermes</i>     | <i>mirabilis</i>       | Haviland, 1898  |               | Not Listed | DD   |
| Termitidae      | <i>Termes</i>            | <i>rostratus</i>       | Haviland, 1898  |               | Not Listed | DD   |

## Checklist of Beetle Species with their Category of Threat Status for Singapore

Prepared by Cheong Loong Fah, Wan F.A. Jusoh, Ong Xin Rui, Sean Yap

| Family       | Genus                                    | Species                | Authority                | Common Name | RDB2       | RDB3 |
|--------------|------------------------------------------|------------------------|--------------------------|-------------|------------|------|
| Carabidae    | <i>Agastus</i>                           | <i>ustulatus</i>       | Gestro, 1875             |             | Not Listed | NEx  |
| Carabidae    | <i>Catascopus</i>                        | <i>brachypterus</i>    | Chaudoir, 1861           |             | Not Listed | NEx  |
| Carabidae    | <i>Catascopus</i>                        | <i>cupripennis</i>     | Thomson, 1858            |             | Not Listed | NEx  |
| Carabidae    | <i>Catascopus</i>                        | <i>punctipennis</i>    | Saunders, 1863           |             | Not Listed | NEx  |
| Carabidae    | <i>Chlaenius</i>                         | <i>acroxanthus</i>     | Chaudoir, 1876           |             | Not Listed | NEx  |
| Carabidae    | <i>Colasidia</i>                         | <i>malayica</i>        | Basilewsky, 1954         |             | Not Listed | DD   |
| Carabidae    | <i>Cryptocephalomorpha</i>               | <i>gaverei</i>         | Ritsema, 1875            |             | Not Listed | DD   |
| Carabidae    | <i>Distichus</i>                         | <i>dicaelus</i>        | Chaudoir, 1881           |             | Not Listed | NEx  |
| Carabidae    | <i>Eustra</i>                            | <i>csikii</i>          | Jedlicka, 1968           |             | Not Listed | DD   |
| Carabidae    | <i>Lachnoderma</i>                       | <i>tricolor</i>        | Andrewes, 1926           |             | Not Listed | DD   |
| Carabidae    | <i>Parena</i>                            | <i>nigrolineata</i>    | (Chaudoir, 1852)         |             | Not Listed | DD   |
| Carabidae    | <i>Stenaptinus</i>                       | <i>occipitalis</i>     | (Macleay, 1825)          |             | Not Listed | CR   |
| Cicindelidae | <i>Heptodonta</i>                        | <i>analis</i>          | (Fabricius, 1801)        |             | Not Listed | NEx  |
| Cicindelidae | <i>Hypaetha</i>                          | <i>quadrilineata</i>   | (Fabricius, 1781)        |             | Not Listed | NEx  |
| Cicindelidae | <i>Lophyra</i>                           | <i>fuliginosa</i>      | (Dejean, 1826)           |             | Not Listed | VU   |
| Cicindelidae | <i>Therates</i>                          | <i>batesii</i>         | Thomson, 1857            |             | Not Listed | NEx  |
| Cicindelidae | <i>Therates</i>                          | <i>fleutiauxi</i>      | Horn, 1898               |             | Not Listed | CR   |
| Buprestidae  | <i>Anthaxia</i><br>( <i>Merocratus</i> ) | <i>miranda</i>         | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Anthaxia</i><br>( <i>Merocratus</i> ) | <i>violaceiventris</i> | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Agrilus</i>                           | <i>albogaster</i>      | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Agrilus</i>                           | <i>amicus</i>          | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Agrilus</i>                           | <i>lancifer</i>        | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Agrilus</i>                           | <i>jankae</i>          | Jendek &<br>Grebennikov, |             | Not Listed | CR   |
| Buprestidae  | <i>Agrilus</i>                           | <i>tristinus</i>       | Obenberger, 1924         |             | Not Listed | NEx  |
| Buprestidae  | <i>Agrilus</i>                           | <i>trito</i>           | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Belionota</i>                         | <i>metasticta</i>      | (Illiger, 1800)          |             | Not Listed | DD   |
| Buprestidae  | <i>Catoxantha</i>                        | <i>opulenta</i>        | (Gory, 1832)             |             | Not Listed | NEx  |
| Buprestidae  | <i>Chrysobothris</i>                     | <i>cyanescens</i>      | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Chrysobothris</i>                     | <i>nigripennis</i>     | Deyrolle, 1864           |             | Not Listed | NEx  |
| Buprestidae  | <i>Chrysochroa</i>                       | <i>castelnaudii</i>    | Deyrolle, 1862           |             | Not Listed | NEx  |
| Buprestidae  | <i>Coraebus</i>                          | <i>collaris</i>        | Gory & Laporte,<br>1839  |             | Not Listed | NEx  |
| Buprestidae  | <i>Endelus</i>                           | <i>baumi</i>           | Obenberger, 1929         |             | Not Listed | NEx  |
| Buprestidae  | <i>Epidelus</i>                          | <i>wallacei</i>        | (Thomson, 1857)          |             | Not Listed | NEx  |
| Buprestidae  | <i>Haplotrinchus</i>                     | <i>viridis</i>         | (Deyrolle, 1864)         |             | Not Listed | DD   |
| Buprestidae  | <i>Megaloxantha</i>                      | <i>hemixantha</i>      | (Vollenhoven,<br>1864)   |             | Not Listed | NEx  |
| Buprestidae  | <i>Megaloxantha</i>                      | <i>purpurascens</i>    | (Ritsema, 1879)          |             | Not Listed | NEx  |

| Family       | Genus                                           | Species                               | Authority                   | Common Name                                   | RDB2       | RDB3 |
|--------------|-------------------------------------------------|---------------------------------------|-----------------------------|-----------------------------------------------|------------|------|
| Cerambycidae | <i>Aegolipton</i>                               | <i>marginale</i>                      | (Fabricius, 1775)           |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Amechana</i>                                 | <i>nobilis</i>                        | Thomson 1864                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Astathes</i><br>( <i>Tetraopthalmus</i> )    | <i>contentiosa</i>                    | Pascoe, 1867                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Astathes</i><br>( <i>Tetraopthalmus</i> )    | <i>terminata</i>                      | Pascoe, 1857                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Bacchisa</i>                                 | <i>albicornis</i>                     | (Pascoe 1867)               |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Dorysthenes</i><br>( <i>Paraphrus</i> )      | <i>planicollis</i>                    | (Bates, 1878)               |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Entelopes</i>                                | <i>glauca</i>                         | Guérin-Ménéville,<br>1844   |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Epianthe</i>                                 | <i>funesta</i>                        | Pascoe, 1869                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Euryphagus</i>                               | <i>lundii</i>                         | Fabricius, 1792             |                                               | Not Listed | CR   |
| Cerambycidae | <i>Glenea</i>                                   | <i>algebraica</i>                     | Thomson, 1857               |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>coris</i>                          | Pascoe, 1867                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>juno</i>                           | Thomson, 1865               |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>mathematica</i>                    | (Thomson, 1857)             |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>myrrhis</i>                        | Pascoe, 1867                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>myrsine</i>                        | Pascoe, 1867                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i>                                   | <i>pulchella</i>                      | Pascoe, 1858                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Glenea</i><br>( <i>Tanylecta</i> )           | <i>aegoprepiformis</i>                | Breuning, 1950              |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Hoplocerambyx</i>                            | <i>spinicornis</i>                    | (Newman, 1842)              |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Nepiodes</i>                                 | <i>cinnamomeum</i><br><i>ritsemai</i> | (Lameere, 1912)             |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Notomulciber</i><br>( <i>Micromulciber</i> ) | <i>sexlineatus</i>                    | Breuning, 1959              |                                               | Not Listed | CR   |
| Cerambycidae | <i>Oberea</i>                                   | <i>compta</i>                         | Pascoe, 1867                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Ocalemia</i>                                 | <i>vigilans</i>                       | Pascoe, 1858                |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Paracyrthosastes</i>                         | <i>marmoreus</i>                      | (Pascoe, 1857)              |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Pseudoparanaspia</i>                         | <i>lepturoides</i>                    | (Pascoe, 1869)              |                                               | Not Listed | NEx  |
| Cerambycidae | <i>Remphan</i>                                  | <i>hopei</i>                          | Waterhouse, 1836            |                                               | Not Listed | NEx  |
| Lampyridae   | <i>Luciola</i>                                  | <i>singapura</i>                      | Jusoh &<br>Ballantyne, 2021 | Singapore<br>Firefly                          | Not Listed | CR   |
| Lampyridae   | <i>Pteroptyx</i>                                | <i>bearni</i>                         | Olivier, 1909               | The<br>Comtesse's<br>Bent-winged<br>Firefly   | Not Listed | NEx  |
| Lampyridae   | <i>Pteroptyx</i>                                | <i>malaccaae</i>                      | Gorham, 1880                |                                               | Not Listed | CR   |
| Lampyridae   | <i>Pteroptyx</i>                                | <i>valida</i>                         | Olivier, 1909               | Non-<br>synchronous<br>Bent-winged<br>Firefly | EN         | EN   |
| Lampyridae   | <i>Pyrocoelia</i>                               | <i>fumigata</i>                       | Gorham, 1880                |                                               | Not Listed | LC   |
| Scarabaeidae | <i>Copris</i>                                   | <i>numa</i>                           | Lansberge, 1886             |                                               | Not Listed | NEx  |
| Scarabaeidae | <i>Sisyphus</i>                                 | <i>thoracicus</i>                     | Sharp, 1875                 |                                               | Not Listed | NEx  |
| Scarabaeidae | <i>Catharsius</i>                               | <i>renaudpauliani</i>                 | Ochi & Kon, 1996            |                                               | Not Listed | NT   |
| Scarabaeidae | <i>Paragymnopleurus</i>                         | <i>maurus</i>                         | (Sharp, 1875)               |                                               | Not Listed | NT   |

| Family        | Genus                 | Species             | Authority                      | Common Name             | RDB2       | RDB3 |
|---------------|-----------------------|---------------------|--------------------------------|-------------------------|------------|------|
| Scarabaeidae  | <i>Caccobius</i>      | <i>unicornis</i>    | (Fabricius, 1798)              |                         | Not Listed | DD   |
| Scarabaeidae  | <i>Onthophagus</i>    | <i>deliensis</i>    | Lansberge, 1885                |                         | Not Listed | NT   |
| Scarabaeidae  | <i>Onthophagus</i>    | <i>trituber</i>     | (Wiedemann, 1823)              |                         | Not Listed | LC   |
| Scarabaeidae  | <i>Onthophagus</i>    | <i>vulpes</i>       | Harold, 1877                   |                         | Not Listed | NEx  |
| Scarabaeidae  | <i>Chalcosoma</i>     | <i>atlas</i>        | (Linnaeus, 1758)               | Atlas Beetle            | Not Listed | CR   |
| Scarabaeidae  | <i>Chalcosoma</i>     | <i>chiron</i>       | (Olivier, 1789)                |                         | Not Listed | NEx  |
| Scarabaeidae  | <i>Xylotrupes</i>     | <i>gideon</i>       | (Linnaeus, 1767)               | Brown Rhinoceros Beetle | Not Listed | NT   |
| Coccinellidae | <i>Cheilomenes</i>    | <i>sexmaculata</i>  | Fabricius, 1781                |                         | Not Listed | LC   |
| Coccinellidae | <i>Chilocorus</i>     | <i>circumdatus</i>  | (Gyllenhal in Schönherr, 1808) | Red Chilocorus          | Not Listed | LC   |
| Coccinellidae | <i>Coelophora</i>     | <i>bissellata</i>   | Mulsant, 1850                  |                         | Not Listed | DD   |
| Coccinellidae | <i>Henosepilachna</i> | <i>indica</i>       | (Mulsant, 1850)                |                         | Not Listed | LC   |
| Coccinellidae | <i>Heteroneda</i>     | <i>billardieri</i>  | Crotch, 1871                   |                         | Not Listed | DD   |
| Coccinellidae | <i>Harmonia</i>       | <i>octomaculata</i> | (Fabricius, 1781)              |                         | Not Listed | VU   |
| Coccinellidae | <i>Megalocaria</i>    | <i>dilatata</i>     | (Fabricius, 1775)              |                         | Not Listed | VU   |
| Lycidae       | <i>Platerodrilus</i>  | <i>ruficollis</i>   | (Pic, 1942)                    | Trilobite Larva         | EN         | VU   |

**Checklist of Diptera (Fly) Species with their Category of Threat Status for Singapore**

Prepared by Ang Yuchen

| <b>Family</b>   | <b>Genus</b>          | <b>Species</b>         | <b>Authority</b>            | <b>Common Name</b>  | <b>RDB2</b> | <b>RDB3</b> |
|-----------------|-----------------------|------------------------|-----------------------------|---------------------|-------------|-------------|
| Asilidae        | <i>Heligmoneura</i>   | <i>fuscinalonga</i>    | Tomasovic & Grootaert, 2008 | Assassin fly        | Not Listed  | VU          |
| Asilidae        | <i>Heligmoneura</i>   | <i>singaporensis</i>   | Tomasovic & Grootaert, 2008 | Assassin fly        | Not Listed  | VU          |
| Asilidae        | <i>Laphria</i>        | <i>basifera</i>        | (Walker, 1857)              | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Laphria</i>        | <i>basigutta</i>       | Walker, 1857                | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Laphria</i>        | <i>imbellis</i>        | Walker, 1857                | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Laphria</i>        | <i>inaurea</i>         | Walker, 1857                | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Laphria</i>        | <i>plana</i>           | Walker, 1857                | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Laphria</i>        | <i>sobria</i>          | Walker, 1857                | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Leptogaster</i>    | <i>moluccana</i>       | (Doleschall, 1957)          | Spider assassin fly | Not Listed  | NT          |
| Asilidae        | <i>Maira</i>          | <i>aenea</i>           | (Fabricius, 1805)           | Assassin fly        | Not Listed  | VU          |
| Asilidae        | <i>Michotamia</i>     | <i>latifascia</i>      | (Walker, 1857)              | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Michotamia</i>     | <i>singaporensis</i>   | Tomasovic & Grootaert, 2008 | Assassin fly        | Not Listed  | EN          |
| Asilidae        | <i>Orthogonis</i>     | <i>scapularis</i>      | (Wiedemann, 1828)           | Assassin fly        | Not Listed  | VU          |
| Asilidae        | <i>Pogonosoma</i>     | <i>crassipes</i>       | (Fabricius, 1805)           | Assassin fly        | Not Listed  | DD          |
| Asilidae        | <i>Promachus</i>      | <i>amorges</i>         | (Walker, 1849)              | Assassin fly        | Not Listed  | VU          |
| Asilidae        | <i>Promachus</i>      | <i>lineosus</i>        | (Walker, 1857)              | Assassin fly        | Not Listed  | DD          |
| Bombyliidae     | <i>Petrorossia</i>    | <i>fulvula</i>         | (Wiedemann, 1821)           | Bee fly             | Not Listed  | DD          |
| Calliphoridae   | <i>Hypopygiopsis</i>  | <i>fumipennis</i>      | (Walker, 1856)              | Blow fly            | Not Listed  | LC          |
| Calliphoridae   | <i>Hypopygiopsis</i>  | <i>violacea</i>        | (Macquart, 1835)            | Blow fly            | Not Listed  | LC          |
| Canacidae       | <i>Allocanace</i>     | <i>gibba</i>           | Munari, 2018                | Gibba beach fly     | Not Listed  | EN          |
| Canacidae       | <i>Dasyrhicnoessa</i> | <i>adelpha</i>         | Munari, 2005                | Beach fly           | Not Listed  | VU          |
| Canacidae       | <i>Dasyrhicnoessa</i> | <i>paraplatypes</i>    | Munari, 2018                | Beach fly           | Not Listed  | VU          |
| Canacidae       | <i>Dasyrhicnoessa</i> | <i>tripunctata</i>     | Sasakawa, 1974              | Beach fly           | Not Listed  | VU          |
| Canacidae       | <i>Sigaloethina</i>   | <i>phaia</i>           | Munari, 2004                | Phaia beach fly     | Not Listed  | VU          |
| Ceratopogonidae | <i>Dasyhelea</i>      | <i>ampullariae</i>     | Macfie, 1934                | Biting midge        | Not Listed  | NE          |
| Ceratopogonidae | <i>Dasyhelea</i>      | <i>biseriatus</i>      | Wirth & Beaver, 1979        | Biting midge        | Not Listed  | NE          |
| Ceratopogonidae | <i>Dasyhelea</i>      | <i>nepenthicola</i>    | Wirth & Beaver, 1979        | Biting midge        | Not Listed  | NE          |
| Ceratopogonidae | <i>Dasyhelea</i>      | <i>schizothrxi</i>     | Lee & Wirth, 1989           | Biting midge        | Not Listed  | NE          |
| Chaoboridae     | <i>Chaoborus</i>      | <i>flavidulus</i>      | Edwards, 1930               | Phantom midge       | Not Listed  | LC          |
| Chaoboridae     | <i>Chaoborus</i>      | <i>queenslandensis</i> | (Theobald, 1905)            | Phantom midge       | Not Listed  | NT          |
| Chironomidae    | <i>Ablabesmyia</i>    | <i>notabilis</i>       | (Skuse, 1889)               | Non-biting midge    | Not Listed  | NT          |
| Chironomidae    | <i>Chironomus</i>     | <i>circumdatus</i>     | Kieffer, 1916               | Non-biting midge    | Not Listed  | LC          |
| Chironomidae    | <i>Chironomus</i>     | <i>dissidens</i>       | Walker, 1856                | Non-biting midge    | Not Listed  | LC          |
| Chironomidae    | <i>Chironomus</i>     | <i>javanus</i>         | Kieffer, 1924               | Non-biting midge    | Not Listed  | LC          |
| Chironomidae    | <i>Chironomus</i>     | <i>kiiensis</i>        | Tokunaga, 1936              | Non-biting midge    | Not Listed  | LC          |
| Chironomidae    | <i>Conochironomus</i> | <i>tobaterdecimus</i>  | (Kikuchi & Sasa, 1980)      | Non-biting midge    | Not Listed  | LC          |

| Family         | Genus                   | Species               | Authority                 | Common Name       | RDB2       | RDB3 |
|----------------|-------------------------|-----------------------|---------------------------|-------------------|------------|------|
| Chironomidae   | <i>Cryptochironomus</i> | <i>fulvus</i>         | Johannsen, 1905           | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Dicrotendipes</i>    | <i>flexus</i>         | (Johannsen, 1932)         | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Dicrotendipes</i>    | <i>pelechloris</i>    | (Kieffer, 1912)           | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Fittkauimyia</i>     | <i>disparipes</i>     | Karunakaran, 1969         | Non-biting midge  | Not Listed | NE   |
| Chironomidae   | <i>Kiefferulus</i>      | <i>tainanus</i>       | (Kieffer, 1912)           | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Microchironomus</i>  | <i>tener</i>          | (Kieffer, 1918)           | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Nilothauma</i>       | <i>hibaraquartum</i>  | Sasa, 1993                | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>convexum</i>       | (Johannsen, 1932)         | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>griseoguttatum</i> | Kieffer, 1921             | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>johannseni</i>     | Sublette & Sublette, 1973 | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>leei</i>           | Freeman, 1961             | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>masudai</i>        | (Tokunaga, 1938)          | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>nodosum</i>        | (Johannsen, 1932)         | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Polypedilum</i>      | <i>nubifer</i>        | Skuse, 1889               | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Procladius</i>       | <i>choreus</i>        | (Meigen, 1804)            | Non-biting midge  | Not Listed | NT   |
| Chironomidae   | <i>Stenochironomus</i>  | <i>tobaduodecimis</i> | Kikuchi & Sasa, 1990      | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Tanypus</i>          | <i>kraatzi</i>        | (Kieffer, 1912)           | Non-biting midge  | Not Listed | NT   |
| Chironomidae   | <i>Tanytarsus</i>       | <i>formosanus</i>     | Kieffer, 1912             | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Tanytarsus</i>       | <i>infundibulus</i>   | Chaudhuri & Datta, 1992   | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Tanytarsus</i>       | <i>oscillans</i>      | Johannsen, 1932           | Non-biting midge  | Not Listed | LC   |
| Chironomidae   | <i>Tanytarsus</i>       | <i>ovatus</i>         | Johannsen, 1932           | Non-biting midge  | Not Listed | LC   |
| Chloropidae    | <i>Pseudogaurax</i>     | <i>sexnotatus</i>     | Ismay & Ang, 2019         | Frit fly          | Not Listed | VU   |
| Chloropidae    | <i>Pseudogaurax</i>     | <i>striatus</i>       | Ismay & Ang, 2019         | Frit fly          | Not Listed | VU   |
| Coelopidae     | <i>Coelopa</i>          | <i>orientalis</i>     | Macquart, 1843            | Kelp fly          | Not Listed | EN   |
| Corethrellidae | <i>Corethrella</i>      | <i>calathicola</i>    | Edwards, 1930             | Frog-biting midge | Not Listed | VU   |
| Culicidae      | <i>Aedes</i>            | <i>franciscoi</i>     | Mattingly, 1959           | Aedes mosquito    | Not Listed | NE   |
| Culicidae      | <i>Aedes</i>            | <i>inermis</i>        | Colless, 1958             | Aedes mosquito    | Not Listed | NE   |
| Culicidae      | <i>Aedes</i>            | <i>litoreus</i>       | Colless, 1958             | Aedes mosquito    | Not Listed | NE   |
| Culicidae      | <i>Aedes</i>            | <i>niveus</i>         | (Ludlow, 1903)            | Aedes mosquito    | Not Listed | NE   |
| Culicidae      | <i>Aedes</i>            | <i>pexus</i>          | Colless, 1958             | Aedes mosquito    | Not Listed | NE   |

| Family         | Genus                   | Species                | Authority                     | Common Name            | RDB2       | RDB3 |
|----------------|-------------------------|------------------------|-------------------------------|------------------------|------------|------|
| Culicidae      | <i>Aedes</i>            | <i>subniveus</i>       | Edwards, 1922                 | Aedes mosquito         | Not Listed | NE   |
| Culicidae      | <i>Aedes</i>            | <i>vanus</i>           | Colless, 1958                 | Aedes mosquito         | Not Listed | NE   |
| Culicidae      | <i>Armigeres</i>        | <i>giveni</i>          | Edwards, 1926                 | Mosquito               | Not Listed | NE   |
| Culicidae      | <i>Culex</i>            | <i>brevipalpis</i>     | (Theobald, 1905)              | Culex mosquito         | Not Listed | NE   |
| Culicidae      | <i>Culex</i>            | <i>curtipalpis</i>     | (Edwards, 1914)               | Culex mosquito         | Not Listed | NE   |
| Culicidae      | <i>Culex</i>            | <i>hewitii</i>         | (Edwards, 1914)               | Culex mosquito         | Not Listed | NE   |
| Culicidae      | <i>Culex</i>            | <i>navalis</i>         | Edwards, 1926                 | Culex mosquito         | Not Listed | NE   |
| Culicidae      | <i>Toxorhynchites</i>   | <i>acaudatus</i>       | (Leicester, 1908)             | Elephant mosquito      | Not Listed | NE   |
| Culicidae      | <i>Tripteroides</i>     | <i>nepenthis</i>       | (Edwards, 1915)               | Mosquito               | Not Listed | NE   |
| Culicidae      | <i>Tripteroides</i>     | <i>nepenthisimilis</i> | Mattingly, 1981               | Mosquito               | Not Listed | NE   |
| Culicidae      | <i>Tripteroides</i>     | <i>tenax</i>           | (Meijere, 1910)               | Mosquito               | Not Listed | NE   |
| Culicidae      | <i>Uranotaenia</i>      | <i>moultoni</i>        | Edwards, 1914                 | Mosquito               | Not Listed | NE   |
| Diopsidae      | <i>Teleopsis</i>        | <i>dalmanni</i>        | (Wiedemann, 1830)             | Malayan stalk-eyed fly | Not Listed | VU   |
| Dolichopodidae | <i>Acropsilus</i>       | <i>uncinatus</i>       | Grootaert & Meuffels, 1986    | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Amblysilopus</i>     | <i>abruptus</i>        | (Walker, 1859)                | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chaetogonopteron</i> | <i>chaetorum</i>       | Grootaert & Meuffels, 1999    | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Chaetogonopteron</i> | <i>vexillum</i>        | Bickel, 2013                  | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chaetogonopteron</i> | <i>laetum</i>          | (Becker, 1922)                | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysosoma</i>       | <i>bearni</i>          | Parent, 1935                  | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysosoma</i>       | <i>fissum</i>          | Becker, 1922                  | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysosoma</i>       | <i>leucopogon</i>      | (Wiedemann, 1824)             | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysosoma</i>       | <i>proliciens</i>      | (Walker, 1856)                | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysosoma</i>       | <i>vittatum</i>        | (Wiedemann, 1819)             | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Chrysotus</i>        | <i>hirsutus</i>        | Aldrich, 1896                 | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Condylostylus</i>    | <i>tenebrosus</i>      | (Walker, 1857)                | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Cymatopus</i>        | <i>malayensis</i>      | Parent, 1935                  | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Diaphorus</i>        | <i>mandarinus</i>      | Wiedemann, 1830               | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Diaphorus</i>        | <i>serenus</i>         | Becker, 1922                  | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Hercostomoides</i>   | <i>indonesianus</i>    | (Hollis, 1964)                | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>brevicornis</i>     | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>brevidigitalis</i>  | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>lanceolatus</i>     | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>limosus</i>         | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>meieri</i>          | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>plumatus</i>        | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Hercostomus</i>      | <i>singaporensis</i>   | Zhang, Yang & Grootaert, 2008 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Lichtwardtia</i>     | <i>formosana</i>       | Enderlein, 1912               | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Lichtwardtia</i>     | <i>nodulata</i>        | Grootaert & Tang, 2018        | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Lichtwardtia</i>     | <i>ziczac</i>          | (Wiedemann, 1824)             | Long-legged fly        | Not Listed | NE   |



| Family         | Genus                    | Species              | Authority                             | Common Name              | RDB2       | RDB3 |
|----------------|--------------------------|----------------------|---------------------------------------|--------------------------|------------|------|
| Dolichopodidae | <i>Medetera</i>          | <i>flavipes</i>      | Meigen, 1824                          | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Medetera</i>          | <i>grisecens</i>     | de Meijere, 1916                      | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Medetera</i>          | <i>minima</i>        | de Meijere, 1916                      | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Medetera</i>          | <i>pumila</i>        | de Meijere, 1916                      | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Medetera</i>          | <i>vivida</i>        | Becker, 1922                          | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Microphorella</i>     | <i>malaysiana</i>    | Shamshev & Grootaert, 2004            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Nanothinophilus</i>   | <i>hoplites</i>      | Grootaert & Meuffels, 2001            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Nanothinophilus</i>   | <i>pauperculus</i>   | Grootaert & Meuffels, 1998            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Neurigona</i>         | <i>angulata</i>      | de Meijere, 1916                      | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Neurigona</i>         | <i>pectinata</i>     | Becker, 1922                          | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Neurigona</i>         | <i>squamifera</i>    | Parent, 1935                          | Long-legged fly          | Not Listed | VU   |
| Dolichopodidae | <i>Neurigona</i>         | <i>temasek</i>       | Grootaert & Foo, 2019                 | Long-legged fly          | Not Listed | NT   |
| Dolichopodidae | <i>Neurigona</i>         | <i>timahensis</i>    | Grootaert & Foo, 2019                 | Long-legged fly          | Not Listed | VU   |
| Dolichopodidae | <i>Ngirhaphium</i>       | <i>caeruleum</i>     | Evenhuis & Grootaert, 2002            | Cerulean long-legged fly | Not Listed | VU   |
| Dolichopodidae | <i>Ngirhaphium</i>       | <i>murphyi</i>       | Evenhuis & Grootaert, 2002            | Murphy's long-legged fly | VU         | EN   |
| Dolichopodidae | <i>Ngirhaphium</i>       | <i>sivasothii</i>    | Evenhuis & Grootaert, 2002            | Siva's long-legged fly   | Not Listed | NT   |
| Dolichopodidae | <i>Paraclius</i>         | <i>abbreviatus</i>   | Becker, 1922                          | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>crassatus</i>     | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>digitatus</i>     | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>obtus</i>         | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>polychaetus</i>   | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>serratus</i>      | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Paraclius</i>         | <i>singaporensis</i> | Zhang et al., 2007                    | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Phacaspis</i>         | <i>mitis</i>         | Grootaert & Meuffels, 2001            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Phacaspis</i>         | <i>ornata</i>        | Meuffels & Grootaert, 1988            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Plagiozopelma</i>     | <i>alutiferum</i>    | (Parent, 1934)                        | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Plagiozopelma</i>     | <i>lichtwardti</i>   | (Enderlein, 1912)                     | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Protomedetera</i>     | <i>singaporensis</i> | Grootaert & Tang in Tang et al., 2018 | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Pseudohercostomus</i> | <i>singaporensis</i> | Grootaert & Van de Velde, 2021        | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Scotiomyia</i>        | <i>singaporensis</i> | Evenhuis & Grootaert, 2002            | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Tachytrechus</i>      | <i>tessellatus</i>   | Macquart, 1842                        | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Teuchophorus</i>      | <i>antennatus</i>    | Grootaert, 2006                       | Long-legged fly          | Not Listed | NE   |
| Dolichopodidae | <i>Teuchophorus</i>      | <i>krabiensis</i>    | Meuffels & Grootaert, 2004            | Long-legged fly          | Not Listed | NE   |

| Family         | Genus                                      | Species                 | Authority                  | Common Name            | RDB2       | RDB3 |
|----------------|--------------------------------------------|-------------------------|----------------------------|------------------------|------------|------|
| Dolichopodidae | <i>Teuchophorus</i>                        | <i>limosus</i>          | Grootaert, 2006            | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Teuchophorus</i>                        | <i>simplicissimus</i>   | Meuffels & Grootaert, 2004 | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Teuchophorus</i>                        | <i>tiomanensis</i>      | Grootaert, 2006            | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Thinolestria</i>                        | <i>nigra</i>            | Grootaert & Evenhuis, 2006 | Long-legged fly        | Not Listed | NE   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>apicatus</i>         | Grootaert, 2018            | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>asiobates</i>        | Evenhuis & Grootaert, 2002 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>chaetulosus</i>      | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>clavatus</i>         | Zhu, Yang & Masunaga, 2006 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>comatus</i>          | Grootaert, 2018            | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>evenhuisi</i>        | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>lenachanae</i>       | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>longicilia</i>       | Evenhuis & Grootaert, 2002 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>meieri</i>           | Grootaert & Evenhuis, 2018 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>thinophilus</i>                         | <i>minor</i>            | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>murphyi</i>          | Evenhuis & Grootaert, 2002 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>nigrilineatus</i>    | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>nitens</i>           | Grootaert & Meuffels, 2001 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>pallitarsis</i>      | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>parmatius</i>        | Grootaert & Meuffels, 2001 | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>puniamoorthyae</i>   | Grootaert, 2018            | Long-legged fly        | Not Listed | VU   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>setiventris</i>      | Grootaert & Meuffels, 2001 | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>simplex</i>          | Grootaert, 2018            | Long-legged fly        | Not Listed | NT   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>superbus</i>         | Grootaert, 2018            | Superb long-legged fly | Not Listed | EN   |
| Dolichopodidae | <i>Thinophilus</i>                         | <i>yeoi</i>             | Grootaert, 2018            | Long-legged fly        | Not Listed | NT   |
| Empididae      | <i>Empis</i>                               | <i>producta</i>         | Loew, 1857                 | Dagger fly             | Not Listed | NE   |
| Empididae      | <i>Empis</i>                               | <i>vitissalutatoris</i> | Grootaert & Yang, 2009     | Dagger fly             | Not Listed | NE   |
| Empididae      | <i>Empis</i><br>( <i>Coptophlebia</i> )    | <i>producta</i>         | Daugeron & Grootaert, 2005 | Dagger fly             | Not Listed | NE   |
| Ephydriidae    | <i>Allotrichoma</i>                        | <i>alium</i>            | Cresson, 1929              | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Donaceus</i>                            | <i>nigronotatus</i>     | Cresson, 1943              | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Glenanthe</i>                           | <i>ismayi</i>           | Mathis, 1992               | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Hecamedoides</i>                        | <i>setosus</i>          | (Meijere, 1916)            | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Limnellia</i>                           | <i>maculipennis</i>     | Malloch, 1925              | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Orasiopa</i>                            | <i>dora</i>             | Zatwarnicki, 2002          | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Paralimna</i>                           | <i>quadrifascia</i>     | (Walker, 1860)             | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Paralimna</i><br>( <i>Phaiosterna</i> ) | <i>lineata</i>          | Meijere, 1908              | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Placopsidella</i>                       | <i>cynocephala</i>      | Kertész, 1901              | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Trypetomima</i>                         | <i>formosina</i>        | (Becker, 1924)             | Shore fly              | Not Listed | NE   |
| Ephydriidae    | <i>Zeros</i>                               | <i>fractivirgatus</i>   | (Lamb, 1912)               | Shore fly              | Not Listed | NE   |
| Hippoboscidae  | <i>Icosta</i><br>( <i>Ornithoponus</i> )   | <i>sensilis</i>         | Maa, 1969                  | Louse fly              | Not Listed | NE   |
| Hippoboscidae  | <i>Ornithoica</i>                          | <i>momiyamai</i>        | Kishida, 1932              | Louse fly              | Not Listed | NE   |

| Family        | Genus                | Species              | Authority                  | Common Name     | RDB2       | RDB3 |
|---------------|----------------------|----------------------|----------------------------|-----------------|------------|------|
| Hippoboscidae | <i>Ornithophila</i>  | <i>metallica</i>     | Schiner, 1864              | Louse fly       | Not Listed | NE   |
| Hippoboscidae | <i>Pseudolynchia</i> | <i>canariensis</i>   | (Macquart, 1839)           | Louse fly       | Not Listed | NE   |
| Hybotidae     | <i>Chersodromia</i>  | <i>bulohensis</i>    | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Chersodromia</i>  | <i>nigripennis</i>   | Shamshev & Grootaert, 2005 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Chersodromia</i>  | <i>singaporensis</i> | Shamshev & Grootaert, 2005 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Drapetis</i>      | <i>laut</i>          | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>albicornis</i>    | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>asexa</i>         | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NT   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>asiophila</i>     | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>bakau</i>         | Grootaert & Shamshev, 2015 | Bakau dance fly | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>biuncinata</i>    | (Melander, 1928)           | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>chanae</i>        | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>chanoides</i>     | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>furca</i>         | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>gohae</i>         | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>kranjiensis</i>   | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>lineola</i>       | de Meijere, 1911           | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>lowioides</i>     | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | EN   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>melanuroides</i>  | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | NT   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>monospina</i>     | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>murphyi</i>       | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>ngi</i>           | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>obscura</i>       | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>pallida</i>       | Grootaert & Shamshev, 2015 | Dance fly       | Not Listed | VU   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>semakau</i>       | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>shufenae</i>      | Grootaert & Shamshev, 2012 | Dance fly       | Not Listed | NE   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>singulata</i>     | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | EN   |
| Hybotidae     | <i>Elaphropeza</i>   | <i>sivasothii</i>    | Shamshev & Grootaert, 2007 | Dance fly       | Not Listed | NE   |

| Family          | Genus                                      | Species              | Authority                  | Common Name                     | RDB2       | RDB3 |
|-----------------|--------------------------------------------|----------------------|----------------------------|---------------------------------|------------|------|
| Hybotidae       | <i>Elaphropeza</i>                         | <i>spicata</i>       | Shamshev & Grootaert, 2007 | Dance fly                       | Not Listed | NE   |
| Hybotidae       | <i>Elaphropeza</i>                         | <i>temasek</i>       | Shamshev & Grootaert, 2007 | Dance fly                       | Not Listed | NE   |
| Hybotidae       | <i>Elaphropeza</i>                         | <i>ubinensis</i>     | Shamshev & Grootaert, 2007 | Dance fly                       | Not Listed | NE   |
| Hybotidae       | <i>Platypalpus</i>                         | <i>singaporensis</i> | Grootaert & Shamshev, 2012 | Dance fly                       | Not Listed | VU   |
| Hybotidae       | <i>Stilpon</i>                             | <i>nigripennis</i>   | Grootaert & Shamshev, 2012 | Dance fly                       | Not Listed | NE   |
| Hybotidae       | <i>Stilpon</i>                             | <i>ubinensis</i>     | Grootaert & Shamshev, 2015 | Dance fly                       | Not Listed | VU   |
| Hybotidae       | <i>Syndyas</i>                             | <i>singaporensis</i> | Grootaert & Yang, 2009     | Dance fly                       | Not Listed | NE   |
| Keroplastidae   | <i>Chiasmoneura</i>                        | <i>anthracina</i>    | Meijere, 1913              | Fungus gnat                     | Not Listed | NE   |
| Keroplastidae   | <i>Xenoplatyura</i>                        | <i>beaveri</i>       | Matile, 1979               | Nepenthes predatory fungus gnat | Not Listed | VU   |
| Lauxaniidae     | <i>Phobeticomyia</i>                       | <i>lunifera</i>      | (Meijere, 1910)            | Leaf-litter fly                 | Not Listed | VU   |
| Lauxaniidae     | <i>Phobeticomyia</i>                       | <i>preapicalis</i>   | Malloch, 1929              | Leaf-litter fly                 | Not Listed | VU   |
| Luaxaniidae     | <i>Homoneura</i>                           | <i>singaporica</i>   | Shi, Wang & Yang, 2011     | Leaf-litter fly                 | Not Listed | NT   |
| Micropezidae    | <i>Mimegralla</i>                          | <i>confinis</i>      | (Walker, 1856)             | Stilt-legged fly                | Not Listed | DD   |
| Neriidae        | <i>Telostylinus</i>                        | <i>lineolatus</i>    | (Wiedemann, 1830)          | Banana-stalk fly                | Not Listed | NE   |
| Phoridae        | <i>Abaristophora</i>                       | <i>hirticornis</i>   | Lengyel & Papp, 2012       | Scuttle fly                     | Not Listed | NE   |
| Phoridae        | <i>Endonepenthia</i>                       | <i>schuitemakeri</i> | Schmitz, 1932              | Scuttle fly                     | Not Listed | NE   |
| Platystomatidae | <i>Pterogenia</i>                          | <i>glabra</i>        | (Walker, 1856)             | Signal fly                      | Not Listed | DD   |
| Platystomatidae | <i>Pterogenia</i>                          | <i>guttata</i>       | (Walker, 1856)             | Signal fly                      | Not Listed | DD   |
| Platystomatidae | <i>Pterogenia</i>                          | <i>vittata</i>       | (Walker, 1856)             | Signal fly                      | Not Listed | DD   |
| Platystomatidae | <i>Pterogenia</i>                          | <i>zonata</i>        | (Walker, 1856)             | Signal fly                      | Not Listed | DD   |
| Platystomatidae | <i>Xarnuta</i>                             | <i>leucotela</i>     | Walker, 1856               | Peacock fly                     | Not Listed | DD   |
| Sarcophagidae   | <i>Sarcophaga</i>                          | <i>martellata</i>    | Senior-White, 1924         | Flesh fly                       | Not Listed | NE   |
| Sarcophagidae   | <i>Sarcophaga</i>                          | <i>princeps</i>      | Wiedemann, 1830            | Flesh fly                       | Not Listed | NE   |
| Sarcophagidae   | <i>Senotainia</i>                          | <i>navigatrix</i>    | Meijere, 1910              | Flesh fly                       | Not Listed | NE   |
| Sciomyzidae     | <i>Sepedon</i>                             | <i>plumbella</i>     | Wiedemann, 1830            | Snail-killing fly               | Not Listed | NT   |
| Sciomyzidae     | <i>Sepedon</i>                             | <i>senex</i>         | Wiedemann, 1830            | Snail-killing fly               | Not Listed | VU   |
| Sepsidae        | <i>Allosepsis</i>                          | <i>testacea</i>      | (Walker 1860)              | Sepsid fly                      | Not Listed | NEx  |
| Sepsidae        | <i>Meroplius</i>                           | <i>sauteri</i>       | (de Meijere 1913)          | Sepsid fly                      | Not Listed | VU   |
| Sepsidae        | <i>Sepsis</i><br>( <i>Australosepsis</i> ) | <i>frontalis</i>     | Walker 1860                | Sepsid fly                      | Not Listed | NEx  |
| Sepsidae        | <i>Sepsis</i>                              | <i>coprophila</i>    | de Meijere, 1906           | Sepsid fly                      | Not Listed | NEx  |
| Sepsidae        | <i>Sepsis</i>                              | <i>silvicola</i>     | Iwasa, 2011                | Sepsid fly                      | Not Listed | VU   |
| Stratiomyidae   | <i>Cyphomyia</i>                           | <i>flaviceps</i>     | (Walker, 1856)             | Soldier fly                     | Not Listed | NEx  |
| Stratiomyidae   | <i>Hermetia</i>                            | <i>bicolor</i>       | (Walker, 1856)             | Soldier fly                     | Not Listed | NE   |
| Stratiomyidae   | <i>Hermetia</i>                            | <i>illucens</i>      | (Linnaeus, 1758)           | Soldier fly                     | Not Listed | NE   |
| Stratiomyidae   | <i>Microchrysa</i>                         | <i>flaviventris</i>  | (Wiedemann, 1824)          | Soldier fly                     | Not Listed | NE   |
| Stratiomyidae   | <i>Pedinocerops</i>                        | <i>radians</i>       | (Walker, 1857)             | Soldier fly                     | Not Listed | NE   |

| Family        | Genus                  | Species              | Authority               | Common Name                | RDB2       | RDB3 |
|---------------|------------------------|----------------------|-------------------------|----------------------------|------------|------|
| Stratiomyidae | <i>Ptecticus</i>       | <i>srilankai</i>     | Rozkošný & Hauser, 2001 | Soldier fly                | Not Listed | NE   |
| Stratiomyidae | <i>Tinda</i>           | <i>indica</i>        | (Walker, 1851)          | Soldier fly                | Not Listed | NE   |
| Syrphidae     | <i>Eosmallota</i>      | <i>singularis</i>    | (Walker, 1857)          | Singular flower fly        | Not Listed | VU   |
| Syrphidae     | <i>Furcantenna</i>     | <i>malayana</i>      | Reemer, 2020            | Hover fly                  | Not Listed | DD   |
| Syrphidae     | <i>Ischiodon</i>       | <i>scutellaris</i>   | (Fabricius, 1805)       | Hover fly                  | Not Listed | NE   |
| Syrphidae     | <i>Milesia</i>         | <i>vespoides</i>     | Walker, 1857            | Hornet-mimicking hover fly | Not Listed | VU   |
| Syrphidae     | <i>Monoceromyia</i>    | <i>javana</i>        | (Wiedemann, 1824)       | Hover fly                  | Not Listed | NT   |
| Syrphidae     | <i>Spheginobaccha</i>  | <i>duplex</i>        | (Walker, 1857)          | Hover fly                  | Not Listed | DD   |
| Syrphidae     | <i>Volucella</i>       | <i>trifasciata</i>   | Wiedemann, 1830         | Hover fly                  | Not Listed | NE   |
| Tabanidae     | <i>Tabanus</i>         | <i>tenens</i>        | Walker, 1850            | Horse fly                  | Not Listed | NE   |
| Tachinidae    | <i>Austrophorocera</i> | <i>grandis</i>       | (Macquart, 1851)        | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Blepharella</i>     | <i>lateralis</i>     | Macquart, 1851          | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Cavillatrix</i>     | <i>equatialis</i>    | Shima, 1996             | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Ceromya</i>         | <i>rotundicornis</i> | (Malloch, 1930)         | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Senometopia</i>     | <i>muscoides</i>     | (Walker, 1856)          | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Sumpigaster</i>     | <i>equatorialis</i>  | (Townsend, 1926)        | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Sumpigaster</i>     | <i>sumatrensis</i>   | Townsend, 1926          | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Thecocarcelia</i>   | <i>parnarae</i>      | Chao, 1976              | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Trigonospila</i>    | <i>transvittata</i>  | (Pandellé, 1896)        | Parasitoid fly             | Not Listed | NE   |
| Tachinidae    | <i>Zambesa</i>         | <i>ocypteroides</i>  | Walker, 1856            | Parasitoid fly             | Not Listed | NE   |
| Tephritidae   | <i>Acanthonevra</i>    | <i>vaga</i>          | (Wiedemann, 1830)       | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Adrama</i>          | <i>determinata</i>   | (Walker, 1856)          | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>albistrigata</i>  | (Meijere, 1911)         | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>carambolae</i>    | Drew & Hancock, 1994    | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>caudata</i>       | (Fabricius, 1805)       | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>curcurbitae</i>   | (Coquillett, 1899)      | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>dorsalis</i>      | (Hendel, 1912)          | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>latifrons</i>     | (Hendel, 1915)          | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>limbifera</i>     | (Bezzi, 1919)           | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>nigrotibialis</i> | (Perkins, 1938)         | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Bactrocera</i>      | <i>rubigina</i>      | (Wang & Zhao, 1989)     | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Carpophthorella</i> | <i>nigrifascia</i>   | (Walker, 1860)          | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Diarrhagma</i>      | <i>paritii</i>       | (Doleschall, 1856)      | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Dioxyna</i>         | <i>sororcula</i>     | (Wiedemann, 1830)       | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Euphranta</i>       | <i>maculifemur</i>   | (Meijere, 1924)         | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Euphranta</i>       | <i>notabilis</i>     | (Wulp, 1880)            | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Euphranta</i>       | <i>signatificies</i> | Hardy, 1981             | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Hardyadrama</i>     | <i>excoecariae</i>   | Lee, 1991               | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Hardyadrama</i>     | <i>magister</i>      | (Lee, 1991)             | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Ichneumonosoma</i>  | <i>imitans</i>       | (Meijere, 1911)         | Peacock fly                | Not Listed | NE   |
| Tephritidae   | <i>Philophylla</i>     | <i>fossata</i>       | (Fabricius, 1805)       | Peacock fly                | Not Listed | NE   |

| Family      | Genus                  | Species              | Authority         | Common Name    | RDB2       | RDB3 |
|-------------|------------------------|----------------------|-------------------|----------------|------------|------|
| Tephritidae | <i>Philophylla</i>     | <i>superflucta</i>   | (Enderlein, 1911) | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Platensina</i>      | <i>amplipennis</i>   | (Walker, 1860)    | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Platensina</i>      | <i>tetrica</i>       | Hering, 1939      | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Platensina</i>      | <i>zodiacalis</i>    | (Bezzi, 1913)     | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Rhabdochaeta</i>    | <i>asteria</i>       | Hendel, 1915      | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Rioxa</i>           | <i>lanceolata</i>    | Walker, 1856      | Peacock fly    | Not Listed | NEx  |
| Tephritidae | <i>Rioxa</i>           | <i>sexmaculata</i>   | (Wulp, 1880)      | Peacock fly    | Not Listed | VU   |
| Tephritidae | <i>Rioxoptilona</i>    | <i>dunlopi</i>       | (Wulp, 1880)      | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Scedella</i>        | <i>formosella</i>    | (Hendel, 1915)    | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Sophira</i>         | <i>venusta</i>       | Walker, 1856      | Peacock fly    | Not Listed | DD   |
| Tephritidae | <i>Spathulina</i>      | <i>acroleuca</i>     | (Schiner, 1868)   | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Sphaeniscus</i>     | <i>atilius</i>       | (Walker, 1849)    | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Sphaeniscus</i>     | <i>quadrincisus</i>  | (Wiedemann, 1824) | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Sphenella</i>       | <i>sinensis</i>      | Schiner, 1868     | Peacock fly    | Not Listed | NE   |
| Tephritidae | <i>Themara</i>         | <i>ampla</i>         | Walker, 1857      | Hammerhead fly | Not Listed | NEx  |
| Tephritidae | <i>Themara</i>         | <i>maculipennis</i>  | (Westwood, 1847)  | Hammerhead fly | VU         | VU   |
| Tephritidae | <i>Tritaeniopteron</i> | <i>tetraspilotum</i> | Hardy, 1973       | Peacock fly    | Not Listed | NE   |
| Tipulidae   | <i>Hexatoma</i>        | <i>plecioides</i>    | (Walker, 1857)    | Crane fly      | Not Listed | DD   |

## Checklist of Freshwater Aquatic Bug Species with their Category of Threat Status for Singapore

Prepared by Hwang Wei Song, Tran Anh Duc

| Family        | Genus                  | Species                  | Authority                     | RDB2       | RDB3 |
|---------------|------------------------|--------------------------|-------------------------------|------------|------|
| Gerridae      | <i>Amemboa</i>         | <i>brevifasciata</i>     | Miyamoto, 1967                | Not Listed | LC   |
| Gerridae      | <i>Amemboa</i>         | <i>cristata</i>          | Polhemus & Andersen, 1984     | Not Listed | DD   |
| Gerridae      | <i>Amemboa</i>         | <i>riparia</i>           | Polhemus & Andersen, 1984     | Not Listed | LC   |
| Gerridae      | <i>Aquarius</i>        | <i>adelaidis</i>         | Dohrn, 1860                   | Not Listed | LC   |
| Gerridae      | <i>Cylindrostethus</i> | <i>malayensis</i>        | Polhemus, 1994                | Not Listed | NEx  |
| Gerridae      | <i>Esakia</i>          | <i>fernandoi</i>         | Cheng, 1966                   | Not Listed | NEx  |
| Gerridae      | <i>Lathriobates</i>    | <i>rufus</i>             | Polhemus & Polhemus, 1995     | Not Listed | NT   |
| Gerridae      | <i>Limnogonus</i>      | <i>fossarum fossarum</i> | Fabricius, 1775               | Not Listed | LC   |
| Gerridae      | <i>Limnogonus</i>      | <i>hungerfordi</i>       | Andersen, 1975                | Not Listed | LC   |
| Gerridae      | <i>Limnogonus</i>      | <i>nitidus</i>           | Mayr, 1865                    | Not Listed | LC   |
| Gerridae      | <i>Limnometra</i>      | <i>ciliata</i>           | Mayr, 1865                    | Not Listed | LC   |
| Gerridae      | <i>Limnometra</i>      | <i>insularis</i>         | Hungerford & Matsuda, 1958    | Not Listed | LC   |
| Gerridae      | <i>Limnometra</i>      | <i>matsudai</i>          | Miyamoto, 1967                | Not Listed | DD   |
| Gerridae      | <i>Limnometra</i>      | <i>octopunctatus</i>     | Hungerford, 1955              | Not Listed | LC   |
| Gerridae      | <i>Limnometra</i>      | <i>spinosa</i>           | Zettel, 2002                  | Not Listed | DD   |
| Gerridae      | <i>Metrocoris</i>      | <i>tenuicornis</i>       | Esaki, 1926                   | Not Listed | LC   |
| Gerridae      | <i>Neogerris</i>       | <i>assimilis</i>         | Andersen, 1975                | Not Listed | LC   |
| Gerridae      | <i>Ptilomera</i>       | <i>tigrina</i>           | Uhler, 1860                   | Not Listed | LC   |
| Gerridae      | <i>Rhagodotarsus</i>   | <i>kraepelini</i>        | Breddin, 1905                 | Not Listed | LC   |
| Gerridae      | <i>Rheumatogonus</i>   | <i>intermedius</i>       | Hungerford, 1933              | Not Listed | LC   |
| Gerridae      | <i>Tenagogonus</i>     | <i>maai</i>              | Hungerford & Matsuda, 1962    | Not Listed | LC   |
| Gerridae      | <i>Ventidius</i>       | <i>distanti</i>          | Paiva, 1918                   | Not Listed | LC   |
| Gerridae      | <i>Ventidius</i>       | <i>harrisoni</i>         | Cheng, 1965                   | Not Listed | LC   |
| Gerridae      | <i>Ventidius</i>       | <i>malayensis</i>        | Hungerford & Matsuda, 1960    | Not Listed | VU   |
| Hebridae      | <i>Hebrus</i>          | <i>mangrovensis</i>      | Polhemus & Polhemus, 1989     | Not Listed | VU   |
| Hebridae      | <i>Hebrus</i>          | <i>neréis</i>            | Polhemus & Polhemus, 1989     | Not Listed | NT   |
| Hebridae      | <i>Hebrus</i>          | <i>nipponicus</i>        | Horváth, 1929                 | Not Listed | LC   |
| Hebridae      | <i>Hebrus</i>          | <i>ullrichi</i>          | Zettel, 2004                  | Not Listed | VU   |
| Hydrometridae | <i>Hydrometra</i>      | <i>brevitarsus</i>       | Zettel & Yang, 2004           | Not Listed | VU   |
| Hydrometridae | <i>Hydrometra</i>      | <i>carinata</i>          | Polhemus & Polhemus, 1995     | Not Listed | VU   |
| Hydrometridae | <i>Hydrometra</i>      | <i>chaweewanae</i>       | Sites & Polhemus, 2003        | Not Listed | VU   |
| Hydrometridae | <i>Hydrometra</i>      | <i>longicapitis</i>      | Torre Bueno, 1927             | Not Listed | LC   |
| Hydrometridae | <i>Hydrometra</i>      | <i>maidli</i>            | Hungerford & Evans, 1934      | Not Listed | LC   |
| Hydrometridae | <i>Hydrometra</i>      | <i>okinawana</i>         | Drake, 1951                   | Not Listed | VU   |
| Hydrometridae | <i>Hydrometra</i>      | <i>orientalis</i>        | Lundblad, 1933                | Not Listed | LC   |
| Mesoveliidae  | <i>Mesovelia</i>       | <i>horvathi</i>          | Lundblad, 1933                | Not Listed | LC   |
| Mesoveliidae  | <i>Mesovelia</i>       | <i>vittigera</i>         | Horváth, 1895                 | Not Listed | LC   |
| Mesoveliidae  | <i>Nereivelia</i>      | <i>murphyi</i>           | Polhemus & Polhemus, 1989     | Not Listed | NT   |
| Mesoveliidae  | <i>Nereivelia</i>      | <i>polhemorum</i>        | Yang & Murphy, 2011           | Not Listed | NT   |
| Veliidae      | <i>Microvelia</i>      | <i>albolineolata</i>     | Torre Bueno, 1927             | Not Listed | VU   |
| Veliidae      | <i>Microvelia</i>      | <i>cameron</i>           | Andersen, Yang & Zettel, 2002 | Not Listed | LC   |
| Veliidae      | <i>Microvelia</i>      | <i>douglasi</i>          | Scott, 1874                   | Not Listed | LC   |



| Family         | Genus                | Species                  | Authority                 | RDB2       | RDB3 |
|----------------|----------------------|--------------------------|---------------------------|------------|------|
| Veliidae       | <i>Microvelia</i>    | <i>genitalis</i>         | Lundblad, 1933            | Not Listed | NT   |
| Veliidae       | <i>Microvelia</i>    | <i>leveillei</i>         | Lethierry, 1877           | Not Listed | LC   |
| Veliidae       | <i>Microvelia</i>    | <i>minutissima</i>       | Zettel & Tran, 2009       | Not Listed | LC   |
| Veliidae       | <i>Neolardus</i>     | <i>typicus</i>           | Distant, 1903             | Not Listed | NT   |
| Veliidae       | <i>Pseudovelgia</i>  | <i>feuerborni</i>        | Lundblad, 1933            | Not Listed | DD   |
| Veliidae       | <i>Pseudovelgia</i>  | <i>hypodonta</i>         | Lundblad, 1933            | Not Listed | LC   |
| Veliidae       | <i>Rhagovelgia</i>   | <i>rudischuhi</i>        | Zettel, 1993              | Not Listed | LC   |
| Veliidae       | <i>Rhagovelgia</i>   | <i>singaporensis</i>     | Yang & Polhemus, 1994     | Not Listed | LC   |
| Veliidae       | <i>Rhagovelgia</i>   | <i>sondaica</i>          | Polhemus & Polhemus, 1988 | Not Listed | DD   |
| Veliidae       | <i>Rhagovelgia</i>   | <i>sumatrensis</i>       | Lundblad, 1933            | Not Listed | LC   |
| Saldidae       | <i>Micracanthia</i>  | <i>ornatula</i>          | (Reuter, 1881)            | Not Listed | VU   |
| Saldidae       | <i>Saldula</i>       | <i>niveolimbat</i>       | (Reuter, 1900)            | Not Listed | NT   |
| Belostomatidae | <i>Diplonychus</i>   | <i>rusticus</i>          | (Fabricius, 1781)         | Not Listed | LC   |
| Corixidae      | <i>Agraptocorixa</i> | <i>hyalinipennis</i>     | (Fabricius, 1803)         | Not Listed | DD   |
| Gelastocoridae | <i>Nerthra</i>       | <i>macrothorax</i>       | (Montrouzier, 1855)       | Not Listed | NT   |
| Helotrephidae  | <i>Tiphotrephes</i>  | <i>indicus</i>           | (Distant, 1910)           | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>decorata</i>          | Lundblad, 1933            | Not Listed | DD   |
| Micronectidae  | <i>Micronecta</i>    | <i>dentifera</i>         | Nieser, 2002              | Not Listed | NT   |
| Micronectidae  | <i>Micronecta</i>    | <i>haliploides</i>       | Horváth, 1904             | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>johorensis</i>        | Fernando, 1964            | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>ludibunda</i>         | Breddin, 1905             | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>malayana</i>          | Leong, 1966               | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>polhemusi</i>         | Nieser, 2000              | Not Listed | DD   |
| Micronectidae  | <i>Micronecta</i>    | <i>quadristrigata</i>    | Breddin, 1905             | Not Listed | LC   |
| Micronectidae  | <i>Micronecta</i>    | <i>scutellaris</i>       | Stål, 1858                | Not Listed | LC   |
| Micronectidae  | <i>Synptonecta</i>   | <i>issa</i>              | (Distant, 1910)           | Not Listed | LC   |
| Naucoridae     | <i>Ctenipocoris</i>  | <i>asiaticus</i>         | Montandon, 1897           | Not Listed | LC   |
| Naucoridae     | <i>Heleocoris</i>    | <i>montandoni</i>        | Lundblad, 1933            | Not Listed | LC   |
| Naucoridae     | <i>Naucoris</i>      | <i>minutus</i>           | Polhemus & Polhemus, 2013 | Not Listed | NT   |
| Naucoridae     | <i>Naucoris</i>      | <i>scutellaris</i>       | Stål, 1860                | Not Listed | LC   |
| Nepidae        | <i>Cercotmetus</i>   | <i>asiaticus</i>         | Amyot & Serville, 1843    | Not Listed | LC   |
| Nepidae        | <i>Cercotmetus</i>   | <i>brevipes</i>          | Montandon, 1909           | Not Listed | LC   |
| Nepidae        | <i>Laccotrephes</i>  | <i>pfeifferiae</i>       | (Ferrari, 1888)           | Not Listed | NT   |
| Nepidae        | <i>Laccotrephes</i>  | <i>simulatus</i>         | Montandon, 1913           | Not Listed | LC   |
| Nepidae        | <i>Ranatra</i>       | <i>longipes longipes</i> | Stål, 1861                | Not Listed | LC   |
| Nepidae        | <i>Ranatra</i>       | <i>parmata</i>           | Mayr, 1865                | Not Listed | LC   |
| Nepidae        | <i>Ranatra</i>       | <i>rafflesi</i>          | Tran & D. Polhemus, 2012  | Not Listed | LC   |
| Nepidae        | <i>Ranatra</i>       | <i>varipes</i>           | Stål, 1861                | Not Listed | LC   |
| Notonectidae   | <i>Anisops</i>       | <i>barbatus</i>          | Brooks, 1951              | Not Listed | DD   |
| Notonectidae   | <i>Anisops</i>       | <i>bouvieri</i>          | Kirkaldi, 1904            | Not Listed | LC   |
| Notonectidae   | <i>Anisops</i>       | <i>breddini</i>          | Kirkaldy, 1901            | Not Listed | LC   |
| Notonectidae   | <i>Anisops</i>       | <i>exiguus</i>           | Horváth, 1919             | Not Listed | DD   |
| Notonectidae   | <i>Anisops</i>       | <i>lansburyi</i>         | Leong, 1963               | Not Listed | DD   |
| Notonectidae   | <i>Anisops</i>       | <i>nasutus</i>           | Fieber, 1851              | Not Listed | DD   |
| Notonectidae   | <i>Anisops</i>       | <i>niveus</i>            | (Fabricius, 1775)         | Not Listed | DD   |

| Family       | Genus              | Species                 | Authority                 | RDB2       | RDB3 |
|--------------|--------------------|-------------------------|---------------------------|------------|------|
| Notonectidae | <i>Anisops</i>     | <i>occipitalis</i>      | Bredden, 1905             | Not Listed | LC   |
| Notonectidae | <i>Anisops</i>     | <i>tahitiensis</i>      | Lundblad, 1934            | Not Listed | LC   |
| Notonectidae | <i>Aphelonecta</i> | <i>gavini</i>           | Lansbury, 1966            | Not Listed | DD   |
| Notonectidae | <i>Enithares</i>   | <i>malayensis</i>       | Brooks, 1948              | Not Listed | LC   |
| Notonectidae | <i>Enithares</i>   | <i>mandalayensis</i>    | Distant, 1910             | Not Listed | LC   |
| Notonectidae | <i>Nychia</i>      | <i>sappho</i>           | Kirkaldy, 1901            | Not Listed | LC   |
| Ochteridae   | <i>Ochterus</i>    | <i>marginatus</i>       | (Latreille, 1804)         | Not Listed | NT   |
|              |                    | <i>marginatus</i>       |                           |            |      |
| Ochteridae   | <i>Ochterus</i>    | <i>pseudomarginatus</i> | Polhemus & Polhemus, 2012 | Not Listed | VU   |
| Ochteridae   | <i>Ochterus</i>    | <i>singaporensis</i>    | Polhemus & Polhemus, 2012 | Not Listed | NT   |
| Pleidae      | <i>Paraplea</i>    | <i>frontalis</i>        | Fieber, 1844              | Not Listed | LC   |
| Pleidae      | <i>Paraplea</i>    | <i>liturata</i>         | Fieber, 1844              | Not Listed | DD   |

# Checklist of Assassin Bug Species with their Category of Threat Status for Singapore

Prepared by Hwang Wei Song

| Family     | Genus                 | Species               | Authority                   | RDB2       | RDB3 |
|------------|-----------------------|-----------------------|-----------------------------|------------|------|
| Reduviidae | <i>Acanthaspis</i>    | <i>quadriannulata</i> | Stål, 1870                  | Not Listed | VU   |
| Reduviidae | <i>Acanthaspis</i>    | <i>inermis</i>        | Stål, 1870                  | Not Listed | DD   |
| Reduviidae | <i>Acanthaspis</i>    | <i>signifera</i>      | Stål, 1863                  | Not Listed | VU   |
| Reduviidae | <i>Ademula</i>        | <i>reticulata</i>     | McAtee & Malloch, 1926      | Not Listed | DD   |
| Reduviidae | <i>Agyrius</i>        | <i>podagricus</i>     | Stål, 1863                  | Not Listed | DD   |
| Reduviidae | <i>Aulacogenia</i>    | <i>patalungae</i>     | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Aulacogenia</i>    | <i>vicina</i>         | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Bagauda</i>        | <i>similis</i>        | Wygodzinsky, 1966           | Not Listed | DD   |
| Reduviidae | <i>Biastiscus</i>     | <i>eburneus</i>       | Miller, 1941                | Not Listed | DD   |
| Reduviidae | <i>Canthesancus</i>   | <i>gulo</i>           | Stål, 1863                  | Not Listed | VU   |
| Reduviidae | <i>Centrocnemis</i>   | <i>malayana</i>       | Miller, 1956                | Not Listed | DD   |
| Reduviidae | <i>Cosmolestes</i>    | <i>picticeps</i>      | (Stål, 1859)                | Not Listed | LC   |
| Reduviidae | <i>Ectomocoris</i>    | <i>atrox</i>          | (Stål, 1855)                | Not Listed | VU   |
| Reduviidae | <i>Ectomocoris</i>    | <i>elegans</i>        | (Fabricius, 1803)           | Not Listed | DD   |
| Reduviidae | <i>Emesopsis</i>      | <i>gaius</i>          | McAtee & Malloch, 1926      | Not Listed | DD   |
| Reduviidae | <i>Emesopsis</i>      | <i>obsoletus</i>      | McAtee & Malloch, 1926      | Not Listed | DD   |
| Reduviidae | <i>Empicoris</i>      | <i>tesselatoides</i>  | Wygodzinsky & Usinger, 1960 | Not Listed | DD   |
| Reduviidae | <i>Empyrocoris</i>    | <i>pelia</i>          | (Distant, 1904)             | Not Listed | DD   |
| Reduviidae | <i>Euagoras</i>       | <i>plagiatus</i>      | (Burmeister, 1834)          | Not Listed | VU   |
| Reduviidae | <i>Euagoras</i>       | <i>sordidatus</i>     | Stål, 1866                  | Not Listed | VU   |
| Reduviidae | <i>Gardena</i>        | <i>melinathrum</i>    | Dohrn, 1859                 | Not Listed | VU   |
| Reduviidae | <i>Gardena</i>        | <i>muscipapa</i>      | (Bergroth, 1906)            | Not Listed | VU   |
| Reduviidae | <i>Haematolochea</i>  | <i>ridleyana</i>      | Distant, 1902               | Not Listed | DD   |
| Reduviidae | <i>Holoptilus</i>     | <i>leprosus</i>       | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Inara</i>          | <i>alboguttata</i>    | Stål, 1863                  | Not Listed | DD   |
| Reduviidae | <i>Inara</i>          | <i>flavopicta</i>     | Stål, 1859                  | Not Listed | LC   |
| Reduviidae | <i>Ischnobaenella</i> | <i>polymela</i>       | (Kirkaldy, 1901)            | Not Listed | DD   |
| Reduviidae | <i>Lenaeus</i>        | <i>pyrrhus</i>        | Stål, 1859                  | Not Listed | DD   |
| Reduviidae | <i>Lisarda</i>        | <i>annularis</i>      | (Walker, 1873)              | Not Listed | VU   |
| Reduviidae | <i>Lisarda</i>        | <i>erecta</i>         | Distant, 1904               | Not Listed | EN   |
| Reduviidae | <i>Lisarda</i>        | <i>inornata</i>       | (Walker, 1873)              | Not Listed | VU   |
| Reduviidae | <i>Lisarda</i>        | <i>pallidispina</i>   | Stål, 1874                  | Not Listed | VU   |
| Reduviidae | <i>Lisarda</i>        | <i>rhypara</i>        | Stål, 1859                  | Not Listed | VU   |
| Reduviidae | <i>Lisarda</i>        | <i>singaporiensis</i> | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Neostaccia</i>     | <i>laticollis</i>     | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Oncocephalus</i>   | <i>cingalensis</i>    | Walker, 1873                | Not Listed | DD   |
| Reduviidae | <i>Oncocephalus</i>   | <i>lineosus</i>       | Distant, 1904               | Not Listed | DD   |
| Reduviidae | <i>Oncocephalus</i>   | <i>annulipes</i>      | Stål, 1855                  | Not Listed | DD   |
| Reduviidae | <i>Oncocephalus</i>   | <i>sarawakensis</i>   | Miller, 1940                | Not Listed | DD   |
| Reduviidae | <i>Phyrxobotrys</i>   | <i>ridicula</i>       | Wygodzinsky, 1966           | Not Listed | VU   |
| Reduviidae | <i>Physoderes</i>     | <i>curculionis</i>    | China, 1935                 | Not Listed | VU   |
| Reduviidae | <i>Ploiaria</i>       | <i>insolida</i>       | (White, 1877)               | Not Listed | DD   |

| Family     | Genus                 | Species               | Authority                | RDB2       | RDB3 |
|------------|-----------------------|-----------------------|--------------------------|------------|------|
| Reduviidae | <i>Ploiaria</i>       | <i>maai</i>           | Wygodzinsky, 1966        | Not Listed | DD   |
| Reduviidae | <i>Polididus</i>      | <i>armatissimus</i>   | Stål, 1859               | Not Listed | DD   |
| Reduviidae | <i>Polytoxus</i>      | <i>fuscovittatus</i>  | (Stål, 1859)             | Not Listed | DD   |
| Reduviidae | <i>Ptilocerus</i>     | <i>subreticulatus</i> | Montandon, 1907          | Not Listed | DD   |
| Reduviidae | <i>Ptilocerus</i>     | <i>unicolor</i>       | Montandon, 1907          | Not Listed | DD   |
| Reduviidae | <i>Ptilocerus</i>     | <i>venosus</i>        | (Walker, 1873)           | Not Listed | DD   |
| Reduviidae | <i>Pygolampis</i>     | <i>ridleyi</i>        | Miller, 1940             | Not Listed | DD   |
| Reduviidae | <i>Rhynocoris</i>     | <i>niasensis</i>      | Miller, 1941             | Not Listed | VU   |
| Reduviidae | <i>Sastrapada</i>     | <i>singaporiensis</i> | Miller, 1940             | Not Listed | DD   |
| Reduviidae | <i>Scadra</i>         | <i>costalis</i>       | (Lethierry, 1888)        | Not Listed | DD   |
| Reduviidae | <i>Scadra</i>         | <i>gemella</i>        | Miller, 1953             | Not Listed | DD   |
| Reduviidae | <i>Schottus</i>       | <i>luteicollis</i>    | (Walker, 1873)           | Not Listed | VU   |
| Reduviidae | <i>Scipinia</i>       | <i>horrida</i>        | (Stål, 1843)             | Not Listed | DD   |
| Reduviidae | <i>Sycanus</i>        | <i>collaris</i>       | (Fabricius, 1781)        | Not Listed | DD   |
| Reduviidae | <i>Triatoma</i>       | <i>rubrofasciata</i>  | (De Geer, 1773)          | Not Listed | DD   |
| Reduviidae | <i>Tribelocephala</i> | <i>indica</i>         | (Walker, 1873)           | Not Listed | DD   |
| Reduviidae | <i>Tridemula</i>      | <i>pallida</i>        | McAtee & Malloch, 1926   | Not Listed | DD   |
| Reduviidae | <i>Tridemula</i>      | <i>plurima</i>        | McAtee & Malloch, 1926   | Not Listed | DD   |
| Reduviidae | <i>Valentia</i>       | <i>apetala</i>        | (Vuillefroy, 1864)       | Not Listed | VU   |
| Reduviidae | <i>Velinus</i>        | <i>nigrigenu</i>      | (Amyot & Serville, 1843) | Not Listed | VU   |
| Reduviidae | <i>Velitra</i>        | <i>rubropicta</i>     | (Amyot & Serville, 1843) | Not Listed | EN   |
| Reduviidae | <i>Vesbius</i>        | <i>purpureus</i>      | (Thunberg, 1783)         | Not Listed | DD   |

# Checklist of Bee Species with their Category of Threat Status for Singapore

Prepared by John S. Ascher, Zestin W.W. Soh

| Family     | Subfamily  | Species                                                                                      | Common Name                 | Origin | RDB2       | RDB3 |
|------------|------------|----------------------------------------------------------------------------------------------|-----------------------------|--------|------------|------|
| Colletidae | Hylaeinae  | <i>Hylaeus (Gephryrohylaeus) sandacanensis</i>                                               | Sandakan Masked Bee         | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Indialeus) sp. 1 cf. strenuus</i> (Cameron)                                      |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Indialeus) sp. 2</i>                                                             |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Nesoprosopis) penangensis</i>                                                    | Penang Masked Bee           | Native | Not Listed | LC   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Nesoprosopis) sp. 1 cf. transversalis</i> Cockerell                              |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Nesoprosopis) sp. 2</i>                                                          |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Nesoprosopis) sp. 3</i>                                                          |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus (Nesoprosopis) sp. 4</i>                                                          |                             | Native | Not Listed | DD   |
| Colletidae | Hylaeinae  | <i>Hylaeus</i> (new subgenus nr. <i>Prosopistemon</i> ) sp. 1 aff. <i>jacobsoni</i> (Friese) | Singapore Blue Masked Bee   | Native | Not Listed | DD   |
| Halictidae | Nomiinae   | <i>Lipotriches (Austronomia) goniognatha</i>                                                 | Angle-jawed Austral-Nomia   | Native | Not Listed | DD   |
| Halictidae | Nomiinae   | <i>Lipotriches (Austronomia) takauensis</i>                                                  | Takau Austral-Nomia         | Native | Not Listed | NT   |
| Halictidae | Nomiinae   | <i>Lipotriches (Rhopalomelissa) ceratina</i>                                                 | Red-waisted Grass-Nomia     | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Lipotriches (Rhopalomelissa) minutula</i>                                                 | Minute Grass-Nomia          | Native | Not Listed | DD   |
| Halictidae | Nomiinae   | <i>Nomia (Acunomia) iridescens</i>                                                           | Iridescent Nomia            | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Nomia (Acunomia) lusoria</i>                                                              | Mangrove Nomia              | Native | Not Listed | VU   |
| Halictidae | Nomiinae   | <i>Nomia (Acunomia) sp. 1 aff. lusoria</i> Cockerell                                         |                             | Native | Not Listed | DD   |
| Halictidae | Nomiinae   | <i>Nomia (Acunomia) strigata</i>                                                             | Striped Nomia               | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Nomia (Gnathonomia) thoracica</i>                                                         | Felt-topped Nomia           | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Nomia (Hoplonomia) incerta</i>                                                            | Black-waisted Pronged-Nomia | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Nomia (Maculonomia) apicalis</i>                                                          | Black-tipped Forest-Nomia   | Native | Not Listed | CR   |
| Halictidae | Nomiinae   | <i>Nomia (Maculonomia) elegans</i>                                                           | Elegant Forest-Nomia        | Native | Not Listed | NEx  |
| Halictidae | Nomiinae   | <i>Nomia (Maculonomia) fuscipennis</i>                                                       | Dusky-winged Forest-Nomia   | Native | Not Listed | NT   |
| Halictidae | Nomiinae   | <i>Nomia (Maculonomia) penangensis</i>                                                       | Penang Forest-Nomia         | Native | Not Listed | NEx  |
| Halictidae | Nomiinae   | <i>Nomia (Maculonomia) sp. 1 aff. apicalis</i> Smith                                         | Spine-thighed Forest-Nomia  | Native | Not Listed | LC   |
| Halictidae | Nomiinae   | <i>Pseudapis (Pseudapis) siamensis</i>                                                       | Siamese Epaulette-Nomia     | Native | Not Listed | LC   |
| Halictidae | Halictinae | <i>Ceylalictus (Ceylalictus) communis</i>                                                    | Common Ceylalictus          | Native | Not Listed | DD   |
| Halictidae | Halictinae | <i>Ceylalictus (Ceylalictus) malayensis</i>                                                  | Malay Ceylalictus           | Native | Not Listed | DD   |

| Family       | Subfamily    | Species                                                                        | Common Name                    | Origin | RDB2       | RDB3 |
|--------------|--------------|--------------------------------------------------------------------------------|--------------------------------|--------|------------|------|
| Halictidae   | Halictinae   | <i>Eupetersia</i> ( <i>Nesoeupetersia</i> ) <i>malayensis</i>                  | Malay Smooth-Blood Bee         | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) <i>albescens</i>                     | White Combed-Sweat Bee         | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) <i>deliense</i>                      | Orange-legged Combed-Sweat Bee | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) <i>halictoides</i>                   | Beach Combed-Sweat Bee         | Native | Not Listed | NT   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) <i>semirussatum</i>                  | Singapore Combed-Sweat Bee     | Native | Not Listed | CR   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) <i>vagans</i>                        | Wandering Combed-Sweat Bee     | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) sp. 1 [ <i>vagans</i> species group] | Tan-haired Combed-Sweat Bee    | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) sp. 2                                |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Ctenonomia</i> ) sp. 3 [ <i>vagans</i> species group] |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Hemihalictus</i> ) <i>plasunicum</i>                  | Plasun's Sweat Bee             | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Homalictus</i> ) <i>adonidiae</i>                     | Palm Plume-vented Bee          | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Homalictus</i> ) sp. 1 aff. <i>latitarse</i>          |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Lasioglossum</i> ( <i>Homalictus</i> ) <i>singaporellum</i>                 | Singapore Plume-vented Bee     | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Patellapis</i> ( <i>Pachyhalictus</i> ) <i>intricata</i>                    | Vachal's Reticulate-Furrow Bee | Native | Not Listed | CR   |
| Halictidae   | Halictinae   | <i>Patellapis</i> ( <i>Pachyhalictus</i> ) <i>murbanus</i>                     | Sunda Reticulate-Furrow Bee    | Native | Not Listed | LC   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> <i>duplex</i>                                                 | Singapore Blood Bee            | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 2                                                         |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 3 cf. <i>redivivus</i> Blüthgen                           |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 4                                                         |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 5 cf. <i>javanicus</i> Friese                             |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 6                                                         |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 7 [nr. sp. 5]                                             |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 8 [nr. sp. 5]                                             |                                | Native | Not Listed | DD   |
| Halictidae   | Halictinae   | <i>Sphecodes</i> sp. 9 [red on thorax]                                         |                                | Native | Not Listed | DD   |
| Megachilidae | Lithurginae  | <i>Lithurgus</i> sp. 1                                                         | Lesser Woodborer               | Native | Not Listed | LC   |
| Megachilidae | Lithurginae  | <i>Lithurgus</i> sp. 2 cf. <i>collaris</i>                                     | Greater Woodborer              | Native | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Anthidiellum</i> ( <i>Pycanthidiellum</i> ) <i>smithii</i>                  | Smith's Rotund-Resin Bee       | Native | Not Listed | VU   |
| Megachilidae | Megachilinae | <i>Euasps</i> <i>polynesia</i>                                                 | Asian Chilli-tail              | Native | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Euasps</i> n. sp. 1                                                         |                                | Native | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Heriades</i> ( <i>Michenerella</i> ) <i>othonis</i>                         | Indomalayan Armoured-Resin Bee | Native | Not Listed | LC   |

| Family       | Subfamily    | Species                                                               | Common Name                    | Origin    | RDB2       | RDB3 |
|--------------|--------------|-----------------------------------------------------------------------|--------------------------------|-----------|------------|------|
| Megachilidae | Megachilinae | <i>Coelioxys (Allocoelioxys) angulatus</i>                            | Angulate Sharptail             | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Coelioxys (Allocoelioxys) sp. 2</i>                                |                                | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Coelioxys (Allocoelioxys) sp. 3</i>                                |                                | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Coelioxys (Callosarissa) confusus</i>                              | Confusing Sharptail            | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Coelioxys (Torridapis) n. sp.</i>                                  |                                | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) borneana</i>                            | Bornean Leafcutter             | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) conjuncta</i>                           | Dimorphic Leafcutter           | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) laticeps</i>                            | Broad-headed Leafcutter        | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) ramera</i>                              | Singapore Leafcutter           | Native    | Not Listed | VU   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) sp. 1 nr. borneana</i>                  | Bright-legged Leafcutter       | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) sp. 2 [fusciventris species group]</i>  | White-gloved Leafcutter        | Native    | Not Listed | VU   |
| Megachilidae | Megachilinae | <i>Megachile (Aethomegachile) sp. 3 [nr borneana with dark hairs]</i> |                                | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Paracella) trincta</i>                                  | Golden-bellied Leafcutter      | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile) disjuncta</i>                           | Disjunct Resin Bee             | Uncertain | Not Listed | NA   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile) fulvipennis</i>                         | Orange-winged Resin Bee        | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile) indonesica</i>                          | Indonesian Resin Bee           | Native    | Not Listed | VU   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile) umbripennis</i>                         | Shadow-winged Resin Bee        | Uncertain | Not Listed | NA   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile) sp. 1 [biroi species group]</i>         | Yellow-bellied Resin Bee       | Native    | Not Listed | NT   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile s.l.) ornata</i>                         | Ornate Resin Bee               | Native    | Not Listed | VU   |
| Megachilidae | Megachilinae | <i>Megachile (Callomegachile s.l.) tuberculata</i>                    | Tuberculate Resin Bee          | Native    | Not Listed | NT   |
| Megachilidae | Megachilinae | <i>Megachile (Carinula) stulta</i>                                    | Fiery Resin Bee                | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Carinula) butteli</i>                                   | Buttel-Reepen's Resin Bee      | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Chelostomoda) moera</i>                                 | Orange-thighed Leafcutter      | Native    | Not Listed | DD   |
| Megachilidae | Megachilinae | <i>Megachile (Creightonella) atrata</i>                               | Orange-winged Leafcutter       | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Eutricharaea) subrixator</i>                            | Orange-bellied Leafcutter      | Native    | Not Listed | LC   |
| Megachilidae | Megachilinae | <i>Megachile (Eutricharaea) sp. 1</i>                                 | White-dusted Leafcutter        | Native    | Not Listed | LC   |
| Apidae       | Xylocopinae  | <i>Xylocopa (Biluna) iridipennis</i>                                  | Purple-winged Bamboo-Carpenter | Native    | DD         | DD   |



| Family | Subfamily   | Species                                                | Common Name                  | Origin | RDB2       | RDB3 |
|--------|-------------|--------------------------------------------------------|------------------------------|--------|------------|------|
| Apidae | Xylocopinae | <i>Xylocopa (Cyaneoderes) caerulea</i>                 | Cerulean Carpenter           | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Xylocopa (Cyaneoderes) insularis</i>                | Blue-sided Carpenter         | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Xylocopa (Maiella) aestuans</i>                     | White-cheeked Carpenter      | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Xylocopa (Maiella) flavonigrescens</i>              | Yellow-and-Black Carpenter   | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Xylocopa (Nyctomelitta) myops</i>                   | Sunda Night-Carpenter        | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Xylocopa (Platynopoda) latipes</i>                  | Broad-handed Carpenter       | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Xylocopa (Zonohirsuta) dejeanii penangensis</i>     | Collared Carpenter           | Native | Not Listed | EN   |
| Apidae | Xylocopinae | <i>Ceratina (Catoceratina) perforatrix pyramidalis</i> | Plume-vented Small Carpenter | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Ceratinidia) accusator</i>                | Short-nosed Small Carpenter  | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Ceratinidia) cognata</i>                  | Black-topped Small Carpenter | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Ceratina (Ceratinidia) collusor</i>                 | Companion Small Carpenter    | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Ceratinidia) lieftincki</i>               | Lieftinck's Small Carpenter  | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Ceratinidia) nigrolateralis incerta</i>   | Black-sided Small Carpenter  | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Lioceratina) ridleyi</i>                  | Ridley's Small Carpenter     | Native | Not Listed | VU   |
| Apidae | Xylocopinae | <i>Ceratina (Neoceratina) dentipes</i>                 | Tooth-legged Small Carpenter | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Pithitis) smaragdula</i>                  | Emerald Small Carpenter      | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Pithitis) unimaculata palmerii</i>        | One-spotted Small Carpenter  | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Ceratina (Xanthoceratina) fuliginosa</i>            | Dusky-winged Small Carpenter | Native | Not Listed | VU   |
| Apidae | Xylocopinae | <i>Ceratina (Xanthoceratina) metaria</i>               | Bounded Small Carpenter      | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Braunsapis breviceps</i>                            | Short-headed Reed-Cuckoo     | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Braunsapis clarihirta</i>                           | Clear-haired Reed Bee        | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Braunsapis cupulifera</i>                           | Cup-legged Reed Bee          | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Braunsapis hewitti</i>                              | Hewitt's Reed Bee            | Native | Not Listed | LC   |
| Apidae | Xylocopinae | <i>Braunsapis philippinensis</i>                       | Philippine Reed Bee          | Native | Not Listed | DD   |
| Apidae | Xylocopinae | <i>Braunsapis puangensis</i>                           | Puang Reed Bee               | Native | Not Listed | LC   |
| Apidae | Nomadinae   | <i>Nomada adusta</i>                                   | Singed Nomad Bee             | Native | Not Listed | DD   |
| Apidae | Nomadinae   | <i>Nomada malayana</i>                                 | Malay Nomad                  | Native | Not Listed | VU   |
| Apidae | Nomadinae   | <i>Nomada penangensis</i>                              | Penang Nomad                 | Native | Not Listed | CR   |
| Apidae | Nomadinae   | <i>Nomada polyodonta</i>                               | Many-toothed Nomad           | Native | Not Listed | DD   |
| Apidae | Nomadinae   | <i>Nomada sandacana</i>                                | Sandakan Nomad               | Native | Not Listed | CR   |

| Family | Subfamily | Species                                         | Common Name                        | Origin    | RDB2       | RDB3 |
|--------|-----------|-------------------------------------------------|------------------------------------|-----------|------------|------|
| Apidae | Apinae    | <i>Amegilla (Glossamegilla) insularis</i>       | Island Forest-Digger               | Native    | Not Listed | VU   |
| Apidae | Apinae    | <i>Amegilla (Zonamegilla) andrewsi</i>          | Sunda Blue-banded Digger           | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Amegilla (Zonamegilla) korotonensis</i>      | Koroton Blue-banded Digger         | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Amegilla (Zonamegilla) flammeozonata</i>     | Flame-banded Digger Bee            | Native    | Not Listed | DD   |
| Apidae | Apinae    | <i>Thyreus abdominalis rostratus</i>            | Beaked Cloak-and-Dagger Bee        | Native    | Not Listed | EN   |
| Apidae | Apinae    | <i>Thyreus lilacinus</i>                        | Black-notched Cloak-and-Dagger Bee | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Thyreus himalayensis</i>                     | Himalayan Cloak-and-Dagger Bee     | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Thyreus novaehollandiae signatus</i>         | Indomalayan Cloak-and-Dagger Bee   | Native    | Not Listed | CR   |
| Apidae | Apinae    | <i>Apis (Apis) cerana javana</i>                | Asian Honey Bee                    | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Apis (Megapis) dorsata dorsata</i>           | Giant Honey Bee                    | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Apis (Micrapis) andreniformis</i>            | Black Dwarf Honey Bee              | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Apis (Micrapis) florea</i>                   | Red Dwarf Honey Bee                | Uncertain | Not Listed | NA   |
| Apidae | Apinae    | <i>Geniotrigona thoracica</i>                   | Long-chinned Stingless Bee         | Native    | Not Listed | CR   |
| Apidae | Apinae    | <i>Heterotrigona (Heterotrigona) itama</i>      | Notch-toothed Stingless Bee        | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Heterotrigona (Sundatrigona) moorei</i>      | Moore's Stingless Bee              | Native    | Not Listed | NEx  |
| Apidae | Apinae    | <i>Homotrigona (Homotrigona) fimbriata</i>      | Bristle-faced Stingless Bee        | Native    | Not Listed | NEx  |
| Apidae | Apinae    | <i>Homotrigona (Lophotrigona) canifrons</i>     | Woolly Stingless Bee               | Native    | Not Listed | NEx  |
| Apidae | Apinae    | <i>Homotrigona (Tetrigona) apicalis</i>         | Milky-tipped Stingless Bee         | Native    | Not Listed | NT   |
| Apidae | Apinae    | <i>Lepidotrigona latipes</i>                    | Broad-legged Stingless Bee         | Native    | Not Listed | NEx  |
| Apidae | Apinae    | <i>Lepidotrigona terminata</i>                  | Gold-margined Stingless Bee        | Native    | Not Listed | VU   |
| Apidae | Apinae    | <i>Lisotrigona furva</i>                        | Dusky Tear Bee                     | Uncertain | Not Listed | NA   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonilla) atripes</i>       | Orange-and-black Stingless Bee     | Native    | Not Listed | NEx  |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) fuscobalteata</i>  | Belted Stingless Bee               | Native    | Not Listed | DD   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) geissleri</i>      | Geissler's Stingless Bee           | Native    | Not Listed | NT   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) valdezi</i>        | Valdez's Stingless Bee             | Native    | Not Listed | LC   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) pagdeni</i>        | Pagden's Stingless Bee             | Uncertain | Not Listed | NA   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) testaceitarsis</i> | Testaceous-footed Stingless Bee    | Uncertain | Not Listed | NA   |
| Apidae | Apinae    | <i>Tetragonula (Tetragonula) laeviceps</i>      | Smooth-headed Stingless Bee        | Native    | Not Listed | NT   |

## Checklist of Aculeate Wasp Species with their Category of Threat Status for Singapore

Prepared by John S. Ascher, John X.Q. Lee, Zestin W.W. Soh

This checklist provides comprehensive coverage of groups such as Vespinae and Sphecidae, but others such as Eumeninae, Scoliinae, and Crabronidae require further attention. Several taxa are treated as morphospecies and are potentially undescribed. Besides listing a few threatened taxa, we designate some wasps that are commonly recorded across land use types as Least Concern. Additional species assessments are planned for the future.

| Family   | Subfamily      | Species                                     | Common Name                 | Origin | RDB2       | RDB3 |
|----------|----------------|---------------------------------------------|-----------------------------|--------|------------|------|
| Vespidae | Stenogastrinae | <i>Eustenogaster gibbosa</i>                |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Eustenogaster</i> cf. <i>latebricola</i> |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Eustenogaster hauxwellii</i>             |                             | Native | DD         | NE   |
| Vespidae | Stenogastrinae | <i>Eustenogaster micans</i>                 |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Liostenogaster flavolineata</i>          |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Liostenogaster nitidipennis</i>          |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Liostenogaster varipicta</i>             |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Metischnogaster drewseni</i>             | Drewsen's Hover Wasp        | Native | Not Listed | DD   |
| Vespidae | Stenogastrinae | <i>Parischnogaster mellyi</i>               |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Parischnogaster nigricans</i>            |                             | Native | Not Listed | NE   |
| Vespidae | Stenogastrinae | <i>Parischnogaster unicuspata</i>           |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Polistes sagittarius</i>                 | Banded Paper Wasp           | Native | Not Listed | LC   |
| Vespidae | Polistinae     | <i>Polistes stigma</i>                      |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Polistes tenebris</i>                    |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Polistes tenebricosus</i>                | Dark-winged Paper Wasp      | Native | Not Listed | VU   |
| Vespidae | Polistinae     | <i>Polistes meadeanus</i>                   | Meade-Waldo's Paper Wasp    | Native | Not Listed | VU   |
| Vespidae | Polistinae     | <i>Ropalidia erythrospila</i>               |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia flavopicta</i>                 | Yellow-painted Paper Wasp   | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia marginata</i>                  |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia stigma</i>                     | Stigma Small Paper Wasp     | Native | Not Listed | LC   |
| Vespidae | Polistinae     | <i>Ropalidia sumatrae</i>                   | Sumatran Small Paper Wasp   | Native | Not Listed | LC   |
| Vespidae | Polistinae     | <i>Ropalidia rufoplagiata</i>               |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia fasciata</i>                   |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia timida</i>                     |                             | Native | Not Listed | NE   |
| Vespidae | Polistinae     | <i>Ropalidia jacobsoni</i>                  | Jacobson's Small Paper Wasp | Native | Not Listed | LC   |
| Vespidae | Polistinae     | <i>Polybioides raphigastra</i>              | Needle-tailed Paper Wasp    | Native | Not Listed | DD   |
| Vespidae | Polistinae     | <i>Parapolybia varia</i>                    |                             | Native | Not Listed | NE   |
| Vespidae | Vespinae       | <i>Provespa anomala</i>                     | Anomalous Night Hornet      | Native | Not Listed | NT   |
| Vespidae | Vespinae       | <i>Vespa affinis</i>                        | Lesser-banded Hornet        | Native | Not Listed | LC   |

| Family   | Subfamily | Species                                            | Common Name               | Origin    | RDB2       | RDB3 |
|----------|-----------|----------------------------------------------------|---------------------------|-----------|------------|------|
| Vespidae | Vespinae  | <i>Vespa analis</i>                                | Yellow-vented<br>Hornet   | Native    | Not Listed | LC   |
| Vespidae | Vespinae  | <i>Vespa multimaculata</i>                         | Many-banded<br>Hornet     | Native    | Not Listed | NEx  |
| Vespidae | Vespinae  | <i>Vespa tropica</i>                               | Greater-banded<br>Hornet  | Native    | Not Listed | LC   |
| Vespidae | Eumeninae | <i>Eumenes architectus</i>                         |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Eumenes multipictus</i>                         |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Eumenes</i> sp. 1                               |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Delta pyriforme</i> [ssp.<br><i>circinale</i> ] | Pyriforme Potter<br>Wasp  | Native    | Not Listed | LC   |
| Vespidae | Eumeninae | <i>Delta esuriens</i>                              |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Delta campaniforme</i>                          |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Phimenes flavopictus</i>                        |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Phimenes</i> sp. 1                              |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Rhynchium haemorrhoidale</i>                    | Red-tipped<br>Potter Wasp | Native    | Not Listed | LC   |
| Vespidae | Eumeninae | <i>Allorhynchium argentatum</i>                    |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Allorhynchium snelleni</i>                      |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Antepipona bipustulata</i>                      |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Antepipona guttata</i>                          |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Anterhynchium flavolineatum</i>                 |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Apodynerus troglodytes</i>                      |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Coeleumenes impavidus</i>                       |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Ectopioglossa sublaevis</i>                     |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Epsilon manifestum</i>                          |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Euodynerus trilobus</i>                         |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Knemodynerus complanatus</i>                    |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Lissodynerus laminiger</i>                      |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Labus amoenus</i>                               |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Labus exiguus</i>                               |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Omicroides singularis</i>                       |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Parancistrocerus androcles</i>                  |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Paraleptomenes miniatus</i>                     |                           | Uncertain | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Paraleptomenes communis</i>                     |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus cilicioides</i>                |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus heterospilus</i>               |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus multipictus</i>                |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus hewitti</i>                    |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus octolineatus</i>               |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodyneriellus guttulatus</i>                 |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodynerus</i><br><i>monotuberculatus</i>     |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodynerus ignotus</i>                        |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Stenodynerus peninsularis</i>                   |                           | Native    | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Subancistrocerus sichelii</i>                   |                           | Uncertain | Not Listed | NE   |
| Vespidae | Eumeninae | <i>Subancistrocerus</i> [red legs]                 |                           | Native    | Not Listed | NE   |

| Family      | Subfamily     | Species                                                        | Common Name            | Origin | RDB2       | RDB3 |
|-------------|---------------|----------------------------------------------------------------|------------------------|--------|------------|------|
| Vespidae    | Eumeninae     | <i>Subancistrocerus [extra Ubin species different clypeus]</i> |                        | Native | Not Listed | NE   |
| Vespidae    | Eumeninae     | <i>Subancistrocerus [orange pronotum]</i>                      |                        | Native | Not Listed | NE   |
| Vespidae    | Eumeninae     | <i>Gribodia confluenta</i>                                     |                        | Native | Not Listed | NE   |
| Vespidae    | Eumeninae     | <i>Zethus bakeri</i>                                           |                        | Native | Not Listed | NE   |
| Vespidae    | Eumeninae     | <i>Zethus</i> sp. 1                                            |                        | Native | Not Listed | NE   |
| Ampulicidae | Ampulicinae   | <i>Ampulex compressa</i>                                       |                        | Native | Not Listed | NE   |
| Ampulicidae | Ampulicinae   | <i>Ampulex smaragdina</i>                                      |                        | Native | Not Listed | NE   |
| Ampulicidae | Ampulicinae   | <i>Ampulex</i> sp. 1                                           |                        | Native | Not Listed | NE   |
| Ampulicidae | Ampulicinae   | <i>Ampulex</i> sp. 2                                           |                        | Native | Not Listed | NE   |
| Ampulicidae | Ampulicinae   | <i>Ampulex</i> sp. 3                                           |                        | Native | Not Listed | NE   |
| Ampulicidae | Dolichurinae  | <i>Dolichurus</i> sp. 1                                        |                        | Native | Not Listed | NE   |
| Ampulicidae | Dolichurinae  | <i>Dolichurus</i> sp. 2                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Sphex argentatus</i>                                        | Silver Digger Wasp     | Native | Not Listed | VU   |
| Sphecidae   | Sphecinae     | <i>Sphex diabolicus</i>                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Sphex madasummae</i>                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Sphex sericeus</i>                                          |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Sphex subtruncatus</i>                                      |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Isodontia diodon</i>                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Isodontia severini</i>                                      |                        | Native | Not Listed | NE   |
| Sphecidae   | Sphecinae     | <i>Prionyx viduatus</i>                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Sceliphron madraspatanum</i>                                |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Sceliphron coromandelicum</i>                               |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Sceliphron javanum</i>                                      |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Sceliphron</i> sp. [small, black legs, yellow petiole]      |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Chalybion bengalense</i>                                    |                        | Native | Not Listed | NE   |
| Sphecidae   | Sceliphrinae  | <i>Chalybion sumatranum</i>                                    |                        | Native | Not Listed | NE   |
| Sphecidae   | Ammophilinae  | <i>Ammophila clavus</i>                                        |                        | Native | Not Listed | NE   |
| Sphecidae   | Ammophilinae  | <i>Ammophila</i> [small, black]                                |                        | Native | Not Listed | NE   |
| Sphecidae   | Chloriontinae | <i>Chlorion lobatum</i>                                        | Emerald Cricket-Hunter | Native | Not Listed | NT   |
| Crabronidae | Bembecinae    | <i>Bembix melancholica</i>                                     | Melancholic Sand Wasp  | Native | Not Listed | VU   |
| Crabronidae | Bembecinae    | <i>Argogorytes</i> sp. 1                                       |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Hoplisoides</i> sp. 1                                       |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Bembecinus borneanus</i>                                    |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Bembecinus insularis</i>                                    |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Bembecinus littoralis</i>                                   |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Bembecinus reversus</i>                                     |                        | Native | Not Listed | NE   |
| Crabronidae | Bembecinae    | <i>Nysson</i> sp. 1                                            |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Dicranorhina ruficollis</i>                                 |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris aurulentus</i>                                        |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris subtesselatus</i>                                     |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris</i> sp. 1                                             |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris</i> sp. 2                                             |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris</i> sp. 3                                             |                        | Native | Not Listed | NE   |
| Crabronidae | Crabroninae   | <i>Liris</i> sp. 4                                             |                        | Native | Not Listed | NE   |

| Family      | Subfamily      | Species                                                            | Common Name | Origin | RDB2       | RDB3 |
|-------------|----------------|--------------------------------------------------------------------|-------------|--------|------------|------|
| Crabronidae | Crabroninae    | <i>Liris</i> sp. 5                                                 |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Liris</i> sp. 6                                                 |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Larra alecto</i>                                                |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Larra carbonaria</i>                                            |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Tachytes modestus</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Tachytes</i> sp. 1                                              |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Tachysphex morosus</i>                                          |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Tachysphex</i> sp. 1                                            |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon atricorne</i>                                        |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon bicolor</i>                                          |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon errans</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon menkei</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon nigricorne</i>                                       |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon petiolatum</i>                                       |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon ridleyi</i>                                          |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon simile</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon singaporense</i>                                     |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon</i> cf. <i>schmiedeknechti</i>                       |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon singator</i>                                         |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Trypoxylon varipilosum</i>                                      |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Pison argentatum</i>                                            |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Pison obliteratum</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Pison punctifrons</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Oxybelus malaysianus</i>                                        |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Encopognathus</i> sp. [ <i>braueri</i> group]                   |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Ectemnius bogorensis</i>                                        |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Ectemnius</i> sp. 1                                             |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Crossocerus fabreorum</i>                                       |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Dasyproctus agilis</i>                                          |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Dasyproctus buddha</i>                                          |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Dasyproctus pentheri</i>                                        |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Dasyproctus</i> sp. [metasoma mostly black]                     |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Piyuma accepta</i>                                              |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Piyuma singapurae</i>                                           |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Rhopalum</i> sp. 1                                              |             | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Vechtia rugosa</i>                                              |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Polemistus</i> sp. 1                                            |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Arpactophilus</i> sp. 1                                         |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Spilomena</i> sp. 1                                             |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Carinostigmus</i> cf. <i>congruus</i>                           |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Carinostigmus</i> cf. <i>maior</i>                              |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psen elisabethae</i>                                            |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus carinifrons</i> [ssp. <i>malayanus</i> van Lith, 1969] |             | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus continentis</i>                                        |             | Native | Not Listed | NE   |

| Family      | Subfamily      | Species                                                                                  | Common Name             | Origin | RDB2       | RDB3 |
|-------------|----------------|------------------------------------------------------------------------------------------|-------------------------|--------|------------|------|
| Crabronidae | Pemphredoninae | <i>Psenulus crabroniformis</i> [ssp. <i>sumatranus</i> (Ritsema, 1880)]                  |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus diversus</i>                                                                 |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus erraticus</i> [ssp. <i>basilanensis</i> (Rohwer, 1921)]                      |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus maculatus</i>                                                                |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus nigrolineatus</i> [ssp. <i>ajax</i> (Rohwer, 1921)]                          |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus pulcherrimus</i>                                                             |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus puncticeps</i> [typical form incl. holotype of <i>Diodontus antennatus</i> ] |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus trimaculatus</i>                                                             |                         | Native | Not Listed | NE   |
| Crabronidae | Pemphredoninae | <i>Psenulus yoshimotoi</i>                                                               |                         | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Nitela</i> sp. 1                                                                      |                         | Native | Not Listed | NE   |
| Crabronidae | Crabroninae    | <i>Nitela</i> sp. 2                                                                      |                         | Native | Not Listed | NE   |
| Crabronidae | Philanthinae   | <i>Cerceris</i> sp. 1                                                                    |                         | Native | Not Listed | NE   |
| Crabronidae | Philanthinae   | <i>Cerceris</i> sp. 2                                                                    |                         | Native | Not Listed | NE   |
| Crabronidae | Philanthinae   | <i>Cerceris</i> sp. 3                                                                    |                         | Native | Not Listed | NE   |
| Crabronidae | Philanthinae   | <i>Cerceris</i> sp. 4                                                                    |                         | Native | Not Listed | NE   |
| Scoliidae   | Campsomerinae  | <i>Campsomeriella collaris</i>                                                           | Collared Scoliid Wasp   | Native | Not Listed | LC   |
| Scoliidae   | Campsomerinae  | <i>Megacampsomeris</i> sp. 1                                                             |                         | Native | Not Listed | NE   |
| Scoliidae   | Campsomerinae  | <i>Phalerimeris phalerata</i>                                                            | Ornamented Scoliid Wasp | Native | Not Listed | LC   |
| Scoliidae   | Campsomerinae  | <i>Sericocampsomeris rubromaculata</i>                                                   |                         | Native | Not Listed | NE   |
| Scoliidae   | Campsomerinae  | <i>Sericocampsomeris stygia</i>                                                          |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Megascolia azurea</i>                                                                 |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Megascolia capitata</i>                                                               |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Megaoscolia procer</i>                                                                | Atlas Mammoth Wasp      | Native | Not Listed | VU   |
| Scoliidae   | Scoliinae      | <i>Austroscolia ruficeps</i>                                                             |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Scolia binotata</i>                                                                   |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Scolia</i> sp. 1                                                                      |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Scolia</i> sp. 2                                                                      |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Scolia</i> sp. 3                                                                      |                         | Native | Not Listed | NE   |
| Scoliidae   | Scoliinae      | <i>Scolia</i> sp. 4                                                                      |                         | Native | Not Listed | NE   |



# Checklist of Ant Species with their Category of Threat Status for Singapore

Prepared by Wendy Y. Wang

| Family     | Genus                | Species                       | Authority                                                                                                                                           | Common Name      | RDB2       | RDB3 |
|------------|----------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|------|
| Formicidae | <i>Acanthomyrmex</i> | <i>ferox</i>                  | Emery, 1893                                                                                                                                         |                  | Not Listed | EN   |
| Formicidae | <i>Acropyga</i>      | <i>acutiventris</i>           | Roger, 1862                                                                                                                                         |                  | Not Listed | VU   |
| Formicidae | <i>Acropyga</i>      | <i>inezae</i>                 | Forel, 1912                                                                                                                                         |                  | Not Listed | CR   |
| Formicidae | <i>Acropyga</i>      | <i>oceanica</i>               | Emery, 1900                                                                                                                                         |                  | Not Listed | DD   |
| Formicidae | <i>Acropyga</i>      | <i>rubescens</i>              | Forel, 1894                                                                                                                                         |                  | Not Listed | DD   |
| Formicidae | <i>Aenictus</i>      | <i>camposi</i>                | Wheeler & Chapman, 1925                                                                                                                             |                  | Not Listed | EN   |
| Formicidae | <i>Aenictus</i>      | <i>cylindripetiolus</i>       | Jaitrong & Yamane, 2013                                                                                                                             |                  | Not Listed | EN   |
| Formicidae | <i>Aenictus</i>      | <i>gracilis</i>               | Emery, 1893                                                                                                                                         |                  | Not Listed | CR   |
| Formicidae | <i>Aenictus</i>      | <i>seletarius</i>             | Wong & Guenard, 2016                                                                                                                                |                  | Not Listed | CR   |
| Formicidae | <i>Aenictus</i>      | <i>yamane</i>                 | Wiwatwitaya & Jaitrong, 2011                                                                                                                        |                  | Not Listed | CR   |
| Formicidae | <i>Anochetus</i>     | <i>agilis</i>                 | Emery, 1901                                                                                                                                         |                  | Not Listed | CR   |
| Formicidae | <i>Anochetus</i>     | <i>graeffei</i>               | Mayr, 1870                                                                                                                                          |                  | Not Listed | DD   |
| Formicidae | <i>Anochetus</i>     | <i>incultus</i>               | Brown, 1978                                                                                                                                         |                  | Not Listed | CR   |
| Formicidae | <i>Anochetus</i>     | <i>tua</i>                    | Brown, 1978                                                                                                                                         |                  | Not Listed | CR   |
| Formicidae | <i>Anoplolepis</i>   | <i>gracilipes</i>             | (Smith, 1857)                                                                                                                                       | Yellow Crazy Ant | Not Listed | LC   |
| Formicidae | <i>Aphaenogaster</i> | <i>faeae simulans</i>         | Forel, 1915                                                                                                                                         |                  | Not Listed | VU   |
| Formicidae | <i>Brachyponera</i>  | <i>obscurans</i>              | (Walker, 1859)                                                                                                                                      |                  | Not Listed | DD   |
| Formicidae | <i>Buniapone</i>     | <i>amblyops</i>               | (Emery, 1887)                                                                                                                                       |                  | Not Listed | VU   |
| Formicidae | <i>Calyptomyrmex</i> | <i>beccarii</i>               | Emery, 1887                                                                                                                                         |                  | Not Listed | NT   |
| Formicidae | <i>Camponotus</i>    | <i>albosparsus</i>            | Bingham, 1903                                                                                                                                       |                  | Not Listed | NT   |
| Formicidae | <i>Camponotus</i>    | <i>arrogans</i>               | (Smith, 1858)                                                                                                                                       |                  | Not Listed | CR   |
| Formicidae | <i>Camponotus</i>    | <i>bedoti</i>                 | Emery, 1893                                                                                                                                         |                  | Not Listed | NT   |
| Formicidae | <i>Camponotus</i>    | <i>irritans</i>               | (Smith, 1857)                                                                                                                                       |                  | Not Listed | LC   |
| Formicidae | <i>Camponotus</i>    | <i>reticulatus</i>            | Roger, 1863                                                                                                                                         |                  | Not Listed | NT   |
| Formicidae | <i>Camponotus</i>    | <i>reticulatus sericellus</i> | Viehmeyer, H. (1916) ("1915"[sic]). Ameisen von Singapore. Beobachtet und gesammelt von H. Overbeck. Archiv für Naturgeschichte (A). 81(8). 08-168. |                  | Not Listed | DD   |
| Formicidae | <i>Camponotus</i>    | <i>parius</i>                 | Emery, 1889                                                                                                                                         |                  | Not Listed | LC   |
| Formicidae | <i>Cardiocondyla</i> | <i>obscurior</i>              | Wheeler, 1929                                                                                                                                       |                  | Not Listed | LC   |
| Formicidae | <i>Cardiocondyla</i> | <i>tjibodana</i>              | Karavaiev, 1935                                                                                                                                     |                  | Not Listed | DD   |
| Formicidae | <i>Cardiocondyla</i> | <i>wroughtonii</i>            | (Forel, 1890)                                                                                                                                       |                  | Not Listed | DD   |
| Formicidae | <i>Carebara</i>      | <i>affinis</i>                | (Jerdon, 1851)                                                                                                                                      |                  | Not Listed | NT   |
| Formicidae | <i>Carebara</i>      | <i>diversa</i>                | (Jerdon, 1851)                                                                                                                                      | Marauder Ant     | Not Listed | LC   |

| Family     | Genus                | Species                   | Authority                                                                                                                                             | Common Name | RDB2       | RDB3 |
|------------|----------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Formicidae | <i>Carebara</i>      | <i>overbecki</i>          | (Viehmeyer, H. (1916) ("1915"[sic]). Ameisen von Singapore. Beobachtet und gesammelt von H. Overbeck. Archiv für Naturgeschichte (A), 81(8), 08-168.) |             | Not Listed | VU   |
| Formicidae | <i>Carebara</i>      | <i>silenus</i>            | (Smith, 1858)                                                                                                                                         |             | Not Listed | DD   |
| Formicidae | <i>Cataulacus</i>    | <i>granulatus</i>         | (Latreille, 1802)                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Cataulacus</i>    | <i>horridus</i>           | Smith, 1857                                                                                                                                           |             | Not Listed | CR   |
| Formicidae | <i>Cataulacus</i>    | <i>nenassus</i>           | Bolton, 1974                                                                                                                                          |             | Not Listed | DD   |
| Formicidae | <i>Centromyrmex</i>  | <i>feae greeni</i>        | (Emery, 1889)                                                                                                                                         |             | Not Listed | DD   |
| Formicidae | <i>Centromyrmex</i>  | <i>hamulatus</i>          | (Karavaiev, 1925)                                                                                                                                     |             | Not Listed | EN   |
| Formicidae | <i>Chronoxenus</i>   | <i>wroughtonii</i>        | (Forel, 1895)                                                                                                                                         |             | Not Listed | DD   |
| Formicidae | <i>Colobopsis</i>    | <i>vitrea</i>             | (Smith, 1860)                                                                                                                                         |             | Not Listed | NT   |
| Formicidae | <i>Crematogaster</i> | <i>anthracina</i>         | Smith, 1857                                                                                                                                           |             | Not Listed | EN   |
| Formicidae | <i>Crematogaster</i> | <i>bandarensis</i>        | Forel, 1913                                                                                                                                           |             | Not Listed | NT   |
| Formicidae | <i>Crematogaster</i> | <i>borneensis</i>         | André, 1896                                                                                                                                           |             | Not Listed | DD   |
| Formicidae | <i>Crematogaster</i> | <i>coriaria</i>           | Mayr, 1872                                                                                                                                            |             | Not Listed | CR   |
| Formicidae | <i>Crematogaster</i> | <i>difformis</i>          | Smith, 1857                                                                                                                                           |             | Not Listed | CR   |
| Formicidae | <i>Crematogaster</i> | <i>ferrarii</i>           | Emery, 1888                                                                                                                                           |             | Not Listed | DD   |
| Formicidae | <i>Crematogaster</i> | <i>inflata</i>            | Smith, 1857                                                                                                                                           |             | Not Listed | CR   |
| Formicidae | <i>Crematogaster</i> | <i>linsenmairi</i>        | Feldhaar, Maschwitz & Fiala,                                                                                                                          |             | Not Listed | DD   |
| Formicidae | <i>Crematogaster</i> | <i>longipilosa</i>        | Forel, 1907                                                                                                                                           |             | Not Listed | VU   |
| Formicidae | <i>Crematogaster</i> | <i>modiglianii</i>        | Emery, 1900                                                                                                                                           |             | Not Listed | DD   |
| Formicidae | <i>Crematogaster</i> | <i>myops</i>              | Forel, 1911                                                                                                                                           |             | Not Listed | CR   |
| Formicidae | <i>Crematogaster</i> | <i>quadriruga</i>         | Forel, 1911                                                                                                                                           |             | Not Listed | NT   |
| Formicidae | <i>Crematogaster</i> | <i>sewardi</i>            | Forel, 1901                                                                                                                                           |             | Not Listed | LC   |
| Formicidae | <i>Crematogaster</i> | <i>subnuda discinodis</i> | Emery, 1893                                                                                                                                           |             | Not Listed | NT   |
| Formicidae | <i>Crematogaster</i> | <i>treubi</i>             | Emery, 1896                                                                                                                                           |             | Not Listed | NT   |
| Formicidae | <i>Crematogaster</i> | <i>yappi</i>              | Forel, 1901                                                                                                                                           |             | Not Listed | VU   |
| Formicidae | <i>Cryptopone</i>    | <i>butteli</i>            | Forel, 1913                                                                                                                                           |             | Not Listed | EN   |
| Formicidae | <i>Diacamma</i>      | <i>geometricum</i>        | (Smith, 1857)                                                                                                                                         |             | Not Listed | VU   |
| Formicidae | <i>Diacamma</i>      | <i>pallidum</i>           | (Smith, 1858)                                                                                                                                         |             | Not Listed | LC   |
| Formicidae | <i>Diacamma</i>      | <i>rugosum</i>            | (Le Guillou, 1842)                                                                                                                                    |             | Not Listed | VU   |
| Formicidae | <i>Diacamma</i>      | <i>vagans</i>             | (Smith, 1860)                                                                                                                                         |             | Not Listed | DD   |

| Family     | Genus                 | Species               | Authority                                                                                                                                                                         | Common Name       | RDB2       | RDB3 |
|------------|-----------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------|------|
| Formicidae | <i>Dilobocondyla</i>  | <i>fulva</i>          | Viehmeyer, H.<br>(1916)<br>("1915"[sic]).<br>Ameisen von<br>Singapore.<br>Beobachtet und<br>gesammelt von H.<br>Overbeck. Archiv<br>für<br>Naturgeschichte<br>(A), 81(8), 08-168. |                   | Not Listed | DD   |
| Formicidae | <i>Dinomyrmex</i>     | <i>gigas</i>          | (Latreille, 1802)                                                                                                                                                                 |                   | Not Listed | VU   |
| Formicidae | <i>Discothyrea</i>    | <i>bryanti</i>        | (Wheeler, 1917)                                                                                                                                                                   |                   | Not Listed | EN   |
| Formicidae | <i>Discothyrea</i>    | <i>sauteri</i>        | Forel, 1912                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Dolichoderus</i>   | <i>affinis</i>        | Emery, 1889                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Dolichoderus</i>   | <i>indrapurensis</i>  | Forel, 1912                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Dolichoderus</i>   | <i>sulcaticeps</i>    | (Mayr, 1870)                                                                                                                                                                      |                   | Not Listed | CR   |
| Formicidae | <i>Dorylus</i>        | <i>laevigatus</i>     | (Smith, 1857)                                                                                                                                                                     | Driver Ant        | Not Listed | EN   |
| Formicidae | <i>Echinopla</i>      | <i>lineata</i>        | Mayr, 1862                                                                                                                                                                        |                   | Not Listed | NT   |
| Formicidae | <i>Ectomomyrmex</i>   | <i>leeuwenhoekii</i>  | (Forel, 1896)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Ectomomyrmex</i>   | <i>overbeckii</i>     | (Viehmeyer, 1916)                                                                                                                                                                 |                   | Not Listed | VU   |
| Formicidae | <i>Emeryopone</i>     | <i>buttelreepeni</i>  | Forel, 1912                                                                                                                                                                       |                   | Not Listed | EN   |
| Formicidae | <i>Euponera</i>       | <i>sharpi</i>         | Forel, 1901                                                                                                                                                                       |                   | Not Listed | NT   |
| Formicidae | <i>Euprenolepis</i>   | <i>procera</i>        | (Emery, 1900)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Eurhopalothrix</i> | <i>heliscata</i>      | Wilson & Brown,<br>1985                                                                                                                                                           |                   | Not Listed | EN   |
| Formicidae | <i>Eurhopalothrix</i> | <i>omnivaga</i>       | Taylor, 1990                                                                                                                                                                      |                   | Not Listed | EN   |
| Formicidae | <i>Eurhopalothrix</i> | <i>procera</i>        | (Emery, 1897)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Stictoponera</i>   | <i>binghamii</i>      | (Forel, 1900)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Stictoponera</i>   | <i>coxalis</i>        | (Roger, 1860)                                                                                                                                                                     |                   | Not Listed | EN   |
| Formicidae | <i>Holcoponera</i>    | <i>cribrata</i>       | (Emery, 1900)                                                                                                                                                                     |                   | Not Listed | EN   |
| Formicidae | <i>Stictoponera</i>   | <i>hyalina</i>        | Latke, 2004                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Stictoponera</i>   | <i>ortostoma</i>      | Latke, 2004                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Stictoponera</i>   | <i>posteropsis</i>    | (Gregg, 1951)                                                                                                                                                                     |                   | Not Listed | CR   |
| Formicidae | <i>Harpegnathos</i>   | <i>venator</i>        | (Smith, 1858)                                                                                                                                                                     | Giant Jumping Ant | CR         | CR   |
| Formicidae | <i>Hypoponera</i>     | <i>singaporensis</i>  | (Viehmeyer, 1916)                                                                                                                                                                 |                   | Not Listed | DD   |
| Formicidae | <i>Iridomyrmex</i>    | <i>anceps</i>         | (Roger, 1863)                                                                                                                                                                     |                   | Not Listed | LC   |
| Formicidae | <i>Leptanilla</i>     | <i>hypodracos</i>     | Wong & Guénard,<br>2016                                                                                                                                                           |                   | Not Listed | CR   |
| Formicidae | <i>Leptogenys</i>     | <i>diminuta</i>       | (Smith, 1857)                                                                                                                                                                     |                   | Not Listed | CR   |
| Formicidae | <i>Leptogenys</i>     | <i>hemioptica</i>     | Forel, 1901                                                                                                                                                                       |                   | Not Listed | CR   |
| Formicidae | <i>Leptogenys</i>     | <i>kraepelini</i>     | Forel, 1905                                                                                                                                                                       |                   | Not Listed | NT   |
| Formicidae | <i>Leptogenys</i>     | <i>mutabilis</i>      | (Smith, 1861)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Leptogenys</i>     | <i>peuqueti</i>       | (André, 1887)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Leptogenys</i>     | <i>processionalis</i> | (Jerdon, 1851)                                                                                                                                                                    |                   | Not Listed | DD   |
| Formicidae | <i>Liomyrmex</i>      | <i>gestroi</i>        | (Emery, 1887)                                                                                                                                                                     |                   | Not Listed | VU   |
| Formicidae | <i>Lioponera</i>      | <i>singaporensis</i>  | (Viehmeyer, 1916)                                                                                                                                                                 |                   | Not Listed | DD   |

| Family     | Genus                   | Species               | Authority                   | Common Name    | RDB2       | RDB3 |
|------------|-------------------------|-----------------------|-----------------------------|----------------|------------|------|
| Formicidae | <i>Mayriella</i>        | <i>transfuga</i>      | Baroni Urbani, 1977         |                | Not Listed | VU   |
| Formicidae | <i>Meranoplus</i>       | <i>bicolor</i>        | (Guérin-Ménéville, 1844)    |                | Not Listed | LC   |
| Formicidae | <i>Meranoplus</i>       | <i>mucronatus</i>     | Smith, 1857                 |                | Not Listed | DD   |
| Formicidae | <i>Mesoponera</i>       | <i>rubra</i>          | (Smith, 1857)               |                | Not Listed | CR   |
| Formicidae | <i>Metapone</i>         | <i>murphyi</i>        | Wang, Yamada & Eguchi, 2019 |                | Not Listed | DD   |
| Formicidae | <i>Myopopone</i>        | <i>castanea</i>       | (Smith, 1860)               |                | Not Listed | VU   |
| Formicidae | <i>Myrmecina</i>        | <i>bandarensis</i>    | Forel, 1913                 |                | Not Listed | DD   |
| Formicidae | <i>Myrmecina</i>        | <i>magnificens</i>    | Wong & Guénard, 2016        |                | Not Listed | EN   |
| Formicidae | <i>Myrmicaria</i>       | <i>adpressipilosa</i> | Santschi, 1928              |                | Not Listed | CR   |
| Formicidae | <i>Myrmicaria</i>       | <i>arachnoides</i>    | Emery, 1900                 |                | Not Listed | EN   |
|            |                         | <i>lutea</i>          |                             |                |            |      |
| Formicidae | <i>Myrmicaria</i>       | <i>luteiventris</i>   | Emery, 1900                 |                | Not Listed | EN   |
| Formicidae | <i>Myrmicaria</i>       | <i>melanogaster</i>   | Emery, 1900                 |                | Not Listed | CR   |
| Formicidae | <i>Myrmoteras</i>       | <i>bakeri</i>         | Wheeler, 1919               |                | Not Listed | CR   |
| Formicidae | <i>Myrmoteras</i>       | <i>barbouri</i>       | Creighton, 1930             |                | Not Listed | CR   |
| Formicidae | <i>Mystrium</i>         | <i>camillae</i>       | Emery, 1889                 |                | Not Listed | VU   |
| Formicidae | <i>Nylanderia</i>       | <i>bourbonica</i>     | (Forel, 1886)               |                | Not Listed | DD   |
| Formicidae | <i>Ochetellus</i>       | <i>glaber</i>         | (Mayr, 1862)                |                | Not Listed | NT   |
| Formicidae | <i>Odontomachus</i>     | <i>litoralis</i>      | Wang, Yamada & Yamane, 2020 |                | Not Listed | VU   |
| Formicidae | <i>Odontomachus</i>     | <i>malignus</i>       | Smith, 1859                 |                | Not Listed | DD   |
| Formicidae | <i>Odontomachus</i>     | <i>rixosus</i>        | Smith, 1857                 |                | Not Listed | NT   |
| Formicidae | <i>Odontomachus</i>     | <i>simillimus</i>     | Smith, 1858                 |                | Not Listed | LC   |
| Formicidae | <i>Odontoponera</i>     | <i>denticulata</i>    | (Smith, 1858)               |                | Not Listed | LC   |
| Formicidae | <i>Odontoponera</i>     | <i>transversa</i>     | (Smith, 1857)               |                | Not Listed | VU   |
| Formicidae | <i>Oecophylla</i>       | <i>smaragdina</i>     | (Fabricius, 1775)           | Red Weaver Ant | Not Listed | LC   |
| Formicidae | <i>Ooceraea</i>         | <i>biroi</i>          | (Forel, 1907)               |                | Not Listed | DD   |
| Formicidae | <i>Paraparatrechina</i> | <i>opaca</i>          | (Emery, 1887)               |                | Not Listed | VU   |
| Formicidae | <i>Paratopula</i>       | <i>demeta</i>         | Bolton, 1988                |                | Not Listed | CR   |
| Formicidae | <i>Paratopula</i>       | <i>oculata</i>        | (Smith, 1857)               |                | Not Listed | DD   |
| Formicidae | <i>Parvaponera</i>      | <i>darwinii</i>       | (Forel, 1893)               |                | Not Listed | DD   |
| Formicidae | <i>Pheidole</i>         | <i>aglae</i>          | Forel, 1913                 |                | Not Listed | VU   |
| Formicidae | <i>Pheidole</i>         | <i>aristotelis</i>    | Forel, 1911                 |                | Not Listed | EN   |
| Formicidae | <i>Pheidole</i>         | <i>binghamii</i>      | Forel, 1902                 |                | Not Listed | DD   |
| Formicidae | <i>Pheidole</i>         | <i>cariniceps</i>     | Eguchi, 2001                |                | Not Listed | EN   |
| Formicidae | <i>Pheidole</i>         | <i>clypeocornis</i>   | Eguchi, 2001                |                | Not Listed | VU   |
| Formicidae | <i>Pheidole</i>         | <i>fervens</i>        | Smith, 1858                 |                | Not Listed | LC   |
| Formicidae | <i>Pheidole</i>         | <i>nodgii</i>         | Wheeler, 1937               |                | Not Listed | DD   |
|            |                         | <i>verlatenensis</i>  |                             |                |            |      |
| Formicidae | <i>Pheidole</i>         | <i>parva</i>          | Mayr, 1865                  |                | Not Listed | LC   |
| Formicidae | <i>Pheidole</i>         | <i>plagiaria</i>      | Smith, 1860                 |                | Not Listed | LC   |
| Formicidae | <i>Pheidole</i>         | <i>plinii</i>         | Forel, 1911                 |                | Not Listed | DD   |
| Formicidae | <i>Pheidole</i>         | <i>rugifera</i>       | Eguchi, 2001                |                | Not Listed | DD   |
| Formicidae | <i>Pheidole</i>         | <i>sexspinosa</i>     | Mayr, 1870                  |                | Not Listed | VU   |
| Formicidae | <i>Pheidole</i>         | <i>singaporensis</i>  | Özdikmen, 2010              |                | Not Listed | VU   |
| Formicidae | <i>Pheidole</i>         | <i>tandjongensis</i>  | Forel, 1913                 |                | Not Listed | VU   |

| Family     | Genus                  | Species                 | Authority                                                                                                                                                                       | Common Name | RDB2       | RDB3 |
|------------|------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Formicidae | <i>Pheidole</i>        | <i>tjibodana</i>        | Forel, 1905                                                                                                                                                                     |             | Not Listed | EN   |
| Formicidae | <i>Pheidole</i>        | <i>umbonata</i>         | Mayr, 1870                                                                                                                                                                      |             | Not Listed | DD   |
| Formicidae | <i>Philidris</i>       | <i>cordata</i>          | (Smith, 1859)                                                                                                                                                                   |             | Not Listed | NT   |
| Formicidae | <i>Philidris</i>       | <i>laevigata</i>        | (Emery, 1895)                                                                                                                                                                   |             | Not Listed | EN   |
| Formicidae | <i>Platythyrea</i>     | <i>parallela</i>        | (Smith, 1859)                                                                                                                                                                   |             | Not Listed | VU   |
| Formicidae | <i>Polyrhachis</i>     | <i>abdominalis</i>      | Smith, 1858                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>armata</i>           | (Le Guillou, 1842)                                                                                                                                                              |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>beccarii</i>         | Mayr, 1872                                                                                                                                                                      |             | Not Listed | DD   |
| Formicidae | <i>Polyrhachis</i>     | <i>bicolor</i>          | Smith, 1858                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>carbonaria</i>       | Smith, 1857                                                                                                                                                                     |             | Not Listed | CR   |
| Formicidae | <i>Polyrhachis</i>     | <i>chalybea</i>         | Smith, 1857                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>dives</i>            | Smith, 1857                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>hosei</i>            | Donisthorpe, 1942                                                                                                                                                               |             | Not Listed | DD   |
| Formicidae | <i>Polyrhachis</i>     | <i>illaudata</i>        | Walker, 1859                                                                                                                                                                    |             | Not Listed | VU   |
| Formicidae | <i>Polyrhachis</i>     | <i>inermis</i>          | Smith, 1858                                                                                                                                                                     |             | Not Listed | VU   |
| Formicidae | <i>Polyrhachis</i>     | <i>lepida</i>           | Kohout, 2006                                                                                                                                                                    |             | Not Listed | EN   |
| Formicidae | <i>Polyrhachis</i>     | <i>nigropilosa</i>      | Mayr, 1872                                                                                                                                                                      |             | Not Listed | VU   |
| Formicidae | <i>Polyrhachis</i>     | <i>olybria</i>          | Forel, 1912                                                                                                                                                                     |             | Not Listed | EN   |
| Formicidae | <i>Polyrhachis</i>     | <i>orsylla ritsemai</i> | Mayr, 1883                                                                                                                                                                      |             | Not Listed | DD   |
| Formicidae | <i>Polyrhachis</i>     | <i>proxima</i>          | Roger, 1863                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Polyrhachis</i>     | <i>pruinosa</i>         | Mayr, 1872                                                                                                                                                                      |             | Not Listed | DD   |
| Formicidae | <i>Polyrhachis</i>     | <i>saeuissima</i>       | Smith, 1860                                                                                                                                                                     |             | Not Listed | EN   |
| Formicidae | <i>Polyrhachis</i>     | <i>thrinax</i>          | Viehmeyer, H.                                                                                                                                                                   |             | Not Listed | DD   |
|            |                        | <i>inconstans</i>       | (1916)<br>("1915"[sic]).<br>Ameisen von<br>Singapore.<br>Beobachtet und<br>gesammelt von H.<br>Overbeck. Archiv<br>für<br>Naturgeschichte<br>(A). 81(8). 08-168.<br>Dorow, 1995 |             |            |      |
| Formicidae | <i>Polyrhachis</i>     | <i>thrinax</i>          |                                                                                                                                                                                 |             | Not Listed | DD   |
|            |                        | <i>overbecki</i>        |                                                                                                                                                                                 |             |            |      |
| Formicidae | <i>Polyrhachis</i>     | <i>vindex</i>           | Smith, 1857                                                                                                                                                                     |             | Not Listed | VU   |
| Formicidae | <i>Ponera</i>          | <i>swezeyi</i>          | (Wheeler, 1933)                                                                                                                                                                 |             | Not Listed | VU   |
| Formicidae | <i>Prenolepis</i>      | <i>jerdoni</i>          | Emery, 1893                                                                                                                                                                     |             | Not Listed | VU   |
| Formicidae | <i>Prenolepis</i>      | <i>subopaca</i>         | Emery, 1900                                                                                                                                                                     |             | Not Listed | VU   |
| Formicidae | <i>Prionopelta</i>     | <i>kraepelini</i>       | Forel, 1905                                                                                                                                                                     |             | Not Listed | DD   |
| Formicidae | <i>Pristomyrmex</i>    | <i>costatus</i>         | Wang, 2003                                                                                                                                                                      |             | Not Listed | VU   |
| Formicidae | <i>Pristomyrmex</i>    | <i>punctatus</i>        | (Smith, 1860)                                                                                                                                                                   |             | Not Listed | NT   |
| Formicidae | <i>Proatta</i>         | <i>butteli</i>          | Forel, 1912                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Probolomyrmex</i>   | <i>vieti</i>            | Eguchi et al. 2006                                                                                                                                                              |             | Not Listed | DD   |
| Formicidae | <i>Probolomyrmex</i>   | <i>watanabei</i>        | Tanaka, 1974                                                                                                                                                                    |             | Not Listed | EN   |
| Formicidae | <i>Proceratium</i>     | <i>deelemani</i>        | Perrault, 1981                                                                                                                                                                  |             | Not Listed | EN   |
| Formicidae | <i>Proceratium</i>     | <i>malesianum</i>       | De Andrade, 2003                                                                                                                                                                |             | Not Listed | CR   |
| Formicidae | <i>Protanilla</i>      | <i>rafflesi</i>         | Taylor, 1990                                                                                                                                                                    |             | Not Listed | VU   |
| Formicidae | <i>Pseudoneoponera</i> | <i>rufipes</i>          | (Jerdon, 1851)                                                                                                                                                                  |             | Not Listed | VU   |

| Family     | Genus                  | Species               | Authority                                                                                                                                           | Common Name | RDB2       | RDB3 |
|------------|------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Formicidae | <i>Pseudoneoponera</i> | <i>tridentata</i>     | (Smith, 1858)                                                                                                                                       |             | Not Listed | VU   |
| Formicidae | <i>Rhopalomastix</i>   | <i>glabricephala</i>  | Wang et al., 2018                                                                                                                                   |             | Not Listed | CR   |
| Formicidae | <i>Rhopalomastix</i>   | <i>javana</i>         | Wheeler, 1929                                                                                                                                       |             | Not Listed | VU   |
| Formicidae | <i>Rhopalomastix</i>   | <i>johorensis</i>     | Wheeler, 1929                                                                                                                                       |             | Not Listed | LC   |
| Formicidae | <i>Rhopalomastix</i>   | <i>murphyi</i>        | Wang et al., 2018                                                                                                                                   |             | Not Listed | VU   |
| Formicidae | <i>Rhopalomastix</i>   | <i>striata</i>        | Wang et al., 2018                                                                                                                                   |             | Not Listed | VU   |
| Formicidae | <i>Rhopalomastix</i>   | <i>tenebra</i>        | Wang, Yong & Jaitrong, 2018                                                                                                                         |             | Not Listed | VU   |
| Formicidae | <i>Rostromyrmex</i>    | <i>pasohensis</i>     | Rosciszewski, 1994                                                                                                                                  |             | Not Listed | CR   |
| Formicidae | <i>Rotastruma</i>      | <i>recava</i>         | Bolton, 1991                                                                                                                                        |             | Not Listed | EN   |
| Formicidae | <i>Simopone</i>        | <i>bakeri</i>         | Menozi, 1926                                                                                                                                        |             | Not Listed | CR   |
| Formicidae | <i>Stigmatomma</i>     | <i>besucheti</i>      | (Baroni Urbani, 1978)                                                                                                                               |             | Not Listed | VU   |
| Formicidae | <i>Stigmatomma</i>     | <i>reclinatum</i>     | (Mayr, 1879)                                                                                                                                        |             | Not Listed | VU   |
| Formicidae | <i>Strumigenys</i>     | <i>chapmani</i>       | Brown, 1954                                                                                                                                         |             | Not Listed | CR   |
| Formicidae | <i>Strumigenys</i>     | <i>extemena</i>       | (Taylor, 1968)                                                                                                                                      |             | Not Listed | CR   |
| Formicidae | <i>Strumigenys</i>     | <i>sublaminata</i>    | Brown, 1959                                                                                                                                         |             | Not Listed | CR   |
| Formicidae | <i>Strumigenys</i>     | <i>godeffroyi</i>     | Mayr, 1866                                                                                                                                          |             | Not Listed | DD   |
| Formicidae | <i>Strumigenys</i>     | <i>juliae</i>         | Forel, 1905                                                                                                                                         |             | Not Listed | VU   |
| Formicidae | <i>Strumigenys</i>     | <i>koningsbergeri</i> | Forel, 1905                                                                                                                                         |             | Not Listed | EN   |
| Formicidae | <i>Strumigenys</i>     | <i>kraepelini</i>     | Forel, 1905                                                                                                                                         |             | Not Listed | CR   |
| Formicidae | <i>Strumigenys</i>     | <i>mitis</i>          | (Brown, 2000)                                                                                                                                       |             | Not Listed | DD   |
| Formicidae | <i>Strumigenys</i>     | <i>nanzanensis</i>    | Lin & Wu, 1996                                                                                                                                      |             | Not Listed | VU   |
| Formicidae | <i>Strumigenys</i>     | <i>nepalensis</i>     | Baroni Urbani & de Andrade, 1994                                                                                                                    |             | Not Listed | DD   |
| Formicidae | <i>Strumigenys</i>     | <i>rofocala</i>       | Bolton, 2000                                                                                                                                        |             | Not Listed | VU   |
| Formicidae | <i>Strumigenys</i>     | <i>szalayi</i>        | Emery, 1897                                                                                                                                         |             | Not Listed | DD   |
| Formicidae | <i>Strumigenys</i>     | <i>sydorata</i>       | Bolton, 2000                                                                                                                                        |             | Not Listed | DD   |
| Formicidae | <i>Technomyrmex</i>    | <i>albipes</i>        | (Smith, 1861)                                                                                                                                       |             | Not Listed | LC   |
| Formicidae | <i>Technomyrmex</i>    | <i>horni</i>          | Forel, 1912                                                                                                                                         |             | Not Listed | DD   |
| Formicidae | <i>Technomyrmex</i>    | <i>kraepelini</i>     | Forel, 1905                                                                                                                                         |             | Not Listed | NT   |
| Formicidae | <i>Technomyrmex</i>    | <i>pratensis</i>      | (Smith, 1860)                                                                                                                                       |             | Not Listed | EN   |
| Formicidae | <i>Technomyrmex</i>    | <i>schimmeri</i>      | Viehmeyer, H. (1916) ("1915"[sic]). Ameisen von Singapore. Beobachtet und gesammelt von H. Overbeck. Archiv für Naturgeschichte (A), 81(8), 08-168. |             | Not Listed | VU   |
| Formicidae | <i>Technomyrmex</i>    | <i>textor</i>         | Forel, 1909                                                                                                                                         |             | Not Listed | VU   |
| Formicidae | <i>Technomyrmex</i>    | <i>vitiensis</i>      | Mann, 1921                                                                                                                                          |             | Not Listed | DD   |

| Family     | Genus                | Species            | Authority                                                                                                                                                                         | Common Name | RDB2       | RDB3 |
|------------|----------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------|
| Formicidae | <i>Tetramorium</i>   | <i>bicarinarum</i> | (Nylander, 1846)                                                                                                                                                                  |             | Not Listed | LC   |
| Formicidae | <i>Tetramorium</i>   | <i>insolens</i>    | (Smith, 1861)                                                                                                                                                                     |             | Not Listed | LC   |
| Formicidae | <i>Tetramorium</i>   | <i>kheperra</i>    | (Bolton, 1976)                                                                                                                                                                    |             | Not Listed | DD   |
| Formicidae | <i>Tetramorium</i>   | <i>lanuginosum</i> | Mayr, 1870                                                                                                                                                                        | Wooly Ant   | Not Listed | DD   |
| Formicidae | <i>Tetramorium</i>   | <i>meshena</i>     | (Bolton, 1976)                                                                                                                                                                    |             | Not Listed | VU   |
| Formicidae | <i>Tetramorium</i>   | <i>obtusidens</i>  | Viehmeyer, H.<br>(1916)<br>("1915"[sic]).<br>Ameisen von<br>Singapore.<br>Beobachtet und<br>gesammelt von H.<br>Overbeck. Archiv<br>für<br>Naturgeschichte<br>(A), 81(8), 08-168. |             | Not Listed | EN   |
| Formicidae | <i>Tetramorium</i>   | <i>pacificum</i>   | Mayr, 1870                                                                                                                                                                        |             | Not Listed | NT   |
| Formicidae | <i>Tetramorium</i>   | <i>smithi</i>      | Mayr, 1879                                                                                                                                                                        |             | Not Listed | DD   |
| Formicidae | <i>Tetramorium</i>   | <i>tonganum</i>    | Mayr, 1870                                                                                                                                                                        |             | Not Listed | NT   |
| Formicidae | <i>Tetraponera</i>   | <i>allaborans</i>  | (Walker, 1859)                                                                                                                                                                    |             | Not Listed | NT   |
| Formicidae | <i>Tetraponera</i>   | <i>attenuata</i>   | Smith, 1877                                                                                                                                                                       |             | Not Listed | VU   |
| Formicidae | <i>Tetraponera</i>   | <i>difficilis</i>  | (Emery, 1900)                                                                                                                                                                     |             | Not Listed | VU   |
| Formicidae | <i>Tetraponera</i>   | <i>extenuata</i>   | Ward, 2001                                                                                                                                                                        |             | Not Listed | VU   |
| Formicidae | <i>Tetraponera</i>   | <i>modesta</i>     | (Smith, 1860)                                                                                                                                                                     |             | Not Listed | EN   |
| Formicidae | <i>Tetraponera</i>   | <i>nitida</i>      | (Smith, 1860)                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Tetraponera</i>   | <i>pilosa</i>      | (Smith, 1858)                                                                                                                                                                     |             | Not Listed | NT   |
| Formicidae | <i>Tetraponera</i>   | <i>rufonigra</i>   | (Jerdon, 1851)                                                                                                                                                                    |             | Not Listed | LC   |
| Formicidae | <i>Tetraponera</i>   | <i>vivax</i>       | Ward, 2001                                                                                                                                                                        |             | Not Listed | DD   |
| Formicidae | <i>Tetraponera</i>   | <i>volucris</i>    | Ward, 2001                                                                                                                                                                        |             | Not Listed | DD   |
| Formicidae | <i>Tyrannomyrmex</i> | <i>rex</i>         | Fernández, 2003                                                                                                                                                                   |             | Not Listed | EN   |
| Formicidae | <i>Vollenhovia</i>   | <i>rufiventris</i> | Forel, 1901                                                                                                                                                                       |             | Not Listed | CR   |



**Checklist of Butterfly Species with their Category of Threat Status for Singapore**

Prepared by Khew Sin Khoon, Horace Tan, Tea Yi-Kai, Aaron Soh, Jonathan Soong

| Family       | Taxon Name                              | Common Name             | Origin    | RDB2       | RDB3 |
|--------------|-----------------------------------------|-------------------------|-----------|------------|------|
| Papilionidae | <i>Troides helena cerberus</i>          | Common Birdwing         | Native    | VU         | VU   |
| Papilionidae | <i>Troides amphrysus ruficollis</i>     | Malayan Birdwing        | Native    | NEx        | DD   |
| Papilionidae | <i>Pachliopta aristolochiae asteris</i> | Common Rose             | Native    | VU         | NT   |
| Papilionidae | <i>Papilio clytia clytia</i>            | Common Mime             | Native    | Not Listed | LC   |
| Papilionidae | <i>Papilio paradoxa aenigma</i>         | Great Blue Mime         | Native    | NEx        | NEx  |
| Papilionidae | <i>Papilio demoleus malayanus</i>       | Lime Butterfly          | Native    | Not Listed | LC   |
| Papilionidae | <i>Papilio demolion demolion</i>        | Banded Swallowtail      | Native    | Not Listed | EN   |
| Papilionidae | <i>Papilio iswara iswara</i>            | Great Helen             | Native    | Not Listed | NT   |
| Papilionidae | <i>Papilio polytes romulus</i>          | Common Mormon           | Native    | Not Listed | LC   |
| Papilionidae | <i>Papilio memnon agenor</i>            | Great Mormon            | Native    | Not Listed | VU   |
| Papilionidae | <i>Papilio prexaspes prexaspes</i>      | Blue Helen              | Uncertain | VU         | VU   |
| Papilionidae | <i>Papilio helenus helenus</i>          | Red Helen               | Uncertain | Not Listed | DD   |
| Papilionidae | <i>Graphium sarpedon luctatus</i>       | Common Bluebottle       | Native    | Not Listed | LC   |
| Papilionidae | <i>Graphium empedovana</i>              | Yellow Bluebottle       | Uncertain | Not Listed | DD   |
| Papilionidae | <i>Graphium euryplus mecisteus</i>      | Great Jay               | Uncertain | Not Listed | DD   |
| Papilionidae | <i>Graphium evemon eventus</i>          | Lesser or Blue Jay      | Native    | Not Listed | LC   |
| Papilionidae | <i>Graphium doson evemonides</i>        | Common Jay              | Uncertain | CR         | VU   |
| Papilionidae | <i>Graphium bathycles bathycloides</i>  | Striped Jay             | Uncertain | Not Listed | DD   |
| Papilionidae | <i>Graphium agamemnon agamemnon</i>     | Tailed Jay              | Native    | Not Listed | LC   |
| Papilionidae | <i>Graphium antiphates itamputi</i>     | Five Bar Swordtail      | Native    | Not Listed | LC   |
| Papilionidae | <i>Lamproptera meges virescens</i>      | Green Dragontail        | Native    | Not Listed | NEx  |
| Pieridae     | <i>Prioneris philonome themana</i>      | Red Spot Sawtooth       | Uncertain | Not Listed | DD   |
| Pieridae     | <i>Delias singapura singapura</i>       | Lion Jezebel            | Native    | NEx        | NEx  |
| Pieridae     | <i>Delias hyparete metarete</i>         | Painted Jezebel         | Native    | Not Listed | LC   |
| Pieridae     | <i>Delias pasithoe parthenope</i>       | Red Base Jezebel        | Native    | NEx        | DD   |
| Pieridae     | <i>Leptosia nina malayana</i>           | Psyche                  | Native    | Not Listed | LC   |
| Pieridae     | <i>Pieris canidia canidia</i>           | Cabbage White           | Native    | Not Listed | NT   |
| Pieridae     | <i>Cepora iudith malaya</i>             | Orange Gull             | Native    | NEx        | DD   |
| Pieridae     | <i>Appias lyncida vasava</i>            | Chocolate Albatross     | Native    | Not Listed | DD   |
| Pieridae     | <i>Appias olferna olferna</i>           | Striped Albatross       | Native    | Not Listed | LC   |
| Pieridae     | <i>Appias nero figulina</i>             | Orange Albatross        | Native    | NEx        | DD   |
| Pieridae     | <i>Appias paulina distant</i>           | Lesser Albatross        | Uncertain | Not Listed | DD   |
| Pieridae     | <i>Appias indra plana</i>               | Plain Puffin            | Uncertain | Not Listed | DD   |
| Pieridae     | <i>Hebomoia glaucippe aturia</i>        | Great Orange Tip        | Uncertain | DD         | DD   |
| Pieridae     | <i>Pareronia valeria lutescens</i>      | Wanderer                | Native    | NEx        | DD   |
| Pieridae     | <i>Saletara liberia distant</i>         | Malaysian Albatross     | Native    | DD         | DD   |
| Pieridae     | <i>Dercas verhuelli herodorus</i>       | Tailed Sulphur          | Native    | NEx        | NEx  |
| Pieridae     | <i>Catopsilia pyranthe pyranthe</i>     | Mottled Emigrant        | Native    | Not Listed | LC   |
| Pieridae     | <i>Catopsilia pomona pomona</i>         | Lemon Emigrant          | Native    | Not Listed | LC   |
| Pieridae     | <i>Catopsilia scylla cornelia</i>       | Orange Emigrant         | Native    | Not Listed | LC   |
| Pieridae     | <i>Eurema brigitta senna</i>            | No Brand Grass Yellow   | Native    | NEx        | CR   |
| Pieridae     | <i>Eurema hecabe contubernalis</i>      | Common Grass Yellow     | Native    | Not Listed | LC   |
| Pieridae     | <i>Eurema simulatrix tecmessa</i>       | Forest Grass Yellow     | Native    | Not Listed | NT   |
| Pieridae     | <i>Eurema blanda snelleni</i>           | Three Spot Grass Yellow | Native    | Not Listed | LC   |
| Pieridae     | <i>Eurema andersonii andersonii</i>     | Anderson's Grass Yellow | Native    | Not Listed | NT   |

| Family      | Taxon Name                                  | Common Name             | Origin    | RDB2       | RDB3 |
|-------------|---------------------------------------------|-------------------------|-----------|------------|------|
| Pieridae    | <i>Eurema lacteola lacteola</i>             | Scarce Grass Yellow     | Native    | NEx        | NEx  |
| Pieridae    | <i>Eurema ada iona</i>                      | Talbot's Grass Yellow   | Native    | NEx        | NEx  |
| Pieridae    | <i>Eurema sari sodalis</i>                  | Chocolate Grass Yellow  | Native    | Not Listed | LC   |
| Pieridae    | <i>Gandaca harina distantia</i>             | Tree Yellow             | Native    | Not Listed | LC   |
| Nymphalidae | <i>Danaus chrysippus chrysippus</i>         | Plain Tiger             | Native    | Not Listed | LC   |
| Nymphalidae | <i>Danaus genutia genutia</i>               | Common Tiger            | Native    | Not Listed | LC   |
| Nymphalidae | <i>Danaus melanippus hegesippus</i>         | Black Veined Tiger      | Native    | Not Listed | NT   |
| Nymphalidae | <i>Danaus affinis malayanus</i>             | Swamp Tiger             | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Tirumala septentrionis septentrionis</i> | Dark Blue Tiger         | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Tirumala limniace</i>                    | Blue Tiger              | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Parantica agleoides agleoides</i>        | Dark Glassy Tiger       | Native    | Not Listed | LC   |
| Nymphalidae | <i>Parantica aspasia aspasia</i>            | Yellow Glassy Tiger     | Native    | NEx        | DD   |
| Nymphalidae | <i>Parantica melaneus sinopion</i>          | Chocolate Tiger         | Native    | NEx        | NEx  |
| Nymphalidae | <i>Ideopsis vulgaris macrina</i>            | Blue Glassy Tiger       | Native    | Not Listed | LC   |
| Nymphalidae | <i>Ideopsis juvena sitah</i>                | Grey Glassy Tiger       | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Ideopsis gaura perakana</i>              | Smaller Wood Nymph      | Native    | NEx        | NEx  |
| Nymphalidae | <i>Ideopsis similis persimilis</i>          | Glassy Tiger            | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Idea stolli logani</i>                   | Common Tree Nymph       | Native    | Not Listed | CR   |
| Nymphalidae | <i>Idea leuconoe chersonesia</i>            | Mangrove Tree Nymph     | Native    | CR         | CR   |
| Nymphalidae | <i>Euploea crameri bremeri</i>              | Spotted Black Crow      | Native    | Not Listed | NT   |
| Nymphalidae | <i>Euploea camaralzeman malayica</i>        | Malayan Crow            | Native    | CR         | CR   |
| Nymphalidae | <i>Euploea eyndhovii gardineri</i>          | Striped Black Crow      | Native    | Not Listed | EN   |
| Nymphalidae | <i>Euploea sylvester harrisii</i>           | Double Branded Crow     | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Euploea mulciber mulciber</i>            | Striped BlueCrow        | Native    | Not Listed | LC   |
| Nymphalidae | <i>Euploea phaenareta castelnaui</i>        | King Crow               | Native    | Not Listed | NT   |
| Nymphalidae | <i>Euploea midamus singapura</i>            | Blue Spotted Crow       | Native    | Not Listed | NT   |
| Nymphalidae | <i>Euploea tulliolus ledereri</i>           | Dwarf Crow              | Native    | EN         | NT   |
| Nymphalidae | <i>Euploea eunice leucogonis</i>            | Blue-branded King Crow  | Native    | NEx        | NEx  |
| Nymphalidae | <i>Euploea radamanthus radamanthus</i>      | Magpie Crow             | Native    | Not Listed | CR   |
| Nymphalidae | <i>Melanitis leda leda</i>                  | Common Evening Brown    | Native    | Not Listed | LC   |
| Nymphalidae | <i>Melanitis phedima abdullae</i>           | Dark Evening Brown      | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Elymnias panthera panthera</i>           | Tawny Palmfly           | Native    | Not Listed | NT   |
| Nymphalidae | <i>Elymnias hypermnestra agina</i>          | Common Palmfly          | Native    | Not Listed | LC   |
| Nymphalidae | <i>Elymnias nesaea lioneli</i>              | Tiger Palmfly           | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Elymnias esaca esaca</i>                 | Green Palmfly           | Native    | NEx        | NEx  |
| Nymphalidae | <i>Elymnias penanga penanga</i>             | Pointed Palmfly         | Native    | DD         | DD   |
| Nymphalidae | <i>Lethe europa malaya</i>                  | Bamboo Tree Brown       | Native    | Not Listed | NT   |
| Nymphalidae | <i>Xanthotaenia busiris busiris</i>         | Yellow Barred           | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Mycalesis fusca fusca</i>                | Malayan Bush Brown      | Native    | Not Listed | NT   |
| Nymphalidae | <i>Mycalesis perseus cepheus</i>            | Dingy Bush Brown        | Native    | Not Listed | LC   |
| Nymphalidae | <i>Mycalesis perseoides perseoides</i>      | Burmese Bush Brown      | Uncertain | DD         | LC   |
| Nymphalidae | <i>Mycalesis mineus macromalayana</i>       | Dark Brand Bush Brown   | Native    | Not Listed | LC   |
| Nymphalidae | <i>Mycalesis visala phamis</i>              | Long Brand Bush Brown   | Native    | Not Listed | NT   |
| Nymphalidae | <i>Mycalesis orseis nautilus</i>            | Purple Bush Brown       | Native    | Not Listed | VU   |
| Nymphalidae | <i>Orsotriaena medus cinerea</i>            | Dark Grass Brown        | Native    | Not Listed | LC   |
| Nymphalidae | <i>Coelites epiminthia epiminthia</i>       | Straight-Banded Catseye | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Ypthima huebneri</i>                     | Common Four Ring        | Native    | Not Listed | LC   |

| Family      | Taxon Name                                    | Common Name               | Origin    | RDB2       | RDB3 |
|-------------|-----------------------------------------------|---------------------------|-----------|------------|------|
| Nymphalidae | <i>Ypthima fasciata torone</i>                | Scarce Six Ring           | Native    | CR         | DD   |
| Nymphalidae | <i>Ypthima baldus newboldi</i>                | Common Five Ring          | Native    | Not Listed | LC   |
| Nymphalidae | <i>Ypthima horsfieldii humei</i>              | Malayan Five Ring         | Native    | Not Listed | LC   |
| Nymphalidae | <i>Ypthima pandocus corticaria</i>            | Common Three Ring         | Native    | Not Listed | VU   |
| Nymphalidae | <i>Faunis canens arcesilas</i>                | Common Faun               | Native    | Not Listed | LC   |
| Nymphalidae | <i>Melanocyma faunula faunula</i>             | Pallid Faun               | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Taenaris horsfieldii birchi</i>            | Silky Owl                 | Native    | NEx        | NEx  |
| Nymphalidae | <i>Amathusia phidippus phidippus</i>          | Palm King                 | Native    | Not Listed | NT   |
| Nymphalidae | <i>Amathusia friderici holmanhunti</i>        | Bicolour Haired Palm King | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Zeuxidia amethystus amethystus</i>         | Saturn                    | Native    | Not Listed | LC   |
| Nymphalidae | <i>Zeuxidia doubledayi doubledayi</i>         | Scarce Saturn             | Native    | NEx        | NEx  |
| Nymphalidae | <i>Thaumantis klugius lucipor</i>             | Dark Blue Jungle Glory    | Native    | Not Listed | NT   |
| Nymphalidae | <i>Thaumantis noureddin noureddin</i>         | Dark Jungle Glory         | Native    | NEx        | EN   |
| Nymphalidae | <i>Discophora sondaica despoliata</i>         | Common Duffer             | Native    | CR         | EN   |
| Nymphalidae | <i>Acraea terpsicore</i>                      | Tawny Coster              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Cethosia hypsea hypsina</i>                | Malay Lacewing            | Native    | Not Listed | CR   |
| Nymphalidae | <i>Cethosia methypsea</i>                     | Plain Lacewing            | Uncertain | CR         | CR   |
| Nymphalidae | <i>Cethosia cyane</i>                         | Leopard Lacewing          | Uncertain | Not Listed | LC   |
| Nymphalidae | <i>Phalanta phalantha phalantha</i>           | Leopard                   | Native    | Not Listed | LC   |
| Nymphalidae | <i>Vagrans sinha sinha</i>                    | Vagrant                   | Native    | NEx        | DD   |
| Nymphalidae | <i>Cupha erymanthis lotis</i>                 | Rustic                    | Native    | Not Listed | LC   |
| Nymphalidae | <i>Cirrochroa orissa orissa</i>               | Banded Yeoman             | Native    | Not Listed | EN   |
| Nymphalidae | <i>Cirrochroa emalea emalea</i>               | Malay Yeoman              | Native    | Not Listed | EN   |
| Nymphalidae | <i>Cirrochroa tyche rotundata</i>             | Common Yeoman             | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Vindula dejone erotella</i>                | Cruiser                   | Native    | Not Listed | LC   |
| Nymphalidae | <i>Terinos terpander robertsia</i>            | Royal Assyrian            | Native    | Not Listed | NT   |
| Nymphalidae | <i>Terinos atlita teuthras</i>                | Great Assyrian            | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Dryas iulia</i>                            | Julia Heliconian          | Uncertain | Not Listed | LC   |
| Nymphalidae | <i>Ariadne ariadne ariadne</i>                | Angled Castor             | Native    | NEx        | DD   |
| Nymphalidae | <i>Ariadne isaeus isaeus</i>                  | Malayan Castor            | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Laringa castelnaui castelnaui</i>          | Blue Dandy                | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Vanessa cardui</i>                         | Painted Lady              | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Vanessa indica indica</i>                  | Indian Red Admiral        | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Symbrenthia hippoclus selangorana</i>      | Malayan Jester            | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Hypolimnias anomala anomala</i>            | Malayan Eggfly            | Native    | Not Listed | LC   |
| Nymphalidae | <i>Hypolimnias misippus misippus</i>          | Danaid Eggfly             | Native    | NEx        | DD   |
| Nymphalidae | <i>Hypolimnias bolina bolina</i>              | Great Eggfly              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Hypolimnias bolina jacintha</i>            | Jacintha Eggfly           | Uncertain | Not Listed | LC   |
| Nymphalidae | <i>Doleschallia bisaltide ?bisaltide var.</i> | Autumn Leaf               | Native    | Not Listed | LC   |
| Nymphalidae | <i>Doleschallia bisaltide pratipa</i>         | Autumn Leaf               | Native    | Not Listed | DD   |
| Nymphalidae | <i>Rhinopalpa polynice eudoxia</i>            | The Wizard                | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Junonia hedonia ida</i>                    | Chocolate Pansy           | Native    | Not Listed | LC   |
| Nymphalidae | <i>Junonia atlites atlites</i>                | Grey Pansy                | Native    | Not Listed | LC   |
| Nymphalidae | <i>Junonia almana javana</i>                  | Peacock Pansy             | Native    | Not Listed | LC   |
| Nymphalidae | <i>Junonia orithya wallacei</i>               | Blue Pansy                | Native    | Not Listed | LC   |
| Nymphalidae | <i>Kallima limborgii amplirufa</i>            | Leaf butterfly            | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Chersonesia rahria rahria</i>              | Wavy Maplet               | Native    | NEx        | NEx  |

| Family      | Taxon Name                           | Common Name              | Origin    | RDB2       | RDB3 |
|-------------|--------------------------------------|--------------------------|-----------|------------|------|
| Nymphalidae | <i>Chersonesia peraka peraka</i>     | Little Maplet            | Native    | VU         | VU   |
| Nymphalidae | <i>Moduza procris milonia</i>        | Commander                | Native    | Not Listed | LC   |
| Nymphalidae | <i>Lebadea martha parkeri</i>        | Knight                   | Native    | Not Listed | LC   |
| Nymphalidae | <i>Lebadea martha malayana</i>       | Knight                   | Uncertain | Not Listed | DD   |
| Nymphalidae | <i>Athyma pravara helma</i>          | Lance Sergeant           | Uncertain | Not Listed | LC   |
| Nymphalidae | <i>Athyma asura idita</i>            | Studded Sergeant         | Native    | Not Listed | NT   |
| Nymphalidae | <i>Athyma kanwa kanwa</i>            | Dot-Dash Sergeant        | Native    | Not Listed | LC   |
| Nymphalidae | <i>Athyma reta moorei</i>            | Malay Staff Sergeant     | Native    | Not Listed | NT   |
| Nymphalidae | <i>Athyma nefte subrata</i>          | Colour Sergeant          | Native    | Not Listed | LC   |
| Nymphalidae | <i>Athyma perius perius</i>          | Common Sergeant          | Native    | NEx        | DD   |
| Nymphalidae | <i>Pandita sinope sinope</i>         | Colonel                  | Native    | Not Listed | NT   |
| Nymphalidae | <i>Neptis hylas papaja</i>           | Common Sailor            | Native    | Not Listed | LC   |
| Nymphalidae | <i>Neptis leucoporus cresina</i>     | Burmese (Grey) Sailor    | Native    | Not Listed | LC   |
| Nymphalidae | <i>Neptis omeroda omeroda</i>        | Dingy Sailor             | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Neptis harita harita</i>          | Chocolate Sailor         | Uncertain | VU         | NT   |
| Nymphalidae | <i>Neptis miah batara</i>            | Small Yellow Sailor      | Native    | NEx        | NEx  |
| Nymphalidae | <i>Phaedyra columella singa</i>      | Short Banded Sailor      | Native    | Not Listed | LC   |
| Nymphalidae | <i>Lasippa heliodore dorelia</i>     | Burmese Lascar           | Native    | DD         | NT   |
| Nymphalidae | <i>Lasippa tiga siaka</i>            | Malayan Lascar           | Native    | Not Listed | LC   |
| Nymphalidae | <i>Pantoporia hordonia hordonia</i>  | Common Lascar            | Native    | Not Listed | DD   |
| Nymphalidae | <i>Pantoporia paraka paraka</i>      | Perak Lascar             | Native    | Not Listed | LC   |
| Nymphalidae | <i>Pantoporia sandaka sandaka</i>    | Extra Lascar             | Native    | NEx        | NT   |
| Nymphalidae | <i>Pantoporia dindinga</i>           | Grey-Lined Lascar        | Native    | NEx        | NEx  |
| Nymphalidae | <i>Pantoporia aurelia aurelia</i>    | Baby Lascar              | Native    | NEx        | NEx  |
| Nymphalidae | <i>Parthenos sylvia lilacinus</i>    | Clipper                  | Native    | NEx        | DD   |
| Nymphalidae | <i>Tanaecia pelea pelea</i>          | Malay Viscount           | Native    | Not Listed | LC   |
| Nymphalidae | <i>Tanaecia iapis puseda</i>         | Horsfield's Baron        | Native    | Not Listed | LC   |
| Nymphalidae | <i>Tanaecia godartii puloa</i>       | Malay Count              | Native    | NEx        | NEx  |
| Nymphalidae | <i>Tanaecia clathrata violaria</i>   | Violet-Bordered Viscount | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Euthalia monina monina</i>        | Malay Baron              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Euthalia merta merta</i>          | White Tipped Baron       | Native    | CR         | EN   |
| Nymphalidae | <i>Euthalia aconthea gurma</i>       | Baron                    | Native    | Not Listed | LC   |
| Nymphalidae | <i>Euthalia adonia pinwilli</i>      | Green Baron              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Euthalia djata rubidifascia</i>   | Red-Spot Baron           | Native    | NEx        | NEx  |
| Nymphalidae | <i>Dophla evelina compta</i>         | Red-Spot Duke            | Native    | NEx        | NEx  |
| Nymphalidae | <i>Bassarona teuta goodrichi</i>     | Banded Marquis           | Native    | Not Listed | NEx  |
| Nymphalidae | <i>Lexias dirtea merguia</i>         | Dark Archduke            | Native    | Not Listed | LC   |
| Nymphalidae | <i>Lexias pardalis dirteana</i>      | Archduke                 | Native    | Not Listed | LC   |
| Nymphalidae | <i>Lexias canescens pardalina</i>    | Yellow Archduke          | Native    | Not Listed | NT   |
| Nymphalidae | <i>Eulaceura osteria kumana</i>      | Purple Duke              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Euripus nyctelius euploeoides</i> | Courtesan                | Native    | CR         | CR   |
| Nymphalidae | <i>Prothoe franck uniformis</i>      | Blue Begum               | Native    | NEx        | NEx  |
| Nymphalidae | <i>Charaxes bernardus crepax</i>     | Tawny Rajah              | Native    | NEx        | NEx  |
| Nymphalidae | <i>Charaxes solon echo</i>           | Black Rajah              | Native    | CR         | CR   |
| Nymphalidae | <i>Polyura hebe plautus</i>          | Plain Nawab              | Native    | Not Listed | LC   |
| Nymphalidae | <i>Polyura schreiber tisamenus</i>   | Blue Nawab               | Native    | Not Listed | LC   |
| Nymphalidae | <i>Polyura moori moori</i>           | Malayan Nawab            | Native    | NEx        | DD   |
| Nymphalidae | <i>Polyura athamas athamas</i>       | Common Nawab             | Native    | Not Listed | NEx  |

| Family     | Taxon Name                                 | Common Name                  | Origin    | RDB2       | RDB3 |
|------------|--------------------------------------------|------------------------------|-----------|------------|------|
| Riodinidae | <i>Zemeros flegyas albipunctatus</i>       | Punchinello                  | Native    | NEx        | NEx  |
| Riodinidae | <i>Zemeros emesoides emesoides</i>         | Malay Punchinello            | Native    | Not Listed | NEx  |
| Riodinidae | <i>Abisara geza niya</i>                   | Spotted Judy                 | Native    | Not Listed | LC   |
| Riodinidae | <i>Abisara savitri savitri</i>             | Malay Tailed Judy            | Native    | Not Listed | LC   |
| Riodinidae | <i>Abisara saturata kausambioides</i>      | Malayan Plum Judy            | Native    | Not Listed | LC   |
| Riodinidae | <i>Laxita thuisto thuisto</i>              | Lesser Harlequin             | Native    | Not Listed | LC   |
| Riodinidae | <i>Taxila haquinus haquinus</i>            | The Harlequin                | Native    | EN         | CR   |
| Lycaenidae | <i>Poritia philota philota</i>             | Malay Gem                    | Native    | Not Listed | EN   |
| Lycaenidae | <i>Poritia sumatrae sumatrae</i>           | Sumatran Gem                 | Native    | Not Listed | LC   |
| Lycaenidae | <i>Poritia erycinoides phraatica</i>       | Blue Gem                     | Native    | NEx        | NEx  |
| Lycaenidae | <i>Poritia pleurata</i>                    | Indian Green Gem             | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Simiskina phalena phalena</i>           | Broad-Banded Brilliant       | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Simiskina pheretia pheretia</i>         | Streaked Blue Brilliant      | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Simiskina pediada</i>                   | Mixture Blue Brilliant       | Native    | NEx        | NEx  |
| Lycaenidae | <i>Simiskina phalia potina</i>             | Blue Brilliant               | Native    | NEx        | NEx  |
| Lycaenidae | <i>Deramas livens livens</i>               | Common Bluejohn              | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Miletus gaesa gaesa</i>                 | Brown Brownwing              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Miletus gopara gopara</i>               | Round-band Brownwing         | Native    | DD         | DD   |
| Lycaenidae | <i>Miletus biggsii biggsii</i>             | Bigg's Brownwing             | Native    | Not Listed | LC   |
| Lycaenidae | <i>Miletus symethus petronius</i>          | Blue Brownwing               | Native    | Not Listed | NT   |
| Lycaenidae | <i>Allotinus unicolor unicolor</i>         | Lesser Darkwing              | Native    | Not Listed | LC   |
| Lycaenidae | <i>Allotinus davidis</i>                   | Short-Branded Darkwing       | Native    | NEx        | NEx  |
| Lycaenidae | <i>Allotinus strigatus malayanus</i>       | Small Malayan Darkwing       | Native    | NEx        | NEx  |
| Lycaenidae | <i>Allotinus subviolaceus subviolaceus</i> | Blue Darkwing                | Native    | NEx        | NEx  |
| Lycaenidae | <i>Allotinus substrigosus substrigosus</i> |                              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Allotinus horsfieldi permagnus</i>      | Common Darkwing              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Allotinus corbeti</i>                   |                              | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Logania marmorata damis</i>             | Common Mottle                | Native    | Not Listed | LC   |
| Lycaenidae | <i>Spalgis epius epius</i>                 | The Apefly                   | Native    | Not Listed | LC   |
| Lycaenidae | <i>Taraka mahanetra</i>                    |                              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Liphyra brassolis abbreviata</i>        | Moth Butterfly               | Native    | NEx        | DD   |
| Lycaenidae | <i>Spindasis syama terana</i>              | Club/Black Banded Silverline | Native    | Not Listed | LC   |
| Lycaenidae | <i>Spindasis lohita senama</i>             | Long Banded Silverline       | Native    | Not Listed | LC   |
| Lycaenidae | <i>Curetis bulis stigmata</i>              | Bright Sunbeam               | Native    | NEx        | NEx  |
| Lycaenidae | <i>Curetis sperthis sperthis</i>           | Rounded Sunbeam              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Curetis tagalica jopa</i>               | Southern Sunbeam             | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Curetis regula</i>                      | Regular Sunbeam              | Native    | NEx        | NEx  |
| Lycaenidae | <i>Curetis santana malayica</i>            | Malayan Sunbeam              | Native    | Not Listed | LC   |
| Lycaenidae | <i>Curetis saronis sumatrana</i>           | Sumatran Sunbeam             | Native    | Not Listed | LC   |
| Lycaenidae | <i>Castalius rosimon rosimon</i>           | Common Pierrot               | Native    | NEx        | DD   |
| Lycaenidae | <i>Caleta elna elvira</i>                  | Elbowed Pierrot              | Native    | Not Listed | LC   |
| Lycaenidae | <i>Everes lacturnus rileyi</i>             | Indian Cupid                 | Native    | Not Listed | EN   |
| Lycaenidae | <i>Lycaenopsis haraldus haraldus</i>       | Felder's Hedge Blue          | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Neopithecops zalmora zalmora</i>        | The Quaker                   | Native    | Not Listed | LC   |
| Lycaenidae | <i>Megisba malaya sikkima</i>              | The Malayan                  | Uncertain | Not Listed | LC   |
| Lycaenidae | <i>Acytolepis puspa lambi</i>              | Common Hedge Blue            | Native    | Not Listed | LC   |
| Lycaenidae | <i>Zizina otis lampa</i>                   | Lesser Grass Blue            | Native    | Not Listed | LC   |

| Family     | Taxon Name                              | Common Name                | Origin    | RDB2       | RDB3 |
|------------|-----------------------------------------|----------------------------|-----------|------------|------|
| Lycaenidae | <i>Zizula hylax pygmaea</i>             | Pygmy Grass Blue           | Native    | Not Listed | LC   |
| Lycaenidae | <i>Zizeeria maha serica</i>             | Pale Grass Blue            | Native    | Not Listed | LC   |
| Lycaenidae | <i>Zizeeria karsandra</i>               | Dark Grass Blue            | Native    | NEx        | NEx  |
| Lycaenidae | <i>Freyeria putli</i>                   | Jewelled Grass Blue        | Uncertain | Not Listed | DD   |
| Lycaenidae | <i>Chilades pandava pandava</i>         | Cycad Blue                 | Native    | Not Listed | LC   |
| Lycaenidae | <i>Euchrysops cnejus cnejus</i>         | Gram Blue                  | Native    | Not Listed | LC   |
| Lycaenidae | <i>Catochrysops strabo strabo</i>       | Forget-Me-Not              | Native    | Not Listed | VU   |
| Lycaenidae | <i>Catochrysops panormus exiguus</i>    | Silver Forget-Me-Not       | Native    | Not Listed | LC   |
| Lycaenidae | <i>Lampides boeticus</i>                | Pea Blue                   | Native    | Not Listed | LC   |
| Lycaenidae | <i>Jamides bochus nabonassar</i>        | Dark Caerulean             | Native    | Not Listed | LC   |
| Lycaenidae | <i>Jamides alecto ageladas</i>          | Metallic Caerulean         | Native    | NEx        | LC   |
| Lycaenidae | <i>Jamides celeno aelianus</i>          | Common Caerulean           | Native    | Not Listed | LC   |
| Lycaenidae | <i>Jamides malaccanus malaccanus</i>    | Malaccan Caerulean         | Uncertain | DD         | DD   |
| Lycaenidae | <i>Jamides caeruleus caeruleus</i>      | Sky Blue                   | Native    | DD         | CR   |
| Lycaenidae | <i>Jamides elpis pseudelpis</i>         | Glistening Caerulean       | Native    | NEx        | CR   |
| Lycaenidae | <i>Jamides pura pura</i>                | White Caerulean            | Native    | NEx        | NEx  |
| Lycaenidae | <i>Jamides philatus subditus</i>        | Burmese Caerulean          | Native    | NEx        | NEx  |
| Lycaenidae | <i>Jamides abdul abdul</i>              | Abdul Caerulean            | Native    | NEx        | NEx  |
| Lycaenidae | <i>Nacaduba pendleburyi pendleburyi</i> | Pendlebury's Caerulean     | Native    | NEx        | DD   |
| Lycaenidae | <i>Nacaduba hermus swatipa</i>          | Pale Fourline Blue         | Native    | NEx        | DD   |
| Lycaenidae | <i>Nacaduba subperusia lysa</i>         | Violet Fourline Blue       | Native    | NEx        | DD   |
| Lycaenidae | <i>Nacaduba russelli</i>                | Dark Marginal Sixline Blue | Native    | NEx        | DD   |
| Lycaenidae | <i>Nacaduba angusta kerriana</i>        | White Fourline Blue        | Native    | NEx        | DD   |
| Lycaenidae | <i>Nacaduba sanaya elioti</i>           | Jewel Fourline Blue        | Native    | NEx        | LC   |
| Lycaenidae | <i>Nacaduba pactolus odon</i>           | Large Fourline Blue        | Native    | NEx        | LC   |
| Lycaenidae | <i>Nacaduba kurava nemana</i>           | Transparent Sixline Blue   | Native    | NEx        | LC   |
| Lycaenidae | <i>Nacaduba pavana singapura</i>        | Singapore Fourline Blue    | Native    | Not Listed | EN   |
| Lycaenidae | <i>Nacaduba beroe neon</i>              | Opaque Sixline Blue        | Native    | Not Listed | LC   |
| Lycaenidae | <i>Nacaduba berenice icena</i>          | Rounded Sixline Blue       | Native    | Not Listed | LC   |
| Lycaenidae | <i>Nacaduba calauria malayica</i>       | Dark Malayan Sixline Blue  | Native    | Not Listed | LC   |
| Lycaenidae | <i>Nacaduba biocellata</i>              | Two Spotted Line Blue      | Uncertain | Not Listed | LC   |
| Lycaenidae | <i>Ionolyce helicon merguiana</i>       | Pointed Line Blue          | Native    | Not Listed | LC   |
| Lycaenidae | <i>Prosotas lutea sivoka</i>            | Banded Line Blue           | Uncertain | Not Listed | DD   |
| Lycaenidae | <i>Prosotas nora superdates</i>         | Common Line-Blue           | Native    | Not Listed | LC   |
| Lycaenidae | <i>Prosotas dubiosa lumpura</i>         | Tailless Line Blue         | Native    | Not Listed | LC   |
| Lycaenidae | <i>Prosotas aluta nanda</i>             | Barred Line Blue           | Uncertain | Not Listed | NT   |
| Lycaenidae | <i>Una usta usta</i>                    | Singleton                  | Native    | NEx        | NEx  |
| Lycaenidae | <i>Catopyrops ancyra aberrans</i>       | Ancyra Blue                | Uncertain | VU         | LC   |
| Lycaenidae | <i>Petrelaea dana dana</i>              | Dingy Line Blue            | Uncertain | Not Listed | LC   |
| Lycaenidae | <i>Anthene emolus goberus</i>           | Ciliate Blue               | Native    | Not Listed | LC   |
| Lycaenidae | <i>Anthene lycaenina miya</i>           | Pointed Ciliate Blue       | Native    | Not Listed | LC   |
| Lycaenidae | <i>Arhopala lurida</i>                  | Lesser Disc Oakblue        | Native    | NEx        | NEx  |
| Lycaenidae | <i>Arhopala allata pandora</i>          | Rosy Oakblue               | Native    | NEx        | EN   |
| Lycaenidae | <i>Arhopala delta</i>                   | Delta Dull Oakblue         | Native    | NEx        | NEx  |
| Lycaenidae | <i>Arhopala avathina avathina</i>       | Lunulate Yellow Oakblue    | Native    | NEx        | NEx  |
| Lycaenidae | <i>Arhopala muta maranda</i>            | Mutal Oakblue              | Native    | NEx        | VU   |

| Family     | Taxon Name                            | Common Name                  | Origin | RDB2       | RDB3 |
|------------|---------------------------------------|------------------------------|--------|------------|------|
| Lycaenidae | <i>Arhopala kurzi</i>                 |                              | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala aroa aroa</i>             |                              | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala zambra zambra</i>         | Zambra Oakblue               | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala vihara vihara</i>         | Large Spotted Oakblue        | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala moorei busa</i>           |                              | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala metamuta metamuta</i>     | Bicolour Oakblue             | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala inornata inornata</i>     |                              | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala democritus lycaenaria</i> | White Dot Oakblue            | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala alitaeus pardenas</i>     | Purple Broken-Band Oakblue   | Native | NEx        | EN   |
| Lycaenidae | <i>Arhopala agrata agrata</i>         | de Niceville's Dull Oakblue  | Native | NEx        | DD   |
| Lycaenidae | <i>Arhopala milleri</i>               | Indigo Oakblue               | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala phanda phanda</i>         | Golden Oakblue               | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala normani</i>               | Norman's Oakblue             | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala barami penanga</i>        | Wood's Oakblue               | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala agelastus agelastus</i>   | Green-Edged Tailless Oakblue | Native | Not Listed | NEx  |
| Lycaenidae | <i>Arhopala wildeyana wildeyana</i>   | White Wavy Oakblue           | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala hypomuta hypomuta</i>     | Violet Oakblue               | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala corinda aceses</i>        | Ultramarine Oakblue          | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala ariel</i>                 | Chocolate Bushblue           | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala achelous achelous</i>     |                              | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala fulla intaca</i>          | Spotless Oakblue             | Native | NEx        | NEx  |
| Lycaenidae | <i>Arhopala centaurus nakula</i>      | Centaur Oakblue              | Native | Not Listed | LC   |
| Lycaenidae | <i>Arhopala myrzala lammas</i>        | Malayan Oakblue              | Native | Not Listed | VU   |
| Lycaenidae | <i>Arhopala aedias agnis</i>          | Large Metallic Oakblue       | Native | DD         | EN   |
| Lycaenidae | <i>Arhopala atosia malayana</i>       | Tailed Disc Oakblue          | Native | Not Listed | EN   |
| Lycaenidae | <i>Arhopala epimuta epiala</i>        | Common Disc Oakblue          | Native | Not Listed | LC   |
| Lycaenidae | <i>Arhopala amphimuta amphimuta</i>   | Broad Yellow Oakblue         | Native | NEx        | NT   |
| Lycaenidae | <i>Arhopala major major</i>           | Major Yellow Oakblue         | Native | DD         | LC   |
| Lycaenidae | <i>Arhopala antimuta antimuta</i>     | Small Tailless Oakblue       | Native | NEx        | EN   |
| Lycaenidae | <i>Arhopala pseudomuta pseudomuta</i> | Raffles' Oakblue             | Native | NEx        | NT   |
| Lycaenidae | <i>Arhopala athada athada</i>         | Vinous Oakblue               | Native | Not Listed | LC   |
| Lycaenidae | <i>Arhopala sublustris ridleyi</i>    | Bright Oakblue               | Native | NEx        | NT   |
| Lycaenidae | <i>Arhopala silhetensis adorea</i>    | Sylhet Oakblue               | Native | NEx        | VU   |
| Lycaenidae | <i>Arhopala eumolpus maxwelli</i>     | Green Oakblue                | Native | NEx        | NT   |
| Lycaenidae | <i>Arhopala aurea</i>                 | Golden Green Oakblue         | Native | Not Listed | EN   |
| Lycaenidae | <i>Arhopala trogon</i>                | Green Suffused Oakblue       | Native | Not Listed | EN   |
| Lycaenidae | <i>Arhopala ammon ammon</i>           | Lesser Malayan Oakblue       | Native | Not Listed | EN   |
| Lycaenidae | <i>Arhopala abseus abseus</i>         | Aberrant Oakblue             | Native | Not Listed | LC   |
| Lycaenidae | <i>Flos diardi capeta</i>             | Bifid Plushblue              | Native | Not Listed | NT   |
| Lycaenidae | <i>Flos fulgida singhapura</i>        | Shining Plushblue            | Native | Not Listed | NT   |
| Lycaenidae | <i>Flos anniella anniella</i>         | Darky Plushblue              | Native | Not Listed | NT   |
| Lycaenidae | <i>Flos apidanus saturatus</i>        | Plain Plushblue              | Native | Not Listed | LC   |
| Lycaenidae | <i>Semanga superba deliciosa</i>      | Red Edge                     | Native | Not Listed | LC   |
| Lycaenidae | <i>Surendra vivarna amisena</i>       | Acacia Blue                  | Native | Not Listed | LC   |
| Lycaenidae | <i>Surendra florimel</i>              | Steely Acacia Blue           | Native | Not Listed | NEx  |
| Lycaenidae | <i>Iraota timoleon wickii</i>         | Silverstreak                 | Native | NEx        | NEx  |



| Family     | Taxon Name                               | Common Name          | Origin    | RDB2       | RDB3 |
|------------|------------------------------------------|----------------------|-----------|------------|------|
| Lycaenidae | <i>Iraota rochana boswelliana</i>        | Scarce Silverstreak  | Native    | Not Listed | LC   |
| Lycaenidae | <i>Iraota distanti distanti</i>          | Spotted Silverstreak | Uncertain | CR         | DD   |
| Lycaenidae | <i>Catapaecilma major emas</i>           | Gray Tinsel          | Native    | DD         | DD   |
| Lycaenidae | <i>Catapaecilma evansi evansi</i>        | Golden Tinsel        | Uncertain | Not Listed | DD   |
| Lycaenidae | <i>Loxura atymnus fuconius</i>           | Yamfly               | Native    | Not Listed | LC   |
| Lycaenidae | <i>Eooxylides tharis distanti</i>        | Branded Imperial     | Native    | Not Listed | LC   |
| Lycaenidae | <i>Thamala marciana marciana</i>         | Cardinal             | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Cheritra freja frigga</i>             | Common Imperial      | Native    | Not Listed | LC   |
| Lycaenidae | <i>Drupadia ravindra moorei</i>          | Common Posy          | Native    | Not Listed | LC   |
| Lycaenidae | <i>Drupadia rufotaenia rufotaenia</i>    | Pygmy Posy           | Native    | CR         | EN   |
| Lycaenidae | <i>Drupadia theda thesmia</i>            | Dark Posy            | Native    | Not Listed | VU   |
| Lycaenidae | <i>Drupadia scaeva scaeva</i>            | Blue Posy            | Native    | NEx        | NEx  |
| Lycaenidae | <i>Horaga albimacula albistigmata</i>    | Brown Onyx           | Native    | NEx        | DD   |
| Lycaenidae | <i>Horaga chalcedonyx malaya</i>         | Malayan Onyx         | Native    | NEx        | DD   |
| Lycaenidae | <i>Horaga onyx sardonix</i>              | Common Onyx          | Native    | NEx        | VU   |
| Lycaenidae | <i>Horaga syrinx maenala</i>             | Ambon Onyx           | Native    | Not Listed | VU   |
| Lycaenidae | <i>Dacalana vidura azyada</i>            | Medium Branded Royal | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Pratapa deva relata</i>               | White Royal          | Native    | CR         | EN   |
| Lycaenidae | <i>Pratapa icetoides calculis</i>        | Smoky Blue Royal     | Native    | NEx        | NEx  |
| Lycaenidae | <i>Tajuria cippus maxentius</i>          | Peacock Royal        | Native    | Not Listed | LC   |
| Lycaenidae | <i>Tajuria mantra mantra</i>             | Felder's Royal       | Native    | Not Listed | NT   |
| Lycaenidae | <i>Tajuria deudorix ingeni</i>           | Flash Royal          | Native    | NEx        | EN   |
| Lycaenidae | <i>Tajuria dominus dominus</i>           | Sovereign Royal      | Native    | Not Listed | NT   |
| Lycaenidae | <i>Rachana jalindra burbona</i>          | Banded Royal         | Native    | CR         | VU   |
| Lycaenidae | <i>Purlisa gigantea gigantea</i>         | Giant Imperial       | Native    | NEx        | NEx  |
| Lycaenidae | <i>Jacoona anasuja anasuja</i>           | Great Imperial       | Native    | DD         | NT   |
| Lycaenidae | <i>Neocheritra amrita amrita</i>         | Grand Imperial       | Native    | Not Listed | CR   |
| Lycaenidae | <i>Manto hypoleuca terana</i>            | Green Imperial       | Native    | NEx        | NT   |
| Lycaenidae | <i>Mantoides gama gama</i>               | Distant's Imperial   | Native    | NEx        | NEx  |
| Lycaenidae | <i>Remelana jangala travana</i>          | Chocolate Royal      | Native    | Not Listed | LC   |
| Lycaenidae | <i>Pseudotajuria donatana donatana</i>   | Golden Royal         | Native    | CR         | VU   |
| Lycaenidae | <i>Ancema blanka blanka</i>              | Silver Royal         | Native    | CR         | VU   |
| Lycaenidae | <i>Hypolycaena thecloides thecloides</i> | Dark Tit             | Native    | Not Listed | LC   |
| Lycaenidae | <i>Hypolycaena erylus teatus</i>         | Common Tit           | Native    | Not Listed | LC   |
| Lycaenidae | <i>Zeltus amasa maximinianus</i>         | Fluffy Tit           | Native    | Not Listed | LC   |
| Lycaenidae | <i>Deudorix epijarbas cinnabarus</i>     | Cornelian            | Native    | Not Listed | LC   |
| Lycaenidae | <i>Deudorix elioti</i>                   | Eliot's Cornelian    | Native    | Not Listed | NT   |
| Lycaenidae | <i>Deudorix staudingeri</i>              | Large Cornelian      | Native    | NEx        | DD   |
| Lycaenidae | <i>Drina cowani</i>                      |                      | Native    | NEx        | NEx  |
| Lycaenidae | <i>Drina manea</i>                       | Blue Yam             | Native    | Not Listed | NEx  |
| Lycaenidae | <i>Virachola subguttata malaya</i>       | Spotted Guava Blue   | Native    | NEx        | DD   |
| Lycaenidae | <i>Virachola kessuma deliochus</i>       | Pitcher Blue         | Native    | Not Listed | EN   |
| Lycaenidae | <i>Sinthusia nasaka amba</i>             | Narrow Spark         | Uncertain | Not Listed | NT   |
| Lycaenidae | <i>Bindahara phocides phocides</i>       | The Plane            | Native    | Not Listed | NT   |
| Lycaenidae | <i>Bullis buto cowani</i>                | Baby Royal           | Native    | NEx        | NEx  |
| Lycaenidae | <i>Rapala abnormis abnormis</i>          |                      | Native    | NEx        | NEx  |
| Lycaenidae | <i>Rapala damona</i>                     | Malayan Red Flash    | Native    | NEx        | DD   |

| Family      | Taxon Name                              | Common Name           | Origin    | RDB2       | RDB3 |
|-------------|-----------------------------------------|-----------------------|-----------|------------|------|
| Lycaenidae  | <i>Rapala cowani</i>                    |                       | Native    | NEx        | DD   |
| Lycaenidae  | <i>Rapala domitia domitia</i>           | Yellow Flash          | Native    | Not Listed | NT   |
| Lycaenidae  | <i>Rapala suffusa barthema</i>          | Suffused Flash        | Native    | Not Listed | NT   |
| Lycaenidae  | <i>Rapala pheretima sequeira</i>        | Copper Flash          | Native    | Not Listed | LC   |
| Lycaenidae  | <i>Rapala dieneces dieneces</i>         | Scarlet Flash         | Native    | Not Listed | LC   |
| Lycaenidae  | <i>Rapala iarbus iarbus</i>             | Common Red Flash      | Native    | Not Listed | LC   |
| Lycaenidae  | <i>Rapala manea chozeba</i>             | Slate Flash           | Native    | Not Listed | LC   |
| Lycaenidae  | <i>Rapala varuna orseis</i>             | Indigo Flash          | Native    | Not Listed | LC   |
| Lycaenidae  | <i>Araotes lapithis uruwela</i>         | The Witch             | Native    | NEx        | NEx  |
| Lycaenidae  | <i>Sithon nedymond nedymond</i>         | The Plush             | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Bibasis etelka</i>                   | Great Orange Awlet    | Native    | Not Listed | NT   |
| Hesperiidae | <i>Bibasis harisa consobrina</i>        | Orange Awlet          | Native    | Not Listed | LC   |
| Hesperiidae | <i>Bibasis sena uniformis</i>           | Orange-Tail Awl       | Uncertain | Not Listed | NT   |
| Hesperiidae | <i>Bibasis oedipodea oedipodea</i>      | Branded Orange Awlet  | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Hasora chromus chromus</i>           | Common Banded Awl     | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hasora taminatus malayana</i>        | White Banded Awl      | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hasora schoenherr chuza</i>          | Yellow Banded Awl     | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hasora badra badra</i>               | Common Awl            | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hasora vitta vitta</i>               | Plain Banded Awl      | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hasora lizetta</i>                   |                       | Native    | NEx        | NEx  |
| Hesperiidae | <i>Badamia exclamationis</i>            | Brown Awl             | Native    | Not Listed | NT   |
| Hesperiidae | <i>Choaspes plateni caudatus</i>        | Yellow Tailed Awlking | Native    | NEx        | NEx  |
| Hesperiidae | <i>Choaspes subcaudatus crawfurdi</i>   | Lobed Awlking         | Native    | NEx        | NEx  |
| Hesperiidae | <i>Capila phanaeus ferrea</i>           | Fulvous Dawnfly       | Native    | NEx        | NEx  |
| Hesperiidae | <i>Tapena thwaitesi bornea</i>          | Dark Flat             | Uncertain | EN         | VU   |
| Hesperiidae | <i>Odina hieroglyphica ortina</i>       | Hieroglyphic Flat     | Native    | Not Listed | NT   |
| Hesperiidae | <i>Celaenorrhinus asmara asmara</i>     | White Banded Flat     | Native    | NEx        | CR   |
| Hesperiidae | <i>Pseudocoladenia dan dhyana</i>       | Fulvous Pied Flat     | Uncertain | Not Listed | NT   |
| Hesperiidae | <i>Gerosis limax dirae</i>              | Black and White Flat  | Native    | Not Listed | DD   |
| Hesperiidae | <i>Gerosis tristis</i>                  |                       | Native    | NEx        | DD   |
| Hesperiidae | <i>Gerosis phisara phisara</i>          | Variable White Flat   | Uncertain | Not Listed | DD   |
| Hesperiidae | <i>Tagiades japedus atticus</i>         | Common Snow Flat      | Native    | Not Listed | LC   |
| Hesperiidae | <i>Tagiades gana gana</i>               | Large Snow Flat       | Native    | Not Listed | LC   |
| Hesperiidae | <i>Tagiades ultra</i>                   | Ultra Snow Flat       | Native    | Not Listed | LC   |
| Hesperiidae | <i>Tagiades calligana</i>               | Malayan Snow Flat     | Native    | Not Listed | NT   |
| Hesperiidae | <i>Mooreana trichoneura trichoneura</i> | Yellow Flat           | Uncertain | Not Listed | EN   |
| Hesperiidae | <i>Odontoptilum angulatum angulatum</i> | Chestnut Angle        | Native    | Not Listed | NT   |
| Hesperiidae | <i>Ampittia dioscorides camertes</i>    | Bush Hopper           | Native    | Not Listed | LC   |
| Hesperiidae | <i>Halpe insignis</i>                   | White Fringed Ace     | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Halpe elana</i>                      | Narrow Banded Ace     | Native    | NEx        | NEx  |
| Hesperiidae | <i>Halpe ormenes vilasina</i>           | Dark Banded Ace       | Native    | Not Listed | VU   |
| Hesperiidae | <i>Halpe porus</i>                      | Moore's Ace           | Uncertain | Not Listed | DD   |
| Hesperiidae | <i>Iambrix salsala salsala</i>          | Chestnut Bob          | Native    | Not Listed | LC   |
| Hesperiidae | <i>Iambrix stellifer</i>                | Starry Bob            | Native    | Not Listed | LC   |
| Hesperiidae | <i>Idmon distantis</i>                  | Spotless Bob          | Native    | NEx        | NEx  |
| Hesperiidae | <i>Idmon obliquans obliquans</i>        | Small Red Bob         | Native    | NEx        | NEx  |
| Hesperiidae | <i>Psolos fuligo fuligo</i>             | Coon                  | Native    | Not Listed | NEx  |

| Family      | Taxon Name                            | Common Name                 | Origin    | RDB2       | RDB3 |
|-------------|---------------------------------------|-----------------------------|-----------|------------|------|
| Hesperiidae | <i>Astictopterus jama jama</i>        | Forest Hopper               | Native    | Not Listed | EN   |
| Hesperiidae | <i>Ancistroides nigrita maura</i>     | Chocolate Demon             | Native    | Not Listed | LC   |
| Hesperiidae | <i>Ancistroides gemmifer gemmifer</i> | Gem Red Demon               | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Notocrypta paralyos varians</i>    | Banded Demon                | Native    | Not Listed | LC   |
| Hesperiidae | <i>Notocrypta clavata clavata</i>     | Clavated Banded Demon       | Native    | NEx        | NEx  |
| Hesperiidae | <i>Udaspes folus</i>                  | Grass Demon                 | Native    | Not Listed | LC   |
| Hesperiidae | <i>Suastus gremius gremius</i>        | Palm Bob                    | Uncertain | Not Listed | LC   |
| Hesperiidae | <i>Suastus everyx everyx</i>          | White Palm Bob              | Uncertain | EN         | NT   |
| Hesperiidae | <i>Zographetus doxus</i>              | Spotted Flitter             | Native    | Not Listed | NT   |
| Hesperiidae | <i>Zographetus ogygia ogygia</i>      | Purple Spotted Flitter      | Native    | NEx        | VU   |
| Hesperiidae | <i>Zographetus rama</i>               |                             | Native    | NEx        | NEx  |
| Hesperiidae | <i>Hyarotis adrastus praba</i>        | Tree Flitter                | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hyarotis microsticta</i>           | White Club Flitter          | Uncertain | Not Listed | DD   |
| Hesperiidae | <i>Quedara monteithi monteithi</i>    | Dubious Bar Flitter         | Native    | Not Listed | NT   |
| Hesperiidae | <i>Isma protoclea obscura</i>         | Ciliate Long-Horned Flitter | Native    | Not Listed | DD   |
| Hesperiidae | <i>Isma bononia bononia</i>           | Lesser Long-Spot Flitter    | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Plastingia naga</i>                | Chequered Lancer            | Native    | Not Listed | LC   |
| Hesperiidae | <i>Plastingia pellationia</i>         | Yellow Chequered Lancer     | Native    | Not Listed | VU   |
| Hesperiidae | <i>Salanoemia tavoyana</i>            | Yellow Streak Darter        | Uncertain | Not Listed | DD   |
| Hesperiidae | <i>Salanoemia sala</i>                | Multi-Spotted Darter        | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Pemara pugnans</i>                 | Pugnacious Lancer           | Native    | Not Listed | VU   |
| Hesperiidae | <i>Pyronura latoia latoia</i>         | Yellow Vein Lancer          | Native    | Not Listed | LC   |
| Hesperiidae | <i>Pyronura derna</i>                 | Spot-Pointed Lancer         | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Zela storeyi (or Zela zenon)</i>   | Storey's Palmer             | Uncertain | CR         | EN   |
| Hesperiidae | <i>Zela cowani</i>                    | Cowan's Palmer              | Native    | NEx        | NEx  |
| Hesperiidae | <i>Gangara thyrus thyrus</i>          | Giant Redeye                | Native    | Not Listed | VU   |
| Hesperiidae | <i>Gangara lebadea lebadea</i>        | Banded Redeye               | Native    | NEx        | EN   |
| Hesperiidae | <i>Matapa aria</i>                    | Common Redeye               | Native    | Not Listed | LC   |
| Hesperiidae | <i>Erionota torus</i>                 | Giant Banana Skipper        | Native    | Not Listed | LC   |
| Hesperiidae | <i>Erionota thrax thrax</i>           | Banana Skipper              | Native    | Not Listed | LC   |
| Hesperiidae | <i>Erionota acroleuca apicalis</i>    | White Tipped Banana Skipper | Native    | Not Listed | LC   |
| Hesperiidae | <i>Erionota sybira</i>                | Sybarite Skipper            | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Unkana ambasa batara</i>           | Hoary Palmer                | Native    | Not Listed | LC   |
| Hesperiidae | <i>Hidari irava</i>                   | Coconut Skipper             | Native    | Not Listed | NT   |
| Hesperiidae | <i>Eetion elia</i>                    | White Spot Palmer           | Native    | Not Listed | VU   |
| Hesperiidae | <i>Acerbas anthea anthea</i>          | White Palmer                | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Pirdana hyala rudolphii</i>        | Green Striped Palmer        | Native    | Not Listed | NEx  |
| Hesperiidae | <i>Taractrocera ardonia lamia</i>     | Spotted Grass Dart          | Native    | Not Listed | VU   |
| Hesperiidae | <i>Taractrocera archias quinta</i>    | Yellow Grass Dart           | Uncertain | Not Listed | LC   |
| Hesperiidae | <i>Oriens gola pseudolus</i>          | Common Dartlet              | Native    | Not Listed | LC   |
| Hesperiidae | <i>Oriens paragola</i>                | Malay Dartlet               | Uncertain | Not Listed | LC   |
| Hesperiidae | <i>Potanthus omaha omaha</i>          | Lesser Dart                 | Native    | Not Listed | LC   |
| Hesperiidae | <i>Potanthus trachala tyleri</i>      | Detached Dart               | Native    | NEx        | LC   |
| Hesperiidae | <i>Potanthus serina</i>               | Large Dart                  | Native    | NEx        | LC   |
| Hesperiidae | <i>Potanthus junio junio</i>          | Overlapped Dart             | Native    | NEx        | DD   |
| Hesperiidae | <i>Potanthus confucius dushta</i>     | Confucian Dart              | Native    | NEx        | NEx  |

| Family      | Taxon Name                             | Common Name             | Origin    | RDB2       | RDB3 |
|-------------|----------------------------------------|-------------------------|-----------|------------|------|
| Hesperiidae | <i>Potanthus ganda ganda</i>           | Ganda Dart              | Uncertain | Not Listed | LC   |
| Hesperiidae | <i>Cephrenes acalle niasicus</i>       | Plain Palm Dart         | Native    | NEx        | VU   |
| Hesperiidae | <i>Cephrenes trichopepla</i>           | Yellow Palm Dart        | Uncertain | Not Listed | LC   |
| Hesperiidae | <i>Telicota colon stinga</i>           | Common Palm Dart        | Native    | NEx        | LC   |
| Hesperiidae | <i>Telicota besta bina</i>             | Besta Palm Dart         | Native    | Not Listed | LC   |
| Hesperiidae | <i>Telicota augias augias</i>          | Palm Dart               | Native    | Not Listed | VU   |
| Hesperiidae | <i>Telicota linna</i>                  | Linna Palm Dart         | Uncertain | Not Listed | NT   |
| Hesperiidae | <i>Borbo cinnara</i>                   | Formosan Swift          | Native    | NEx        | LC   |
| Hesperiidae | <i>Parnara bada bada</i>               | Ceylon Swift            | Native    | NEx        | DD   |
| Hesperiidae | <i>Parnara ganga</i>                   | Continental Swift       | Native    | NEx        | DD   |
| Hesperiidae | <i>Pelopidas mathias mathias</i>       | Small Branded Swift     | Native    | Not Listed | LC   |
| Hesperiidae | <i>Pelopidas agna agna</i>             | Bengal Swift            | Native    | NEx        | LC   |
| Hesperiidae | <i>Pelopidas assamensis</i>            | Great Swift             | Uncertain | Not Listed | VU   |
| Hesperiidae | <i>Pelopidas conjunctus conjunctus</i> | Conjoined Swift         | Uncertain | Not Listed | NT   |
| Hesperiidae | <i>Polytremis lubricans lubricans</i>  | Contiguous Swift        | Native    | Not Listed | LC   |
| Hesperiidae | <i>Baoris farri farri</i>              | Bamboo Paintbrush Swift | Native    | Not Listed | LC   |
| Hesperiidae | <i>Baoris oceia</i>                    | Paintbrush Swift        | Native    | Not Listed | LC   |
| Hesperiidae | <i>Caltoris cormasa</i>                | Full Stop Swift         | Native    | Not Listed | LC   |
| Hesperiidae | <i>Caltoris bromus bromus</i>          | Extra Spot Swift        | Uncertain | Not Listed | DD   |
| Hesperiidae | <i>Caltoris philippina philippina</i>  | Philippine Swift        | Native    | Not Listed | VU   |
| Hesperiidae | <i>Caltoris malaya</i>                 | Malayan Swift           | Native    | NEx        | NT   |

**Checklist of Moth Species with their Category of Threat Status for Singapore**

Prepared by Anuj Jain, Jerome Chua, Gan Cheong Weei

| <b>Family</b> | <b>Taxon Name</b>                   | <b>Authority</b>              | <b>Common Name</b>       | <b>RDB2</b> | <b>RDB3</b> |
|---------------|-------------------------------------|-------------------------------|--------------------------|-------------|-------------|
| Erebidae      | <i>Achaea janata</i>                | Linnaeus,1758                 | Castor Semi-Looper       | Not Listed  | LC          |
| Erebidae      | <i>Achaea serva</i>                 | Fabricius,1775                |                          | Not Listed  | LC          |
| Erebidae      | <i>Amata huebneri</i>               | Boisduval,1828                | Hubner's Wasp Moth       | Not Listed  | LC          |
| Erebidae      | <i>Anomis albipunctula</i>          | Hampson                       |                          | Not Listed  | VU          |
| Erebidae      | <i>Anomis cupienda</i>              | Swinhoe,1903                  |                          | Not Listed  | VU          |
| Erebidae      | <i>Arctornis dorsolineatus</i>      | Holloway,1999                 |                          | Not Listed  | NT          |
| Erebidae      | <i>Arctornis egerina</i>            | Swinhoe,1893                  |                          | Not Listed  | NT          |
| Lasiocampidae | <i>Arguda rosemariae</i>            | Holloway,1987                 |                          | Not Listed  | NT          |
| Erebidae      | <i>Asota caricae</i>                | Fabricius,1775                | Tropical Tiger Moth      | Not Listed  | LC          |
| Erebidae      | <i>Asota plana</i>                  | Walker,1854                   |                          | Not Listed  | LC          |
| Erebidae      | <i>Asota subsimilis</i>             | Walker,1864                   |                          | Not Listed  | LC          |
| Saturniidae   | <i>Attacus atlas</i>                | Linnaeus,1758                 | Atlas Moth               | Not Listed  | LC          |
| Erebidae      | <i>Avitta bracteola</i>             | Holloway,1976                 |                          | Not Listed  | VU          |
| Erebidae      | <i>Avitta guttulosa</i>             | Swinhoe,1900                  |                          | Not Listed  | VU          |
| Erebidae      | <i>Avittonia albidentata</i>        | Hampson,1926                  |                          | Not Listed  | NT          |
| Noctuidae     | <i>Bagada labi</i>                  | Holloway,1989                 |                          | Not Listed  | NT          |
| Erebidae      | <i>Bamra albicola</i>               | Walker,1858                   |                          | Not Listed  | NT          |
| Erebidae      | <i>Bematha extensa</i>              | Walker,1865                   |                          | Not Listed  | LC          |
| Cossidae      | <i>Bergaris lutescens</i>           | Roepke,1957                   |                          | Not Listed  | NT          |
| Noctuidae     | <i>Borbotana nivifascia</i>         | Walker,1858                   |                          | Not Listed  | VU          |
| Erebidae      | <i>Brontypena ochrocuprea</i>       | Pagenstecher,1894             |                          | Not Listed  | VU          |
| Erebidae      | <i>Brunia antica</i>                | Walker,1854                   |                          | Not Listed  | LC          |
| Geometridae   | <i>Bulonga schistacearia</i>        | Walker,1859                   |                          | Not Listed  | NT          |
| Erebidae      | <i>Calliteara horsfieldii</i>       | Saunders,1851                 | Horsfield's Tussock Moth | Not Listed  | LC          |
| Noctuidae     | <i>Callopietria wallacei</i>        | Felder,1874                   |                          | Not Listed  | VU          |
| Limacodidae   | <i>Cania striola</i>                | Hering,1931                   |                          | Not Listed  | LC          |
| Notodontidae  | <i>Cerasana pagenstecheri</i>       | Schintlmeister & Lourens,2010 |                          | Not Listed  | LC          |
| Erebidae      | <i>Chalciope mygdon</i>             | Cramer,1777                   | Triangular Striped Moth  | Not Listed  | LC          |
| Zygaenidae    | <i>Chalcosia coliadoides</i>        | Walker,1862                   |                          | Not Listed  | NEx         |
| Nolidae       | <i>Chloriola gratissima</i>         | Walker,1863                   |                          | Not Listed  | NT          |
| Geometridae   | <i>Chrysocraspeda argentimacula</i> | Holloway,1997                 |                          | Not Listed  | NT          |
| Geometridae   | <i>Chrysocraspeda phlogea</i>       | Prout,1938                    |                          | Not Listed  | VU          |
| Erebidae      | <i>Claterna cydonia</i>             | Cramer,1775                   |                          | Not Listed  | LC          |
| Erebidae      | <i>Corcobara angulipennis</i>       | Moore,1894                    |                          | Not Listed  | VU          |
| Geometridae   | <i>Coremecis maculata</i>           | Warren,1899                   |                          | Not Listed  | NT          |
| Erebidae      | <i>Cretonotos gangis</i>            | Linnaeus,1763                 | Baphomet Moth            | Not Listed  | LC          |
| Erebidae      | <i>Cretonotos transiens</i>         | Walker,1855                   | Clouded Tiger Moth       | Not Listed  | LC          |
| Erebidae      | <i>Crithote horridipes</i>          | Walker,1864                   |                          | Not Listed  | LC          |
| Crambidae     | <i>Culladia hastiferalis</i>        | Walker,1865                   |                          | Not Listed  | LC          |
| Erebidae      | <i>Cultripalpa lunulifera</i>       | Hampson,1926                  |                          | Not Listed  | VU          |
| Erebidae      | <i>Cultripalpa partita</i>          | Guenée,1852                   |                          | Not Listed  | EN          |
| Zygaenidae    | <i>Cyclosia inclusus</i>            | Walker,1864                   |                          | Not Listed  | NT          |

| Family          | Taxon Name                           | Authority                 | Common Name                | RDB2       | RDB3 |
|-----------------|--------------------------------------|---------------------------|----------------------------|------------|------|
| Zygaenidae      | <i>Cyclosia pieridoides</i>          | Herrich-Schäffer, 1854    | False Idea Moth            | Not Listed | LC   |
| Erebidae        | <i>Cyme reticulata</i>               | C. Felder, 1861           |                            | Not Listed | LC   |
| Sphingidae      | <i>Daphnis nerii</i>                 | Linnaeus, 1758            | Oleander Hawkmoth          | Not Listed | LC   |
| Erebidae        | <i>Dasychira chekiangensis</i>       | Collenette, 1938          | Zhejiang Tussock Moth      | Not Listed | LC   |
| Erebidae        | <i>Diascia hayesi</i>                | Holloway, 1976            |                            | Not Listed | VU   |
| Geometridae     | <i>Dysphania subrepleta</i>          | Walker, 1854              |                            | Not Listed | LC   |
| Erebidae        | <i>Egnasides rudmuna</i>             | Swinhoe, 1905             |                            | Not Listed | LC   |
| Sphingidae      | <i>Elibia dolichus</i>               | Westwood, 1847            | Large Banded Hawkmoth      | Not Listed | EN   |
| Sphingidae      | <i>Enpinanga borneensis</i>          | Butler, 1879              |                            | Not Listed | LC   |
| Erebidae        | <i>Ercheia pulchrivenula</i>         | Gaede, 1938               |                            | Not Listed | NT   |
| Erebidae        | <i>Erebus ephesperis</i>             | Hübner, 1827              |                            | Not Listed | LC   |
| Erebidae        | <i>Eressa confinis</i>               | Walker, 1854              |                            | Not Listed | LC   |
| Erebidae        | <i>Eublemma ignefusa</i>             | Hampson, 1910             |                            | Not Listed | EN   |
| Erebidae        | <i>Eudocima phalonia</i>             | Linnaeus, 1763            | Common Fruit-piercing Moth | Not Listed | LC   |
| Erebidae        | <i>Eugnathia diagonalis</i>          | Hampson, 1910             |                            | Not Listed | NT   |
| Crambidae       | <i>Eurrhparodes tricoloralis</i>     | Zeller, 1852              |                            | Not Listed | LC   |
| Sphingidae      | <i>Eurypteryx bhaga</i>              | Moore, 1865               |                            | Not Listed | VU   |
| Geometridae     | <i>Fascellina viridicosta</i>        | Holloway, 1993            |                            | Not Listed | NT   |
| Eupterotidae    | <i>Ganisa plana</i>                  | Walker, 1855              |                            | Not Listed | VU   |
| Erebidae        | <i>Gesonia obeditalis</i>            | Walker, 1859              |                            | Not Listed | LC   |
| Bombycidae      | <i>Gunda subnotata</i>               | Walker, 1859              |                            | Not Listed | NEx  |
| Erebidae        | <i>Hadennia kimae</i>                | Holloway, 2008            |                            | Not Listed | NT   |
| Erebidae        | <i>Hamodes lutea</i>                 | Walker, 1863              |                            | Not Listed | NT   |
| Crambidae       | <i>Herpetogramma licarsisalis</i>    | Walker, 1859              | Grass Webworm Moth         | Not Listed | LC   |
| Geometridae     | <i>Heteralex rectilineata</i>        | Guenée, 1857              |                            | Not Listed | LC   |
| Crambidae       | <i>Hoplisa xipharesalis</i>          | Walker, 1859              |                            | Not Listed | NT   |
| Erebidae        | <i>Hulodes caranea</i>               | Cramer, 1780              |                            | Not Listed | LC   |
| Crambidae       | <i>Hydriris ornatalis</i>            | Duponchel, 1832           | Ornate Hydriris Moth       | Not Listed | LC   |
| Erebidae        | <i>India citrona</i>                 | Hampson, 1907             |                            | Not Listed | NT   |
| Erebidae        | <i>Ischyja anna</i>                  | Swinhoe, 1902             |                            | Not Listed | NEx  |
| Erebidae        | <i>Ischyja ferrifracta</i>           | Walker, 1864              |                            | Not Listed | VU   |
| Geometridae     | <i>Krananda semihyalina</i>          | Moore, 1868               |                            | Not Listed | LC   |
| Cosmopterigidae | <i>Labdia stibogramma</i>            | Meyrick, 1924             |                            | Not Listed | VU   |
| Crambidae       | <i>Lamprosema tampiusalis</i>        | Walker, 1859              |                            | Not Listed | LC   |
| Erebidae        | <i>Lopharthrum comprimens</i>        | Walker, 1858              |                            | Not Listed | EN   |
| Erebidae        | <i>Lutzugia trigonalis</i>           | Kobes, 1983               |                            | Not Listed | LC   |
| Erebidae        | <i>Lymantria faircloughi</i>         | Holloway, 1999            |                            | Not Listed | NT   |
| Uraniidae       | <i>Lyssa zampa</i>                   | Butler, 1869              | Tropical Swallowtail Moth  | Not Listed | LC   |
| Sphingidae      | <i>Macroglossum multifascia</i>      | Rothschild & Jordan, 1903 |                            | Not Listed | NT   |
| Geometridae     | <i>Maxates magnipuncta</i>           | Prout, 1916               |                            | Not Listed | VU   |
| Erebidae        | <i>Mecodina leucosticta</i>          | Hampson, 1926             |                            | Not Listed | NT   |
| Erebidae        | <i>Metaemene atrigutta</i>           | Walker, 1862              |                            | Not Listed | LC   |
| Crambidae       | <i>Metoecca foederalis</i>           | Guenée, 1854              |                            | Not Listed | LC   |
| Geometridae     | <i>Microcalicha punctimarginaria</i> | Leech, 1897               |                            | Not Listed | NT   |

| Family         | Taxon Name                       | Authority         | Common Name                   | RDB2       | RDB3 |
|----------------|----------------------------------|-------------------|-------------------------------|------------|------|
| Erebidae       | <i>Mocis undata</i>              | Fabricius,1775    | Brown-striped Semilooper      | Not Listed | LC   |
| Tortricidae    | <i>Neocalyptis affinisana</i>    | Walker,1863       |                               | Not Listed | LC   |
| Erebidae       | <i>Neochera inops</i>            | Walker,1854       |                               | Not Listed | VU   |
| Erebidae       | <i>Neochera marmorea</i>         | Walker,1856       |                               | Not Listed | NEx  |
| Geometridae    | <i>Nothomiza xanthocolona</i>    | Meyrick,1897      |                               | Not Listed | VU   |
| Erebidae       | <i>Nyctemera lactinia</i>        | Cramer,1775       |                               | Not Listed | LC   |
| Erebidae       | <i>Oeonistis altica</i>          | Linnaeus,1768     |                               | Not Listed | NT   |
| Erebidae       | <i>Olene mendosa</i>             | Hübner,1823       | Brown Tussock Moth            | Not Listed | LC   |
| Geometridae    | <i>Organopoda perorbata</i>      | Prout,1937        |                               | Not Listed | NT   |
| Erebidae       | <i>Orvasca subnotata</i>         | Walker,1865       |                               | Not Listed | LC   |
| Notodontidae   | <i>Oxoia smaragdiplena</i>       | Walker,1862       |                               | Not Listed | VU   |
| Erebidae       | <i>Pandesma quenavadi</i>        | Guenée,1852       |                               | Not Listed | LC   |
| Crambidae      | <i>Parapoynx diminutalis</i>     | Snellen,1880      | Hydrilla Leafcutter Moth      | Not Listed | LC   |
| Geometridae    | <i>Peratophyga xanthyla</i>      | Hampson,1896      |                               | Not Listed | NT   |
| Crambidae      | <i>Peribona venosa</i>           | Butler,1889       |                               | Not Listed | VU   |
| Tineidae       | <i>Phereoeca uterella</i>        | Walsingham, 1897  | Household Casebearer          | Not Listed | LC   |
| Gracillariidae | <i>Phyllocnistis nepenthae</i>   | Hering,1931       | Pitcher-plant Leaf-miner Moth | EN         | DD   |
| Zygaenidae     | <i>Pidorus corculum</i>          | Butler,1879       |                               | Not Listed | NEx  |
| Erebidae       | <i>Pilipectus cyclopis</i>       | Hampson,1912      |                               | Not Listed | LC   |
| Erebidae       | <i>Pindara illibata</i>          | Fabricius,1775    |                               | Not Listed | VU   |
| Erebidae       | <i>Platyja sumatrana</i>         | Felder,1894       |                               | Not Listed | NT   |
| Erebidae       | <i>Plecoptera recta</i>          | Pagenstecher,1886 |                               | Not Listed | NT   |
| Tortricidae    | <i>Polemograptis miltocosma</i>  | Meyrick,1910      |                               | Not Listed | NT   |
| Erebidae       | <i>Poliofoca gebenna</i>         | Swinhoe,1903      |                               | Not Listed | VU   |
| Zygaenidae     | <i>Pompelon marginata</i>        | Guerin,1843       |                               | Not Listed | LC   |
| Geometridae    | <i>Protuliocnemis helpsi</i>     | Holloway,1996     |                               | Not Listed | NT   |
| Zygaenidae     | <i>Psaphis camadeva</i>          | Doubleday,1847    |                               | Not Listed | CR   |
| Erebidae       | <i>Pseudosphetta fissisigna</i>  | Hampson,1926      |                               | Not Listed | VU   |
| Erebidae       | <i>Pterocyclophora ridleyi</i>   | Hampson,1913      |                               | Not Listed | VU   |
| Pterophoridae  | <i>Pterophorus lacteipennis</i>  | Walker,1864       |                               | Not Listed | LC   |
| Nolidae        | <i>Ptisciana seminivea</i>       | Walker,1865       |                               | Not Listed | VU   |
| Erebidae       | <i>Rhesala imparata</i>          | Walker,1858       |                               | Not Listed | LC   |
| Geometridae    | <i>Rhombocentra semipurpurea</i> | Warren,1897       |                               | Not Listed | LC   |
| Erebidae       | <i>Rhynchodina molybdota</i>     | Hampson,1926      |                               | Not Listed | NT   |
| Crambidae      | <i>Sameodes cancellalis</i>      | Zeller,1852       | Banded Pearl                  | Not Listed | LC   |
| Choreutidae    | <i>Saptha beryllitis</i>         | Meyrick,1910      |                               | Not Listed | LC   |
| Choreutidae    | <i>Saptha exanthista</i>         | Meyrick,1910      |                               | Not Listed | LC   |
| Erebidae       | <i>Saroba pansa</i>              | Swinhoe,1902      |                               | Not Listed | VU   |
| Erebidae       | <i>Schistorhynch lobata</i>      | Prout,1925        |                               | Not Listed | NT   |
| Geometridae    | <i>Scopula divisaria</i>         | Christoph,1893    |                               | Not Listed | NT   |
| Drepanidae     | <i>Scytolepteryx elongata</i>    | Snellen,1889      |                               | Not Listed | NT   |
| Erebidae       | <i>Somena aurantiacoides</i>     | Holloway,1999     |                               | Not Listed | EN   |
| Erebidae       | <i>Speiredonia mutabilis</i>     | Fabricius,1794    |                               | Not Listed | VU   |
| Noctuidae      | <i>Spodoptera litura</i>         | Fabricius,1775    | Oriental Leafworm Moth        | Not Listed | LC   |
| Noctuidae      | <i>Spodoptera pecten</i>         | Guenée,1852       |                               | Not Listed | LC   |
| Crambidae      | <i>Spoladea recurvalis</i>       | Fabricius,1775    | Hawaiian Beet Webworm Moth    | Not Listed | LC   |
| Metarbelidae   | <i>Squamura disciplaga</i>       | Swinhoe,1901      |                               | Not Listed | EN   |
| Erebidae       | <i>Stenocarsia sthenoptera</i>   | Swinhoe,1895      |                               | Not Listed | NT   |
| Lasiocampidae  | <i>Suana riemsdyki</i>           | Heylaerts,1889    |                               | Not Listed | NT   |



| Family       | Taxon Name                     | Authority             | Common Name           | RDB2       | RDB3 |
|--------------|--------------------------------|-----------------------|-----------------------|------------|------|
| Erebidae     | <i>Sundagrapha tenebrosa</i>   | Swinhoe,1902          |                       | Not Listed | NT   |
| Erebidae     | <i>Syntomoides imaon</i>       | Cramer,1780           | Handmaiden Moth       | Not Listed | LC   |
| Erebidae     | <i>Talariga capacior</i>       | Walker,1858           |                       | Not Listed | VU   |
| Erebidae     | <i>Tamba basiscripta</i>       | Walker,1864           |                       | Not Listed | VU   |
| Erebidae     | <i>Tamsia hieroglyphica</i>    | Swinhoe,1902          |                       | Not Listed | VU   |
| Crambidae    | <i>Tatobotys varanesalis</i>   | Walker,1858           | Striped Mangrove Moth | VU         | DD   |
| Callidulidae | <i>Tetragonus catamitus</i>    | Geyer,1832            | Common Butterfly Moth | Not Listed | LC   |
| Erebidae     | <i>Thyas coronata</i>          | Fabricius,1775        | Yellow Underwing      | Not Listed | LC   |
| Erebidae     | <i>Tiruvaca hollowayi</i>      | Kobes,1988            |                       | Not Listed | VU   |
| Geometridae  | <i>Traminda aventiaria</i>     | Guenée,1857           | Cross-line Wave Moth  | Not Listed | LC   |
| Geometridae  | <i>Traminda mundissima</i>     | Walker,1861           |                       | Not Listed | LC   |
| Erebidae     | <i>Trigonodes hyppasia</i>     | Cramer,1779           | Triangles Moth        | Not Listed | LC   |
| Erebidae     | <i>Tropidamba lepraota</i>     | Hampson,1898          |                       | Not Listed | NT   |
| Erebidae     | <i>Veslema flavifrons</i>      | Bucsek,2012           |                       | Not Listed | VU   |
| Erebidae     | <i>Xanthanomis xanthina</i>    | Holloway & Zilli,2005 |                       | Not Listed | NT   |
| Nolidae      | <i>Xenochroa xanthia</i>       | Hampson,1902          |                       | Not Listed | NT   |
| Noctuidae    | <i>Yepcalphis dilectissima</i> | Walker,1858           |                       | Not Listed | NT   |

# Checklist of Odonata Species with their Category of Threat Status for Singapore

Prepared by Robin Ngiam Wen Jiang, Marcus F.C. Ng

| Family          | Species                              | Common Name           | RDB2       | RDB3 |
|-----------------|--------------------------------------|-----------------------|------------|------|
| Argiolestidae   | <i>Podolestes orientalis</i>         | Blue-spotted Flatwing | CR         | VU   |
| Calopterygidae  | <i>Echo modesta</i>                  | White-faced Clearwing | Not Listed | NEx  |
| Calopterygidae  | <i>Neurobasis chinensis</i>          | Green Metalwing       | NEx        | NEx  |
| Calopterygidae  | <i>Vestalis amethystina</i>          | Common Flashwing      | Not Listed | VU   |
| Calopterygidae  | <i>Vestalis amoena</i>               | Charming Flashwing    | Not Listed | EN   |
| Calopterygidae  | <i>Vestalis gracilis</i>             | Plain Flashwing       | Not Listed | CR   |
| Chlorocyphidae  | <i>Libellago aurantiaca</i>          | Fiery Gem             | Not Listed | CR   |
| Chlorocyphidae  | <i>Libellago hyalina</i>             | Clearwing Gem         | CR         | CR   |
| Chlorocyphidae  | <i>Libellago lineata</i>             | Golden Gem            | Not Listed | LC   |
| Chlorocyphidae  | <i>Libellago stigmatizans</i>        | Orange-faced Gem      | NEx        | NEx  |
| Coenagrionidae  | <i>Aciagrion hisopa</i>              | Blue Slim             | CR         | VU   |
| Coenagrionidae  | <i>Agriocnemis femina</i>            | Variable Wisp         | Not Listed | LC   |
| Coenagrionidae  | <i>Agriocnemis minima</i>            | Marsh Wisp            | Not Listed | CR   |
| Coenagrionidae  | <i>Agriocnemis nana</i>              | Dwarf Wisp            | CR         | EN   |
| Coenagrionidae  | <i>Agriocnemis pygmaea</i>           | Wandering Wisp        | CR         | LC   |
| Coenagrionidae  | <i>Amphicnemis bebar</i>             | Bebar Wisp            | Not Listed | CR   |
| Coenagrionidae  | <i>Amphicnemis gracilis</i>          | Will-o-wisp           | Not Listed | VU   |
| Coenagrionidae  | <i>Archibasis melanocyana</i>        | Blue-nosed Sprite     | CR         | EN   |
| Coenagrionidae  | <i>Archibasis rebecca</i>            | Rebecca's Sprite      | Not Listed | CR   |
| Coenagrionidae  | <i>Archibasis viola</i>              | Violet Sprite         | CR         | LC   |
| Coenagrionidae  | <i>Argiocnemis rubescens rubeola</i> | Variable Sprite       | CR         | LC   |
| Coenagrionidae  | <i>Ceriagrion cerinorubellum</i>     | Ornate Coraltail      | Not Listed | LC   |
| Coenagrionidae  | <i>Ceriagrion chaoi</i>              | Fiery Coraltail       | Not Listed | VU   |
| Coenagrionidae  | <i>Ischnura senegalensis</i>         | Common Bluetail       | Not Listed | LC   |
| Coenagrionidae  | <i>Mortonagrion aborense</i>         | Blue Midget           | Not Listed | CR   |
| Coenagrionidae  | <i>Mortonagrion arthuri</i>          | Arthur's Midget       | Not Listed | VU   |
| Coenagrionidae  | <i>Mortonagrion falcatum</i>         | Hooked Midget         | CR         | CR   |
| Coenagrionidae  | <i>Pericnemis stictica</i>           | Dryad                 | CR         | VU   |
| Coenagrionidae  | <i>Pseudagrion australasiae</i>      | Look-alike Sprite     | Not Listed | VU   |
| Coenagrionidae  | <i>Pseudagrion microcephalum</i>     | Blue Sprite           | Not Listed | LC   |
| Coenagrionidae  | <i>Pseudagrion pruinosum</i>         | Grey Sprite           | CR         | VU   |
| Coenagrionidae  | <i>Pseudagrion rubriceps</i>         | Orange-faced Sprite   | CR         | NT   |
| Coenagrionidae  | <i>Teinobasis cryptica</i>           | Cryptic Shadesprite   | Not Listed | CR   |
| Coenagrionidae  | <i>Teinobasis ruficollis</i>         | Red-tailed Sprite     | CR         | NT   |
| Devadattidae    | <i>Devadatta argyroides</i>          | Malayan Grisette      | Not Listed | EN   |
| Euphaeidae      | <i>Dysphaea dimidiata</i>            | Black Velvetwing      | NEx        | NEx  |
| Euphaeidae      | <i>Euphaea impar</i>                 | Blue-sided Satinwing  | Not Listed | LC   |
| Lestidae        | <i>Lestes praemorsus</i>             | Crenulated Spreadwing | Not Listed | LC   |
| Lestidae        | <i>Orolestes wallacei</i>            | Great Spreadwing      | NEx        | NEx  |
| Lestidae        | <i>Platylestes heterostylus</i>      | Slender Spreadwing    | CR         | CR   |
| Platycnemididae | <i>Coeliccia albicauda</i>           | White-tailed Sylvan   | CR         | CR   |
| Platycnemididae | <i>Coeliccia didyma</i>              | Twin-spotted Sylvan   | Not Listed | CR   |
| Platycnemididae | <i>Coeliccia octogesima</i>          | Telephone Sylvan      | Not Listed | VU   |
| Platycnemididae | <i>Copera marginipes</i>             | Yellow Featherlegs    | Not Listed | LC   |
| Platycnemididae | <i>Copera vittata</i>                | Variable Featherlegs  | CR         | VU   |
| Platycnemididae | <i>Onychargia atrocyana</i>          | Shorttail             | Not Listed | LC   |

| Family          | Species                           | Common Name                | RDB2       | RDB3 |
|-----------------|-----------------------------------|----------------------------|------------|------|
| Platycnemididae | <i>Prodasineura collaris</i>      | Collared Threadtail        | Not Listed | VU   |
| Platycnemididae | <i>Prodasineura humeralis</i>     | Orange-striped Threadtail  | CR         | LC   |
| Platycnemididae | <i>Prodasineura interrupta</i>    | Interrupted Threadtail     | Not Listed | CR   |
| Platycnemididae | <i>Prodasineura notostigma</i>    | Crescent Threadtail        | Not Listed | LC   |
| Platystictidae  | <i>Drepanosticta quadrata</i>     | Singapore Shadowdamsel     | Not Listed | VU   |
| Aeshnidae       | <i>Anax guttatus</i>              | Emperor                    | Not Listed | LC   |
| Aeshnidae       | <i>Anax panybeus</i>              | Arrow Emperor              | Not Listed | LC   |
| Aeshnidae       | <i>Gynacantha basiguttata</i>     | Spoon-tailed Duskhawker    | Not Listed | VU   |
| Aeshnidae       | <i>Gynacantha bayadera</i>        | Small Duskhawker           | Not Listed | LC   |
| Aeshnidae       | <i>Gynacantha dohrni</i>          | Spear-tailed Duskhawker    | Not Listed | LC   |
| Aeshnidae       | <i>Gynacantha subinterrupta</i>   | Dingy Duskhawker           | Not Listed | LC   |
| Aeshnidae       | <i>Heliaeschna crassa</i>         | Nighthawker                | Not Listed | CR   |
| Aeshnidae       | <i>Heliaeschna simplicia</i>      | Plain Nighthawker          | Not Listed | CR   |
| Aeshnidae       | <i>Heliaeschna uninervulata</i>   | Lesser Nighthawker         | Not Listed | NT   |
| Aeshnidae       | <i>Oligoaeschna amata</i>         | Paddletail                 | NEx        | CR   |
| Aeshnidae       | <i>Oligoaeschna foliacea</i>      | Leaftail                   | Not Listed | CR   |
| Aeshnidae       | <i>Tetracanthagyna plagiata</i>   | Giant Hawker               | CR         | VU   |
| Corduliidae     | <i>Hemicordulia tenera</i>        | Emerald                    | CR         | VU   |
| Gomphidae       | <i>Acrogomphus malayanus</i>      | Malayan Hooktail           | Not Listed | VU   |
| Gomphidae       | <i>Burmagomphus arthuri</i>       | Arthur's Clubtail          | Not Listed | CR   |
| Gomphidae       | <i>Burmagomphus divaricatus</i>   | Splayed Clubtail           | CR         | NEx  |
| Gomphidae       | <i>Burmagomphus plagiatus</i>     | Lesser Splayed Clubtail    | CR         | NEx  |
| Gomphidae       | <i>Heliogomphus kelantanensis</i> | Malayan Grappletail        | CR         | CR   |
| Gomphidae       | <i>Ictinogomphus decoratus</i>    | Common Flangetail          | Not Listed | LC   |
| Gomphidae       | <i>Leptogomphus risi</i>          | Ris' Clubtail              | CR         | VU   |
| Gomphidae       | <i>Macrogomphus quadratus</i>     | Forktail                   | Not Listed | VU   |
| Gomphidae       | <i>Merogomphus femoralis</i>      | Malayan Spineleg           | Not Listed | CR   |
| Gomphidae       | <i>Microgomphus chelifera</i>     | Tiny Sheartail             | CR         | VU   |
| Gomphidae       | <i>Paragomphus capricornis</i>    | Banded Hooktail            | CR         | EN   |
| Libellulidae    | <i>Acisoma panorpoides</i>        | Trumpet Tail               | Not Listed | LC   |
| Libellulidae    | <i>Aethriamanta aethra</i>        | Blue Adjutant              | CR         | LC   |
| Libellulidae    | <i>Aethriamanta brevipennis</i>   | Scarlet Adjutant           | Not Listed | LC   |
| Libellulidae    | <i>Aethriamanta gracilis</i>      | Pond Adjutant              | Not Listed | LC   |
| Libellulidae    | <i>Agrionoptera insignis</i>      | Grenadier                  | Not Listed | LC   |
| Libellulidae    | <i>Agrionoptera sexlineata</i>    | Handsome Grenadier         | CR         | LC   |
| Libellulidae    | <i>Brachydiplax chalybea</i>      | Blue Dasher                | Not Listed | LC   |
| Libellulidae    | <i>Brachydiplax farinosa</i>      | Black-tailed Dasher        | CR         | EN   |
| Libellulidae    | <i>Brachygonia oculata</i>        | Pixie                      | NEx        | EN   |
| Libellulidae    | <i>Brachythemis contaminata</i>   | Common Amberwing           | Not Listed | LC   |
| Libellulidae    | <i>Camacinia gigantea</i>         | Sultan                     | CR         | LC   |
| Libellulidae    | <i>Chalybiothemis fluviatilis</i> | Green-eyed Percher         | CR         | VU   |
| Libellulidae    | <i>Cratilla lineata</i>           | Lined Forest Skimmer       | CR         | LC   |
| Libellulidae    | <i>Cratilla metallica</i>         | Dark-tipped Forest Skimmer | Not Listed | LC   |
| Libellulidae    | <i>Crocothemis servilia</i>       | Common Scarlet             | Not Listed | LC   |
| Libellulidae    | <i>Diplacodes nebulosa</i>        | Black-tipped Percher       | Not Listed | LC   |
| Libellulidae    | <i>Diplacodes trivialis</i>       | Blue Percher               | Not Listed | LC   |
| Libellulidae    | <i>Hydrobasileus croceus</i>      | Water Monarch              | Not Listed | LC   |
| Libellulidae    | <i>Indothemis carnatica</i>       | White-tipped Demon         | Not Listed | CR   |
| Libellulidae    | <i>Indothemis limbata</i>         | Restless Demon             | CR         | VU   |

| Family         | Species                            | Common Name              | RDB2       | RDB3 |
|----------------|------------------------------------|--------------------------|------------|------|
| Libellulidae   | <i>Lathrecista asiatica</i>        | Scarlet Grenadier        | Not Listed | LC   |
| Libellulidae   | <i>Lyriothemis cleis</i>           | Bombardier               | Not Listed | EN   |
| Libellulidae   | <i>Macrodiplax cora</i>            | Coastal Glider           | Not Listed | LC   |
| Libellulidae   | <i>Nannophya pygmaea</i>           | Scarlet Pygmy            | Not Listed | LC   |
| Libellulidae   | <i>Nesoxenia lineata</i>           | Striped Grenadier        | CR         | LC   |
| Libellulidae   | <i>Neurothemis disparilis</i>      | Rare Parasol             | NEx        | NEx  |
| Libellulidae   | <i>Neurothemis fluctuans</i>       | Common Parasol           | Not Listed | LC   |
| Libellulidae   | <i>Onychothemis testacea</i>       | Riverhawk                | Not Listed | EN   |
| Libellulidae   | <i>Orchithemis pruinans</i>        | Blue Sentinel            | Not Listed | CR   |
| Libellulidae   | <i>Orchithemis pulcherrima</i>     | Variable Sentinel        | Not Listed | LC   |
| Libellulidae   | <i>Orthetrum chrysis</i>           | Spine-tufted Skimmer     | Not Listed | LC   |
| Libellulidae   | <i>Orthetrum glaucum</i>           | Common Blue Skimmer      | Not Listed | LC   |
| Libellulidae   | <i>Orthetrum luzonicum</i>         | Slender Blue Skimmer     | Not Listed | LC   |
| Libellulidae   | <i>Orthetrum sabina</i>            | Variegated Green Skimmer | Not Listed | LC   |
| Libellulidae   | <i>Orthetrum testaceum</i>         | Scarlet Skimmer          | Not Listed | LC   |
| Libellulidae   | <i>Pantala flavescens</i>          | Wandering Glider         | Not Listed | LC   |
| Libellulidae   | <i>Pornothemis starrei</i>         | Mangrove Marshal         | Not Listed | NT   |
| Libellulidae   | <i>Potamarcha congener</i>         | Common Chaser            | Not Listed | LC   |
| Libellulidae   | <i>Pseudothemis jorina</i>         | Banded Skimmer           | CR         | LC   |
| Libellulidae   | <i>Raphismia bispina</i>           | Mangrove Dwarf           | Not Listed | NT   |
| Libellulidae   | <i>Rhodothemis rufa</i>            | Common Redbolt           | Not Listed | LC   |
| Libellulidae   | <i>Rhyothemis fulgens</i>          | Small Bronze Flutterer   | Not Listed | NEx  |
| Libellulidae   | <i>Rhyothemis obsolescens</i>      | Bronze Flutterer         | CR         | LC   |
| Libellulidae   | <i>Rhyothemis phyllis</i>          | Yellow-barred Flutterer  | Not Listed | LC   |
| Libellulidae   | <i>Rhyothemis triangularis</i>     | Sapphire Flutterer       | Not Listed | LC   |
| Libellulidae   | <i>Risiophlebia dohrni</i>         | Potbellied Elf           | CR         | EN   |
| Libellulidae   | <i>Tetrathemis hyalina</i>         | Elf                      | Not Listed | EN   |
| Libellulidae   | <i>Tholymis tillarga</i>           | White-barred Duskhawk    | Not Listed | LC   |
| Libellulidae   | <i>Tramea transmarina euryale</i>  | Saddlebag Glider         | CR         | LC   |
| Libellulidae   | <i>Trithemis aurora</i>            | Crimson Dropwing         | Not Listed | LC   |
| Libellulidae   | <i>Trithemis festiva</i>           | Indigo Dropwing          | Not Listed | LC   |
| Libellulidae   | <i>Trithemis pallidinervis</i>     | Dancing Dropwing         | Not Listed | LC   |
| Libellulidae   | <i>Tyriobapta torrida</i>          | Treehugger               | Not Listed | LC   |
| Libellulidae   | <i>Urothemis abbotti</i>           | Rare Basker              | CR         | NEx  |
| Libellulidae   | <i>Urothemis signata insignata</i> | Scarlet Basker           | Not Listed | LC   |
| Libellulidae   | <i>Zyxomma obtusum</i>             | White Duskdarter         | Not Listed | CR   |
| Libellulidae   | <i>Zyxomma petiolatum</i>          | Slender Duskdarter       | Not Listed | LC   |
| Macromiidae    | <i>Epophthalmia vittigera</i>      | Pond Cruiser             | Not Listed | LC   |
| Macromiidae    | <i>Macromia cincta</i>             | Stream Cruiser           | Not Listed | EN   |
| Macromiidae    | <i>Macromia cydippe</i>            | Lesser Stream Cruiser    | Not Listed | EN   |
| Synthemistidae | <i>Idionyx yolanda</i>             | Shadowdancer             | CR         | LC   |

# Checklist of Orthoptera Species with their Category of Threat Status for Singapore

Prepared by Tan Ming Kai

| Family         | Genus               | Species          | Authority             | Common Name                               | RDB2       | RDB3 |
|----------------|---------------------|------------------|-----------------------|-------------------------------------------|------------|------|
| Tettigoniidae  | <i>Asiophlugis</i>  | <i>temasek</i>   | Gorochov & Tan, 2011  | Temasek Crystal Predatory Katydid         | Not Listed | EN   |
| Trigonidiidae  | <i>Svistella</i>    | <i>chekjawa</i>  | Tan & Robillard, 2013 | Chek Jawa's Mangrove Sword-tailed Cricket | Not Listed | CR   |
| Gryllotalpidae | <i>Gryllotalpa</i>  | <i>fulvipes</i>  | Saussure, 1877        | Yellow-legged Mole Cricket                | EN         | VU   |
| Gryllidae      | <i>Singapuriola</i> | <i>separata</i>  | Gorochov & Tan, 2012  | Singapore's Feather-winged Cricket        | Not Listed | VU   |
| Tettigoniidae  | <i>Glenophisis</i>  | <i>singapura</i> | Tan, 2012             | Spectacular Spider-legged Katydid         | Not Listed | CR   |

**Checklist of Phasmida Species with their Category of Threat Status for Singapore**

Prepared by Francis Seow-Choen

| Family          | Genus                                    | Species                   | Authority                | Common Name            | Origin    | RDB2       | RDB3 |
|-----------------|------------------------------------------|---------------------------|--------------------------|------------------------|-----------|------------|------|
| Diapheromeridae | <i>Pseudobactricia</i>                   | <i>ridleyi</i>            | Brock, 1999              | Ridley's Stick         | Uncertain | NEx        | NA   |
| Lonchodidae     | <i>Baculofractum</i>                     | <i>insigne</i>            | (Brunner, 1907)          | Broken Twig            | Native    | VU         | CR   |
| Lonchodidae     | <i>Carausius</i>                         | <i>transiliens</i>        | Brunner, 1907            | Knob-back Stick        | Native    | Not Listed | NT   |
| Lonchodidae     | <i>Lonchodes</i>                         | <i>brevipes</i>           | Gray, 1835               | Gray's Malayan Stick   | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Staelonchodes</i>                     | <i>geniculatus</i>        | (Gray, 1835)             | Orange-kneed Stick     | Native    | Not Listed | NT   |
| Lonchodidae     | <i>Stheneboea</i>                        | <i>malaya</i>             | Stål, 1875               | Warty-legged Stick     | Native    | Not Listed | NT   |
| Lonchodidae     | <i>Acacus</i>                            | <i>sarawacus</i>          | (Wood-Mason, 1877)       | White-kneed Stick      | Native    | VU         | NT   |
| Lonchodidae     | <i>Anarchodes</i>                        | <i>sinkiebensis</i>       | (Gray, 1835)             | Yellow-and-Brown Stick | Native    | Not Listed | NEx  |
| Lonchodidae     | <i>Asceles</i>                           | <i>malaccaae</i>          | (Saussure, 1868)         | Hairy Asceles          | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Asceles</i>                           | <i>rabihahae</i>          | Seow-Choen, 2021         | Mottled Asceles        | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Asceles</i>                           | <i>tanarata singapura</i> | Seow-Choen & Brock, 1999 | Singapore Asceles      | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Calvisia</i> ( <i>Calvisia</i> )      | <i>sangarius</i>          | (Westwood, 1859)         | Brown Knob-Neck        | Native    | NEx        | NEx  |
| Lonchodidae     | <i>Calvisia</i> ( <i>Conoicalvisia</i> ) | <i>virbius virbius</i>    | (Westwood, 1859)         | Green Knob-Neck        | Native    | Not Listed | CR   |
| Lonchodidae     | <i>Diacanthoidea</i>                     | <i>diacanthos</i>         | (Haan, 1842)             | Spike Head Stick       | Native    | Not Listed | NEx  |
| Lonchodidae     | <i>Diacanthoidea</i>                     | <i>malaccensis</i>        | (Kirby, 1904)            | Cone Head Stick        | Native    | Not Listed | NEx  |
| Lonchodidae     | <i>Diardia</i>                           | <i>battak</i>             | Redtenbacher, 1908       | Thin-Spine Neck Stick  | Native    | Not Listed | CR   |
| Lonchodidae     | <i>Diesbachia</i>                        | <i>tamyris</i>            | (Westwood, 1859)         | Spiny Flying Stick     | Native    | VU         | EN   |
| Lonchodidae     | <i>Gargantuoidea</i>                     | <i>triumphalis</i>        | Redtenbacher, 1908       | Triumphant Giant       | Native    | VU         | NT   |
| Lonchodidae     | <i>Lobonecrosia</i>                      | <i>subflava</i>           | Brock & Seow-Choen, 2000 | Lobe-Legged Stick      | Native    | VU         | CR   |
| Lonchodidae     | <i>Lopaphus</i>                          | <i>brachypterus</i>       | (Haan, 1842)             | Short Winged Lopaphus  | Native    | VU         | VU   |
| Lonchodidae     | <i>Lopaphus</i>                          | <i>iolas iolas</i>        | (Westwood, 1859)         | Round Winged Lopaphus  | Native    | Not Listed | NT   |
| Lonchodidae     | <i>Marmessoidea</i>                      | <i>rosea</i>              | (Fabricius, 1793)        | Yellow-Spotted Stick   | Native    | NEx        | NEx  |
| Lonchodidae     | <i>Necrosia</i>                          | <i>connexa</i>            | (Redtenbacher, 1908)     | Rose-Wing Stick        | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Necrosia</i>                          | <i>ingenua</i>            | (Redtenbacher, 1908)     | Green Flying Stick     | Native    | Not Listed | LC   |
| Lonchodidae     | <i>Necrosia</i>                          | <i>punctata</i>           | (Gray, 1835)             | Spotted Flying Stick   | Native    | Not Listed | LC   |

| Family           | Genus                                      | Species                             | Authority                                  | Common Name                | Origin     | RDB2       | RDB3 |
|------------------|--------------------------------------------|-------------------------------------|--------------------------------------------|----------------------------|------------|------------|------|
| Lonchodidae      | <i>Necrosia</i>                            | <i>westwoodi</i>                    | Kirby, 1904                                | Westwood's Flying Stick    | Native     | Not Listed | VU   |
| Lonchodidae      | <i>Phaenopharos</i>                        | <i>struthioneus</i>                 | (Westwood, 1859)                           | Small-Red-Wings            | Native     | NEx        | CR   |
| Lonchodidae      | <i>Planososibia</i>                        | <i>esacus</i>                       | (Westwood, 1859)                           | Banded Sosibia             | Native     | Not Listed | LC   |
| Lonchodidae      | <i>Planososibia</i>                        | <i>lysippus</i>                     | (Westwood, 1859)                           | Greater Sosibia            | Native     | Not Listed | LC   |
| Lonchodidae      | <i>Planososibia</i>                        | <i>tommykohi</i>                    | Seow-Choen, 2017                           | Tommy's Sosibia            | Native     | Not Listed | CR   |
| Lonchodidae      | <i>Singaporoidea</i>                       | <i>menepolemus</i>                  | (Westwood, 1859)                           | Green-Legged Stick         | Native     | Not Listed | NT   |
| Lonchodidae      | <i>Sipylodea</i>                           | <i>chlorotica</i>                   | Serville, 1838                             | Pink Winged Stick          | Native     | VU         | LC   |
| Lonchodidae      | <i>Trachythorax</i>                        | sp.                                 |                                            |                            | Native     | Not Listed | NE   |
| Phasmatidae      | <i>Ramulus</i>                             | <i>nematodea</i>                    | (Haan, 1842)                               | Great Thin Stick           | Native     | VU         | LC   |
| Phasmatidae      | <i>Phobaeticus</i>                         | <i>serratipes</i>                   | (Gray, 1835)                               | Giant Malayan Stick        | Native     | VU         | NEx  |
| Phasmatidae      | <i>Eurycnema</i>                           | <i>versirubra</i>                   | Serville, 1838                             | Pink-Winged Green Giant    | Non-Native | NEx        | NA   |
| Aschiphasmatidae | <i>Chlorobistius</i>                       | <i>xiuyuae</i>                      | Brock & Seow-Choen, 1999                   | Xiuyu's Abrosoma           | Native     | Not Listed | NT   |
| Aschiphasmatidae | <i>Kerabistus</i><br>( <i>Kerabistus</i> ) | <i>murphyi</i>                      | Seow-Choen, 2017                           | Murphy's Kerabistus        | Native     | Not Listed | CR   |
| Aschiphasmatidae | <i>Presbistus</i>                          | <i>peleus</i>                       | (Gray, 1835)                               | Green-Striped Flying Stick | Native     | Not Listed | LC   |
| Heteropterygidae | <i>Orestes</i>                             | <i>draegeri</i>                     | Bresseel & Constant, 2018                  | Small Cigar Stick          | Native     | VU         | LC   |
| Heteropterygidae | <i>Planispectrum</i>                       | <i>bengalense</i>                   | (Redtenbacher, 1906)                       | Pygmy Stick                | Native     | VU         | VU   |
| Heteropterygidae | <i>Pylaemenes</i>                          | <i>mitratus</i>                     | (Redtenbacher, 1906)                       | Money Plant Stick          | Native     | Not Listed | LC   |
| Heteropterygidae | <i>Haaniella</i>                           | <i>mecheli</i><br><i>macroptera</i> | Hennemann, Conle, Brock & Seow-Choen, 2016 | Spiny Brown Stick          | Native     | Not Listed | CR   |
| Heteropterygidae | <i>Heteropteryx</i>                        | <i>dilatata</i>                     | (Parkinson, 1798)                          | Malayan Jungle Nymph       | Native     | CR         | NEx  |
| Phylliidae       | <i>Cryptophyllum</i>                       | <i>chrisangi</i>                    | Seow-Choen, 2017                           | Chris Ang's Leaf Insect    | Native     | Not Listed | LC   |
| Phylliidae       | <i>Phyllium</i>                            | <i>hausleithneri</i>                | Brock, 1999                                | Hausleithner's Leaf Insect | Uncertain  | Not Listed | NA   |
| Phylliidae       | <i>Pulchriphyllum</i>                      | <i>bioculatum</i>                   | (Gray, 1832)                               | Gray's Leaf Insect         | Native     | VU         | NT   |



# Checklist of Spider Species with their Category of Threat Status for Singapore

Prepared by David J. Court, Joseph K.H. Koh

| Family    | Genus              | Species              | Authority                   | Common Name                         | RDB2       | RDB3 |
|-----------|--------------------|----------------------|-----------------------------|-------------------------------------|------------|------|
| Anapidae  | <i>Pseudanapis</i> | <i>parocula</i>      | (Simon, 1899)               | Palp-less Dimpled Orb Weaver        | Not Listed | DD   |
| Anapidae  | <i>Pseudanapis</i> | sp.                  |                             | Palped Dimpled Orb Weaver           | Not Listed | NE   |
| Araneidae | <i>Acusilas</i>    | <i>coccineus</i>     | Simon, 1895                 | Brown Leaf-rolling Orb Weaver       | Not Listed | DD   |
| Anapidae  | <i>Acusilas</i>    | sp.                  |                             |                                     | Not Listed | NE   |
| Araneidae | <i>Anepsion</i>    | <i>depressum</i>     | (Thorell, 1877)             | Common Pizza Round-headed Spider    | Not Listed | LC   |
| Araneidae | <i>Anepsion</i>    | <i>maculatum</i>     | (Thorell, 1897)             | Spotted Round-headed Spider         | Not Listed | DD   |
| Araneidae | <i>Anepsion</i>    | <i>maritatum</i>     | (O.Pickard-Cambridge, 1877) | Marble Anepsion                     | Not Listed | LC   |
| Araneidae | <i>Aoaraneus</i>   | sp.                  |                             | Green Orb Weaver                    | Not Listed | NE   |
| Araneidae | <i>Arachnura</i>   | <i>melanura</i>      | Simon, 1867                 | Black Scorpion-tailed Spider        | Not Listed | LC   |
| Araneidae | <i>Arachnura</i>   | sp.                  |                             | Yellow-lined Scorpion-tailed Spider | Not Listed | NE   |
| Araneidae | <i>Araneus</i>     | <i>nox</i>           | (Simon, 1877)               | Leathery Garden Orb Weaver          | Not Listed | LC   |
| Araneidae | <i>Araneus</i>     | sp. A                |                             | Yellow-striped Orb Weaver           | Not Listed | NE   |
| Araneidae | <i>Araneus</i>     | sp. B                |                             | Marshmallow Orb Weaver              | Not Listed | NE   |
| Araneidae | <i>Araneus</i>     | sp. C                |                             | White-spotted Orb Weaver            | Not Listed | NE   |
| Araneidae | <i>Araneus</i>     | sp. D                |                             | Porphyron Orb Weaver                | Not Listed | NE   |
| Araneidae | <i>Argiope</i>     | <i>aemula</i>        | (Walckenaer, 1841)          | Oval Silver-faced Spider            | Not Listed | LC   |
| Araneidae | <i>Argiope</i>     | <i>catenulata</i>    | (Doleschall, 1859)          | Chained Silver-faced Spider         | Not Listed | LC   |
| Araneidae | <i>Argiope</i>     | <i>dang</i>          | Jäger & Praxaysombath, 2009 | Red-capped Silver-faced Spider      | Not Listed | DD   |
| Araneidae | <i>Argiope</i>     | <i>jinghongensis</i> | Yin, Peng & Wang, 1994      | Jinghong Silver-faced Spider        | Not Listed | DD   |
| Araneidae | <i>Argiope</i>     | <i>mangal</i>        | Koh, 1991                   | Mangrove Silver-faced Spider        | Not Listed | VU   |
| Araneidae | <i>Argiope</i>     | <i>pulchella</i>     | Thorell, 1881               | Beautiful Silver-faced Spider       | Not Listed | DD   |
| Araneidae | <i>Argiope</i>     | <i>versicolor</i>    | (Doleschall, 1859)          | Multicoloured Silver-faced Spider   | Not Listed | LC   |
| Araneidae | <i>Bijoaraneus</i> | <i>legonensis</i>    | (Grasshoff & Edmunds, 1979) | Giant Kidney Orb Weaver             | Not Listed | DD   |
| Araneidae | <i>Bijoaraneus</i> | <i>mitificus</i>     | (Simon, 1886)               | Kidney Garden Spider                | Not Listed | LC   |
| Araneidae | <i>Caerostris</i>  | <i>sumatrana</i>     | Strand, 1915                | Sumatran Bark Spider                | Not Listed | DD   |
| Araneidae | <i>Caerostris</i>  | sp.                  |                             | White-faced Bark Spider             | Not Listed | NE   |

| Family    | Genus                  | Species                | Authority                  | Common Name                      | RDB2       | RDB3 |
|-----------|------------------------|------------------------|----------------------------|----------------------------------|------------|------|
| Araneidae | <i>Chorizopesoides</i> | <i>wulingensis</i>     | (Yin, Wang & Xie, 1994)    | Swollen-headed Orb Weaver        | Not Listed | DD   |
| Araneidae | <i>Cyclosa</i>         | <i>bifida</i>          | (Doleschall, 1859)         | Long-bellied Cyclosa             | Not Listed | LC   |
| Araneidae | <i>Cyclosa</i>         | <i>bulla</i>           | Tanikawa & Petcharad, 2018 | Door-knob Cyclosa                | Not Listed | DD   |
| Araneidae | <i>Cyclosa</i>         | <i>confraga</i>        | (Thorell, 1893)            | Double-humped Cyclosa            | Not Listed | DD   |
| Araneidae | <i>Cyclosa</i>         | <i>insulana</i>        | (Costa, 1834)              | Humpback Debris Spider           | Not Listed | LC   |
| Araneidae | <i>Cyclosa</i>         | <i>mulmeinensis</i>    | (Thorell, 1887)            | Two-horned Debris spider         | Not Listed | LC   |
| Araneidae | <i>Cyclosa</i>         | sp. A                  |                            | Long-tailed Debris Spider        | Not Listed | NE   |
| Araneidae | <i>Cyphalonotus</i>    | <i>sumatranus</i>      | Simon, 1899                | Sumatran Twig-legged Spider      | Not Listed | DD   |
| Araneidae | <i>Cyphalonotus</i>    | sp. A                  |                            | Twin Peaks Twig-legged Spider    | Not Listed | NE   |
| Araneidae | <i>Cyphalonotus</i>    | sp. B                  |                            | Round-humped Twig-legged Spider  | Not Listed | NE   |
| Araneidae | <i>Cyrtarachne</i>     | <i>conica</i>          | O. Pickard-Cambridge, 1901 | Conical Spider                   | EN         | VU   |
| Araneidae | <i>Cyrtarachne</i>     | <i>inaequalis</i>      | Thorell, 1895              | Double-humped Bird Dung Spider   | Not Listed | LC   |
| Araneidae | <i>Cyrtarachne</i>     | <i>nagasakiensis</i>   | Strand, 1918               | Nagasaki Bird Dung Spider        | Not Listed | DD   |
| Araneidae | <i>Cyrtarachne</i>     | sp.                    |                            | Homer Simpson Bird Dung Spider   | Not Listed | NE   |
| Araneidae | <i>Cyrtophora</i>      | <i>beccarii</i>        | (Thorell, 1878)            | Cotton Tent Spider               | Not Listed | LC   |
| Araneidae | <i>Cyrtophora</i>      | <i>cicatrosa</i>       | (Stoliczka, 1869)          | Four-humped Tent Spider          | Not Listed | DD   |
| Araneidae | <i>Cyrtophora</i>      | <i>cylindroides</i>    | (Walckenaer, 1841)         | Double-humped Yellow Tent Spider | Not Listed | DD   |
| Araneidae | <i>Cyrtophora</i>      | <i>exanthematica</i>   | (Doleschall, 1859)         | Double-tailed Tent Spider        | Not Listed | LC   |
| Araneidae | <i>Cyrtophora</i>      | <i>moluccensis</i>     | (Doleschall, 1857)         | Maluku Tent Spider               | Not Listed | DD   |
| Araneidae | <i>Cyrtophora</i>      | <i>sextuberculata</i>  | Tanikawa & Petcharad, 2015 | Six-nippled Tent Spider          | Not Listed | DD   |
| Araneidae | <i>Cyrtophora</i>      | <i>unicolor</i>        | (Doleschall, 1857)         | Red Tent Spider                  | Not Listed | LC   |
| Araneidae | <i>Eriovixia</i>       | <i>excelsa</i>         | (Simon, 1889)              | Knob-tailed Woolly Orb Weaver    | Not Listed | DD   |
| Araneidae | <i>Eriovixia</i>       | <i>laglaizei</i>       | (Simon, 1877)              | Laglaise's Woolly Orb Weaver     | Not Listed | LC   |
| Araneidae | <i>Eriovixia</i>       | <i>porcula</i>         | (Simon, 1877)              | Pig-tailed Woolly Orb Weaver     | Not Listed | DD   |
| Araneidae | <i>Eriovixia</i>       | <i>pseudocentrodes</i> | (Bösenberg & Strand, 1906) | Cone-tailed Woolly Orb Weaver    | Not Listed | DD   |
| Araneidae | <i>Eriovixia</i>       | sp. A                  |                            | False-eyed Woolly Spider         | Not Listed | NE   |
| Araneidae | <i>Eriovixia</i>       | sp. B                  |                            | Periscope Woolly Orb Weaver      | Not Listed | NE   |

| Family    | Genus                | Species            | Authority                    | Common Name                       | RDB2       | RDB3 |
|-----------|----------------------|--------------------|------------------------------|-----------------------------------|------------|------|
| Araneidae | <i>Eriovixia</i>     | sp. C              |                              | Truncated Tail Woolly Orb Weaver  | Not Listed | NE   |
| Araneidae | <i>Eriovixia</i>     | sp. D              |                              | Squirrel-headed Woolly Orb Weaver | Not Listed | NE   |
| Araneidae | <i>Gasteracantha</i> | <i>diardi</i>      | (Lucas, 1835)                | Diard's Spiny Spider              | Not Listed | DD   |
| Araneidae | <i>Gasteracantha</i> | <i>kuhli</i>       | C.L.Koch, 1837               | Black-and-white Spiny Spider      | Not Listed | LC   |
| Araneidae | <i>Gasteracantha</i> | <i>mengei</i>      | Keyserling, 1864             | Parallel Spiny Spider             | Not Listed | DD   |
| Araneidae | <i>Gasteracantha</i> | sp. A              |                              | Double-barred Yellow Spiny Spider | Not Listed | NE   |
| Araneidae | <i>Gasteracantha</i> | sp. B              |                              | Double-banded White Spiny Spider  | Not Listed | NE   |
| Araneidae | <i>Gea</i>           | <i>spinipes</i>    | C.L.Koch, 1843               | Spiny Shoulder-horn Spider        | Not Listed | LC   |
| Araneidae | <i>Guizygiella</i>   | <i>nadleri</i>     | (Heimer 1984)                | Marbled Orb Weaver                | Not Listed | LC   |
| Araneidae | <i>Hypososinga</i>   | <i>pygmaea</i>     | (Sundevall, 1831)            | Pygmy Orb Weaver                  | Not Listed | LC   |
| Araneidae | <i>Leviaraneus</i>   | <i>noegeatus</i>   | (Thorell, 1895)              | Banner Orb Weaver                 | Not Listed | VU   |
| Araneidae | <i>Lipocrea</i>      | <i>fusiformis</i>  | (Thorell, 1877)              | Grass Orb Weaver Spider           | Not Listed | LC   |
| Araneidae | <i>Lipocrea</i>      | sp.                |                              | Black-banded Grass Orb Weaver     | Not Listed | NE   |
| Araneidae | <i>Macracantha</i>   | <i>arcuata</i>     | (Fabricius, 1793)            | Longhorn Spiny Spider             | VU         | EN   |
| Araneidae | <i>Macracantha</i>   | <i>hasselti</i>    | (C. L. Koch, 1837)           | Hasselt's Spiny Spider            | Not Listed | LC   |
| Araneidae | <i>Milonia</i>       | <i>obtusa</i>      | Thorell, 1893                | Obtuse Leaf-rolling Orb Weaver    | Not Listed | EN   |
| Araneidae | <i>Neogea</i>        | <i>nocticolor</i>  | (Thorell, 1887)              | Silver-spotted Sun Spider         | Not Listed | DD   |
| Araneidae | <i>Neoscona</i>      | <i>inusta</i>      | (L.Koch, 1871)               | Variable Grass Neoscona           | Not Listed | DD   |
| Araneidae | <i>Neoscona</i>      | <i>nautica</i>     | (L.Koch, 1875)               | Brown Sailor Spider               | Not Listed | LC   |
| Araneidae | <i>Neoscona</i>      | <i>punctigera</i>  | (Doleschall, 1857)           | Jute Mat Neoscona                 | Not Listed | LC   |
| Araneidae | <i>Neoscona</i>      | <i>theisi</i>      | (Walckenaer, 1841)           | Serrated Spearhead Neoscona       | Not Listed | LC   |
| Araneidae | <i>Neoscona</i>      | <i>vigilans</i>    | (Blackwall, 1865)            | Variable Orb Weaver               | Not Listed | LC   |
| Araneidae | <i>Ordgarius</i>     | <i>hobsoni</i>     | (O. Pickard-Cambridge, 1877) | Hobson's Bolas Spider             | Not Listed | DD   |
| Araneidae | <i>Ordgarius</i>     | <i>sexspinosus</i> | (Thorell, 1894)              | Six-spined Bolas Spider           | Not Listed | DD   |
| Araneidae | <i>Ordgarius</i>     | sp.                |                              | Periscope Bolas Spider            | Not Listed | NE   |
| Araneidae | <i>Paraplectana</i>  | sp. A              |                              | Black Socks Ladybird Spider       | Not Listed | NE   |
| Araneidae | <i>Paraplectana</i>  | sp. B              |                              | Spotted Ladybird Spider           | Not Listed | NE   |
| Araneidae | <i>Paraplectana</i>  | sp. C              |                              | White-eyed Ladybird Spider        | Not Listed | VU   |
| Araneidae | <i>Parawixia</i>     | <i>dehaani</i>     | (Doleschall, 1859)           | Common Two-horned Orb Weaver      | Not Listed | LC   |
| Araneidae | <i>Pasilobus</i>     | <i>bufoninus</i>   | (Simon, 1867)                | X-wing Fighter Spider             | Not Listed | LC   |

| Family           | Genus                   | Species             | Authority                  | Common Name                              | RDB2       | RDB3 |
|------------------|-------------------------|---------------------|----------------------------|------------------------------------------|------------|------|
| Araneidae        | <i>Polrys</i>           | <i>elevatus</i>     | Thorell, 1890              | Tall-bellied Orb Weaver                  | Not Listed | DD   |
| Araneidae        | <i>Polrys</i>           | <i>illepidus</i>    | C. L. Koch, 1843           | Abominable Tree-stump Spider             | Not Listed | LC   |
| Araneidae        | <i>Polrys</i>           | <i>stygius</i>      | Thorell, 1898              | Round Tree-stump Spider                  | Not Listed | DD   |
| Araneidae        | <i>"Singa"</i>          | <i>perpolita</i>    | (Thorell, 1893)            | Spotted Green-bottom Spider              | Not Listed | DD   |
| Araneidae        | <i>Talhybia</i>         | <i>depressa</i>     | Thorell, 1898              | Wrap-around Orb Weaver                   | Not Listed | DD   |
| Araneidae        | <i>Thelacantha</i>      | <i>brevispina</i>   | (Doleschall, 1857)         | Peaked Carapace Spiny Spider             | Not Listed | LC   |
| Araneidae        | <i>"Zygiella"</i>       | <i>calyptrata</i>   | (Workman & Workman, 1894)  | Cotton Ball Orb Weaver                   | Not Listed | LC   |
| Atypidae         | <i>Calommata</i>        | <i>sundaica</i>     | (Doleschall, 1857)         | Sunda Calommata                          | Not Listed | NEx? |
| Barychelidae     | <i>Idioctis</i>         | <i>littoralis</i>   | Abraham, 1924              | Intertidal Brush-footed Trapdoor Spider  | Not Listed | VU   |
| Barychelidae     | <i>Monodontium</i>      | <i>bukittimah</i>   | Raven, 2008                | Bukit Timah Brush-footed Trapdoor Spider | Not Listed | VU   |
| Barychelidae     | <i>Rhianodes</i>        | <i>atratus</i>      | (Thorell, 1890)            | Spotted Brush-footed Trapdoor Spider     | Not Listed | LC   |
| Bemmeridae       | <i>Damarchus</i>        | <i>workmani</i>     | Thorell, 1891              | Workman's Werewolf Spider                | Not Listed | DD   |
| Cheiracanthiidae | <i>Calamoneta</i>       | sp.                 |                            | Flexi-legs Spider                        | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | <i>approximatum</i> | O. Pickard-Cambridge, 1885 | Black-faced Sac Spider                   | Not Listed | LC   |
| Cheiracanthiidae | <i>"Cheiracanthium"</i> | <i>insigne</i>      | O. Pickard-Cambridge, 1874 | Insignia Sac Spider                      | Not Listed | LC   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. A               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. B               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. C               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. D               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. E               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. F               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. G               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. H               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. I               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. J               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. K               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. L               |                            |                                          | Not Listed | NE   |
| Cheiracanthiidae | <i>Cheiracanthium</i>   | sp. M               |                            | White-blotched Long-jawed Sac Spider     | Not Listed | DD   |
| Cithaeronidae    | <i>Cithaeron</i>        | <i>praedonius</i>   | O. Pickard-Cambridge, 1872 | Swift Ground Spider                      | Not Listed | LC   |
| Clubionidae      | <i>Clubiona</i>         | <i>melanosticta</i> | Thorell, 1890              | Smooth Spotted Spider                    | Not Listed | DD   |
| Clubionidae      | <i>Clubiona</i>         | sp. A               |                            | Three-toned Sac Spider                   | Not Listed | NE   |
| Clubionidae      | <i>Clubiona</i>         | sp. B               |                            | Pygmy Sac Spider                         | Not Listed | NE   |
| Clubionidae      | <i>Clubiona</i>         | sp. C               |                            | Bronze Sac Spider                        | Not Listed | NE   |
| Clubionidae      | <i>Clubiona</i>         | sp. D               |                            | Narrow-headed Sac Spider                 | Not Listed | NE   |

| Family      | Genus                | Species             | Authority                              | Common Name                                 | RDB2       | RDB3 |
|-------------|----------------------|---------------------|----------------------------------------|---------------------------------------------|------------|------|
| Clubionidae | <i>Clubiona</i>      | sp. E               |                                        | Broad-carapaced Sac Spider                  | Not Listed | NE   |
| Clubionidae | <i>Clubiona</i>      | sp. F               |                                        | Purple-jawed Sac Spider                     | Not Listed | NE   |
| Clubionidae | <i>Clubiona</i>      | sp. G               |                                        | White-headed Sac Spider                     | Not Listed | NE   |
| Clubionidae | <i>Nusatidia</i>     | <i>borneensis</i>   | Deeleman-Reinhold, 2001                | Borneo Green Sac Spider                     | Not Listed | DD   |
| Clubionidae | <i>Nusatidia</i>     | <i>camouflata</i>   | Deeleman-Reinhold, 2001                | Camouflage Green Sac Spider                 | Not Listed | LC   |
| Clubionidae | <i>Nusatidia</i>     | <i>javana</i>       | (Simon, 1897)                          | Javanese Green Sac Spider                   | Not Listed | DD   |
| Clubionidae | <i>Pteroneta</i>     | <i>tertia</i>       | Deeleman-Reinhold, 2001                | Blue-spotted Sac Spider                     | Not Listed | DD   |
| Corinnidae  | <i>Aetius</i>        | <i>bicuspidatus</i> | Yamasaki, 2020                         | Swallowtail Ant-mimicking Spider            | Not Listed | DD   |
| Corinnidae  | <i>Aetius</i>        | sp. A               |                                        | Yen Ant-mimicking Spider                    | Not Listed | NE   |
| Corinnidae  | <i>Aetius</i>        | sp. B               |                                        | Lined Ant-mimicking Spider                  | Not Listed | NE   |
| Corinnidae  | <i>Apochinomma</i>   | <i>nitidum</i>      | (Thorell, 1895)                        | Golden Hair Armoured Spider                 | Not Listed | DD   |
| Corinnidae  | <i>Corinomma</i>     | <i>javanum</i>      | Simon, 1905                            | Javanese Leathery Sac Spider                | Not Listed | DD   |
| Corinnidae  | <i>Corinomma</i>     | <i>severum</i>      | (Thorell, 1877)                        | Common Black Leathery Sac Spider            | Not Listed | LC   |
| Corinnidae  | <i>Echinax</i>       | <i>oxyopoides</i>   | (Deeleman-Reinhold, 1995)              | Pale Urchin Spider                          | Not Listed | LC   |
| Corinnidae  | <i>Medmassa</i>      | <i>insignis</i>     | (Thorell, 1890)                        | Caramel-Stripe Medmassa                     | Not Listed | DD   |
| Corinnidae  | <i>Medmassa</i>      | sp.                 |                                        | "Blackish Brown Medmassa"                   | Not Listed | NE   |
| Corinnidae  | <i>Peng</i>          | sp.                 |                                        | Box-headed Black Ant Mimic                  | Not Listed | VU   |
| Corinnidae  | <i>Serendib</i>      | <i>muadai</i>       | Jäger, Nophaseud & Praxaysombath, 2012 | Striped Serendib                            | Not Listed | DD   |
| Corinnidae  | <i>Serendib</i>      | <i>suthepica</i>    | Deeleman-Reinhold, 2001                | Four-spined Serendib                        | Not Listed | DD   |
| Ctenidae    | <i>Acantheis</i>     | sp. A               |                                        | Orange-spotted Long-legged Wandering Spider | Not Listed | NE   |
| Ctenidae    | " <i>Acantheis</i> " | sp. B               |                                        | Red-spotted Tufted Wandering Spider         | Not Listed | NE   |
| Ctenidae    | " <i>Acantheis</i> " | sp. C               |                                        | Yellow-lined Tufted Wandering Spider        | Not Listed | NE   |
| Ctenidae    | <i>Anahita</i>       | <i>periculosa</i>   | (Bristowe, 1931)                       | Common Banded Wandering Spider              | Not Listed | DD   |
| Ctenidae    | <i>Anahita</i>       | sp.                 |                                        | Grassland Banded Wandering Spider           | Not Listed | DD   |
| Ctenidae    | <i>Bowie</i>         | <i>abdulmajid</i>   | Jäger, 2022                            | Shaggy Wandering Spider                     | Not Listed | DD   |
| Ctenidae    | <i>Bowie</i>         | <i>argentipes</i>   | (van Hasselt, 1893)                    | Sumatran Wandering Spider                   | Not Listed | DD   |

| Family       | Genus               | Species                | Authority                 | Common Name                         | RDB2       | RDB3 |
|--------------|---------------------|------------------------|---------------------------|-------------------------------------|------------|------|
| Deinopidae   | <i>Asianopis</i>    | sp.                    |                           | Common Singapore Net-casting Spider | Not Listed | NE   |
| Desidae      | <i>Desis</i>        | <i>martensi</i>        | L. Koch, 1872             | Von Martens' Reef Spider            | VU         | VU   |
| Dictynidae   | <i>Paratheuma</i>   | <i>sp. aff. armata</i> | (Marples, 1964)           | Can-opener Marine Spider            | Not Listed | VU   |
| Dictynidae   | <i>Sudesna</i>      | sp.                    |                           | White-lined Sudesna                 | Not Listed | NE   |
| Euagridae    | <i>"Masteria"</i>   | sp.                    |                           | Minute Curtain Web Spider           | Not Listed | NE   |
| Filistatidae | <i>Labahitha</i>    | <i>garciai</i>         | (Simon, 1892)             | Garcia Crevice Weaver               | Not Listed | DD   |
| Gnaphosidae  | <i>"Drassodes"</i>  | sp. A                  |                           | Mangrove Tawny Ground Spider        | Not Listed | NE   |
| Gnaphosidae  | <i>"Drassodes"</i>  | sp. B                  |                           | Parkland Black Ground Spider        | Not Listed | NE   |
| Gnaphosidae  | <i>Hitobia</i>      | sp. A                  |                           | Common Tapir Ground Spider          | Not Listed | NE   |
| Gnaphosidae  | <i>Hitobia</i>      | sp. B                  |                           | White-crested Tapir Ground Spider   | Not Listed | NE   |
| Gnaphosidae  | <i>Hitobia</i>      | sp. C                  |                           | Wavy Tapir Ground Spider            | Not Listed | NE   |
| Gnaphosidae  | <i>Hitobia</i>      | sp. D                  |                           | Strong-armed Tapir Ground Spider    | Not Listed | VU   |
| Gnaphosidae  | ?                   | ?                      |                           |                                     | Not Listed | NE   |
| Gnaphosidae  | ?                   | ?                      |                           |                                     | Not Listed | NE   |
| Gnaphosidae  | ?                   | ?                      |                           |                                     | Not Listed | NE   |
| Hahniidae    | <i>Alistra</i>      | sp. A                  |                           | Pale Comb-tailed Spider             | Not Listed | NE   |
| Hahniidae    | <i>Alistra</i>      | sp. B                  |                           | Black-capped Comb-tailed Spider     | Not Listed | NE   |
| Hahniidae    | <i>Alistra</i>      | sp. C                  |                           | Spotted Comb-tailed Spider          | Not Listed | NE   |
| Hersiliidae  | <i>Hersilia</i>     | <i>deelemanae</i>      | M. Baehr & B. Baehr, 1993 | Deeleman's Two-tailed Spider        | Not Listed | DD   |
| Hersiliidae  | <i>Hersilia</i>     | <i>lelabah</i>         | Rheims & Brescovit, 2004  | Long-abdomen Two-tailed Spider      | Not Listed | DD   |
| Hersiliidae  | <i>Hersilia</i>     | <i>nentwigi</i>        | M. Baehr & B. Baehr, 1993 | Nentwig's Two-tailed Spider         | Not Listed | DD   |
| Hersiliidae  | <i>Hersilia</i>     | <i>savignyi</i>        | Lucas, 1836               | Dusky Two-tailed Spider             | Not Listed | LC   |
| Hersiliidae  | <i>Hersilia</i>     | <i>sumatrana</i>       | (Thorell, 1890)           | Sumatran Two-tailed Spider          | Not Listed | DD   |
| Hersiliidae  | <i>Hersilia</i>     | <i>sundaica</i>        | M. Baehr & B. Baehr, 1993 | Sunda Two-tailed Spider             | Not Listed | DD   |
| Hersiliidae  | <i>Murricia</i>     | <i>cornuta</i>         | M. Baehr & B. Baehr, 1993 | Green Murricia                      | Not Listed | DD   |
| Linyphiidae  | <i>Atypena</i>      | sp.                    |                           | Bump-headed Money Spider            | Not Listed | NE   |
| Linyphiidae  | <i>Batueta</i>      | <i>voluta</i>          | Locket, 1982              | Seletar Money Spider                | Not Listed | DD   |
| Linyphiidae  | <i>Cirrosus</i>     | sp.                    |                           | Lemon Money Spider                  | Not Listed | NE   |
| Linyphiidae  | <i>Ceratinopsis</i> | <i>blesti</i>          | Locket, 1982              |                                     | Not Listed | DD   |
| Linyphiidae  | <i>Erigone</i>      | <i>bifurca</i>         | Locket, 1982              | Locket's Forked-tibia Money Spider  | Not Listed | DD   |
| Linyphiidae  | <i>Johorea</i>      | <i>decorata</i>        | Locket, 1982              |                                     | Not Listed | DD   |
| Linyphiidae  | <i>Knischatiria</i> | sp.                    |                           | Spiny Hammock Spider                | Not Listed | NE   |

| Family      | Genus                     | Species               | Authority                                | Common Name                       | RDB2       | RDB3 |
|-------------|---------------------------|-----------------------|------------------------------------------|-----------------------------------|------------|------|
| Linyphiidae | <i>Microbathyphantes</i>  | <i>palmarius</i>      | (Marples, 1955)                          | Palm Money Spider                 | Not Listed | DD   |
| Linyphiidae | <i>Nasootia</i>           | <i>chrysanthusi</i>   | Locket, 1982                             | Father Chrysanthus Hammock Spider | Not Listed | LC   |
| Linyphiidae | <i>Nasootia</i>           | <i>crucifera</i>      | (Thorell, 1895)                          | Crucifix Nasootia                 | Not Listed | DD   |
| Linyphiidae | <i>Nematogmus</i>         | <i>dentimanus</i>     | Simon, 1886                              |                                   | Not Listed | DD   |
| Linyphiidae | <i>Neonesiotetes</i>      | sp.                   |                                          | Oven Mitten Money Spider          | Not Listed | NE   |
| Linyphiidae | <i>Neriere</i>            | <i>macella</i>        | (Thorell, 1898)                          | Common Southeast Asian Neriere    | Not Listed | LC   |
| Linyphiidae | <i>"Nesioneura"</i>       | sp.                   |                                          | Durian-palped Sheet Web Spider    | Not Listed | NE   |
| Linyphiidae | <i>Parameioneta</i>       | <i>spicata</i>        | Locket, 1982                             |                                   | Not Listed | DD   |
| Linyphiidae | <i>Parameioneta</i>       | sp.                   |                                          | Bicolored Sheet Web Spider        | Not Listed | NE   |
| Linyphiidae | <i>Prosoponoides</i>      | <i>sinense</i>        | (Chen, 1991)                             |                                   | Not Listed | DD   |
| Linyphiidae | <i>Pseudomicrocentria</i> | <i>simplex</i>        | Locket, 1982                             |                                   | Not Listed | DD   |
| Linyphiidae | <i>Singatrachona</i>      | <i>longipes</i>       | Tanasevitch, 2019                        |                                   | Not Listed | DD   |
| Liocranidae | <i>Oedignatha</i>         | <i>scrobiculata</i>   | Thorell, 1881                            | Common Swollen Jaw Spider         | Not Listed | LC   |
| Liocranidae | <i>Oedignatha</i>         | sp.                   |                                          | "Larger Swollen Jaw Spider"       | Not Listed | NE   |
| Liocranidae | <i>Sesieutes</i>          | <i>lucens</i>         | Simon, 1897                              | Shiny Spiny-legged Spider         | Not Listed | DD   |
| Liocranidae | <i>Sphingius</i>          | <i>punctatus</i>      | Deeleman-Reinhold, 2001                  | Punctate Sphingius                | Not Listed | DD   |
| Liocranidae | <i>Sphingius</i>          | <i>vivax</i>          | (Thorell, 1897)                          | Granulate Sphingius               | Not Listed | DD   |
| Liocranidae | <i>Teutamus</i>           | <i>leptothecus</i>    | Dankittipakul, Tavano & Singtripop, 2012 | Wavy Spiny-legged Spider          | Not Listed | DD   |
| Lycosidae   | <i>Arctosa</i>            | <i>tanakai</i>        | Barrion & Litsinger, 1995                | White-flecked Wolf Spider         | Not Listed | DD   |
| Lycosidae   | <i>Draposa</i>            | sp.                   |                                          | Greater Pond Wolf Spider          | Not Listed | NE   |
| Lycosidae   | <i>Hippasa</i>            | <i>holmerae</i>       | Thorell, 1895                            | Lawn Wolf Spider                  | Not Listed | LC   |
| Lycosidae   | <i>Lycosa</i>             | <i>vittata</i>        | Yin, Bao & Zhang, 1995                   | Colourful Striped Wolf Spider     | Not Listed | LC   |
| Lycosidae   | <i>Lysania</i>            | <i>pygmaea</i>        | Thorell, 1890                            | Dwarf Wolf Spider                 | Not Listed | DD   |
| Lycosidae   | <i>Ovia</i>               | <i>macritchie</i>     | Lu, Koh, Zhang & Li, 2018                | MacRitchie Blue Wolf Spider       | Not Listed | LC   |
| Lycosidae   | <i>"Pardosa"</i>          | <i>pseudoannulata</i> | (Bösenberg & Strand, 1906)               | Pond Wolf Spider                  | Not Listed | LC   |
| Lycosidae   | <i>Pardosa</i>            | <i>pusiola</i>        | (Thorell, 1891)                          | Common Little Wolf Spider         | Not Listed | LC   |
| Lycosidae   | <i>Pardosa</i>            | <i>sumatrana</i>      | (Thorell, 1890)                          | Sumatran Wolf Spider              | Not Listed | DD   |
| Lycosidae   | <i>"Pirata"</i>           | sp.                   |                                          | Singapore Mangrove Wolf Spider    | Not Listed | NE   |
| Lycosidae   | <i>Trochosa</i>           | <i>ruricoloides</i>   | Schenkel, 1963                           | White-spotted Wolf Spider         | Not Listed | LC   |
| Lycosidae   | <i>Venonia</i>            | <i>coruscans</i>      | Thorell, 1895                            | White-dot Wolf Spider             | Not Listed | LC   |



| Family          | Genus                | Species             | Authority                    | Common Name                    | RDB2       | RDB3 |
|-----------------|----------------------|---------------------|------------------------------|--------------------------------|------------|------|
| Lycosidae       | <i>Wadicosa</i>      | <i>fidelis</i>      | (O. Pickard-Cambridge, 1872) | White-palped Wolf Spider       | Not Listed | DD   |
| Lycosidae       | <i>Zoica</i>         | <i>parvula</i>      | (Thorell, 1895)              | Miniature Wolf Spider          | Not Listed | DD   |
| Mimetidae       | <i>Mimetus</i>       | sp. A               |                              | White-lined Pirate Spider      | Not Listed | NE   |
| Mimetidae       | <i>Mimetus</i>       | sp. B               |                              | Blue-and-White Pirate Spider   | Not Listed | NE   |
| Mimetidae       | <i>Mimetus</i>       | sp. C               |                              | Red-shouldered Pirate Spider   | Not Listed | NE   |
| Miturgidae      | <i>Systaria</i>      | sp.                 |                              | Singapore Systaria             | Not Listed | NE   |
| Miturgidae      | <i>Tamin</i>         | sp.                 |                              | Singapore Tamin                | Not Listed | NE   |
| Miturgidae      | <i>Xantharia</i>     | <i>murphyi</i>      | Deeleman-Reinhold, 2001      | Murphy's Large-eyed Spider     | Not Listed | DD   |
| Mysmenidae      | <i>Microdipoena</i>  | sp.                 |                              | Spotted Minute Clasp Weaver    | Not Listed | NE   |
| Mysmenidae      | <i>Mosu</i>          | sp.                 |                              | Garlic Minute Clasp Weaver     | Not Listed | NE   |
| Mysmenidae      | <i>Mysmena</i>       | sp.                 |                              | Dark Minute Clasp Weaver       | Not Listed | NE   |
| Nephilidae      | <i>Herennia</i>      | <i>multipuncta</i>  | (Doleschall, 1859)           | Ornamental Coin Spider         | Not Listed | LC   |
| Nephilidae      | <i>Nephila</i>       | <i>pilipes</i>      | (Fabricius, 1793)            | Giant Golden Orb Weaver        | Not Listed | LC   |
| Nephilidae      | <i>Nephilengys</i>   | <i>malabarensis</i> | (Walckenaer, 1841)           | Malabar Hermit Spider          | Not Listed | LC   |
| Nephilidae      | <i>Trichonephila</i> | <i>antipodiana</i>  | (Walckenaer, 1841)           | Batik Golden Orb Weaver        | Not Listed | LC   |
| Nesticidae      | <i>Nesticella</i>    | sp.                 |                              | Grassland Midget Cobweb Spider | Not Listed | NE   |
| Ochyroceratidae | <i>Theotima</i>      | <i>minutissima</i>  | (Petrunkevitch, 1929)        | Virgin Midget Ground Weaver    | Not Listed | LC   |
| Oecobiidae      | <i>Oecobius</i>      | <i>concinus</i>     | Simon, 1893                  | Elegant Tiny House Dweller     | Not Listed | LC   |
| Oonopidae       | <i>Aposphragisma</i> | <i>salewski</i>     | Thoma, 2014                  | Salewski's Goblin Spider       | Not Listed | DD   |
| Oonopidae       | <i>Aposphragisma</i> | <i>stannum</i>      | Thoma, 2014                  |                                | Not Listed | DD   |
| Oonopidae       | <i>Gamasomorpha</i>  | <i>camelina</i>     | Simon, 1893                  | Camel Goblin Spider            | Not Listed | DD   |
| Oonopidae       | <i>Gamasomorpha</i>  | <i>coniacris</i>    | Eichenberger, 2012           |                                | Not Listed | DD   |
| Oonopidae       | <i>Gamasomorpha</i>  | <i>insomnia</i>     | Eichenberger, 2012           | Perplexing Goblin Spider       | Not Listed | DD   |
| Oonopidae       | <i>Gamasomorpha</i>  | <i>squalens</i>     | Eichenberger, 2012           |                                | Not Listed | DD   |
| Oonopidae       | <i>Ischnothyreus</i> | <i>an</i>           | Tong & Li, 2016              | Black-palped Goblin Spider     | Not Listed | DD   |
| Oonopidae       | <i>Ischnothyreus</i> | <i>brunneus</i>     | Tong & Li, 2016              | Chocolate Goblin Spider        | Not Listed | DD   |
| Oonopidae       | <i>Ischnothyreus</i> | <i>dactylinus</i>   | Tong & Li, 2016              | Dark-rumped Goblin Spider      | Not Listed | DD   |
| Oonopidae       | <i>Ischnothyreus</i> | <i>poculum</i>      | Tong & Li, 2016              | Humpback Goblin Spider         | Not Listed | DD   |

| Family    | Genus                | Species              | Authority                  | Common Name                              | RDB2       | RDB3 |
|-----------|----------------------|----------------------|----------------------------|------------------------------------------|------------|------|
| Oonopidae | <i>Ischnothyreus</i> | <i>tectorius</i>     | Tong & Li, 2016            | Folded Carapace Goblin Spider            | Not Listed | DD   |
| Oonopidae | <i>Ischnothyreus</i> | sp.                  |                            | Large Black-palped Goblin Spider         | Not Listed | NE   |
| Oonopidae | <i>Ischnothyreus</i> | sp.                  |                            |                                          | Not Listed | NE   |
| Oonopidae | <i>Opopaea</i>       | <i>apicalis</i>      | (Simon, 1893)              | Black-rumped Boxing-gloved Goblin Spider | Not Listed | DD   |
| Oonopidae | <i>Opopaea</i>       | <i>deserticola</i>   | Simon, 1892                | Desert Dweller Goblin Spider             | Not Listed | LC   |
| Oonopidae | <i>Opopaea</i>       | sp. A                |                            | Four-spined Goblin Spider                | Not Listed | NE   |
| Oonopidae | <i>Opopaea</i>       | sp. B                |                            | Notched Goblin Spider                    | Not Listed | NE   |
| Oonopidae | <i>Opopaea</i>       | sp.                  |                            |                                          | Not Listed | NE   |
| Oonopidae | <i>Orchestina</i>    | sp.                  |                            | Singapore Leaping Goblin Spider          | Not Listed | NE   |
| Oonopidae | <i>Prethopalpus</i>  | <i>pahang</i>        | Baehr, 2012                | Pahang Swollen-palped Goblin Spider      | Not Listed | DD   |
| Oonopidae | <i>Prethopalpus</i>  | <i>schwendingeri</i> | Baehr, 2012                |                                          | Not Listed | DD   |
| Oonopidae | <i>Xyphinus</i>      | <i>hystrix</i>       | Simon, 1893                | Porcupine Goblin Spider                  | Not Listed | VU   |
| Oonopidae | <i>Xyphinus</i>      | <i>karschi</i>       | (Bösenberg & Strand, 1906) | Karsch's Porcupine Goblin Spider         | Not Listed | DD   |
| Oxyopidae | <i>Hamadruas</i>     | sp. A                |                            | Jogjakarta Batik Lynx Spider             | Not Listed | NE   |
| Oxyopidae | <i>Hamadruas</i>     | sp. B                |                            | Green Fairy Lynx Spider                  | Not Listed | NE   |
| Oxyopidae | <i>Hamadruas</i>     | sp. C                |                            | Mohawk Lynx Spider                       | Not Listed | NE   |
| Oxyopidae | <i>Hamadruas</i>     | sp. D                |                            | Crocodile Lynx Spider                    | Not Listed | NE   |
| Oxyopidae | <i>Hamadruas</i>     | sp.                  |                            |                                          | Not Listed | NE   |
| Oxyopidae | <i>Hamataliwa</i>    | <i>floreni</i>       | Deeleman-Reinhold, 2009    | Floren's Boxy Lynx Spider                | Not Listed | DD   |
| Oxyopidae | <i>Hamataliwa</i>    | <i>incompta</i>      | (Thorell, 1895)            | Common Boxy Lynx Spider                  | Not Listed | LC   |
| Oxyopidae | <i>Hamataliwa</i>    | sp. A                |                            | Black-spotted Boxy Lynx Spider           | Not Listed | NE   |
| Oxyopidae | <i>Hamataliwa</i>    | sp. B                |                            | Lance-backed Lynx Spider                 | Not Listed | NE   |
| Oxyopidae | <i>Oxyopes</i>       | <i>auratus</i>       | Thorell, 1890              | Golden Lynx Spider                       | Not Listed | DD   |
| Oxyopidae | <i>Oxyopes</i>       | <i>birmanicus</i>    | Thorell, 1887              | Burmese Lynx Spider                      | Not Listed | LC   |
| Oxyopidae | <i>Oxyopes</i>       | <i>complicatus</i>   | Tang & Li, 2012            | Slender Striped Lynx Spider              | Not Listed | DD   |
| Oxyopidae | <i>Oxyopes</i>       | <i>javanus</i>       | Thorell, 1887              | Javan Lynx Spider                        | Not Listed | LC   |
| Oxyopidae | <i>Oxyopes</i>       | <i>lineatipes</i>    | (C.L.Koch, 1847)           | Common Garden Lynx Spider                | Not Listed | LC   |
| Oxyopidae | <i>Oxyopes</i>       | <i>macilentus</i>    | L. Koch, 1878              | Long-legged Lynx Spider                  | Not Listed | DD   |
| Oxyopidae | <i>Oxyopes</i>       | sp. A                |                            | Swampy Grassland Lynx Spider             | Not Listed | NE   |
| Oxyopidae | <i>Oxyopes</i>       | sp. B                |                            | Boxy Epigyne Lynx Spider                 | Not Listed | NE   |
| Oxyopidae | <i>Oxyopes</i>       | sp. C                |                            | Mangrove Lynx Spider                     | Not Listed | NE   |
| Oxyopidae | <i>Tapponia</i>      | <i>micans</i>        | Simon, 1885                | Metallic Green Lynx Spider               | Not Listed | DD   |

| Family        | Genus               | Species                | Authority               | Common Name                                 | RDB2       | RDB3 |
|---------------|---------------------|------------------------|-------------------------|---------------------------------------------|------------|------|
| Oxyopidae     | <i>Tapponia</i>     | sp.                    |                         |                                             | Not Listed | NE   |
| Pacullidae    | <i>Paculla</i>      | <i>bukittimahensis</i> | Lin & Li, 2017          | Bukit Timah Armoured Spider                 | Not Listed | DD   |
| Pacullidae    | <i>Paculla</i>      | <i>globosa</i>         | Lin & Li, 2017          | Globular-palped Armoured Spider             | Not Listed | DD   |
| Palpimanidae  | <i>Boagrius</i>     | <i>pumilus</i>         | Simon, 1893             | Dwarf Palp-footed Spider                    | Not Listed | VU   |
| Palpimanidae  | <i>Boagrius</i>     | sp.                    |                         | Goldfish Palp-footed Spider                 | Not Listed | VU   |
| Palpimanidae  | <i>Sarascelis</i>   | <i>raffrayi</i>        | Simon, 1893             | Raffray's Palp-footed Spider                | Not Listed | NEx? |
| Philodromidae | <i>Philodromus</i>  | sp. A                  |                         | Rotund White Running Spider                 | Not Listed | NE   |
| Philodromidae | <i>Philodromus</i>  | sp. B                  |                         | Slender White Running Spider                | Not Listed | NE   |
| Philodromidae | <i>Philodromus</i>  | sp. C                  |                         | Kaleidoscope Running Crab Spider            | Not Listed | NE   |
| Philodromidae | <i>Philodromus</i>  | sp. D                  |                         | Curly White Running Crab Spider             | Not Listed | NE   |
| Pholcidae     | <i>Artema</i>       | <i>atlanta</i>         | Walckenaer, 1837        | Giant Daddy-long-legs                       | Not Listed | LC   |
| Pholcidae     | <i>Belisana</i>     | <i>nomis</i>           | Huber, 2005             | Common Singapore Short Rump Daddy-long-legs | Not Listed | DD   |
| Pholcidae     | <i>Belisana</i>     | sp. A                  |                         | Red-eyed Short Rump Daddy-long-legs         | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. B                  |                         | Truncated Yellow Short Rump Daddy-long-legs | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. C                  |                         | Red-patched Short Rump Daddy-long-legs      | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. D                  |                         | Blunt-tusked Short Rump Daddy-long-legs     | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. E                  |                         | Dracula Litter Daddy-long-legs              | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. F                  |                         | Household Tiny Daddy-long-legs              | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. G                  |                         | Purple Short Rump Daddy-long-legs           | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. H                  |                         | Curved-tusked Short Rump Daddy-long-legs    | Not Listed | NE   |
| Pholcidae     | <i>Belisana</i>     | sp. I                  |                         | Dark-spotted Short Rump Daddy-long-legs     | Not Listed | NE   |
| Pholcidae     | <i>Cantikus</i>     | <i>halabala</i>        | (Huber, 2011)           | Halabala Variegated Daddy-long-legs         | Not Listed | DD   |
| Pholcidae     | <i>Cantikus</i>     | <i>ubin</i>            | (Huber, 2016)           | Ubin Variegated Daddy-long-legs             | Not Listed | DD   |
| Pholcidae     | <i>Crossopriza</i>  | <i>lyoni</i>           | (Blackwall, 1867)       | Common House Daddy-long-legs                | Not Listed | LC   |
| Pholcidae     | <i>Holocneminus</i> | <i>multiguttatus</i>   | (Simon, 1905)           | Multi-spotted Leaf Litter Pholcid           | Not Listed | LC   |
| Pholcidae     | <i>Leptopholcus</i> | <i>borneensis</i>      | Deeleman-Reinhold, 1986 | Borneo Slender Daddy-long-legs              | Not Listed | DD   |
| Pholcidae     | <i>Leptopholcus</i> | <i>podophthalmus</i>   | (Simon, 1893)           | Short Leptopholcus                          | Not Listed | DD   |

| Family         | Genus               | Species                | Authority                 | Common Name                         | RDB2       | RDB3 |
|----------------|---------------------|------------------------|---------------------------|-------------------------------------|------------|------|
| Pholcidae      | <i>Micropholcus</i> | <i>fauroti</i>         | (Simon, 1887)             | Tiny House Daddy-long-legs          | Not Listed | LC   |
| Pholcidae      | <i>Modisimus</i>    | <i>culicinus</i>       | (Simon, 1893)             | Six-eyed Turret House Spider        | Not Listed | LC   |
| Pholcidae      | <i>Ninetis</i>      | sp.                    |                           | Short-legged House Spider           | Not Listed | NE   |
| Pholcidae      | <i>Nipisa</i>       | <i>anai</i>            | (Huber, 2017)             | Beaded Egg Sac Matchstick Spider    | Not Listed | DD   |
| Pholcidae      | <i>Nipisa</i>       | <i>phyllicola</i>      | (Deeleman-Reinhold, 1986) | Common Matchstick Spider            | Not Listed | DD   |
| Pholcidae      | <i>Pholcus</i>      | <i>gracillimus</i>     | Thorell, 1890             | Double-streaked Daddy-long-legs     | Not Listed | DD   |
| Pholcidae      | <i>Physocyclus</i>  | <i>globosus</i>        | (Taczanowski, 1874)       | Rounded Cellar Spider               | Not Listed | LC   |
| Pholcidae      | <i>Pribumia</i>     | <i>atrigularis</i>     | (Simon, 1901)             | Antelope Stalk-eyed Daddy-long-legs | Not Listed | DD   |
| Pholcidae      | <i>Smeringopus</i>  | <i>pallidus</i>        | (Blackwall, 1858)         | Large House Daddy-long-legs         | Not Listed | LC   |
| Pholcidae      | <i>Spermophora</i>  | sp.                    |                           | Rear-pocketed Daddy-long-legs       | Not Listed | NE   |
| Pholcidae      | <i>Tissahamia</i>   | <i>bukittimah</i>      | (Huber, 2016)             | Bukit Timah Forest Daddy-long-legs  | Not Listed | DD   |
| Pholcidae      | <i>Uthina</i>       | <i>luzonica</i>        | Simon, 1893               | Luzon Daddy-long-legs               | Not Listed | LC   |
| Phrurolithidae | <i>Plynnon</i>      | sp.                    |                           | Cream-legged Rimmed Spider          | Not Listed | NE   |
| Pisauridae     | <i>Dendrolycosa</i> | sp.                    |                           | Mangrove Tree Lycan                 | Not Listed | NE   |
| Pisauridae     | <i>Dolomedes</i>    | sp. A                  |                           | Common Singapore Fishing Spider     | Not Listed | NE   |
| Pisauridae     | <i>Dolomedes</i>    | sp. B                  |                           | Larger Fishing Spider               | Not Listed | NE   |
| Pisauridae     | <i>Dolomedes</i>    | sp. C                  |                           | Wide-belted Fishing Spider          | Not Listed | EN   |
| Pisauridae     | <i>Hygropoda</i>    | <i>prognatha</i>       | Thorell, 1895             | Common Pond Flexi-legs              | Not Listed | DD   |
| Pisauridae     | <i>Hygropoda</i>    | sp. A                  |                           | Brown Cigar Flexi-legs              | Not Listed | NE   |
| Pisauridae     | <i>Hygropoda</i>    | sp. B                  |                           | Singapore Mangrove Flexi-legs       | Not Listed | NE   |
| Pisauridae     | <i>Hygropoda</i>    | sp. C                  |                           | Southeast Asian Mangrove Flexi-legs | Not Listed | NE   |
| Pisauridae     | <i>Nilus</i>        | <i>albocinctus</i>     | (Doleschall, 1859)        | Common White-Flanked Water Spider   | Not Listed | DD   |
| Pisauridae     | <i>Nilus</i>        | sp.                    |                           | Variegated Water Spider             | Not Listed | NE   |
| Pisauridae     | <i>Perenethis</i>   | <i>venusta</i>         | L. Koch, 1878             | Broad-banded Grass Spider           | Not Listed | DD   |
| Pisauridae     | <i>Polyboea</i>     | <i>vulpina</i>         | Thorell, 1895             | Brown Grass Spider                  | Not Listed | LC   |
| Pisauridae     | <i>Sphephanus</i>   | <i>quadrinaculatus</i> | (Thorell, 1897)           | Four-spotted Nursery Web Spider     | Not Listed | DD   |
| Psechridae     | <i>Fecenia</i>      | <i>ochracea</i>        | (Doleschall, 1859)        | Raccoon Pseudo-orb Weaver           | Not Listed | DD   |
| Psechridae     | <i>Fecenia</i>      | <i>protensa</i>        | Thorell, 1891             | Common Pseudo-orb Weaver            | Not Listed | DD   |

| Family        | Genus                 | Species                | Authority                        | Common Name                            | RDB2       | RDB3 |
|---------------|-----------------------|------------------------|----------------------------------|----------------------------------------|------------|------|
| Psechridae    | <i>Psechrus</i>       | <i>singaporensis</i>   | Thorell, 1895                    | Singapore Lace-web Weaver              | Not Listed | LC   |
| Psilodercidae | <i>Leclercera</i>     | sp.                    |                                  | Patched Violet Ground Weaver           | Not Listed | NE   |
| Psilodercidae | <i>Merizocera</i>     | <i>mandai</i>          | Li, 2020                         | Striped Violet Ground Weaver           | Not Listed | DD   |
| Salticidae    | (Euophryini)          | sp. A                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Euophryini)          | sp. B                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Euophryini)          | sp. C                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Chysillini)          | sp. A                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Simaethina)          | sp. A                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Simaethina)          | sp. B                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | (Nannenini)           | sp. A                  |                                  |                                        | Not Listed | DD   |
| Salticidae    | <i>Agorius</i>        | <i>constrictus</i>     | Simon, 1901                      | Orange-waisted Long-patella Ant Jumper | Not Listed | DD   |
| Salticidae    | <i>Agorius</i>        | sp. A                  |                                  | Peanut Long-patella Ant Jumper         | Not Listed | VU   |
| Salticidae    | <i>Agorius</i>        | sp. B                  |                                  | Hyena Long-patella Ant Jumper          | Not Listed | NE   |
| Salticidae    | <i>Anarrhotus</i>     | <i>fossulatus</i>      | Simon, 1902                      | Hairy Bronze Jumper                    | Not Listed | DD   |
| Salticidae    | " <i>Anarrhotus</i> " | sp. A                  |                                  |                                        | Not Listed | NE   |
| Salticidae    | <i>Artabrus</i>       | <i>erythrocephalus</i> | (C.L.Koch, 1846)                 | Red-headed Jumper                      | Not Listed | DD   |
| Salticidae    | <i>Asemonea</i>       | <i>tenuipes</i>        | (O. Pickard-Cambridge, 1869)     | Iridescent Jumper                      | Not Listed | DD   |
| Salticidae    | <i>Augustaea</i>      | <i>formicaria</i>      | Szombathy, 1915                  |                                        | Not Listed | DD   |
| Salticidae    | <i>Bavia</i>          | <i>aericeps</i>        | Simon, 1877                      |                                        | Not Listed | LC   |
| Salticidae    | <i>Bavia</i>          | <i>capistrata</i>      | (C. L. Koch, 1846)               | Wavy-striped Long-bellied Jumper       | Not Listed | DD   |
| Salticidae    | <i>Bavia</i>          | <i>sempunctata</i>     | (Doleschall, 1859)               | Six-spotted Long-bellied Jumper        | Not Listed | DD   |
| Salticidae    | <i>Bianor</i>         | <i>angulosus</i>       | (Karsch, 1879)                   | Angular Bianor                         | Not Listed | DD   |
| Salticidae    | <i>Bocus</i>          | <i>angusticollis</i>   | Deeleman-Reinhold & Floren, 2003 | Broad-jawed Ant-Mimic Jumper           | Not Listed | DD   |
| Salticidae    | <i>Bristowia</i>      | <i>heterospinosa</i>   | Reimoser, 1934                   | Bristowe's Spiny-legged Jumper         | Not Listed | DD   |
| Salticidae    | <i>Burmattus</i>      | <i>pococki</i>         | (Thorell, 1895)                  | Four-dotted Grass Jumper               | Not Listed | DD   |
| Salticidae    | <i>Carrhotus</i>      | <i>sannio</i>          | (Thorell, 1877)                  | Clown-faced Jumper                     | Not Listed | DD   |
| Salticidae    | <i>Carrhotus</i>      | <i>viduus</i>          | (C.L. Koch, 1846)                | Double-striped Black-and-white Jumper  | Not Listed | DD   |
| Salticidae    | <i>Carrhotus</i>      | sp. A                  |                                  | Striped Cat-whiskered Jumper           | Not Listed | NE   |
| Salticidae    | <i>Carrhotus</i>      | sp. B                  |                                  | Painted Cat-whiskered Jumper           | Not Listed | NE   |
| Salticidae    | <i>Carrhotus</i>      | sp. C                  |                                  | Tiny Cat-whiskered Jumper              | Not Listed | NE   |
| Salticidae    | <i>Carrhotus</i>      | sp. D                  |                                  | Heavyweight Cat-whiskered Jumper       | Not Listed | NE   |

| Family     | Genus                    | Species                            | Authority                              | Common Name                     | RDB2       | RDB3 |
|------------|--------------------------|------------------------------------|----------------------------------------|---------------------------------|------------|------|
| Salticidae | <i>Carrhotus</i>         | sp. E                              |                                        | Bearded Cat-whiskered Jumper    | Not Listed | NE   |
| Salticidae | <i>Chalcotropis</i>      | sp. A                              |                                        | Wide-jawed House Spider         | Not Listed | NE   |
| Salticidae | <i>Chalcotropis</i>      | sp. B                              |                                        | White-patched Heavy Jumper      | Not Listed | NE   |
| Salticidae | <i>Chalcovietnamicus</i> | <i>daiqini</i>                     | (Prószyński & Deeleman-Reinhold, 2012) | Black-faced Jumper              | Not Listed | DD   |
| Salticidae | <i>Chalcovietnamicus</i> | <i>terbakar</i>                    | Yu, Maddison & Yang, 2023              | Dark Squat Jumper               | Not Listed | DD   |
| Salticidae | <i>Chalcovietnamicus</i> | <i>vietnamensis</i>                | Zabka, 1985                            | Gold-lined Jumper               | Not Listed | DD   |
| Salticidae | <i>"Chrysilla"</i>       | <i>delicata</i>                    | Thorell, 1892                          | Double-banded Iridescent Jumper | Not Listed | DD   |
| Salticidae | <i>Chrysilla</i>         | <i>lauta</i>                       | Thorell, 1887                          | Spectacular Iridescent Jumper   | Not Listed | LC   |
| Salticidae | <i>Cocalus</i>           | <i>murinus</i>                     | Simon, 1899                            | Bump-headed Arboreal Jumper     | Not Listed | DD   |
| Salticidae | <i>Colyttus</i>          | <i>bilineatus</i>                  | Thorell, 1891                          | Two-lined Jumper                | Not Listed | DD   |
| Salticidae | <i>Colyttus</i>          | <i>nigriceps</i>                   | (Simon, 1899)                          |                                 | Not Listed | DD   |
| Salticidae | <i>Colyttus</i>          | <i>striatus</i>                    | (Simon, 1902)                          | Striated Jungle Jumper          | Not Listed | DD   |
| Salticidae | <i>Copocrossa</i>        | sp.                                |                                        | Cigar Jumper                    | Not Listed | VU   |
| Salticidae | <i>Cosmophasis</i>       | <i>lami</i>                        | Berry, Beatty & Prószyński, 1997       | Tangerine Garden Jumper         | Not Listed | LC   |
| Salticidae | <i>Cosmophasis</i>       | <i>quadricincta</i>                | (Simon, 1886)                          |                                 | Not Listed | DD   |
| Salticidae | <i>Cosmophasis</i>       | <i>thalassina</i>                  | (C.L.Koch, 1846)                       | Iridescent Green Garden Jumper  | Not Listed | DD   |
| Salticidae | <i>Cytaea</i>            | <i>dispalans</i>                   | (Thorell, 1892)                        | Iridescent Emerald Jumper       | Not Listed | DD   |
| Salticidae | <i>Cytaea</i>            | <i>oreophila</i>                   | Simon, 1902                            | Banded Jaw Jumper               | Not Listed | DD   |
| Salticidae | <i>Dendroicius</i>       | sp. A                              |                                        | U-Pin Jumper                    | Not Listed | NE   |
| Salticidae | <i>Dendroicius</i>       | sp. B                              |                                        | Banded Wavy Jumper              | Not Listed | NE   |
| Salticidae | <i>Diplocanthopoda</i>   | <i>marina</i>                      | Abraham, 1926                          | Marine Jumper                   | Not Listed | VU   |
| Salticidae | <i>Echeclus</i>          | sp.                                |                                        | Halloween Bark Jumper           | Not Listed | NE   |
| Salticidae | <i>Emertonius</i>        | <i>exasperans</i>                  | (G.W. Peckham & E.G. Peckham, 1892)    | Emerton's Ant Jumper            | Not Listed | DD   |
| Salticidae | <i>Epeus</i>             | <i>furcatus</i>                    | Zhang, Song & Li, 2003                 | Forked Jade Jumper              | Not Listed | LC   |
| Salticidae | <i>Epeus</i>             | <i>sumatranus</i>                  | Prószyński & Deeleman-Reinhold, 2012   | Sumatra Jade Jumper             | Not Listed | DD   |
| Salticidae | <i>Epeus</i>             | sp. A (ex <i>flavobilineatus</i> ) |                                        | Jade Legs Mohawk Jumper         | Not Listed | DD   |
| Salticidae | <i>Epeus</i>             | sp. B                              |                                        | Serrated Spur Jade Jumper       | Not Listed | NE   |
| Salticidae | <i>Epeus</i>             | sp. C                              |                                        | Bukit Timah Jade Jumper         | Not Listed | NE   |
| Salticidae | <i>Epeus</i>             | sp. D                              |                                        | Green & Yellow Jade Jumper      | Not Listed | NE   |
| Salticidae | <i>Epeus</i>             | sp. E                              |                                        | Stout-legged Jade Jumper        | Not Listed | NE   |

| Family     | Genus               | Species                | Authority           | Common Name                   | RDB2       | RDB3 |
|------------|---------------------|------------------------|---------------------|-------------------------------|------------|------|
| Salticidae | <i>Epeus</i>        | sp. F                  |                     | Green & Yellow Jade Jumper    | Not Listed | NE   |
| Salticidae | <i>Epeus</i>        | sp. G                  |                     | Stout-legged Jade Jumper      | Not Listed | NE   |
| Salticidae | <i>Epeus</i>        | sp. H                  |                     | Bronze Jade Jumper            | Not Listed | NE   |
| Salticidae | <i>Epeus</i>        | sp. I                  |                     | Tuning Fork Jumper            | Not Listed | NE   |
| Salticidae | <i>Epocilla</i>     | <i>calcarata</i>       | (Karsch, 1880)      | Orange Painted Face Jumper    | Not Listed | LC   |
| Salticidae | <i>Epocilla</i>     | <i>praetextata</i>     | Thorell, 1887       |                               | Not Listed | DD   |
| Salticidae | <i>"Evarcha"</i>    | <i>besar</i>           | (Prószyński, 2018)  | Pop-eye Big-head Jumper       | Not Listed | DD   |
| Salticidae | <i>"Evarcha"</i>    | <i>bulbosa</i>         | Zabka, 1985         | Horned Grass Jumper           | Not Listed | DD   |
| Salticidae | <i>Evarcha</i>      | sp. A                  |                     | Copper Pop-eye Jumper         | Not Listed | NE   |
| Salticidae | <i>Evarcha</i>      | sp. B                  |                     | Golden Pop-eye Jumper         | Not Listed | NE   |
| Salticidae | <i>Gedea</i>        | <i>tibialis</i>        | Zabka, 1985         | Guan Kong Bark Jumper         | Not Listed | LC   |
| Salticidae | <i>Gelotia</i>      | <i>argenteolimbata</i> | (Simon, 1900)       |                               | Not Listed | DD   |
| Salticidae | <i>Gelotia</i>      | <i>bimaculata</i>      | Thorell, 1890       | Starry Night Gelotia          | Not Listed | DD   |
| Salticidae | <i>Gelotia</i>      | <i>syringopalpis</i>   | Wanless, 1984       | Syringe Palp Gelotia          | Not Listed | DD   |
| Salticidae | <i>Harmochirus</i>  | <i>brachiatus</i>      | (Thorell, 1877)     | Hairy-armed Jumper            | Not Listed | LC   |
| Salticidae | <i>Hasarius</i>     | <i>adansoni</i>        | (Audouin, 1826)     | Adanson's House Jumper        | Not Listed | LC   |
| Salticidae | <i>Heratemita</i>   | sp. A                  |                     | Kaleidoscope Jumper           | Not Listed | NE   |
| Salticidae | <i>Heratemita</i>   | sp. B                  |                     | White Socks Squat Jumper      | Not Listed | NE   |
| Salticidae | <i>Hyllus</i>       | <i>diardi</i>          | (Walckenaer, 1837)  | Heavy Jumper                  | Not Listed | DD   |
| Salticidae | <i>Hyllus</i>       | <i>keratodes</i>       | (Hasselt, 1882)     | Bronze Heavy Jumper           | Not Listed | DD   |
| Salticidae | <i>Hyllus</i>       | <i>semicupreus</i>     | (Simon, 1885)       | Copper Heavy Jumper           | Not Listed | LC   |
| Salticidae | <i>Idastrandia</i>  | <i>orientalis</i>      | (Szombathy, 1915)   | Oriental Ground Jumper        | Not Listed | DD   |
| Salticidae | <i>Indopadilla</i>  | <i>nesinor</i>         | Maddison, 2020      | Custard Tart Scorpion Jumper  | Not Listed | DD   |
| Salticidae | <i>Indopadilla</i>  | <i>vimedaba</i>        | Maddison, 2020      | Cappuccino Scorpion Spider    | Not Listed | DD   |
| Salticidae | <i>Indopadilla</i>  | sp. A                  |                     | Black Glossy Scorpion Spider  | Not Listed | NE   |
| Salticidae | <i>Indopadilla</i>  | sp. B                  |                     | Peanut Butter Scorpion Spider | Not Listed | NE   |
| Salticidae | <i>Kelawakaju</i>   | <i>leucomelas</i>      | Maddison & Ng, 2022 |                               | Not Listed | DD   |
| Salticidae | <i>Kelawakaju</i>   | <i>singapura</i>       | Maddison & Ng, 2022 |                               | Not Listed | DD   |
| Salticidae | <i>Kelawakaju</i>   | sp.                    |                     |                               | Not Listed | NE   |
| Salticidae | <i>Langerra</i>     | sp. A                  |                     | Triangular Langerra           | Not Listed | NE   |
| Salticidae | <i>Langerra</i>     | sp. B                  |                     | White-brushed Langerra        | Not Listed | NE   |
| Salticidae | <i>Langona</i>      | sp.                    |                     | Hairy Ground Jumper           | Not Listed | NE   |
| Salticidae | <i>Lepidemathis</i> | sp.                    |                     | Crimson Jumper                | Not Listed | NE   |
| Salticidae | <i>Ligurra</i>      | <i>latidens</i>        | (Doleschall, 1859)  | Bronze Angular Jumper         | Not Listed | LC   |
| Salticidae | <i>Maripanthus</i>  | <i>draconis</i>        | Maddison, 2020      | Black-collared Jumper         | Not Listed | DD   |



| Family     | Genus                | Species                  | Authority                           | Common Name                              | RDB2       | RDB3 |
|------------|----------------------|--------------------------|-------------------------------------|------------------------------------------|------------|------|
| Salticidae | <i>Menemerus</i>     | <i>bivittatus</i>        | (Dufour, 1831)                      | Common House Jumper                      | Not Listed | LC   |
| Salticidae | <i>Menemerus</i>     | sp. (aff. <i>nigli</i> ) | Wesołowska & Freudenschuss, 2012    | South Asian House Jumper                 | Not Listed | LC   |
| Salticidae | <i>Mintonia</i>      | <i>protruberans</i>      | Wanless, 1984                       | Cappuccino Mintonia                      | Not Listed | DD   |
| Salticidae | <i>Mintonia</i>      | <i>silvicola</i>         | Wanless, 1987                       | White-moustached Mintonia                | Not Listed | DD   |
| Salticidae | <i>Myrmaplata</i>    | <i>plataleoides</i>      | (O. Pickard-Cambridge, 1869)        | Kerengga Ant Jumper                      | Not Listed | LC   |
| Salticidae | <i>Myrmaplata</i>    | <i>wanlessi</i>          | (Edmunds & Prószyński, 2003)        | Wanless' Ant Jumper                      | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>acromegalis</i>       | Yamasaki & Ahmad, 2013              | Swollen-jawed Black Ant-mimicking Spider | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>biseratensis</i>      | Badcock, 1918                       | Biserat Ant-mimicking Spider             | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>cornuta</i>           | Badcock, 1918                       | Long-waisted Ant-mimic Jumper            | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>macrognatha</i>       | (Thorell, 1894)                     | Mangrove Long-jawed Ant Jumper           | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>markaha</i>           | Barrion & Litsinger, 1995           | Long-jawed Ant Jumper                    | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>melanocephala</i>     | MacLeay, 1839                       | Black-headed Ant Jumper                  | Not Listed | LC   |
| Salticidae | <i>Myrmarachne</i>   | <i>pumilio</i>           | (Karsch, 1880)                      | Long Drumstick Ant Spider                | Not Listed | DD   |
| Salticidae | <i>Myrmarachne</i>   | <i>pygmaea</i>           | (Thorell, 1894)                     |                                          | Not Listed | DD   |
| Salticidae | <i>Nannenus</i>      | <i>lyriger</i>           | Simon, 1902                         | Singapore Litter Jumper                  | Not Listed | DD   |
| Salticidae | <i>Nannenus</i>      | <i>syrphus</i>           | Simon, 1902                         | Common Litter Jumper                     | Not Listed | LC   |
| Salticidae | <i>Nannenus</i>      | sp.                      |                                     |                                          | Not Listed | NE   |
| Salticidae | <i>Neon</i>          | <i>sumatranus</i>        | Logunov, 1998                       | Miniature Jumper                         | Not Listed | DD   |
| Salticidae | <i>Nungia</i>        | sp.                      |                                     | Glossy False Scorpion Spider             | Not Listed | NE   |
| Salticidae | <i>Ogdenia</i>       | <i>mutilla</i>           | (G.W. Peckham & E.G. Peckham, 1907) | Ogden's Ant-mimic Spider                 | Not Listed | DD   |
| Salticidae | <i>Orcevia</i>       | sp. A                    |                                     | Chevroned Tree-trunk Jumper              | Not Listed | NE   |
| Salticidae | <i>Orcevia</i>       | sp. B                    |                                     | Golden Tree-trunk Jumper                 | Not Listed | NE   |
| Salticidae | <i>Orientattus</i>   | <i>minutus</i>           | (Zabka, 1985)                       | Miniature Big-headed Jumper              | Not Listed | DD   |
| Salticidae | <i>Orsima</i>        | <i>ichneumon</i>         | (Simon, 1901)                       | Kaleidoscope Ant Mimic Jumper            | Not Listed | DD   |
| Salticidae | <i>Padillothorax</i> | <i>semiostranus</i>      | Simon, 1901                         | Slingshot Jumper                         | Not Listed | DD   |
| Salticidae | <i>Pancorius</i>     | <i>dentichelus</i>       | (Simon, 1899)                       | Silver-back Big-headed Jumper            | Not Listed | DD   |
| Salticidae | <i>Pancorius</i>     | <i>kohi</i>              | Zhang, Song & Li, 2003              |                                          | Not Listed | DD   |
| Salticidae | <i>Pancorius</i>     | <i>magnus</i>            | Zabka, 1985                         | Mighty Big-headed Jumper                 | Not Listed | DD   |
| Salticidae | <i>Pancorius</i>     | <i>protervus</i>         | (Simon, 1902)                       |                                          | Not Listed | DD   |

| Family     | Genus                    | Species             | Authority                             | Common Name                          | RDB2       | RDB3 |
|------------|--------------------------|---------------------|---------------------------------------|--------------------------------------|------------|------|
| Salticidae | <i>Pancorius</i>         | <i>thorelli</i>     | (Simon, 1899)                         | White-capped Big-headed Jumper       | Not Listed | DD   |
| Salticidae | <i>Pancorius</i>         | sp. A               |                                       | Striped Big-headed Jumper            | Not Listed | NE   |
| Salticidae | <i>Pancorius</i>         | sp. B               |                                       | Short Big-headed Jumper              | Not Listed | NE   |
| Salticidae | <i>Parabathippus</i>     | <i>digitalis</i>    | (Zhang, Song & Li, 2003)              | Fingered Divergent Jaw Jumper        | Not Listed | DD   |
| Salticidae | <i>Parabathippus</i>     | <i>macilentus</i>   | (Thorell, 1890)                       |                                      | Not Listed | DD   |
| Salticidae | <i>Parabathippus</i>     | <i>rectus</i>       | (Zhang, Song & Li, 2003)              |                                      | Not Listed | DD   |
| Salticidae | <i>Parabathippus</i>     | <i>shelfordi</i>    | (G. W. Peckham & E. G. Peckham, 1907) | Common Divergent Jaw Jumper          | Not Listed | DD   |
| Salticidae | <i>Parabathippus</i>     | sp.                 |                                       |                                      | Not Listed | NE   |
| Salticidae | <i>Pengmarino</i>        | <i>chelifer</i>     | (Simon, 1900)                         | White-spotted Strong-arm Spider      | Not Listed | DD   |
| Salticidae | <i>Phaeacius</i>         | <i>malayensis</i>   | Wanless, 1981                         | Malayan Tree Trunk Jumper            | Not Listed | LC   |
| Salticidae | <i>Phintella</i>         | <i>bifurcilinea</i> | (Bösenberg & Strand, 1906)            | Golden Abdomen Spider                | Not Listed | DD   |
| Salticidae | <i>Phintella</i>         | <i>debilis</i>      | (Thorell, 1891)                       | Striped Metallic Jumper              | Not Listed | DD   |
| Salticidae | " <i>Phintella</i> "     | <i>lepidus</i>      | Cao & Li, 2016                        | Lobster Claw Tiny Metallic Jumper    | Not Listed | DD   |
| Salticidae | " <i>Phintella</i> "     | <i>vittata</i>      | (C.L. Koch, 1846)                     | Electric Blue Jumper                 | Not Listed | LC   |
| Salticidae | <i>Phintella</i>         | sp. A               |                                       | Mangrove Golden Jumper               | Not Listed | NE   |
| Salticidae | " <i>Phintella</i> "     | sp. B               |                                       | Excavated Jaw Golden Jumper          | Not Listed | NE   |
| Salticidae | " <i>Phintella</i> "     | sp. C               |                                       | Swollen Jaws Golden Jumper           | Not Listed | NE   |
| Salticidae | " <i>Phintella</i> "     | sp. D               |                                       | Black-and-white Banded Golden Jumper | Not Listed | NE   |
| Salticidae | " <i>Phintella</i> "     | sp. E               |                                       | Wavy-banded Golden jumper            | Not Listed | NE   |
| Salticidae | <i>Phintella</i>         | sp. F               |                                       | Salt-and-pepper Jumper               | Not Listed | NE   |
| Salticidae | " <i>Phintelloides</i> " | <i>versicolor</i>   | (C.L. Koch, 1846)                     | Black-banded Yellow Jumper           | Not Listed | LC   |
| Salticidae | <i>Phlegma</i>           | sp.                 |                                       | Glossy Ground Jumper                 | Not Listed | NE   |
| Salticidae | <i>Piranthus</i>         | <i>api</i>          | Maddison, 2020                        | Orange Strong-armed Jumper           | Not Listed | VU   |
| Salticidae | <i>Piranthus</i>         | <i>kohi</i>         | Maddison, 2020                        | Black Strong-armed Jumper            | Not Listed | DD   |
| Salticidae | <i>Piranthus</i>         | <i>mandai</i>       | Maddison, 2020                        | Mandai Strong-armed Jumper           | Not Listed | VU   |
| Salticidae | <i>Plexippus</i>         | <i>paykulli</i>     | (Audouin, 1826)                       | Greater Housefly Catcher             | Not Listed | LC   |
| Salticidae | <i>Plexippus</i>         | <i>petersi</i>      | (Karsch, 1878)                        | Common Housefly Catcher              | Not Listed | LC   |
| Salticidae | <i>Plexippus</i>         | <i>setipes</i>      | Karsch, 1879                          | Lesser Housefly Catcher              | Not Listed | LC   |

| Family     | Genus              | Species              | Authority                           | Common Name                     | RDB2       | RDB3 |
|------------|--------------------|----------------------|-------------------------------------|---------------------------------|------------|------|
| Salticidae | <i>Portia</i>      | <i>albimana</i>      | (Simon, 1900)                       | White-haired Portia             | Not Listed | DD   |
| Salticidae | <i>Portia</i>      | <i>crassipalpis</i>  | (G.W. Peckham & E.G. Peckham, 1907) | Pale-palped Portia              | Not Listed | DD   |
| Salticidae | <i>Portia</i>      | <i>fimbriata</i>     | (Doleschall, 1859)                  | Stripe-faced Portia             | Not Listed | DD   |
| Salticidae | <i>Portia</i>      | <i>labiata</i>       | (Thorell, 1887)                     | Hairy Moustached Portia         | Not Listed | DD   |
| Salticidae | <i>Psenuc</i>      | <i>nuclearis</i>     | (Prószyński, 1992)                  | Saw-lined Braille Jumper        | Not Listed | DD   |
| Salticidae | <i>Psenuc</i>      | sp.                  |                                     | Mangrove Painted Braille Jumper | Not Listed | NE   |
| Salticidae | <i>Pseudamycus</i> | <i>albomaculatus</i> | (van Hasselt, 1882)                 | White-spotted Big-eyed Jumper   | Not Listed | DD   |
| Salticidae | <i>Pseudicius</i>  | <i>decemnotatus</i>  | Simon, 1886                         | Ten-spotted Strong-armed Jumper | Not Listed | DD   |
| Salticidae | <i>Ptocasius</i>   | <i>gratiosus</i>     | G.W. Peckham & E.G. Peckham, 1907   |                                 | Not Listed | DD   |
| Salticidae | <i>Ptocasius</i>   | <i>montiformis</i>   | Song, 1991                          |                                 | Not Listed | DD   |
| Salticidae | <i>Ptocasius</i>   | <i>weyersi</i>       | Simon, 1885                         | Rounded Cone Zebra Jumper       | Not Listed | LC   |
| Salticidae | <i>Pystira</i>     | <i>ephippigera</i>   | (Simon, 1885)                       | Bumblebee Jumper                | Not Listed | DD   |
| Salticidae | <i>Rhene</i>       | <i>flavigera</i>     | (C.L. Koch, 1846)                   | Bold Cross Flat-headed Jumper   | Not Listed | DD   |
| Salticidae | <i>Rhene</i>       | <i>rubrigera</i>     | (Thorell, 1887)                     |                                 | Not Listed | DD   |
| Salticidae | <i>Rhene</i>       | <i>setipes</i>       | Zabka, 1985                         |                                 | Not Listed | DD   |
| Salticidae | <i>Rhene</i>       | sp. A                |                                     | White Flat-headed Jumper        | Not Listed | NE   |
| Salticidae | <i>Rhene</i>       | sp. B                |                                     | Round-headed Jumper             | Not Listed | NE   |
| Salticidae | <i>Rhene</i>       | sp. C                |                                     | Wavy Flat-head Jumper           | Not Listed | NE   |
| Salticidae | <i>Rhene</i>       | sp. D                |                                     | Domino Flat-headed Jumper       | Not Listed | NE   |
| Salticidae | <i>Rogmocrypta</i> | <i>puta</i>          | Simon, 1900                         |                                 | Not Listed | DD   |
| Salticidae | <i>Siler</i>       | <i>flavocinctus</i>  | (Simon, 1901)                       |                                 | Not Listed | DD   |
| Salticidae | <i>Siler</i>       | <i>semiglaucus</i>   | (Simon, 1901)                       | Bottle-brush Iridescent Jumper  | Not Listed | DD   |
| Salticidae | <i>Simaetha</i>    | <i>deelemanae</i>    | Zhang, Song & Li, 2003              |                                 | Not Listed | DD   |
| Salticidae | <i>Spartaeus</i>   | <i>spinimanus</i>    | (Thorell, 1878)                     | Spiny-legged Jumper             | Not Listed | LC   |
| Salticidae | <i>Stergusa</i>    | sp.                  |                                     | Kaleidoscope Bug Spider         | Not Listed | NE   |
| Salticidae | <i>Telamonia</i>   | <i>dimidiata</i>     | (Simon, 1899)                       | Two-striped Spiny-palped Jumper | Not Listed | LC   |
| Salticidae | <i>Telamonia</i>   | <i>festiva</i>       | Thorell, 1887                       | Magpie Robin Jumper             | Not Listed | LC   |
| Salticidae | <i>Telamonia</i>   | sp.                  |                                     | Bleeding Mango Spider           | Not Listed | NE   |
| Salticidae | <i>Thiania</i>     | <i>bhamoensis</i>    | Thorell, 1887                       | Common Fighting Spider          | Not Listed | LC   |
| Salticidae | <i>Thiania</i>     | <i>demissa</i>       | (Thorell, 1892)                     | Spectacular Fighting Spider     | Not Listed | DD   |
| Salticidae | <i>Thiania</i>     | <i>latefasciata</i>  | (Simon, 1877)                       | Yellow-banded Jumper            | Not Listed | DD   |

| Family       | Genus                 | Species             | Authority                    | Common Name                     | RDB2       | RDB3 |
|--------------|-----------------------|---------------------|------------------------------|---------------------------------|------------|------|
| Salticidae   | <i>Thiania</i>        | sp. A               |                              | Blue-and-black Fighting Spider  | Not Listed | NE   |
| Salticidae   | <i>Thiania</i>        | sp. B               |                              | U-Pin Fighting Spider           | Not Listed | NE   |
| Salticidae   | <i>Thorelliola</i>    | <i>ensifera</i>     | (Thorell, 1877)              | Rhino Garden Jumper             | Not Listed | LC   |
| Salticidae   | <i>Tisaniba</i>       | sp.                 |                              | Tiny Shiny Litter Spider        | Not Listed | NE   |
| Salticidae   | <i>Toxeus</i>         | <i>hirsutipalpi</i> | (Edmunds & Prószyński, 2003) |                                 | Not Listed | DD   |
| Salticidae   | <i>Toxeus</i>         | <i>maxillosus</i>   | C.L.Koch, 1846               | Giant Ant-mimicking Jumper      | Not Listed | LC   |
| Salticidae   | <i>Vaillimia</i>      | sp. A               |                              | Sleeping Beauty Jumper          | Not Listed | NE   |
| Salticidae   | <i>Vaillimia</i>      | sp. B               |                              | Mottled Coppery Jumper          | Not Listed | NE   |
| Salticidae   | <i>Viciria</i>        | <i>pavesii</i>      | Thorell, 1877                | Wide-jawed Scorpion Spider      | Not Listed | LC   |
| Scytodidae   | <i>Dictis</i>         | <i>striatipes</i>   | L. Koch, 1872                |                                 | Not Listed | LC   |
| Scytodidae   | <i>Dictis</i>         | sp. A               |                              | Black-eyed Spitting Spider      | Not Listed | NE   |
| Scytodidae   | <i>Dictis</i>         | sp. B               |                              | Common Scrub Spitting Spider    | Not Listed | NE   |
| Scytodidae   | <i>Scytodes</i>       | <i>fusca</i>        | Walckenaer, 1837             | Brown Spitting Spider           | Not Listed | LC   |
| Scytodidae   | <i>Scytodes</i>       | <i>longipes</i>     | Lucas, 1844                  |                                 | Not Listed | LC   |
| Scytodidae   | <i>Scytodes</i>       | <i>pallida</i>      | Doleschall, 1859             | Pale Spitting Spider            | Not Listed | DD   |
| Scytodidae   | <i>Scytodes</i>       | <i>venusta</i>      | (Thorell, 1890)              | Broad-banded Spitting Spider    | Not Listed | DD   |
| Scytodidae   | <i>Scytodes</i>       | sp. A               |                              | Black Pepper Spitting Spider    | Not Listed | NE   |
| Scytodidae   | <i>Scytodes</i>       | sp. B               |                              | Minute Spitting Spider          | Not Listed | NE   |
| Segestriidae | <i>Ariadna</i>        | sp.                 |                              | Singapore Tube Web Spider       | Not Listed | NE   |
| Selenopidae  | <i>Siamspinops</i>    | sp.                 |                              | Singapore Flattie               | Not Listed | NE   |
| Sparassidae  | <i>Gnathopalystes</i> | <i>kochi</i>        | (Simon, 1880)                | Koch's Huntsman                 | Not Listed | DD   |
| Sparassidae  | <i>Gnathopalystes</i> | sp. A               |                              | Moldy Green Huntsman            | Not Listed | NE   |
| Sparassidae  | <i>Gnathopalystes</i> | sp. B               |                              | Chequered Flag Huntsman         | Not Listed | NE   |
| Sparassidae  | <i>Gnathopalystes</i> | sp. C               |                              | Slender Green Huntsman          | Not Listed | NE   |
| Sparassidae  | <i>Gnathopalystes</i> | sp. D               |                              | Jade Huntsman                   | Not Listed | NE   |
| Sparassidae  | <i>Heteropoda</i>     | <i>boiei</i>        | (Doleschall, 1859)           | Giant Tree Trunk Huntsman       | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>christae</i>     | Jäger, 2008                  | Christa's Huntsman              | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>davidbowie</i>   | Jäger, 2008                  | David Bowie's Huntsman          | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>jaegorum</i>     | Jäger, 2008                  | Filial Piety Huntsman           | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>laai</i>         | Jäger, 2008                  | Flecked Orange Huntsman         | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>lunula</i>       | (Doleschall, 1857)           | Leopard-spotted Huntsman Spider | Not Listed | DD   |
| Sparassidae  | <i>Heteropoda</i>     | <i>tetrica</i>      | Thorell, 1897                | Black-jawed Huntsman            | Not Listed | LC   |

| Family            | Genus                 | Species                  | Authority           | Common Name                         | RDB2       | RDB3 |
|-------------------|-----------------------|--------------------------|---------------------|-------------------------------------|------------|------|
| Sparassidae       | <i>Heteropoda</i>     | <i>venatoria</i>         | (Linnaeus, 1767)    | Domestic Huntsman Spider            | Not Listed | LC   |
| Sparassidae       | <i>Heteropoda</i>     | sp. A                    |                     | Giant Orange Huntsman               | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. B                    |                     | Slender Unicorn Huntsman Spider     | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. C                    |                     | Tiger-striped Dwarf Huntsman        | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. D                    |                     | Pale Huntsman                       | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. E                    |                     | Clouded Monitor Huntsman            | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. F                    |                     | Small Banded Legs Huntsman          | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. G                    |                     | False Black Jaw Huntsman            | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. H                    |                     | Spiny Huntsman                      | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. I                    |                     |                                     | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. J                    |                     | Pale Horse-shoe Huntsman            | Not Listed | NE   |
| Sparassidae       | <i>Heteropoda</i>     | sp. K                    |                     | Broad-banded Pale Huntsman          | Not Listed | NE   |
| Sparassidae       | " <i>Heteropoda</i> " | sp. L                    |                     | Lined Carapace Huntsman             | Not Listed | NE   |
| Sparassidae       | <i>Olios</i>          | sp. aff. <i>nentwigi</i> | Jäger, 2020         | Common Yoga Huntsman                | Not Listed | LC   |
| Sparassidae       | <i>Pandercetes</i>    | sp. A                    |                     | Common Lichen Huntsman              | Not Listed | NE   |
| Sparassidae       | <i>Pandercetes</i>    | sp. B                    |                     | Fringe-legged Arboreal Huntsman     | Not Listed | NE   |
| Sparassidae       | <i>Pandercetes</i>    | sp. C                    |                     | Woolly Small-eyed Arboreal Huntsman | Not Listed | NE   |
| Salticidae        | <i>Rhytimna</i>       | <i>cursor</i>            | (Thorell, 1895)     |                                     | Not Listed | DD   |
| Sparassidae       | <i>Rhytimna</i>       | sp. A                    |                     |                                     | Not Listed | NE   |
| Sparassidae       | <i>Stasina</i>        | <i>planithorax</i>       | Simon, 1897         | Flat-carapaced Spotted Huntsman     | Not Listed | DD   |
| Sparassidae       | <i>Thelcticopis</i>   | <i>orichalcea</i>        | (Simon, 1880)       | Golden Heavy Huntsman               | Not Listed | DD   |
| Sparassidae       | <i>Thelcticopis</i>   | sp. A                    |                     | Black-jawed Heavy Huntsman          | Not Listed | NE   |
| Sparassidae       | <i>Thelcticopis</i>   | sp. B                    |                     | Stout-legged Heavy Huntsman         | Not Listed | NE   |
| Sparassidae       | <i>Thelcticopis</i>   | sp. C                    |                     | Tawny Heavy Huntsman                | Not Listed | NE   |
| Sparassidae       | <i>Thelcticopis</i>   | sp. D                    |                     | Orangish Heavy Huntsman             | Not Listed | NE   |
| Sparassidae       | <i>Thelcticopis</i>   | sp. E                    |                     | Whip Embolus Heavy Huntsman         | Not Listed | NE   |
| Sparassidae       | <i>Tiomanella</i>     | <i>ladam</i>             | Grall & Jäger, 2022 | Mottled Horse-shoe Huntsman         | Not Listed | DD   |
| Stenochilidae     | <i>Colopea</i>        | <i>malayana</i>          | Lehtinen, 1982      | Peninsular Diamond Carapace Spider  | Not Listed | EN   |
| Symphytognathidae | <i>Crassignatha</i>   | sp.                      |                     | Yellow Dwarf Orb Weaver             | Not Listed | NE   |

| Family            | Genus                   | Species             | Authority                     | Common Name                               | RDB2       | RDB3 |
|-------------------|-------------------------|---------------------|-------------------------------|-------------------------------------------|------------|------|
| Symphytognathidae | <i>Patu</i>             | sp.                 |                               | Black Dwarf Orb Weaver                    | Not Listed | NE   |
| Synotaxidae       | <i>Nescina</i>          | <i>kohi</i>         | Lin, Ballarin & Li, 2016      | Singapore Midget Cobweb Spider            | Not Listed | DD   |
| Synotaxidae       | <i>Tekellina</i>        | sp. A               |                               | Blue-ringed Comb-footed Spider            | Not Listed | NE   |
| Synotaxidae       | <i>"Tekellina"</i>      | sp. B               |                               | White Hairy Comb-footed Spider            | Not Listed | NE   |
| Telemidae         | <i>Teleomfila</i>       | <i>fabata</i>       | (Wang & Li, 2010)             | Singapore Long-legged Leaf Litter Spider  | Not Listed | LC   |
| Tetrablemmidae    | <i>Ablemma</i>          | <i>malacca</i>      | Lin & Li, 2017                | Malacca Strait Armoured Spider            | Not Listed | DD   |
| Tetrablemmidae    | <i>Brignoliella</i>     | <i>besutensis</i>   | Lin, Li & Jäger, 2012         | Besut Armoured Spider                     | Not Listed | DD   |
| Tetrablemmidae    | <i>Brignoliella</i>     | <i>michaeli</i>     | Lehtinen, 1981                | Michael's Armoured Spider                 | Not Listed | DD   |
| Tetrablemmidae    | <i>Singaporemma</i>     | <i>lenachanae</i>   | Lin & Li, 2017                | Lena's Armoured Spider                    | Not Listed | DD   |
| Tetrablemmidae    | <i>Singaporemma</i>     | <i>singulare</i>    | Shear, 1978                   | Remarkable Armoured Spider                | Not Listed | DD   |
| Tetrablemmidae    | <i>Sulaimania</i>       | <i>brevis</i>       | Lin & Li, 2017                | Shorty Armoured Spider                    | Not Listed | DD   |
| Tetrablemmidae    | <i>Tetrablemma</i>      | sp. A               |                               | Double-tusked Tree Bark Armoured Spider   | Not Listed | NE   |
| Tetrablemmidae    | <i>Tetrablemma</i>      | sp. B               |                               | Double-fingered Tree Bark Armoured Spider | Not Listed | NE   |
| Tetragnathidae    | <i>Dolichognatha</i>    | <i>deelemana</i>    | Smith, 2008                   | Yellow Long-jawed Orb Weaver              | Not Listed | DD   |
| Tetragnathidae    | <i>Dolichognatha</i>    | sp. A               |                               | Singapore Giraffe Spider                  | Not Listed | NE   |
| Tetragnathidae    | <i>Dolichognatha</i>    | sp. B               |                               | Four-hump Long-jawed Orb Weaver           | Not Listed | NE   |
| Tetragnathidae    | <i>Dolichognatha</i>    | sp. C               |                               | Bi-coloured Humped Spider                 | Not Listed | NE   |
| Tetragnathidae    | <i>"Dolichognatha "</i> | sp. D               |                               | Spiny-legged Humped Spider                | Not Listed | NE   |
| Tetragnathidae    | <i>Glenognatha</i>      | <i>dentata</i>      | (Zhu & Wen, 1978)             | Four-spot Horizontal Orb Weaver           | Not Listed | LC   |
| Tetragnathidae    | <i>Leucauge</i>         | <i>argentina</i>    | (van Hasselt, 1882)           | Black-and-silver Orb Weaver               | Not Listed | LC   |
| Tetragnathidae    | <i>Leucauge</i>         | <i>celebesiana</i>  | (Walckenaer, 1841)            | Celebes Silver Orb Weaver                 | Not Listed | VU   |
| Tetragnathidae    | <i>Leucauge</i>         | <i>decorata</i>     | (Blackwall, 1864)             | Decorative Silver Orb Weaver              | Not Listed | LC   |
| Tetragnathidae    | <i>Leucauge</i>         | <i>fastigata</i>    | (Simon, 1877)                 | Orange-and-black Humpback Spider          | Not Listed | DD   |
| Tetragnathidae    | <i>Leucauge</i>         | <i>sarawakensis</i> | (Dzulhelmi & Suriyanti, 2015) | Red-and-blue Pear Spider                  | Not Listed | DD   |
| Tetragnathidae    | <i>Mesida</i>           | <i>gemmea</i>       | (van Hasselt, 1882)           | Gemstone Spider                           | NEx?       | DD   |
| Tetragnathidae    | <i>Tetragnatha</i>      | <i>ceylonica</i>    | O. Pickard-Cambridge, 1869    | Pop-eyed Big-jawed Spider                 | Not Listed | LC   |
| Tetragnathidae    | <i>Tetragnatha</i>      | <i>chauliodus</i>   | (Thorell, 1890)               | Skinny Big-jawed Spider                   | Not Listed | LC   |

| Family         | Genus                  | Species            | Authority                  | Common Name                           | RDB2       | RDB3 |
|----------------|------------------------|--------------------|----------------------------|---------------------------------------|------------|------|
| Tetragnathidae | <i>Tetragnatha</i>     | <i>hasselti</i>    | Thorell, 1890              | Green-and-red Long-jawed Spider       | Not Listed | DD   |
| Tetragnathidae | <i>Tetragnatha</i>     | <i>josephi</i>     | Okuma, 1988                | Mangrove Long-jawed Spider            | VU         | VU   |
| Tetragnathidae | <i>Tetragnatha</i>     | <i>keyserlingi</i> | Simon, 1890                | Keyserling's Big-jawed Spider         | Not Listed | LC   |
| Tetragnathidae | <i>Tetragnatha</i>     | <i>mandibulata</i> | Walckenaer, 1841           | Common Big-jawed Spider               | Not Listed | LC   |
| Tetragnathidae | <i>Tetragnatha</i>     | <i>nitens</i>      | (Audouin, 1826)            | Reticulated Big-jawed Spider          | Not Listed | LC   |
| Tetragnathidae | <i>Tetragnatha</i>     | <i>serra</i>       | Doleschall, 1857           | Saw-jawed Spider                      | Not Listed | DD   |
| Tetragnathidae | <i>Tetragnatha</i>     | sp. A              |                            | Little Green Long-jawed Spider        | Not Listed | NE   |
| Tetragnathidae | <i>Tetragnatha</i>     | sp. B              |                            | Yellow-and-red Long-jawed Spider      | Not Listed | NE   |
| Tetragnathidae | <i>Tetragnatha</i>     | sp. C              |                            | Embroidered Carapace Big-jawed Spider | Not Listed | NE   |
| Tetragnathidae | <i>Tylorida</i>        | <i>striata</i>     | (Thorell, 1877)            | Streaked Golden Humpback Spider       | Not Listed | LC   |
| Tetragnathidae | <i>Tylorida</i>        | <i>ventralis</i>   | (Thorell, 1877)            | Big-bellied Humpback Spider           | Not Listed | LC   |
| Tetragnathidae | <i>Tylorida</i>        | sp. A              |                            | Brown-bellied Golden Spider           | Not Listed | NE   |
| Tetragnathidae | <i>Tylorida</i>        | sp. B              |                            | Daisy Field Spider                    | Not Listed | NE   |
| Tetragnathidae | <i>Tylorida</i>        | sp. C              |                            | Common Golden Spider                  | Not Listed | NE   |
| Theraphosidae  | <i>"Coremiocnemis"</i> | sp. A              |                            | Singapore Feather-duster Tarantula    | Not Listed | EN   |
| Theraphosidae  | <i>"Coremiocnemis"</i> | sp. B              |                            | Brown Feather-duster Tarantula        | Not Listed | EN   |
| Theraphosidae  | <i>Omothymus</i>       | <i>violaceopes</i> | (Abraham, 1924)            | Singapore Blue Tarantula              | NEx        | EN   |
| Theraphosidae  | <i>Phlogiellus</i>     | sp. A              |                            | Common Singapore Brown Tarantula      | Not Listed | LC   |
| Theraphosidae  | <i>Phlogiellus</i>     | sp. B              |                            | Larger Singapore Brown Tarantula      | Not Listed | DD   |
| Theraphosidae  | <i>Selenocosmia</i>    | sp.                |                            | Singapore Black Tarantula             | Not Listed | EN   |
| Theridiidae    | (Hadrotarsinae)        | sp. A              |                            |                                       | Not Listed | NE   |
| Theridiidae    | (Hadrotarsinae)        | sp. B              |                            |                                       | Not Listed | NE   |
| Theridiidae    | <i>Allothymoites</i>   | sp. A              |                            | Banded Legs Scaly Cobweb Spider       | Not Listed | NE   |
| Theridiidae    | <i>Allothymoites</i>   | sp. B              |                            | Socketed Spines Scaly Cobweb Spider   | Not Listed | NE   |
| Theridiidae    | <i>Anelosimus</i>      | <i>kohi</i>        | Yoshida, 1993              | Common-jagged-band Cobweb Spider      | Not Listed | DD   |
| Theridiidae    | <i>Anelosimus</i>      | sp.                |                            |                                       | Not Listed | NE   |
| Theridiidae    | <i>Argyrodes</i>       | <i>argentatus</i>  | O. Pickard-Cambridge, 1880 | Silver Teardrop Food Stealer          | Not Listed | LC   |
| Theridiidae    | <i>Argyrodes</i>       | <i>fasciatus</i>   | Thorell, 1893              | Singapore Banded Food Stealer         | Not Listed | LC   |
| Theridiidae    | <i>Argyrodes</i>       | <i>fissifrons</i>  | O. Pickard-Cambridge, 1869 | Split-faced Silver Food Stealer       | Not Listed | LC   |



| Family      | Genus               | Species              | Authority                  | Common Name                               | RDB2       | RDB3 |
|-------------|---------------------|----------------------|----------------------------|-------------------------------------------|------------|------|
| Theridiidae | <i>Argyroides</i>   | <i>flavescens</i>    | O. Pickard-Cambridge, 1880 | Orange Silver Food Stealer                | Not Listed | LC   |
| Theridiidae | <i>Argyroides</i>   | sp. A                |                            | Square-notch Food Stealer                 | Not Listed | NE   |
| Theridiidae | <i>Aryoides</i>     | sp. B                |                            | Furry Food Stealer                        | Not Listed | NE   |
| Theridiidae | <i>Aryoides</i>     | sp. C                |                            | Ski-mask Food Stealer                     | Not Listed | NE   |
| Theridiidae | <i>Ariamnes</i>     | <i>flagellum</i>     | (Doleschall, 1857)         | Green Whip Spider                         | Not Listed | DD   |
| Theridiidae | <i>Ariamnes</i>     | <i>petilus</i>       | Gao & Li, 2014             | Reticulated Python Whip Spider            | Not Listed | DD   |
| Theridiidae | <i>Brunepisinus</i> | <i>selirong</i>      | Yoshida & Koh, 2011        | Twin-humpback Spider                      | Not Listed | DD   |
| Theridiidae | <i>Brunepisinus</i> | sp.                  |                            | Striped Twin-humpback Spider              | Not Listed | NE   |
| Theridiidae | <i>Campanicola</i>  | sp.                  |                            | Bell Comb-footed Spider                   | Not Listed | NE   |
| Theridiidae | <i>Cephalobares</i> | sp. A                |                            | Smooth Heavy-headed Spider                | Not Listed | NE   |
| Theridiidae | <i>Cephalobares</i> | sp. B                |                            | Scaly Heavy-headed Spider                 | Not Listed | NE   |
| Theridiidae | <i>Chikunia</i>     | sp.                  |                            | Spinning-top Comb-footed Spider           | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. A                |                            | Tiger-striped Teardrop Translucent Spider | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. B                |                            | Red-&-black Translucent Spider            | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. C                |                            | False Tiger-striped Translucent Spider    | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. D                |                            | Yellow-spotted Translucent Spider         | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. E                |                            | Polymorphic Translucent Spider            | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. F                |                            | Jade Translucent Spider                   | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. G                |                            | Long-legged Jade Translucent Spider       | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. H                |                            | Tiny Spiny Mandarin Orange Spider         | Not Listed | NE   |
| Theridiidae | <i>Chrysso</i>      | sp. I                |                            | Yellow Polka Dot Spider                   | Not Listed | NE   |
| Theridiidae | <i>Coleosoma</i>    | <i>blandum</i>       | O. Pickard-Cambridge, 1882 | Common Collared Comb-footed Spider        | Not Listed | LC   |
| Theridiidae | <i>Coleosoma</i>    | <i>floridanum</i>    | Banks, 1900                | Florida Collared Comb-footed Spider       | Not Listed | LC   |
| Theridiidae | <i>Coleosoma</i>    | <i>pseudoblandum</i> | Barrion & Litsinger, 1995  | Orange Collared Comb-footed Spider        | Not Listed | LC   |
| Theridiidae | <i>Coscinida</i>    | <i>asiatica</i>      | Zhu & Zhang, 1992          | Asian Shovel-nose Big-eye Cobweb Spider   | Not Listed | DD   |
| Theridiidae | <i>Coscinida</i>    | sp.                  |                            | Spotted Big-eye Cobweb Spider             | Not Listed | NE   |
| Theridiidae | <i>Crustulina</i>   | sp.                  |                            | Warty False Widow                         | Not Listed | NE   |
| Theridiidae | <i>"Dipoena"</i>    | <i>turriceps</i>     | (Schenkel, 1936)           | Rorschach Block-headed Spider             | Not Listed | DD   |

| Family      | Genus               | Species             | Authority               | Common Name                              | RDB2       | RDB3 |
|-------------|---------------------|---------------------|-------------------------|------------------------------------------|------------|------|
| Theridiidae | <i>Emertonella</i>  | sp. A               |                         | Silver Ant-hunter                        | Not Listed | NE   |
| Theridiidae | <i>Emertonella</i>  | sp. B               |                         | Golden Ant-hunter                        | Not Listed | NE   |
| Theridiidae | <i>Episinus</i>     | <i>rhomboidalis</i> | (Simon, 1895)           | Rhomboidal Twin-humpback Spider          | Not Listed | DD   |
| Theridiidae | <i>Episinus</i>     | <i>yoshidai</i>     | Okuma, 1994             |                                          | Not Listed | DD   |
| Theridiidae | " <i>Episinus</i> " | sp. A               |                         | Unicorn Spider                           | Not Listed | NE   |
| Theridiidae | " <i>Episinus</i> " | sp. B               |                         | Bactrian Camel Spider                    | Not Listed | NE   |
| Theridiidae | <i>Euryopis</i>     | <i>episinoides</i>  | (Walckenaer, 1847)      | Variable-coloured Ant-hunter             | Not Listed | LC   |
| Theridiidae | <i>Janula</i>       | <i>batman</i>       | Yoshida & Koh, 2011     | Batman Red-eyed Spider                   | Not Listed | DD   |
| Theridiidae | <i>Janula</i>       | <i>picta</i>        | (Simon, 1895)           | Speckled Red-eyed Spider                 | Not Listed | DD   |
| Theridiidae | <i>Janula</i>       | <i>triangularis</i> | Yoshida & Koh, 2011     | Samosa Red-eyed Spider                   | Not Listed | DD   |
| Theridiidae | <i>Janula</i>       | <i>triocellata</i>  | Yoshida & Koh, 2011     | Red-eyed Spider                          | Not Listed | DD   |
| Theridiidae | <i>Janula</i>       | sp. A               |                         | Monkey-faced Red-eyed Spider             | Not Listed | NE   |
| Theridiidae | <i>Janula</i>       | sp. B               |                         | Red-eyed Spider                          | Not Listed | NE   |
| Theridiidae | <i>Janula</i>       | sp. C               |                         | Red-eyed Spider                          | Not Listed | NE   |
| Theridiidae | <i>Janula</i>       | sp. D               |                         | Red-eyed Spider                          | Not Listed | NE   |
| Theridiidae | <i>Janula</i>       | sp. E               |                         | Red-eyed Spider                          | Not Listed | NE   |
| Theridiidae | <i>Janula</i>       | sp. F               |                         | Red-eyed Spider                          | Not Listed | NE   |
| Theridiidae | <i>Latrodectus</i>  | <i>geometricus</i>  | C.L.Koch, 1841          | Brown Widow                              | Not Listed | LC   |
| Theridiidae | " <i>Meotipa</i> "  | <i>picturata</i>    | Simon, 1895             | Painted Blade-haired Triangular Spider   | Not Listed | DD   |
| Theridiidae | <i>Meotipa</i>      | <i>pulcherrima</i>  | (Mello-Leitão, 1917)    | Beautiful Blade-haired Triangular Spider | Not Listed | LC   |
| Theridiidae | <i>Meotipa</i>      | <i>thalerorum</i>   | Deeleman-Reinhold, 2009 | Red Blade-haired Triangular Spider       | Not Listed | DD   |
| Theridiidae | <i>Meotipa</i>      | <i>vesiculosa</i>   | Simon, 1895             | Blister Meotipa                          | Not Listed | DD   |
| Theridiidae | <i>Meotipa</i>      | sp.                 |                         | Durian Meotipa                           | Not Listed | NE   |
| Theridiidae | <i>Molione</i>      | <i>triacantha</i>   | Thorell, 1893           | Three-spined Girdled Comb-footed Spider  | Not Listed | DD   |
| Theridiidae | <i>Moneta</i>       | sp.                 |                         | Short-tarsus Comb-footed Spider          | Not Listed | NE   |
| Theridiidae | <i>Nesticodes</i>   | <i>rufipes</i>      | (Lucas, 1846)           | Red-footed House Spider                  | Not Listed | LC   |
| Theridiidae | <i>Nihonhimea</i>   | <i>mundula</i>      | (L. Koch, 1872)         | Rolled-leaf Comb-footed Spider           | Not Listed | LC   |
| Theridiidae | <i>Parasteatoda</i> | <i>celsabdomina</i> | (Zhu, 1998)             | Brown-streaked Dorsal Hump Spider        | Not Listed | DD   |
| Theridiidae | <i>Parasteatoda</i> | <i>tepidariorum</i> | (C.L.Koch, 1841)        | Glasshouse Spider                        | Not Listed | LC   |
| Theridiidae | <i>Parasteatoda</i> | <i>triangula</i>    | (Yoshida, 1993)         | Pink-rumped Comb-footed Spider           | Not Listed | DD   |
| Theridiidae | <i>Parasteatoda</i> | sp. A               |                         | Black-sided Balloon Spider               | Not Listed | NE   |
| Theridiidae | <i>Parasteatoda</i> | sp. B               |                         | Arrow Folium Comb-footed Spider          | Not Listed | NE   |

| Family      | Genus                | Species         | Authority                   | Common Name                             | RDB2       | RDB3 |
|-------------|----------------------|-----------------|-----------------------------|-----------------------------------------|------------|------|
| Theridiidae | <i>Parasteatoda</i>  | sp. C           |                             | White-streaked Dorsal Hump Spider       | Not Listed | NE   |
| Theridiidae | <i>Parasteatoda</i>  | sp. D           |                             | Halloween Comb-footed Spider            | Not Listed | NE   |
| Theridiidae | <i>Parasteatoda</i>  | sp. E           |                             | Yellow Tall-faced Comb-footed Spider    | Not Listed | NE   |
| Theridiidae | <i>Parasteatoda</i>  | sp. F           |                             | Three-spotted Orange Comb-footed Spider | Not Listed | NE   |
| Theridiidae | <i>Phoroncidia</i>   | <i>lygeana</i>  | (Walckenaer, 1841)          | Spiny Phoroncidia                       | EN         | EN   |
| Theridiidae | <i>Phoroncidia</i>   | sp. A           |                             | Red Tortoise-shell Spider               | Not Listed | NE   |
| Theridiidae | <i>Phoroncidia</i>   | sp. B           |                             | Pearly Tortoise-shell Spider            | Not Listed | NE   |
| Theridiidae | <i>Phoroncidia</i>   | sp. C           |                             | Lumpy Tube-headed Spider                | Not Listed | NE   |
| Theridiidae | <i>Phoroncidia</i>   | sp. D           |                             | Conical Lumpy Tube-headed Spider        | Not Listed | NE   |
| Theridiidae | <i>Phycosoma</i>     | <i>digitula</i> | F. Zhang & B.S. Zhang, 2012 | Zebra-crossing Box-headed Spider        | Not Listed | DD   |
| Theridiidae | <i>Phycosoma</i>     | <i>hana</i>     | (Zhu, 1998)                 | Blotchy Box-headed Spider               | Not Listed | DD   |
| Theridiidae | <i>Phycosoma</i>     | <i>martinae</i> | (Roberts, 1983)             | Spotted Box-headed Spider               | Not Listed | LC   |
| Theridiidae | <i>Phycosoma</i>     | sp. A           |                             |                                         | Not Listed | NE   |
| Theridiidae | <i>Phycosoma</i>     | sp. B           |                             |                                         | Not Listed | NE   |
| Theridiidae | <i>Phycosoma</i>     | sp. C           |                             |                                         | Not Listed | NE   |
| Theridiidae | <i>Phycosoma</i>     | sp. D           |                             |                                         | Not Listed | NE   |
| Theridiidae | <i>Platnickina</i>   | <i>mneon</i>    | (Bösenberg & Strand, 1906)  | Speckled House Cob-web Spider           | Not Listed | LC   |
| Theridiidae | <i>Platnickina</i>   | sp.             |                             | Ninja Comb-footed Spider                | Not Listed | NE   |
| Theridiidae | <i>Propostira</i>    | sp.             |                             | Four-tits Quadrangular Spider           | Not Listed | NE   |
| Theridiidae | <i>Rhinocosmetus</i> | <i>xiphias</i>  | (Thorell, 1887)             | Swordfish Food-stealing Spider          | Not Listed | DD   |
| Theridiidae | <i>Rhinocosmetus</i> | sp.             |                             | Metallic Red Pinnochio Food-stealer     | Not Listed | DD   |
| Theridiidae | <i>Rhomphaea</i>     | <i>labiata</i>  | (Zhu & Song, 1991)          | Tiger Cowrie Boomerang Spider           | Not Listed | LC   |
| Theridiidae | <i>Rhomphaea</i>     | <i>sinica</i>   | (Zhu & Song, 1991)          | Black Diamond Boomerang Spider          | Not Listed | LC   |
| Theridiidae | <i>Rhomphaea</i>     | sp. A           |                             | Chocolate Chips Boomerang Spider        | Not Listed | NE   |
| Theridiidae | <i>Rhomphaea</i>     | sp. B           |                             | Translucent Lined Boomerang Spider      | Not Listed | NE   |
| Theridiidae | <i>Rhomphaea</i>     | sp. C           |                             | Mangrove Boomerang Spider               | Not Listed | NE   |
| Theridiidae | <i>Spheropistha</i>  | sp. A           |                             | Black Balloon Spider                    | Not Listed | NE   |
| Theridiidae | <i>Spheropistha</i>  | sp. B           |                             | Strawberry-bellied Food-stealing Spider | Not Listed | NE   |
| Theridiidae | <i>Spheropistha</i>  | sp. C           |                             | Mangrove Silver Spider                  | Not Listed | NE   |

| Family            | Genus                | Species              | Authority                    | Common Name                         | RDB2       | RDB3 |
|-------------------|----------------------|----------------------|------------------------------|-------------------------------------|------------|------|
| Theridiidae       | <i>Steatoda</i>      | <i>gui</i>           | Zhu, 1998                    | Gu's False Widow                    | Not Listed | DD   |
| Theridiidae       | <i>Steatoda</i>      | sp.                  |                              | Golden False Widow                  | Not Listed | DD   |
| Theridiidae       | <i>Stemmops</i>      | <i>nigrabdomenus</i> | Zhu, 1998                    | Tangerine Bigeye Cobweb Spider      | Not Listed | DD   |
| Theridiidae       | <i>Tamanidion</i>    | sp.                  |                              | Tiny Black-dotted Green Comb-footed | Not Listed | NE   |
| Theridiidae       | <i>Theridion</i>     | <i>hainanense</i>    | Zhu, 1998                    | Boxing Gloves Comb-footed Spider    | Not Listed | LC   |
| Theridiidae       | <i>Theridion</i>     | <i>incanescens</i>   | Simon, 1890                  | Black Spots Comb-footed Spider      | Not Listed | LC   |
| Theridiidae       | <i>Theridion</i>     | <i>t-notatum</i>     | Thorell, 1895                | T-motif Comb-footed Spider          | Not Listed | LC   |
| Theridiidae       | <i>Theridion</i>     | <i>zonulatum</i>     | Thorell, 1890                | Smiley Zebra Comb-footed Spider     | Not Listed | DD   |
| Theridiidae       | <i>Theridion</i>     | sp. A                |                              | White Zebra Comb-footed Spider      | Not Listed | NE   |
| Theridiidae       | <i>Theridion</i>     | sp. B                |                              | Black-rumped Globose Spider         | Not Listed | NE   |
| Theridiidae       | <i>Theridion</i>     | sp. C                |                              | Black Venter Comb-footed Spider     | Not Listed | NE   |
| Theridiidae       | <i>Theridion</i>     | sp. D                |                              | Spotted Comb-footed Spider          | Not Listed | NE   |
| Theridiidae       | <i>Theridion</i>     | sp. E                |                              | Four-spotted Comb-footed Spider     | Not Listed | NE   |
| Theridiidae       | <i>Theridula</i>     | sp.                  |                              | Yellow-spotted Theridula            | Not Listed | NE   |
| Theridiidae       | <i>Thwaitesia</i>    | sp.                  | O. Pickard-Cambridge, 1881   | Asian Mirror Spider                 | Not Listed | DD   |
| Theridiidae       | " <i>Thymoites</i> " | (margaritifera?) sp. |                              | Tiny Hyena Comb-footed Spider       | Not Listed | NE   |
| Theridiidae       | <i>Yaginumena</i>    | <i>maculosa</i>      | (Yoshida & Ono, 2000)        | Spotted Ant-eater                   | Not Listed | DD   |
| Theridiidae       | <i>Yunohamella</i>   | sp.                  |                              | Soccer Comb-footed spider           | Not Listed | NE   |
| Theridiosomatidae | <i>Theridiosoma</i>  | <i>fasciatum</i>     | Workman, 1896                | Workman's Ray Spider                | Not Listed | DD   |
| Theridiosomatidae | <i>Zoma</i>          | sp.                  |                              | Yin-yang Ray Spider                 | Not Listed | NE   |
| Thomisidae        | <i>Alcimochthes</i>  | <i>limbatus</i>      | Simon, 1886                  | Common Tall-faced Crab Spider       | Not Listed | LC   |
| Thomisidae        | <i>Alcimochthes</i>  | sp. A                |                              | Green Tall-faced Crab Spider        | Not Listed | NE   |
| Thomisidae        | <i>Alcimochthes</i>  | sp. B                |                              | Pinkish Tall-faced Crab Spider      | Not Listed | NE   |
| Thomisidae        | <i>Amyciaea</i>      | <i>forticeps</i>     | (O. Pickard-Cambridge, 1873) | Ant-Mimic Crab Spider               | Not Listed | LC   |
| Thomisidae        | <i>Angaeus</i>       | <i>lenticulosus</i>  | Simon, 1903                  | Woolly Flat-faced Crab Spider       | Not Listed | DD   |
| Thomisidae        | <i>Angaeus</i>       | <i>rhombifer</i>     | Thorell, 1890                | Common Diamond-bellied Crab Spider  | Not Listed | DD   |
| Thomisidae        | <i>Angaeus</i>       | <i>verrucosus</i>    | Benjamin, 2017               | Red-haired Flat-faced Crab Spider   | Not Listed | DD   |
| Thomisidae        | <i>Boliscus</i>      | <i>tuberculatus</i>  | (Simon, 1886)                | Beaded Crab Spider                  | Not Listed | LC   |

| Family     | Genus                  | Species              | Authority              | Common Name                         | RDB2       | RDB3 |
|------------|------------------------|----------------------|------------------------|-------------------------------------|------------|------|
| Thomisidae | <i>Borboropactus</i>   | <i>cinerascens</i>   | (Doleschall, 1859)     | Litter Crab Spider                  | Not Listed | DD   |
| Thomisidae | <i>Camarius</i>        | <i>maugei</i>        | (Walckenaer, 1837)     | Flat-abdomen Crab Spider            | Not Listed | LC   |
| Thomisidae | <i>Cebrenninus</i>     | <i>magnus</i>        | Benjamin, 2016         | Greater Cebrenninus                 | Not Listed | DD   |
| Thomisidae | <i>Ebrechtella</i>     | <i>concinna</i>      | (Thorell, 1877)        | Red-blotched Ebrechtella            | Not Listed | LC   |
| Thomisidae | <i>Epidius</i>         | sp. A                |                        | Singapore Long-palped Crab Spider   | Not Listed | VU   |
| Thomisidae | <i>Epidius</i>         | sp. B                |                        | Masked Long-palped Crab Spider      | Not Listed | VU   |
| Thomisidae | <i>Henriksenia</i>     | <i>hilaris</i>       | (Thorell, 1877)        | Merry Crab Spider                   | Not Listed | LC   |
| Thomisidae | <i>Henriksenia</i>     | <i>nepenthicola</i>  | (Fage, 1928)           | Singapore Pitcher-plant Crab Spider | Not Listed | VU   |
| Thomisidae | <i>Loxobates</i>       | sp.                  |                        | Crimson-striped Crab Spider         | Not Listed | NE   |
| Thomisidae | <i>Lycopus</i>         | <i>rubropictus</i>   | Workman, 1896          | Red-painted Lycopus                 | Not Listed | DD   |
| Thomisidae | <i>Mastira</i>         | <i>bipunctata</i>    | Thorell, 1891          | Two-dotted White Angel              | Not Listed | LC   |
| Thomisidae | <i>Monaeses</i>        | sp. A                |                        | Black-banded Flat-faced Spider      | Not Listed | NE   |
| Thomisidae | <i>Monaeses</i>        | sp. B                |                        | Common Flat-faced Crab Spider       | Not Listed | NE   |
| Thomisidae | <i>Oxytate</i>         | <i>virens</i>        | (Thorell, 1891)        | Long Green Crab Spider              | Not Listed | LC   |
| Thomisidae | <i>Pharta</i>          | <i>bimaculata</i>    | Thorell, 1891          | Two-spotted Crab Spider             | Not Listed | LC   |
| Thomisidae | <i>Pharta</i>          | sp.                  |                        | Decorated Carapace Crab Spider      | Not Listed | NE   |
| Thomisidae | <i>Philodamia</i>      | <i>hilaris</i>       | Thorell, 1895          | White-flecked Philodamia            | Not Listed | LC   |
| Thomisidae | <i>Philodamia</i>      | <i>variata</i>       | Thorell, 1895          | Variegated Philodamia               | Not Listed | DD   |
| Thomisidae | " <i>Philodamia</i> "  | <i>semicincta</i>    | (Workman, 1896)        | Half Girdle Crab Spider             | Not Listed | LC   |
| Thomisidae | <i>Phrynarachne</i>    | <i>ceylonica</i>     | (O. P-Cambridge, 1884) | Ceylon Bird-dropping Spider         | Not Listed | DD   |
| Thomisidae | <i>Phrynarachne</i>    | <i>tuberosa</i>      | (Blackwall, 1864)      | Horned Bird-dropping Spider         | Not Listed | DD   |
| Thomisidae | <i>Platythomisus</i>   | <i>octomaculatus</i> | (C.L.Koch, 1845)       | Eight-spotted Crab Spider           | EN         | VU   |
| Thomisidae | <i>Platythomisus</i>   | sp.                  |                        | Three-spotted Crab Spider           | Not Listed | EN   |
| Thomisidae | <i>Pycnaxis</i>        | <i>krakatauensis</i> | (Bristowe, 1931)       | Krakatau Bark Crab Spider           | Not Listed | LC   |
| Thomisidae | <i>Runcinia</i>        | <i>acuminata</i>     | (Thorell, 1881)        | Long-pointed Runcinia               | Not Listed | LC   |
| Thomisidae | <i>Runcinia</i>        | <i>insecta</i>       | (L. Koch, 1875)        | Round-tailed Runcinia               | Not Listed | DD   |
| Thomisidae | <i>Runcinia</i>        | sp. A                |                        | Sharp-tailed Runcinia               | Not Listed | NE   |
| Thomisidae | <i>Runcinia</i>        | sp. B                |                        | Pentagonal Runcinia                 | Not Listed | NE   |
| Thomisidae | " <i>Spilosynema</i> " | sp.                  |                        | Double-dashed Crab Spider           | Not Listed | NE   |
| Thomisidae | <i>Stephanopsis</i>    | sp.                  |                        | Thorny Crab Spider                  | Not Listed | VU   |

| Family       | Genus                 | Species                  | Authority               | Common Name                          | RDB2       | RDB3 |
|--------------|-----------------------|--------------------------|-------------------------|--------------------------------------|------------|------|
| Thomisidae   | <i>Strigoplus</i>     | <i>albostratus</i>       | Simon, 1886             | Rake-faced Crab Spider               | Not Listed | DD   |
| Thomisidae   | <i>Talaus</i>         | sp. A                    |                         | Four-blotched Pea Crab Spider        | Not Listed | NE   |
| Thomisidae   | <i>Talaus</i>         | sp. B                    |                         | Black-and-yellow Pea Crab Spider     | Not Listed | NE   |
| Thomisidae   | <i>"Tarrocanus"</i>   | sp.                      |                         | Cone-eyed Crab Spider                | Not Listed | CR   |
| Thomisidae   | <i>Thomisus</i>       | <i>callidus</i>          | (Thorell, 1890)         | Callidus Crab Spider                 | Not Listed | DD   |
| Thomisidae   | <i>Thomisus</i>       | <i>guangxicus</i>        | Song & Zhu, 1995        | Chocolate-faced Crab Spider          | Not Listed | LC   |
| Thomisidae   | <i>Thomisus</i>       | <i>nepenthophilus</i>    | Fage, 1930              | Pitcher-plant Horned Crab Spider     | Not Listed | VU   |
| Thomisidae   | <i>Thomisus</i>       | <i>perspicillatus</i>    | (Thorell, 1890)         | Buffalo Horn Crab Spider             | Not Listed | EN   |
| Thomisidae   | <i>Thomisus</i>       | <i>zhui</i>              | Tang & Song, 1998       | Small Dot Crab Spider                | Not Listed | LC   |
| Thomisidae   | <i>Thomisus</i>       | sp. A                    |                         | Large horned Crab Spider             | Not Listed | NE   |
| Thomisidae   | <i>Thomisus</i>       | sp. B                    |                         | Triangular Face Crab Spider          | Not Listed | NE   |
| Thomisidae   | <i>Tmarus</i>         | sp. A                    |                         | Striped Humpback Crab Spider         | Not Listed | NE   |
| Thomisidae   | <i>Tmarus</i>         | sp. B                    |                         | Triple-streaked Humpback Crab Spider | Not Listed | NE   |
| Thomisidae   | <i>Tmarus</i>         | sp. C                    |                         | Plump Humpback Crab Spider           | Not Listed | NE   |
| Titanoecidae | <i>Pandava</i>        | <i>laminata</i>          | (Thorell, 1878)         | Ambon Rock Weaver                    | Not Listed | LC   |
| Trachelidae  | <i>Orthobula</i>      | sp.                      |                         | Creamy Orthobula                     | Not Listed | NE   |
| Trachelidae  | <i>Trachelas</i>      | <i>shilinensis</i>       | Jin, Yin & Zhang, 2017  | Tawny Bull-headed Hunter             | Not Listed | DD   |
| Trachelidae  | <i>Utivarachna</i>    | <i>phyllicola</i>        | Deeleman-Reinhold, 2001 | Banded Bull-headed Hunter            | Not Listed | DD   |
| Trachelidae  | <i>Utivarachna</i>    | sp.                      |                         | Singapore Bull-headed Hunter         | Not Listed | NE   |
| Uloboridae   | <i>Miagrammopes</i>   | <i>oblongus</i>          | Yoshida, 1982           | Green Twig Spider                    | Not Listed | DD   |
| Uloboridae   | <i>Miagrammopes</i>   | <i>singaporensis</i>     | Kulczyński, 1908        | Singapore Twig Spider                | Not Listed | DD   |
| Uloboridae   | <i>Miagrammopes</i>   | sp. A                    |                         | Brown Spotted Twig Spider            | Not Listed | NE   |
| Uloboridae   | <i>Miagrammopes</i>   | sp. B                    |                         | Brown-green Twig Spider              | Not Listed | NE   |
| Uloboridae   | <i>Miagrammopes</i>   | sp. C                    |                         | Thick Brush Twig Spider              | Not Listed | NE   |
| Uloboridae   | <i>Miagrammopes</i>   | sp. D                    |                         | Arched-back Twig Spider              | Not Listed | NE   |
| Uloboridae   | <i>"Philoponella"</i> | <i>quadrituberculata</i> | (Thorell, 1893)         | Mexican Hat Philoponella             | Not Listed | EN   |
| Uloboridae   | <i>Philoponella</i>   | <i>raffrayi</i>          | (Simon, 1891)           | Communal Red Philoponella            | Not Listed | DD   |
| Uloboridae   | <i>Uloborus</i>       | <i>plumipes</i>          | Lucas, 1846             | House Feather-legged Spider          | Not Listed | LC   |
| Uloboridae   | <i>Uloborus</i>       | sp. A                    |                         | Hooked Feather-legged Spider         | Not Listed | NE   |
| Uloboridae   | <i>Uloborus</i>       | sp. B                    |                         | Chocolate Feather-legged Spider      | Not Listed | NE   |

| Family     | Genus              | Species             | Authority                                | Common Name                    | RDB2       | RDB3 |
|------------|--------------------|---------------------|------------------------------------------|--------------------------------|------------|------|
| Uloboridae | <i>Uloborus</i>    | sp. C               |                                          | Yellow Feather-legged Spider   | Not Listed | NE   |
| Uloboridae | <i>Zosis</i>       | <i>geniculata</i>   | (Olivier, 1789)                          | Grey Humped Domestic Spider    | Not Listed | LC   |
| Zodariidae | <i>Asceua</i>      | sp. A               |                                          | Five-barred Ant Hunter         | Not Listed | NE   |
| Zodariidae | <i>Asceua</i>      | sp. B               |                                          | Smiley Ant Hunter              | Not Listed | NE   |
| Zodariidae | <i>Asceua</i>      | sp. C               |                                          | Variegated Brown Ant Hunter    | Not Listed | NE   |
| Zodariidae | <i>Asceua</i>      | sp. D               |                                          | Pleated Leathery Ant Hunter    | Not Listed | NE   |
| Zodariidae | <i>Asceua</i>      | sp. E               |                                          | Yellow-banded Ant Hunter       | Not Listed | NE   |
| Zodariidae | <i>Cryptothele</i> | <i>sundaica</i>     | Thorell, 1890                            | Walking Mud Spider             | Not Listed | LC   |
| Zodariidae | <i>Mallinella</i>  | <i>allorostrata</i> | Dankittipakul, Jocqué & Singtripop, 2012 | Long-haired Glossy Ant Hunter  | Not Listed | DD   |
| Zodariidae | <i>Mallinella</i>  | <i>annulipes</i>    | (Thorell, 1893)                          | Ring-legged Glossy Ant Hunter  | Not Listed | LC   |
| Zodariidae | <i>Mallinella</i>  | sp. A               |                                          | Short-haired Glossy Ant Hunter | Not Listed | NE   |
| Zodariidae | <i>Mallinella</i>  | sp. B               |                                          | Moustached Glossy Ant Hunter   | Not Listed | NE   |
| Zodariidae | <i>Tropozodium</i> | sp.                 |                                          | Unshaven Ground Spider         | Not Listed | NE   |
| Zodariidae | <i>Workmania</i>   | <i>botuliformis</i> | Dankittipakul, Jocqué & Singtripop, 2012 | Phang Nga Workman's Spider     | Not Listed | DD   |
| Zodariidae | <i>Workmania</i>   | <i>juvenca</i>      | (Workman, 1896)                          | Singapore Workman's Spider     | Not Listed | DD   |



### Checklist of Miscellaneous Arthropoda and Onychophora Species with their Category of Threat Status for Singapore

Prepared by Hwang Wei Song

| Family        | Genus                  | Species             | Authority         | Common Name                | RDB2  | RDB3 |
|---------------|------------------------|---------------------|-------------------|----------------------------|-------|------|
| Peripatidae   | <i>Eoperipatus</i>     | <i>sumatranus</i>   | (Sedgwick 1888)   | Velvet worm                | EN    | EN   |
| Sminthuridae  | <i>Sphaeridia</i>      | <i>massoudi</i>     | Murphy 1966       | Springtail                 | NEx?  | NEx  |
| Sminthuridae  | <i>Sphaeridia</i>      | <i>pippetti</i>     | Murphy 1966       | Springtail                 | NEx?  | NEx  |
| Machilidae    | <i>Dromadimachilis</i> | <i>gibba</i>        | (Carpenter, 1916) | Camel rockspringer         | NEx   | NEx  |
| Mantidae      | <i>Hymenopus</i>       | <i>coronatus</i>    | (Oliver, 1792)    | Walking flower mantis      | NEx   | NEx  |
| Nogodinidae   | <i>Elica</i>           | <i>latipennis</i>   | (Walker, 1857)    | Nogodinid plant-bug        | DD    | VU   |
| Pyrrhocoridae | <i>Dysdercus</i>       | <i>decussatus</i>   | Boisduval, 1835   | Cotton stainer bug         | EN    | LC   |
| Miridae       | <i>Stethoconus</i>     | <i>praefectus</i>   | (Distant, 1909)   |                            | DD    | DD   |
| Tingidae      | <i>Ypsotingis</i>      | <i>sideris</i>      | (Drake, 1947)     |                            | DD    | DD   |
| Pentatomidae  | <i>Rhynchochoris</i>   | <i>humeralis</i>    | (Thunberg, 1783)  | Lime shieldbug             | EN/CR | DD   |
| Psyllidae     | <i>Diclidophlebia</i>  | <i>oceanica</i>     | (Crawford, 1919)  | Beetle-like plant louse    | DD    | DD   |
| Pteromalidae  | <i>Solenura</i>        | <i>ania</i>         | (Walker, 1846)    | Long-tailed parasitic wasp | VU    | VU   |
| Berothidae    | <i>Berotha</i>         | sp.                 |                   | Beaded lacewing            | VU    | VU   |
| Nicoletiidae  | <i>Assmuthia</i>       | <i>spinosissima</i> | Escherich, 1906   |                            | DD    | DD   |

### Checklist of Arthropoda - Tanaidacean Crustacean Species with their Category of Threat Status for Singapore

Prepared by Chim Chee Kong

| Family          | Genus                     | Species              | Authority           | Common Name | RDB2       | RDB3 |
|-----------------|---------------------------|----------------------|---------------------|-------------|------------|------|
| Kalliapseudidae | <i>Phoxokalliapseudes</i> | <i>singaporensis</i> | Drumm & Heard, 2011 |             | Not Listed | LC   |
| Tanaididae      | <i>Xenosinelobus</i>      | <i>balanocolus</i>   | Chim & Tong, 2019   |             | Not Listed | DD   |

## Checklist of Arthropoda - Freshwater Decapod Crustacean Species with their Category of Threat Status for Singapore

Prepared by Yixiong Cai, Daniel J.J. Ng, Lydia X. Gan, Elysia X.P. Toh, Darren C.J. Yeo

| Family         | Genus                | Species               | Authority            | Common Name               | RDB2       | RDB3 |
|----------------|----------------------|-----------------------|----------------------|---------------------------|------------|------|
| Gecarcinucidae | <i>Irmengardia</i>   | <i>johnsoni</i>       | Ng & Yang, 1985      | Johnson's Freshwater Crab | EN         | VU   |
| Gecarcinucidae | <i>Parathelphusa</i> | <i>maculata</i>       | De Man 1879          | Lowland Freshwater Crab   | Not Listed | LC   |
| Gecarcinucidae | <i>Parathelphusa</i> | <i>reticulata</i>     | Ng, 1990             | Swamp Forest Crab         | EN         | EN   |
| Potamidae      | <i>Johora</i>        | <i>singaporensis</i>  | Ng, 1986             | Singapore Freshwater Crab | EN         | EN   |
| Sesarmidae     | <i>Geosesarma</i>    | <i>peraccae</i>       | (Nobili, 1903)       | Peracca's Land Crab       | VU         | VU   |
| Sesarmidae     | <i>Geosesarma</i>    | <i>nemesis</i>        | Ng, 1986             | Little Land Crab          | EN         | EN   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>equidens</i>       | (Dana, 1852)         | Rough River Prawn         | Not Listed | EN   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>malayanum</i>      | (Roux, 1934)         | Malayan River Prawn       | Not Listed | LC   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>platycheles</i>    | Ou & Yeo, 1995       | Torrent Prawn             | CR         | CR   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>sundaicum</i>      | (Heller, 1862)       | Sunda River Prawn         | Not Listed | VU   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>pilimanus</i>      | (De Man, 1879)       | Muff River Prawn          | Not Listed | EN   |
| Palaemonidae   | <i>Macrobrachium</i> | <i>rosenbergii</i>    | (De Man, 1879)       | Giant River Prawn         | NEx        | NEx  |
| Palaemonidae   | <i>Macrobrachium</i> | <i>scabriculum</i>    | (Heller, 1862)       | Goda River Prawn          | Not Listed | NEx  |
| Palaemonidae   | <i>Macrobrachium</i> | <i>neglectum</i>      | (De Man, 1905)       | Java River Prawn          | Not Listed | NEx  |
| Palaemonidae   | <i>Macrobrachium</i> | <i>idae</i>           | (Heller, 1862)       | Orana River Prawn         | NEx        | NEx  |
| Atyidae        | <i>Caridina</i>      | <i>peninsularis</i>   | Kemp, 1918           | Peninsular Caridina       | Not Listed | EN   |
| Atyidae        | <i>Caridina</i>      | <i>gracilirostris</i> | De Man, 1892         | Needlenose Caridina       | Not Listed | EN   |
| Atyidae        | <i>Caridina</i>      | <i>propinqua</i>      | De Man, 1908         | Bengal Caridina           | Not Listed | VU   |
| Atyidae        | <i>Caridina</i>      | <i>sumatrensis</i>    | De Man, 1892         | Sumatra Caridina          | Not Listed | NEx  |
| Atyidae        | <i>Caridina</i>      | <i>gracilipes</i>     | De Man, 1892         | Slender-legged Caridina   | Not Listed | CR   |
| Atyidae        | <i>Caridina</i>      | <i>bruneiana</i>      | Choy, 1992           | Brunei Caridina           | Not Listed | NEx  |
| Atyidae        | <i>Caridina</i>      | <i>temasek</i>        | Choy & Ng, 1991      | Temasek Caridina          | EN         | EN   |
| Atyidae        | <i>Caridina</i>      | <i>johnsoni</i>       | Cai, Ng & Choy, 2007 | Johnson's Caridina        | Not Listed | LC   |
| Atyidae        | <i>Caridina</i>      | <i>malayensis</i>     | Cai, Ng & Choy, 2007 | Malayan Caridina          | Not Listed | EN   |
| Alpheidae      | <i>Potamalpheops</i> | <i>amnicus</i>        | Yeo & Ng, 1997       | Riverine Alpheid Shrimp   | EN         | EN   |

**Checklist of Arthropoda - Horseshoe Crab (Order: Xiphosurida) and Marine Decapod Crustacean (Order: Decapoda) Species with their Category of Threat Status for Singapore**  
Prepared by Jose Christopher E. Mendoza, Bee Yan Lee, Peter K.L. Ng, Darren C.J. Yeo

| Family        | Genus                      | Species              | Authority                | Common Name                           | RDB2 | RDB3 |
|---------------|----------------------------|----------------------|--------------------------|---------------------------------------|------|------|
| Limulidae     | <i>Carcinoscorpius</i>     | <i>rotundicauda</i>  | (Latreille, 1802)        | Mangrove horseshoe crab               | VU   | VU   |
| Limulidae     | <i>Tachypleus</i>          | <i>gigas</i>         | (Müller, 1785)           | Coastal horseshoe crab                | EN   | VU   |
| Palaemonidae  | <i>Cristimenes</i>         | <i>cristimanus</i>   | (Bruce, 1965)            | Black urchin shrimp                   | VU   | VU   |
| Palaemonidae  | <i>Cuapetes</i>            | <i>johnsoni</i>      | (Bruce, 1987)            | Seagrass shrimp                       | VU   | CR   |
| Alpheidae     | <i>Alpheus</i>             | <i>microrhynchus</i> | De Man, 1898             | Giant mangrove snapping shrimp        | EN   | EN   |
| Alpheidae     | <i>Athanas</i>             | <i>japonicus</i>     | Kubo, 1936               |                                       | VU   | VU   |
| Alpheidae     | <i>Athanas</i>             | <i>polymorphus</i>   | Kemp, 1915               |                                       | VU   | VU   |
| Alpheidae     | <i>Potamalpheops</i>       | <i>johnsoni</i>      | Anker, 2003              | Brackish alpheid shrimp               | VU   | EN   |
| Alpheidae     | <i>Potamalpheops</i>       | <i>tigger</i>        | Yeo & Ng, 1997           | Brackish alpheid shrimp               | VU   | VU   |
| Alpheidae     | <i>Salmoneus</i>           | <i>singaporensis</i> | Anker, 2003              |                                       | CR   | CR   |
| Alpheidae     | <i>Synalpheus</i>          | <i>stimpsoni</i>     | (De Man, 1888)           | Crinoid snapping shrimp               | CR   | EN   |
| Thalassinidae | <i>Thalassina</i>          | <i>anomala</i>       | (Herbst, 1804)           | Mud lobster                           | EN   | EN   |
| Thalassinidae | <i>Thalassina</i>          | <i>gracilis</i>      | Dana, 1852               | Mud lobster                           | EN   | EN   |
| Upogebiidae   | <i>Wolffogebia</i>         | <i>phuketensis</i>   | Sakai, 1982              | Mud shrimp                            | EN   | EN   |
| Porcellanidae | <i>Euleniaios</i>          | <i>cometes</i>       | (Walker, 1887)           | Parchment worm porcelain crab         | EN   | EN   |
| Porcellanidae | <i>Porcellanella</i>       | <i>triloba</i>       | White, 1851              | Painted porcelain crab                | VU   | VU   |
| Porcellanidae | <i>Pseudoporcellanella</i> | <i>manoliensis</i>   | Sankarankutty, 1961      | False porcelain crab                  | VU   | VU   |
| Porcellanidae | <i>Raphidopus</i>          | <i>ciliatus</i>      | Stimpson, 1858           | Hairy-leg porcelain crab              | VU   | VU   |
| Coenobitidae  | <i>Coenobita</i>           | <i>violascens</i>    | Heller, 1862             | Land hermit crab                      | VU   | DD   |
| Coenobitidae  | <i>Coenobita</i>           | <i>lila</i>          | Rahayu, Shih & Ng, 2016  | Land hermit crab                      | VU   | NT   |
| Calappidae    | <i>Calappa</i>             | <i>lophos</i>        | (Herbst, 1782)           | Common box crab                       | VU   | VU   |
| Calappidae    | <i>Calappa</i>             | <i>philargius</i>    | (Linnaeus, 1758)         | Spectacled box crab; Spotted box crab | VU   | NT   |
| Calappidae    | <i>Calappa</i>             | <i>hepatica</i>      | (Linnaeus, 1758)         | Reef box crab                         | VU   | VU   |
| Leucosiidae   | <i>Favus</i>               | <i>granulatus</i>    | Lanchester, 1900         | Rubble crab; Singapore rubble crab    | EN   | EN   |
| Leucosiidae   | <i>Praosia</i>             | <i>punctata</i>      | Tan & Ng, 1993           | Cheryl crab; Mangrove pebble crab     | EN   | EN   |
| Leucosiidae   | <i>Alox</i>                | <i>somphos</i>       | Tan & Ng, 1995           | Spongy rubble crab                    | EN   | EN   |
| Epialtidae    | <i>Doclea</i>              | <i>canaliformis</i>  | Ow-Yang, in Lovett, 1981 | Channeled spider crab                 | EN   | VU   |

| Family          | Genus                 | Species             | Authority               | Common Name                                     | RDB2 | RDB3 |
|-----------------|-----------------------|---------------------|-------------------------|-------------------------------------------------|------|------|
| Epialtidae      | <i>Hyastenus</i>      | <i>elatus</i>       | Griffin & Tranter, 1986 |                                                 | EN   | DD   |
| Epialtidae      | <i>Hyastenus</i>      | <i>subinermis</i>   | Zehntner, 1894          |                                                 | EN   | VU   |
| Epialtidae      | <i>Menaethius</i>     | <i>monoceros</i>    | (Latreille, 1825)       | Arrow-head spider crab; One-horned spider crab  | VU   | NT   |
| Inachidae       | <i>Camposcia</i>      | <i>retusa</i>       | Latreille, 1829         | Velcro crab; Decorator crab                     | VU   | NT   |
| Inachidae       | <i>Paratymolus</i>    | <i>cygnus</i>       | Loh & Ng, 1999          |                                                 | CR   | EN   |
| Majidae         | <i>Planotergum</i>    | <i>mirabile</i>     | Balss, 1935             |                                                 | EN   | DD   |
| Hymenosomatidae | <i>Crustaenia</i>     | <i>palawanensis</i> | (Serène, 1971)          | False spider crab                               | EN   | EN   |
| Hymenosomatidae | <i>Elamena</i>        | <i>globosa</i>      | Chuang & Ng, 1991       | False spider crab                               | EN   | CR   |
| Hymenosomatidae | <i>Elamena</i>        | <i>mendosa</i>      | Chuang & Ng, 1991       | False spider crab                               | EN   | EN   |
| Hymenosomatidae | <i>Elamenopsis</i>    | <i>rotunda</i>      | Naruse & Ng, 2007       | Circular false spider crab                      | CR   | CR   |
| Hymenosomatidae | <i>Lucascinus</i>     | <i>coralicola</i>   | (Rathbun, 1909)         | False spider crab                               | VU   | VU   |
| Hymenosomatidae | <i>Neorhynchoplax</i> | <i>mangalis</i>     | (Ng, 1988)              | Mangrove false spider crab; Mangrove crown crab | VU   | NT   |
| Parthenopidae   | <i>Aulacolambrus</i>  | <i>granulosus</i>   | (Miers, 1879)           | Elbow crab                                      | CR   | DD   |
| Parthenopidae   | <i>Daldorfia</i>      | <i>horrida</i>      | (Linnaeus, 1758)        | Horrid elbow crab                               | NEx  | CR   |
| Parthenopidae   | <i>Enoplolambrus</i>  | <i>echinatus</i>    | (Herbst, 1790)          | Elbow crab                                      | EN   | VU   |
| Parthenopidae   | <i>Pseudolambrus</i>  | <i>bicornis</i>     | (Flipse, 1930)          | Two-horned elbow crab                           | CR   | CR   |
| Parthenopidae   | <i>Rhinolambrus</i>   | <i>pelagicus</i>    | (Rüppell, 1830)         | Common elbow crab                               | VU   | VU   |
| Parthenopidae   | <i>Cryptopodia</i>    | <i>fornicata</i>    | (Fabricius, 1787)       | Domed elbow crab                                | EN   | VU   |
| Corystidae      | <i>Gomeza</i>         | <i>bicornis</i>     | Gray, 1831              | Masked burrowing crab                           | VU   | VU   |
| Corystidae      | <i>Jonas</i>          | <i>formosae</i>     | (Balss, 1922)           | Masked burrowing crab                           | VU   | EN   |
| Portunidae      | <i>Lupocyclus</i>     | <i>rotundatus</i>   | Adams & White, 1849     | Swimming crab                                   | NEx  | EN   |
| Carpiliidae     | <i>Carpilius</i>      | <i>maculatus</i>    | (Linnaeus, 1758)        | Spotted reef crab                               | EN   | EN   |
| Eriphiidae      | <i>Eriphia</i>        | <i>ferox</i>        | Koh & Ng, 2008          | Red-eyed reef crab; Ferocious reef crab         | VU   | VU   |
| Pilumnidae      | <i>Glabropilumnus</i> | <i>edamensis</i>    | (De Man, 1888)          |                                                 | VU   | VU   |
| Pilumnidae      | <i>Gonatonotus</i>    | <i>pentagonus</i>   | White, 1847             | Sea urchin crab                                 | EN   | EN   |
| Pilumnidae      | <i>Harrovia</i>       | <i>albolineata</i>  | Adams & White, 1849     | Feather star crab                               | CR   | VU   |
| Pilumnidae      | <i>Harrovia</i>       | <i>longipes</i>     | Lanchester, 1900        | Feather star crab                               | CR   | VU   |
| Xanthidae       | <i>Hypocolpus</i>     | <i>rugosus</i>      | (Henderson, 1893)       | Reef crab                                       | CR   | EN   |
| Pilumnidae      | <i>Mertonia</i>       | <i>lanka</i>        | Laurie, 1906            |                                                 | VU   | EN   |
| Galenidae       | <i>Parapanope</i>     | <i>euagora</i>      | De Man, 1895            |                                                 | EN   | EN   |
| Pilumnidae      | <i>Pilumnus</i>       | <i>murphyi</i>      | Ng, 1988                |                                                 | VU   | EN   |

| Family         | Genus                   | Species              | Authority                | Common Name                                      | RDB2       | RDB3 |
|----------------|-------------------------|----------------------|--------------------------|--------------------------------------------------|------------|------|
| Pilumnidae     | <i>Pilumnus</i>         | <i>ohshimai</i>      | Takeda & Miyake, 1970    |                                                  | EN         | EN   |
| Pilumnidae     | <i>Vellumnus</i>        | <i>labyrinthicus</i> | (Miers, 1884)            |                                                  | VU         | EN   |
| Pilumnidae     | <i>Rhabdonotus</i>      | <i>pictus</i>        | A. Milne-Edwards, 1879   |                                                  | EN         | EN   |
| Pilumnidae     | <i>Rhizopoides</i>      | <i>yangae</i>        | (Ng, 1985)               |                                                  | CR         | CR   |
| Pilumnidae     | <i>Zebrida</i>          | <i>adamsii</i>       | White, 1847              | Zebra crab; Zebra urchin crab                    | EN         | EN   |
| Trapeziidae    | <i>Trapezia</i>         | <i>cymodoce</i>      | (Herbst, 1801)           | Lilac coral crab; Red coral crab                 | VU         | VU   |
| Tetraliidae    | <i>Tetralia</i>         | <i>nigrolineata</i>  | Serène & Pham, 1957      | Bandit coral crab                                | CR         | EN   |
| Xanthidae      | <i>Atergatis</i>        | <i>floridus</i>      | (Linnaeus, 1767)         | Green egg crab; Floral egg crab                  | VU         | VU   |
| Xanthidae      | <i>Atergatis</i>        | <i>integerrimus</i>  | (Lamarck, 1818)          | Red egg crab                                     | VU         | NT   |
| Xanthidae      | <i>Banareia</i>         | <i>subglobosa</i>    | (Stimpson, 1858)         |                                                  | EN         | EN   |
| Xanthidae      | <i>Cymo</i>             | <i>andreossyi</i>    | (Audouin, 1826)          | Hairy coral crab                                 | VU         | VU   |
| Xanthidae      | <i>Lophozozymus</i>     | <i>pictor</i>        | (Fabricius, 1798)        | Mosaic reef crab                                 | EN         | NT   |
| Xanthidae      | <i>Neoxanthops</i>      | <i>lineatus</i>      | (A. Milne-Edwards, 1867) | Lined reef crab                                  | EN         | EN   |
| Xanthidae      | <i>Novactaea</i>        | <i>bella</i>         | Guinot, 1976             |                                                  | EN         | EN   |
| Xanthidae      | <i>Palapedia</i>        | <i>valentini</i>     | Ng, 1993                 |                                                  | VU         | EN   |
| Xanthidae      | <i>Platypodia</i>       | <i>granulosa</i>     | (Rüppell, 1830)          | Curry puff crab                                  | EN         | VU   |
| Xanthidae      | <i>Trichia</i>          | <i>horii</i>         | Miyake, 1940             | Paddington bear crab                             | CR         | CR   |
| Dotillidae     | <i>Dotilla</i>          | <i>myctiroides</i>   | (H. Milne Edwards, 1852) | Soldier crab                                     | VU         | LC   |
| Dotillidae     | <i>Ilyoplax</i>         | <i>delsmani</i>      | De Man, 1926             | White semaphore crab                             | VU         | VU   |
| Ocypodidae     | <i>Ocypode</i>          | <i>cordimanus</i>    | Latreille, 1818          | Smooth-handed ghost crab; Smooth-eyed ghost crab | VU         | EN   |
| Ocypodidae     | <i>Tubuca</i>           | <i>rosea</i>         | (Tweedie, 1937)          | Rosy fiddler crab                                | EN         | VU   |
| Gecarcinidae   | <i>Tuerkayana</i>       | <i>hirtipes</i>      | (Dana, 1852)             | Blue land crab                                   | Not Listed | EN   |
| Sesarmidae     | <i>Sarmatium</i>        | <i>germaini</i>      | (A. Milne-Edwards, 1869) | Mound crab                                       | EN         | NT   |
| Sesarmidae     | <i>Sesarmoides</i>      | <i>borneensis</i>    | (Tweedie, 1950)          |                                                  | EN         | EN   |
| Sesarmidae     | <i>Haberma</i>          | <i>nanum</i>         | Ng & Schubart, 2002      | Grasping land sesarmid                           | VU         | NT   |
| Camptandriidae | <i>Baruna</i>           | <i>trigranulum</i>   | (Dai & Song, 1986)       | Crevice crab                                     | Not Listed | LC   |
| Camptandriidae | <i>Ilyogynnis</i>       | <i>microcheirum</i>  | (Tweedie, 1937)          | Common silt crab                                 | Not Listed | LC   |
| Camptandriidae | <i>Moguai</i>           | <i>elongatum</i>     | (Rathbun, 1931)          |                                                  | Not Listed | NE   |
| Camptandriidae | <i>Paracleistostoma</i> | <i>depressum</i>     | De Man, 1895             | Red silt crab                                    | Not Listed | LC   |
| Camptandriidae | <i>Paracleistostoma</i> | <i>longimanum</i>    | Tweedie, 1937            |                                                  | Not Listed | NE   |
| Camptandriidae | <i>Paracleistostoma</i> | <i>wardi</i>         | (Rathbun, 1926)          |                                                  | Not Listed | NE   |
| Dorippidae     | <i>Neodorippe</i>       | <i>callida</i>       | (Fabricius, 1798)        | Leaf porter crab                                 | Not Listed | NE   |
| Dotillidae     | <i>Dotilla</i>          | <i>wichmani</i>      | De Man, 1892             | Wichman's soldier crab                           | Not Listed | NE   |
| Dotillidae     | <i>Ilyoplax</i>         | <i>lingulata</i>     | (Rathbun, 1909)          |                                                  | Not Listed | NE   |

| Family           | Genus                            | Species                | Authority                | Common Name                       | RDB2       | RDB3 |
|------------------|----------------------------------|------------------------|--------------------------|-----------------------------------|------------|------|
| Dotillidae       | <i>Ilyoplax</i>                  | <i>longicarpa</i>      | Tweedie, 1918            |                                   | Not Listed | NE   |
| Dotillidae       | <i>Ilyoplax</i>                  | <i>obliqua</i>         | Tweedie, 1935            | Tweedies' semaphore crab          | Not Listed | NE   |
| Dotillidae       | <i>Ilyoplax</i>                  | <i>punctata</i>        | Tweedie, 1935            |                                   | Not Listed | NE   |
| Dotillidae       | <i>Scopimera</i>                 | <i>intermedia</i>      | Balss, 1934              |                                   | Not Listed | LC   |
| Dotillidae       | <i>Shenius</i>                   | <i>anomalus</i>        | (Shen, 1935)             | Shen crab                         | Not Listed | NE   |
| Epialtidae       | <i>Doclea</i>                    | <i>armata</i>          | De Haan, 1839            |                                   | Not Listed | NE   |
| Epialtidae       | <i>Doclea</i>                    | <i>ovis</i>            | (Fabricius, 1787)        |                                   | Not Listed | NE   |
| Epialtidae       | <i>Doclea</i>                    | <i>rissoni</i>         | Leach, 1815              |                                   | Not Listed | NE   |
| Epialtidae       | <i>Hyastenus</i>                 | <i>whitei</i>          | Griffin, 1976            |                                   | Not Listed | NE   |
| Epialtidae       | <i>Phalangipus</i>               | <i>indicus</i>         | (Leach, 1815)            |                                   | Not Listed | NE   |
| Epialtidae       | <i>Phalangipus</i>               | <i>longipes</i>        | (Linnaeus, 1758)         |                                   | Not Listed | NE   |
| Epialtidae       | <i>Phalangipus</i>               | <i>malakkensis</i>     | Griffin, 1973            |                                   | Not Listed | NE   |
| Epialtidae       | <i>Tylocarcinus</i>              | <i>styx</i>            | (Herbst, 1803)           | Underworld spider crab            | Not Listed | NE   |
| Epialtidae       | <i>Xenocarcinus</i>              | <i>tuberculatus</i>    | White, 1847              | Wire coral crab                   | Not Listed | NE   |
| Grapsidae        | <i>Metopograpsus</i>             | <i>frontalis</i>       | Miers, 1880              | Purple climber crab               | Not Listed | NE   |
| Grapsidae        | <i>Metopograpsus</i>             | <i>latifrons</i>       | (White, 1847)            | Purple climber crab               | Not Listed | NE   |
| Inachidae        | <i>Achaeus</i>                   | <i>brevirostris</i>    | (Haswell, 1879)          |                                   | Not Listed | NE   |
| Inachidae        | <i>Achaeus</i>                   | <i>lacertosus</i>      | Stimpson, 1858           |                                   | Not Listed | NE   |
| Inachidae        | <i>Achaeus</i>                   | <i>lorina</i>          | (Adams & White, 1848)    |                                   | Not Listed | NE   |
| Inachidae        | <i>Litosus</i>                   | <i>sexspinosus</i>     | (Miers, 1884)            |                                   | Not Listed | NE   |
| Inachidae        | <i>Oncinopus</i>                 | <i>araneus</i>         | (De Haan, 1839)          |                                   | Not Listed | NE   |
| Inachidae        | <i>Oncinopus</i>                 | <i>neptunus</i>        | Adams & White, 1848      |                                   | Not Listed | NE   |
| Leucosiidae      | <i>Paranursia</i>                | <i>abbreviata</i>      | (Bell, 1855)             |                                   | Not Listed | NT   |
| Leucosiidae      | <i>Philyra</i>                   | <i>malefactorix</i>    | (Kemp, 1915)             | Mangrove pebble crab; Millet crab | Not Listed | NE   |
| Macrophthalmidae | <i>Macrophthalmus (Mareotis)</i> | <i>crinitus</i>        | Rathbun, 1913            |                                   | Not Listed | NE   |
| Majidae          | <i>Holthuija</i>                 | <i>miersii</i>         | (Walker, 1887)           |                                   | Not Listed | NE   |
| Majidae          | <i>Micippa</i>                   | <i>curtispina</i>      | Haswell, 1880            |                                   | Not Listed | NE   |
| Majidae          | <i>Micippa</i>                   | <i>excavata</i>        | Lanchester, 1900         |                                   | Not Listed | NE   |
| Majidae          | <i>Micippa</i>                   | <i>philyra</i>         | (Herbst, 1803)           |                                   | Not Listed | NE   |
| Majidae          | <i>Prismatopus</i>               | <i>aculeatus</i>       | (H. Milne Edwards, 1834) |                                   | Not Listed | NE   |
| Majidae          | <i>Prismatopus</i>               | <i>halimoides</i>      | (Miers, 1879)            |                                   | Not Listed | NE   |
| Majidae          | <i>Schizophrys</i>               | <i>aspera</i>          | (H. Milne Edwards, 1831) | Sea toad spider crab              | Not Listed | NE   |
| Majidae          | <i>Schizophrys</i>               | <i>dama</i>            | (Herbst, 1804)           | Sea toad spider crab              | Not Listed | NE   |
| Menippidae       | <i>Myomenippe</i>                | <i>hardwickii</i>      | (Gray, 1831)             | Stone crab; Thunder crab          | Not Listed | LC   |
| Ocypodidae       | <i>Ocypode</i>                   | <i>ceratophthalmus</i> | (Pallas, 1772)           | Horn-eyed ghost crab              | Not Listed | LC   |
| Ocypodidae       | <i>Gelasimus</i>                 | <i>vocans</i>          | (Linnaeus, 1758)         | Orange fiddler crab               | Not Listed | NE   |

| Family     | Genus                 | Species               | Authority                | Common Name                                                               | RDB2       | RDB3 |
|------------|-----------------------|-----------------------|--------------------------|---------------------------------------------------------------------------|------------|------|
| Ocypodidae | <i>Paraleptuca</i>    | <i>annulipes</i>      | (H. Milne Edwards, 1837) | Porcelain fiddler crab                                                    | Not Listed | NE   |
| Ocypodidae | <i>Paraleptuca</i>    | <i>perplexa</i>       | (H. Milne Edwards, 1837) | Lemon clawed fiddler crab                                                 | Not Listed | NE   |
| Ocypodidae | <i>Tubuca</i>         | <i>dussumieri</i>     | (H. Milne Edwards, 1852) | Purple fiddler crab                                                       | Not Listed | NE   |
| Ocypodidae | <i>Tubuca</i>         | <i>forcipata</i>      | (Adams & White, 1849)    |                                                                           | Not Listed | NE   |
| Ocypodidae | <i>Tubuca</i>         | <i>paradussumieri</i> | Bott, 1973               | Purple fiddler crab                                                       | Not Listed | NE   |
| Ocypodidae | <i>Tubuca</i>         | <i>rhizophoriae</i>   | Tweedie, 1950            |                                                                           | Not Listed | NE   |
| Oziidae    | <i>Epixanthus</i>     | <i>dentatus</i>       | (White, 1848)            | Forceps crab; Mangrove forceps crab; Long fingered peeler crab            | Not Listed | NE   |
| Oziidae    | <i>Ozius</i>          | <i>guttatus</i>       | H. Milne Edwards, 1834   | Spotted-belly forceps crab                                                | Not Listed | NE   |
| Pilumnidae | <i>Aniptumnus</i>     | <i>quadridentatus</i> | (De Man, 1895)           |                                                                           | Not Listed | NE   |
| Pilumnidae | <i>Heteropanope</i>   | <i>glabra</i>         | Stimpson, 1858           | Pebble crab                                                               | Not Listed | NE   |
| Pilumnidae | <i>Heteropilumnus</i> | <i>sasekumari</i>     | Serène, 1971             |                                                                           | Not Listed | NE   |
| Portunidae | <i>Portunus</i>       | <i>pelagicus</i>      | (Linnaeus, 1758)         | Flower crab                                                               | Not Listed | NE   |
| Portunidae | <i>Scylla</i>         | <i>olivacea</i>       | (Herbst, 1796)           | Orange mud crab                                                           | Not Listed | NE   |
| Portunidae | <i>Scylla</i>         | <i>paramamosain</i>   | Estampador, 1949         | Green mud crab                                                            | Not Listed | NE   |
| Portunidae | <i>Scylla</i>         | <i>serrata</i>        | (Forskål, 1775)          | Giant mud crab; Indo-Pacific swamp crab; Sri Lanka crab; Giant green crab | Not Listed | NE   |
| Portunidae | <i>Scylla</i>         | <i>tranquebarica</i>  | (Fabricius, 1798)        | Purple mud crab                                                           | Not Listed | NE   |
| Sesarmidae | <i>Clistocoeloma</i>  | <i>merguiense</i>     | De Man, 1888             |                                                                           | Not Listed | NE   |
| Sesarmidae | <i>Episesarma</i>     | <i>chentongense</i>   | (Serène & Soh, 1967)     | Pink-fingered tree-climbing crab; Pink-fingered vinegar crab              | Not Listed | NE   |
| Sesarmidae | <i>Episesarma</i>     | <i>mederi</i>         | (H. Milne Edwards, 1853) | Thai vinegar crab; Red claw crab                                          | Not Listed | NE   |
| Sesarmidae | <i>Episesarma</i>     | <i>palawanense</i>    | (Rathbun, 1914)          | Rathbun's vinegar crab                                                    | Not Listed | NE   |
| Sesarmidae | <i>Episesarma</i>     | <i>singaporense</i>   | (Tweedie, 1936)          | Singapore tree-climbing crab; Singapore vinegar crab                      | Not Listed | NE   |
| Sesarmidae | <i>Episesarma</i>     | <i>versicolor</i>     | (Tweedie, 1940)          | Violet tree-climbing crab; Violet vinegar crab; Purple white claw         | Not Listed | NE   |
| Sesarmidae | <i>Fasciama</i>       | <i>fasciatum</i>      | (Lanchester, 1900)       |                                                                           | Not Listed | NE   |
| Sesarmidae | <i>Lithoselatum</i>   | <i>kusu</i>           | Schubart, Liu & Ng, 2009 | Kusu rock crab                                                            | Not Listed | NE   |
| Sesarmidae | <i>Nanosesarma</i>    | <i>batavicum</i>      | (Moreira, 1903)          |                                                                           | Not Listed | NE   |
| Sesarmidae | <i>Nanosesarma</i>    | <i>minutum</i>        | (De Man, 1887)           |                                                                           | Not Listed | NE   |

| Family          | Genus                 | Species                | Authority                | Common Name                        | RDB2       | RDB3 |
|-----------------|-----------------------|------------------------|--------------------------|------------------------------------|------------|------|
| Sesarmidae      | <i>Nanosesarma</i>    | <i>pontianacense</i>   | (De Man, 1895)           |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Neosarmatium</i>   | <i>smithi</i>          | (H. Milne Edwards, 1853) |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Neosarmatium</i>   | <i>indicum</i>         | (A. Milne-Edwards, 1898) |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Neosesarma</i>     | <i>gemmiferum</i>      | (Tweedie, 1936)          |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Neosesarma</i>     | <i>rectipectinatum</i> | (Tweedie, 1950)          |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Parasesarma</i>    | <i>eumolpe</i>         | (De Man, 1895)           | Face-banded sesarmine crab         | Not Listed | NE   |
| Sesarmidae      | <i>Parasesarma</i>    | <i>indiarum</i>        | (Tweedie, 1940)          | Face-banded sesarmine crab         | Not Listed | NE   |
| Sesarmidae      | <i>Sarmatium</i>      | <i>striaticarpus</i>   | Davie, 1992              |                                    | Not Listed | NE   |
| Sesarmidae      | <i>Selatium</i>       | <i>brockii</i>         | (De Man, 1887)           | Mangrove tree-dwelling crab        | Not Listed | NE   |
| Sesarmidae      | <i>Tiomanium</i>      | <i>indicum</i>         | (H. Milne Edwards, 1837) |                                    | Not Listed | NE   |
| Varunidae       | <i>Metaplex</i>       | <i>elegans</i>         | De Man, 1888             | Orange signaller crab              | Not Listed | NE   |
| Varunidae       | <i>Utica</i>          | <i>borneensis</i>      | De Man, 1895             |                                    | Not Listed | NE   |
| Varunidae       | <i>Varuna</i>         | <i>yui</i>             | Hwang & Takeda, 1986     | Sundaic paddler crab; Paddler crab | Not Listed | NE   |
| Hymenosomatidae | <i>Neorhynchoplax</i> | <i>venusta</i>         | Ng, 2015                 |                                    | Not Listed | EN   |



# Checklist of Marine Insect Species with their Category of Threat Status for Singapore

Prepared by Marc Chang Jia Jin, Lanna Cheng, Tran Anh Duc, Hwang Wei Song

| Family         | Genus                    | Species              | Authority                     | Common Name          | RDB2       | RDB3 |
|----------------|--------------------------|----------------------|-------------------------------|----------------------|------------|------|
| Chironomidae   | <i>Pontomyia</i>         | <i>pacifica</i>      | Tokunaga, 1932                | Marine midge         | Not Listed | NT   |
| Gerridae       | <i>Asclepios</i>         | <i>annandalei</i>    | Distant, 1915                 | Sea skater           | Not Listed | LC   |
| Gerridae       | <i>Halobates</i>         | <i>esakii</i>        | Miyamoto, 1967                | Sea skater           | Not Listed | DD   |
| Gerridae       | <i>Halobates</i>         | <i>germanus</i>      | White, 1883                   | Sea skater           | Not Listed | LC   |
| Gerridae       | <i>Halobates</i>         | <i>hayanus</i>       | White, 1883                   | Sea skater           | Not Listed | LC   |
| Gerridae       | <i>Halobates</i>         | <i>princeps</i>      | White, 1883                   | Sea skater           | Not Listed | DD   |
| Gerridae       | <i>Halobates</i>         | <i>proavus</i>       | White, 1883                   | Sea skater           | Not Listed | DD   |
| Gerridae       | <i>Halobates</i>         | <i>trynae</i>        | Herring, 1964                 | Sea skater           | Not Listed | DD   |
| Gerridae       | <i>Rheumatometroides</i> | <i>insularis</i>     | (J. Polhemus and Cheng, 1982) | Sea skater           | Not Listed | LC   |
| Gerridae       | <i>Stenobates</i>        | <i>biroi</i>         | Esaki, 1926                   | Sea skater           | Not Listed | LC   |
| Hermatobatidae | <i>Hermatobates</i>      | <i>singaporensis</i> | Cheng, 1976                   | Coral treader        | Not Listed | EN   |
| Veliidae       | <i>Halovelgia</i>        | <i>lannae</i>        | Andersen, 1989                | Coral bug            | Not Listed | LC   |
| Veliidae       | <i>Haloveloides</i>      | <i>sundaensis</i>    | Andersen, 1991                | Coral bug            | Not Listed | LC   |
| Veliidae       | <i>Xenobates</i>         | <i>mandai</i>        | Andersen, 2000                | Mangrove bug         | Not Listed | LC   |
| Veliidae       | <i>Xenobates</i>         | <i>murphyi</i>       | Andersen, 2000                | Mangrove bug         | Not Listed | LC   |
| Veliidae       | <i>Xenobates</i>         | <i>singaporensis</i> | Andersen, 2000                | Mangrove bug         | Not Listed | LC   |
| Omaniidae      | <i>Corallocoris</i>      | <i>marksae</i>       | (Woodward, 1958)              | Intertidal dwarf bug | Not Listed | NT   |
| Saldidae       | <i>Pentacora</i>         | <i>malayensis</i>    | (Dover, 1929)                 | Shore bug            | Not Listed | EN   |
| Saldidae       | <i>Salduncula</i>        | <i>murphyi</i>       | J. Polhemus, 1991             | Shore bug            | Not Listed | VU   |
| Saldidae       | <i>Saldoida</i>          | <i>armata</i>        | Horvath, 1911                 | Shore bug            | Not Listed | VU   |

**Checklist of Echinodermata Species with their Category of Threat Status for Singapore**

Prepared by Iffah Iesa, David J.W. Lane, Helen P.-S. Wong, Teresa Stephanie Tay

| Family        | Genus                                           | Species               | Authority              | Common Name                    | RDB2       | RDB3 |
|---------------|-------------------------------------------------|-----------------------|------------------------|--------------------------------|------------|------|
| Caudinidae    | <i>Acaudina</i>                                 | <i>leucoprocta</i>    | (H. L. Clark, 1938)    |                                | Not Listed | VU   |
| Caudinidae    | <i>Acaudina</i>                                 | <i>molpadioides</i>   | (Semper, 1867)         |                                | Not Listed | VU   |
| Caudinidae    | <i>Acaudina</i>                                 | <i>rosettis</i>       | O'Loughlin & Ong, 2015 |                                | Not Listed | VU   |
| Caudinidae    | <i>Acaudina</i>                                 | sp. A                 |                        |                                | Not Listed | NE   |
| Caudinidae    | <i>Acaudina</i>                                 | sp. B                 |                        |                                | Not Listed | NE   |
| Caudinidae    | <i>Paracaudina</i>                              | <i>australis</i>      | (Semper, 1868)         | See-through sea cucumber       | Not Listed | VU   |
| Caudinidae    | <i>Paracaudina</i>                              | <i>chilensis</i>      | (Muller, 1850)         |                                | Not Listed | VU   |
| Cucumariidae  | <i>Actinocucumis</i>                            | cf. <i>typica</i>     | Ludwig, 1875           |                                | Not Listed | VU   |
| Cucumariidae  | <i>Actinocucumis</i>                            | sp.                   |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Cerodemus</i>                                | <i>anceps</i>         | Selenka, 1867          | Pink warty sea cucumber        | Not Listed | VU   |
| Cucumariidae  | <i>Colochirus</i>                               | <i>quadrangularis</i> | Troschel, 1846         | Thorny sea cucumber            | Not Listed | NT   |
| Cucumariidae  | <i>Colochirus</i>                               | sp.                   |                        |                                | Not Listed | VU   |
| Cucumariidae  | <i>Cucumarid</i>                                | sp. A                 |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Cucumarid</i>                                | sp. B                 |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Cucumarid</i>                                | sp. C                 |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Leptopentacta</i>                            | <i>imbricata</i>      | (Semper, 1867)         |                                | Not Listed | VU   |
| Cucumariidae  | <i>Mensamaria</i>                               | <i>intercedens</i>    | (Lampert, 1885)        | Orange sea cucumber            | Not Listed | VU   |
| Cucumariidae  | <i>Pentacta</i>                                 | sp.                   |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Plesiocolochirus</i>                         | cf. <i>australis</i>  | (Ludwig, 1875)         |                                | Not Listed | VU   |
| Cucumariidae  | <i>Plesiocolochirus</i>                         | sp.                   |                        |                                | Not Listed | NE   |
| Cucumariidae  | <i>Pseudocolochirus</i>                         | <i>violaceus</i>      | (Théel, 1886)          | Sea-apple sea cucumber         | VU         | VU   |
| Holothuriidae | <i>Actinopyga</i>                               | <i>lecanora</i>       | (Jaeger, 1833)         | Stonefish sea cucumber         | Not Listed | VU   |
| Holothuriidae | <i>Actinopyga</i>                               | sp.                   |                        |                                | Not Listed | NE   |
| Holothuriidae | <i>Bohadschia</i>                               | <i>ocellata</i>       | Jaeger, 1833           | Polka-dotted sea cucumber      | Not Listed | VU   |
| Holothuriidae | <i>Bohadschia</i>                               | <i>vitiensis</i>      | (Semper, 1868)         | Brown sandfish sea cucumber    | Not Listed | EN   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Halodeima</i> )       | <i>edulis</i>         | Lesson, 1830           | Pinkfish sea cucumber          | Not Listed | VU   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Lessonothuria</i> )   | <i>pardalis</i>       | Selenka, 1867          | Bantunan<br>[Bahasa Indonesia] | Not Listed | VU   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Lessonothuria</i> )   | sp.                   |                        |                                | Not Listed | NE   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Mertensiothuria</i> ) | <i>leucospilota</i>   | (Brandt, 1835)         | White threadfish sea cucumber  | VU         | EN   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Mertensiothuria</i> ) | sp.                   |                        |                                | Not Listed | NE   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Metriatyla</i> )      | <i>albiventer</i>     | Semper, 1867           | Beige sea cucumber             | Not Listed | VU   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Metriatyla</i> )      | <i>martensi</i>       | Semper, 1868           |                                | Not Listed | VU   |
| Holothuriidae | <i>Holothuria</i><br>( <i>Metriatyla</i> )      | <i>scabra</i>         | Jaeger, 1833           | Sandfish sea cucumber          | VU         | EN   |

| Family           | Genus                                        | Species                         | Authority                              | Common Name                    | RDB2       | RDB3 |
|------------------|----------------------------------------------|---------------------------------|----------------------------------------|--------------------------------|------------|------|
| Holothuriidae    | <i>Holothuria</i><br>( <i>Metriatyla</i> )   | sp.                             |                                        |                                | Not Listed | NE   |
| Holothuriidae    | <i>Holothuria</i><br>( <i>Platyperona</i> )  | <i>crosnieri</i>                | Cherbonnier, 1988                      |                                | Not Listed | VU   |
| Holothuriidae    | <i>Holothuria</i><br>( <i>Platyperona</i> )  | <i>difficilis</i>               | Semper, 1868                           | Difficult sea<br>cucumber      | Not Listed | VU   |
| Holothuriidae    | <i>Holothuria</i><br>( <i>Stauropora</i> )   | <i>fuscocinerea</i>             | Jaeger, 1833                           | Ashy pink sea<br>cucumber      | Not Listed | VU   |
| Holothuriidae    | <i>Holothuria</i><br>( <i>Theelothuria</i> ) | <i>notabilis</i>                | Ludwig, 1875                           | Remarkable sea<br>cucumber     | Not Listed | EN   |
| Holothuriidae    | <i>Holothuria</i><br>( <i>Thymiosyscia</i> ) | <i>impatiens</i>                | (Forsskål, 1775)                       | Bottleneck sea<br>cucumber     | Not Listed | VU   |
| Pelagothuriidae  | <i>Pelagothuria</i>                          | sp.                             |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Hemithyone</i>                            | <i>semperi</i>                  | (Bell, 1884)                           |                                | Not Listed | VU   |
| Phyllophoridae   | <i>Hemithyone</i>                            | sp.                             |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Phyllophorella</i>                        | <i>kohkutiensis</i>             | (Heding & Panning,<br>1954)            |                                | Not Listed | VU   |
| Phyllophoridae   | <i>Phyllophorella</i>                        | <i>spiculata</i>                | (Chang, 1935)                          | Ball sea<br>cucumber           | Not Listed | VU   |
| Phyllophoridae   | <i>Stolus</i>                                | <i>buccalis</i>                 | (Stimpson, 1856)                       |                                | Not Listed | VU   |
| Phyllophoridae   | <i>Stolus</i>                                | sp.                             |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Thorsonia</i>                             | <i>adversaria</i>               | (Semper, 1867)                         |                                | Not Listed | VU   |
| Phyllophoridae   | <i>Thorsonia</i>                             | sp.                             |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Thyone</i>                                | sp. A                           |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Thyone</i>                                | sp. B                           |                                        |                                | Not Listed | NE   |
| Phyllophoridae   | <i>Thyone</i>                                | sp. C                           |                                        |                                | Not Listed | NE   |
| Psolidae         | <i>Psolidium</i>                             | <i>helenae</i>                  | Ong & O'Loughlin,<br>2019              |                                | Not Listed | VU   |
| Psolidae         | <i>Psolidium</i>                             | <i>wongae</i>                   | Ong & O'Loughlin,<br>2019              |                                | Not Listed | VU   |
| Sclerodactylidae | <i>Afrocucumis</i>                           | <i>africana</i>                 | (Semper, 1867)                         | Little African sea<br>cucumber | Not Listed | VU   |
| Sclerodactylidae | <i>Cladolabes</i>                            | <i>hamatus</i>                  | (Sluiter, 1914)                        | Plasticky sea<br>cucumber      | Not Listed | VU   |
| Sclerodactylidae | <i>Globosita</i>                             | sp.                             |                                        | Ball sea<br>cucumber           | Not Listed | NE   |
| Sclerodactylidae | <i>Havelockia</i>                            | sp.                             |                                        |                                | Not Listed | NE   |
| Stichopodidae    | <i>Stichopus</i>                             | aff.<br><i>monotuberculatus</i> | (Quoy & Gaimard,<br>1833)              |                                | Not Listed | NE   |
| Stichopodidae    | <i>Stichopus</i>                             | <i>chloronotus</i>              | Brandt, 1835                           | Greenfish sea<br>cucumber      | Not Listed | VU   |
| Stichopodidae    | <i>Stichopus</i>                             | <i>herrmanni</i>                | Semper, 1868                           | Curryfish sea<br>cucumber      | Not Listed | EN   |
| Stichopodidae    | <i>Stichopus</i>                             | <i>horrens</i>                  | Selenka, 1867                          | Durian sea<br>cucumber         | Not Listed | VU   |
| Stichopodidae    | <i>Stichopus</i>                             | <i>ocellatus</i>                | Massin, Zulfigar,<br>Hwai & Boss, 2002 | Ocellated sea<br>cucumber      | VU         | EN   |
| Stichopodidae    | <i>Stichopus</i>                             | <i>vastus</i>                   | Sluiter, 1887                          | Zebrafish sea<br>cucumber      | Not Listed | EN   |
| Synaptidae       | <i>Anapta</i>                                | <i>gracilis</i>                 | Semper, 1867                           |                                | Not Listed | VU   |
| Synaptidae       | <i>Opheodesoma</i>                           | <i>grisea</i>                   | (Semper, 1867)                         |                                | Not Listed | VU   |
| Synaptidae       | <i>Polyplectana</i>                          | <i>kefersteinii</i>             | (Selenka, 1867)                        |                                | Not Listed | VU   |
| Synaptidae       | <i>Protankyra</i>                            | <i>bidentata</i>                | (Woodward &<br>Barett, 1858)           |                                | Not Listed | VU   |
| Synaptidae       | <i>Protankyra</i>                            | <i>pseudodigitata</i>           | (Semper, 1867)                         |                                | Not Listed | VU   |

| Family         | Genus                                  | Species                | Authority               | Common Name      | RDB2       | RDB3 |
|----------------|----------------------------------------|------------------------|-------------------------|------------------|------------|------|
| Synaptidae     | <i>Protankyra</i>                      | <i>scaphia</i>         | O'Loughling & Ong, 2015 |                  | Not Listed | VU   |
| Synaptidae     | <i>Protankyra</i>                      | sp.                    |                         |                  | Not Listed | NE   |
| Synaptidae     | <i>Synaptula</i>                       | cf. <i>recta</i>       | (Semper, 1952)          |                  | Not Listed | VU   |
| Synaptidae     | <i>Synaptula</i>                       | <i>minima</i>          | Heding, 1928            |                  | Not Listed | VU   |
| Synaptidae     | <i>Synaptula</i>                       | <i>recta</i>           | (Semper, 1867)          |                  | Not Listed | VU   |
| Synaptidae     | <i>Synaptula</i>                       | <i>reticulata</i>      | (Semper, 1867)          |                  | Not Listed | VU   |
| Synaptidae     | <i>Synaptula</i>                       | sp. A                  |                         |                  | Not Listed | NE   |
| Synaptidae     | <i>Synaptula</i>                       | sp. B                  |                         |                  | Not Listed | NE   |
| Synaptidae     | <i>Synaptula</i>                       | sp. C                  |                         |                  | Not Listed | NE   |
| Himerometridae | <i>Amphimetra</i>                      | cf. <i>discoidea</i>   |                         |                  | Not Listed | DD   |
| Himerometridae | <i>Amphimetra</i>                      | <i>ensifer</i>         | AH Clark, 1908          |                  | Not Listed | NT   |
| Himerometridae | <i>Amphimetra</i>                      | <i>molleri</i>         | AH Clark, 1908          |                  | Not Listed | DD   |
| Comatulidae    | <i>Anneissia</i>                       | <i>bennetti</i>        | Müller, 1841            |                  | Not Listed | DD   |
| Comatulidae    | <i>Capillaster</i>                     | cf. <i>tenuicirrus</i> |                         |                  | Not Listed | DD   |
| Comatulidae    | <i>Capillaster</i>                     | <i>multiradiatus</i>   | Linnaeus, 1758          |                  | Not Listed | NT   |
| Comatulidae    | <i>Capillaster</i>                     | <i>sentosus</i>        | Carpenter, 1888         |                  | Not Listed | DD   |
| Colobometridae | <i>Cenometra</i>                       | <i>bella</i>           | Hartlaub, 1890          |                  | Not Listed | DD   |
| Colobometridae | <i>Colobometra</i>                     | <i>perspinosa</i>      | Carpenter, 1881         |                  | Not Listed | VU   |
| Comatulidae    | <i>Comanthus</i>                       | <i>parvicirrus</i>     | Müller, 1841            |                  | Not Listed | DD   |
| Comatulidae    | <i>Comaster</i>                        | <i>multifidus</i>      | Müller, 1841            |                  | Not Listed | DD   |
| Comatulidae    | <i>Comaster</i>                        | <i>schlegelii</i>      | Carpenter, 1881         |                  | Not Listed | DD   |
| Comatulidae    | <i>Comatula</i><br>( <i>Comatula</i> ) | <i>purpurea</i>        | Müller, 1843            |                  | Not Listed | DD   |
| Comatulidae    | <i>Comatula</i>                        | cf. <i>pectinata</i>   |                         |                  | Not Listed | LC   |
| Comatulidae    | <i>Comatula</i>                        | cf. <i>solaris</i>     |                         |                  | Not Listed | LC   |
| Comatulidae    | <i>Comatula</i>                        | sp.                    |                         |                  | Not Listed | LC   |
| Himerometridae | <i>Craspedometra</i>                   | <i>acuticirra</i>      | Carpenter, 1882         |                  | Not Listed | DD   |
| Colobometridae | <i>Decametra</i>                       | <i>informis</i>        | Carpenter, 1888         |                  | Not Listed | DD   |
| Colobometridae | <i>Decametra</i>                       | <i>mylitta</i>         | AH Clark, 1912          |                  | Not Listed | DD   |
| Colobometridae | <i>Decametra</i>                       | sp.                    |                         |                  | Not Listed | DD   |
| Mariametridae  | <i>Dichrometra</i>                     | <i>flagellata</i>      | Müller, 1841            |                  | Not Listed | DD   |
| Antedonidae    | <i>Dorometra</i>                       | cf. <i>nana</i>        |                         |                  | Not Listed | DD   |
| Antedonidae    | <i>Dorometra</i>                       | <i>parvicirra</i>      | Carpenter, 1888         |                  | Not Listed | VU   |
| Himerometridae | <i>Heterometra</i>                     | <i>affinis</i>         | Hartlaub, 1890          |                  | Not Listed | DD   |
| Himerometridae | <i>Heterometra</i>                     | <i>amboinae</i>        | AH Clark, 1912          |                  | Not Listed | DD   |
| Himerometridae | <i>Heterometra</i>                     | <i>bengalensis</i>     | Hartlaub, 1890          |                  | Not Listed | DD   |
| Himerometridae | <i>Heterometra</i>                     | <i>producta</i>        | AH Clark, 1908          |                  | Not Listed | DD   |
| Himerometridae | <i>Heterometra</i>                     | <i>quinduplicava</i>   | Carpenter, 1888         |                  | Not Listed | DD   |
| Himerometridae | <i>Heterometra</i>                     | <i>schlegelii</i>      | AH Clark, 1908          |                  | Not Listed | LC   |
| Himerometridae | <i>Heterometra</i>                     | <i>singularis</i>      | AH Clark, 1909          |                  | Not Listed | DD   |
| Himerometridae | <i>Himerometra</i>                     | <i>bartschi</i>        | AH Clark, 1908          |                  | Not Listed | DD   |
| Himerometridae | <i>Himerometra</i>                     | <i>martensi</i>        | Hartlaub, 1890          |                  | Not Listed | DD   |
| Himerometridae | <i>Himerometra</i>                     | <i>robustipinna</i>    | Carpenter, 1881         | Red feather star | DD         | LC   |
| Himerometridae | <i>Homalometra</i>                     | <i>crenulata</i>       | (Carpenter, 1882)       |                  | Not Listed | DD   |
| Mariametridae  | <i>Lamprometra</i>                     | <i>palmata</i>         | Müller, 1841            |                  | Not Listed | DD   |
| Colobometridae | <i>Oligometra</i>                      | <i>serripinna</i>      | Carpenter, 1881         |                  | Not Listed | NT   |
| Comatulidae    | <i>Phanogenia</i>                      | <i>gracilis</i>        | Hartlaub, 1893          |                  | Not Listed | DD   |
| Comatulidae    | <i>Phanogenia</i>                      | <i>schoenovi</i>       | AH Clark, 1918          |                  | Not Listed | DD   |
| Comatulidae    | <i>Phanogenia</i>                      | <i>typica</i>          | Lóven, 1866             |                  | Not Listed | LC   |
| Colobometridae | <i>Pontometra</i>                      | <i>andersoni</i>       | Carpenter, 1889         |                  | Not Listed | VU   |
| Mariametridae  | <i>Stephanometra</i>                   | <i>indica</i>          | Smith, 1876             |                  | Not Listed | DD   |
| Mariametridae  | <i>Stephanometra</i>                   | <i>oxyacantha</i>      | Hartlaub, 1890          |                  | VU         | VU   |
| Mariametridae  | <i>Stephanometra</i>                   | <i>tenuipinna</i>      | Hartlaub, 1890          |                  | Not Listed | DD   |
| Zygometridae   | <i>Zygometra</i>                       | cf. <i>comata</i>      | AH Clark, 1911          |                  | Not Listed | DD   |

| Family         | Genus                                            | Species             | Authority                 | Common Name                   | RDB2       | RDB3 |
|----------------|--------------------------------------------------|---------------------|---------------------------|-------------------------------|------------|------|
| Euryalidae     | <i>Euryale</i>                                   | <i>aspersa</i>      | Lamarck, 1816             | Basket star                   | DD (EN?)   | DD   |
| Ophiactidae    | <i>Ophiactis</i>                                 | <i>savignyi</i>     | (Müller & Troschel, 1842) |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiomaza</i>                                 | <i>cacaotica</i>    | Lyman, 1871               | Feather-hitching brittle star | Not Listed | VU   |
| Ophiotrichidae | <i>Ophiothela</i>                                | <i>danae</i>        | Verrill, 1869             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothela</i>                                | <i>venusta</i>      | (de Loriol, 1900)         |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i>                                | <i>fumaria</i>      | Müller & Troschel, 1840   |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i>                                | <i>longipeda</i>    | (Lamarck, 1816)           |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphioplus</i><br>( <i>Amphioplus</i> )       | <i>lucidus</i>      | Koehler, 1922             |                               | Not Listed | VU   |
| Amphiuridae    | <i>Amphioplus</i><br>( <i>Lymanella</i> )        | <i>andreae</i>      | (Lütken, 1872)            |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphioplus</i><br>( <i>Lymanella</i> )        | <i>depressus</i>    | (Ljungman, 1867)          |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphipholis</i>                               | <i>misera</i>       | (Koehler, 1899)           |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphiura</i><br>( <i>Amphiura</i> )           | <i>duncani</i>      | Lyman, 1882               |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphiura</i><br>( <i>Amphiura</i> )           | <i>instans</i>      | Koehler, 1905             |                               | Not Listed | NE   |
| Amphiuridae    | <i>Amphiura</i><br>( <i>Ophiopeltis</i> )        | <i>phalerata</i>    | (Lyman, 1874)             |                               | Not Listed | NE   |
| Amphiuridae    | <i>Dougaloplus</i>                               | <i>echinatus</i>    | (Ljungman, 1867)          |                               | Not Listed | NE   |
| Amphiuridae    | <i>Ophiocentrus</i>                              | <i>dilatata</i>     | (Koehler, 1905)           |                               | Not Listed | NE   |
| Amphiuridae    | <i>Ophiocarpa</i>                                | <i>insignis</i>     | Brock, 1888               |                               | Not Listed | NE   |
| Ophiuridae     | <i>Ophiura</i>                                   | <i>kinbergi</i>     | (Ljungman, 1867)          |                               | Not Listed | NE   |
| Ophiuridae     | <i>Ophiura</i>                                   | <i>pteracantha</i>  | Liao, 1982                |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>demessa</i>      | (Lyman, 1862)             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>fumaria</i>      | (Müller & Troschel, 1842) |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>galathea</i>     | (Lütken, 1872)            |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>hybrida</i>      | (Clark, 1915)             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>neridina</i>     | (Lamarck, 1816)           | Violet brittle star           | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>lineocerulea</i> | (H.L. Clark, 1928)        | Blue-lined brittle star       | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>longipeda</i>    | (Lamarck, 1816)           | Very long-armed brittle star  | Not Listed | DD   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>lorioli</i>      | A.M. Clark, 1968          |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>melanosticta</i> | (Grube, 1868)             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>propinqua</i>    | (Lyman, 1862)             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Macrophiothrix</i>                            | <i>robillardi</i>   | (de Loriol, 1893)         |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiocnemis</i>                               | <i>marmorata</i>    | Lamarck, 1816             | Hitchhiker brittle star       | Not Listed | DD   |
| Ophiotrichidae | <i>Ophiothela</i>                                | <i>danae</i>        | Verrill, 1869             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i><br>( <i>Acanthophiothrix</i> ) | <i>leucotrigona</i> | H.L. Clark, 1918          |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i><br>( <i>Acanthophiothrix</i> ) | <i>spinosissima</i> | Koehler, 1905             |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i><br>( <i>Keystonia</i> )        | <i>neridina</i>     | (Lamarck, 1816)           |                               | Not Listed | NE   |
| Ophiotrichidae | <i>Ophiothrix</i><br>( <i>Ophiothrix</i> )       | <i>ciliaris</i>     | (Lamarck, 1816)           |                               | Not Listed | NE   |

| Family          | Genus                                      | Species              | Authority                      | Common Name          | RDB2       | RDB3 |
|-----------------|--------------------------------------------|----------------------|--------------------------------|----------------------|------------|------|
| Ophiotrichidae  | <i>Ophiothrix</i><br>( <i>Ophiothrix</i> ) | <i>exigua</i>        | Lyman, 1874                    |                      | Not Listed | NE   |
| Ophiotrichidae  | <i>Ophiothrix</i><br>( <i>Ophiothrix</i> ) | <i>miles</i>         | Koehler, 1905                  |                      | Not Listed | NE   |
| Ophiotrichidae  | <i>Ophiothrix</i>                          | sp.                  |                                |                      | Not Listed | NE   |
| Ophiactidae     | <i>Ophiactis</i>                           | <i>delagoa</i>       | Balinsky, 1957                 |                      | Not Listed | NE   |
| Ophiactidae     | <i>Ophiactis</i>                           | <i>macrolepidota</i> | Marktanner-Turneretscher, 1887 |                      | Not Listed | NE   |
| Ophiactidae     | <i>Ophiactis</i>                           | <i>modesta</i>       | Brock, 1888                    |                      | Not Listed | VU   |
| Ophiactidae     | <i>Ophiactis</i>                           | <i>picteti</i>       | (de Loriol, 1893)              |                      | Not Listed | NE   |
| Ophiactidae     | <i>Ophiactis</i>                           | <i>sinensis</i>      | Mortensen, 1934                |                      | Not Listed | NE   |
| Ophionereididae | <i>Ophionereis</i>                         | <i>dubia</i>         | (Müller & Troschel, 1842)      |                      | Not Listed | NE   |
| Ophiocomidae    | <i>Ophiarthrum</i>                         | <i>elegans</i>       | Peters, 1851                   |                      | Not Listed | NE   |
| Ophiocomidae    | <i>Ophiopsila</i>                          | <i>pantherina</i>    | Koehler, 1898                  |                      | Not Listed | NE   |
| Ophiocomidae    | <i>Ophiopsila</i>                          | sp.                  |                                |                      | Not Listed | NE   |
| Ophiidermatidae | <i>Ophiarachnella</i>                      | <i>gorgonia</i>      | (Müller & Troschel, 1842)      |                      | Not Listed | NE   |
| Ophiolepididae  | <i>Ophiolepis</i>                          | <i>superba</i>       | H.L. Clark, 1915               |                      | Not Listed | NE   |
| Ophiidermatidae | <i>Ophioconis</i>                          | <i>permixta</i>      | Koehler, 1905                  |                      | Not Listed | NE   |
| Ophiidermatidae | <i>Ophiodyscrita</i>                       | <i>instratus</i>     | (Murakami, 1944)               |                      | Not Listed | NE   |
| Ophiolepididae  | <i>Ophiolepis</i>                          | <i>cincta</i>        | Müller & Troschel, 1842        |                      | Not Listed | NE   |
| Ophiolepididae  | <i>Ophiolepis</i>                          | <i>nodosa</i>        | Duncan, 1887                   |                      | Not Listed | NE   |
| Luidiidae       | <i>Luidia</i>                              | <i>hardwicki</i>     | (Gray, 1840)                   | Luidia sand star     | Not Listed | NE   |
| Luidiidae       | <i>Luidia</i>                              | <i>longispina</i>    | Sladen, 1889                   |                      | Not Listed | NE   |
| Luidiidae       | <i>Luidia</i>                              | <i>maculata</i>      | Müller & Troschel, 1842        | Eight-armed sea star | EN         | EN   |
| Luidiidae       | <i>Luidia</i>                              | <i>penangensis</i>   | de Loriol, 1891                | Six-armed sand star  | VU         | EN   |
| Astropectinidae | <i>Craspidaster</i>                        | <i>hesperus</i>      | (Müller & Troschel, 1840)      | Venus star           | Not Listed | VU   |
| Astropectinidae | <i>Astropecten</i>                         | <i>indicus</i>       | Döderlein, 1888                | Comb star            | Not Listed | VU   |
| Astropectinidae | <i>Astropecten</i>                         | <i>novaeguineae</i>  | Döderlein, 1917                | Venus star           | Not Listed | NE   |
| Anseropodidae   | <i>Anseropoda</i>                          | <i>rosacea</i>       | (Lamarck, 1816)                |                      | Not Listed | NE   |
| Asterinidae     | <i>Aquilonastra</i>                        | <i>anomala</i>       | (H.L. Clark, 1921)             |                      | Not Listed | NE   |
| Asterinidae     | <i>Aquilonastra</i>                        | <i>coronata</i>      | (von Martens, 1866)            |                      | Not Listed | NE   |
| Asterinidae     | <i>Nepanthia</i>                           | <i>belcheri</i>      | (Perrier, 1875)                | Scaly sea star       | Not Listed | VU   |
| Asterinidae     | <i>Nepenthia</i>                           | <i>maculata</i>      | Gray, 1840                     | Maculated sea star   | Not Listed | NE   |
| Asterinidae     | <i>Cryptasterina</i>                       | <i>pentagona</i>     | (Müller & Troschel, 1840)      | Cryptic sea star     | VU         | VU   |
| Asterinidae     | <i>Disasterina</i>                         | <i>ceylanica</i>     | Döderlein, 1888                |                      | Not Listed | NE   |
| Archasteridae   | <i>Archaster</i>                           | <i>typicus</i>       | Müller & Troschel, 1840        | Common sand star     | VU         | VU   |
| Goniasteridae   | <i>Iconaster</i>                           | <i>longimanus</i>    | (Möbius, 1859)                 | Icon star            | VU         | VU   |
| Goniasteridae   | <i>Stellaster</i>                          | <i>childreni</i>     | Gray, 1840                     | Gallop sand star     | Not Listed | VU   |
| Oreasteridae    | <i>Anthenea</i>                            | <i>aspera</i>        | Döderlein, 1915                | Cake star            | VU         | VU   |
| Oreasteridae    | <i>Culcita</i>                             | <i>novaeguineae</i>  | Müller & Troschel, 1842        |                      | Not Listed | NE   |
| Goniasteridae   | <i>Goniodiscaster</i>                      | <i>scaber</i>        | (Möbius, 1859)                 | Biscuit sea star     | Not Listed | VU   |
| Oreasteridae    | <i>Gymnanthenea</i>                        | <i>laevis</i>        | H.L. Clark, 1938               |                      | Not Listed | NE   |
| Oreasteridae    | <i>Protoreaster</i>                        | <i>nodosus</i>       | (Linnaeus, 1758)               | Knobbly sea star     | EN         | EN   |

| Family          | Genus                | Species             | Authority                  | Common Name             | RDB2       | RDB3 |
|-----------------|----------------------|---------------------|----------------------------|-------------------------|------------|------|
| Oreasteridae    | <i>Pentacaster</i>   | <i>mammillatus</i>  | (Audouin, 1826)            | Mammilated pentacaster  | Not Listed | EN   |
| Goniasteridae   | <i>Fromia</i>        | <i>monilis</i>      | (Perrier, 1869)            | Peppermint sea star     | VU         | EN   |
| Ophidiasteridae | <i>Ophidiaster</i>   | <i>granifer</i>     | Lütken, 1871               |                         | Not Listed | NE   |
| Ophidiasteridae | <i>Tamaria</i>       | <i>fusca</i>        | Gray, 1840                 |                         | Not Listed | VU   |
| Pterasteridae   | <i>Euretaster</i>    | <i>insignis</i>     | (Sladen, 1882)             |                         | EN         | EN   |
| Echinasteridae  | <i>Echinaster</i>    | <i>callosus</i>     | Marenzeller, 1895          | Warty sea star          | EN         | EN   |
| Echinasteridae  | <i>Echinaster</i>    | <i>stereosomus</i>  | Fisher, 1913               |                         | Not Listed | NE   |
| Echinasteridae  | <i>Metrodira</i>     | <i>subulata</i>     | Gray, 1840                 |                         | Not Listed | NE   |
| Cidaridae       | <i>Prionocidaris</i> | <i>baculosa</i>     | (Lamarck, 1816)            | Thorny urchin           | VU         | VU   |
| Cidaridae       | <i>Prionocidaris</i> | <i>bispinosa</i>    | (Lamarck, 1816)            | Thorny urchin           | Not Listed | VU   |
| Echinothuriidae | <i>Asthenosoma</i>   | <i>varium</i>       | Grube, 1868                | Fire urchin             | VU         | EN   |
| Diadematidae    | <i>Diadema</i>       | <i>setosum</i>      | (Leske, 1778)              |                         | Not Listed | NE   |
| Diadematidae    | <i>Diadema</i>       | <i>savignyi</i>     | (Audouin, 1809)            |                         | Not Listed | NE   |
| Diadematidae    | <i>Echinothrix</i>   | <i>diadema</i>      | (Linnaeus, 1758)           |                         | Not Listed | NE   |
| Diadematidae    | <i>Chaetodiadema</i> | <i>granulatum</i>   | Mortensen, 1903            |                         | EN         | EN   |
| Temnopleuridae  | <i>Temnopleurus</i>  | <i>toreumaticus</i> | (Leske, 1778)              |                         | Not Listed | NE   |
| Temnopleuridae  | <i>Mespilia</i>      | <i>globulus</i>     | (Linnaeus, 1758)           | Globe urchin            | Not Listed | VU   |
| Temnopleuridae  | <i>Salmacis</i>      | <i>bicolor</i>      | (L. Agassiz & Desor, 1846) |                         | Not Listed | NE   |
| Temnopleuridae  | <i>Salmacis</i>      | <i>sphaeroides</i>  | (Linnaeus, 1758)           |                         | Not Listed | NE   |
| Temnopleuridae  | <i>Salmacis</i>      | <i>virgulata</i>    | (L. Agassiz & Desor, 1846) |                         | Not Listed | NE   |
| Toxopneustidae  | <i>Toxopneustes</i>  | <i>pileolus</i>     | (Lamarck, 1816)            | Flower urchin           | Not Listed | NT   |
| Clypeasteridae  | <i>Arachnoides</i>   | <i>placenta</i>     | (Linnaeus, 1758)           | Sand dollar             | Not Listed | NT   |
| Astriclypeidae  | <i>Echinodiscus</i>  | <i>bisporatus</i>   | Leske, 1778                | Key-hole sand dollar    | VU         | VU   |
| Laganidae       | <i>Jacksonaster</i>  | <i>depressum</i>    | (L. Agassiz, 1841)         | Thick-edged sand dollar | VU         | VU   |
| Laganidae       | <i>Peronella</i>     | <i>lesueuri</i>     | (L. Agassiz, 1841)         |                         | Not Listed | NE   |
| Spatangidae     | <i>Maretia</i>       | <i>planulata</i>    | (Lamarck, 1816)            |                         | Not Listed | NE   |

**Checklist of Freshwater Fish Species with their Category of Threat Status for Singapore**

Prepared by Low Bi Wei, Tan Heok Hui, Jeffrey T.B. Kwik, Zeng Yiwen, Darren C.J. Yeo

| <b>Family</b>    | <b>Genus</b>             | <b>Species</b>       | <b>Authority</b>                               | <b>Common Name</b>            | <b>RDB2</b> | <b>RDB3</b> |
|------------------|--------------------------|----------------------|------------------------------------------------|-------------------------------|-------------|-------------|
| Cyprinidae       | <i>Barbodes</i>          | <i>sellifer</i>      | Kottelat & Lim, 2021                           | Saddle barb                   | Not Listed  | VU          |
| Cyprinidae       | <i>Barbodes</i>          | <i>dunckeri</i>      | (Ahl, 1929)                                    | Malayan clown barb            | Not Listed  | NEx         |
| Cyprinidae       | <i>Barbodes</i>          | <i>lateristriga</i>  | (Valenciennes, in Cuvier & Valenciennes, 1842) | Spanner barb, T-barb          | Not Listed  | EN          |
| Cyprinidae       | <i>Boraras</i>           | <i>maculatus</i>     | (Duncker, 1904)                                | Pygmy rasbora                 | CR          | EN          |
| Cyprinidae       | <i>Cyclocheilichthys</i> | <i>apogon</i>        | (Valenciennes, 1842)                           | Beardless barb                | EN          | EN          |
| Cyprinidae       | <i>Desmopuntius</i>      | <i>hexazona</i>      | (Weber & de Beaufort, 1912)                    | Six-banded tiger barb         | CR          | EN          |
| Cyprinidae       | <i>Osteochilus</i>       | <i>spilurus</i>      | (Bleeker, 1851)                                | Swamp bony-lipped barb        | Not Listed  | NEx         |
| Cyprinidae       | <i>Rasbora</i>           | <i>cephalotaenia</i> | (Bleeker, 1852)                                | Head-banded rasbora           | Not Listed  | NEx         |
| Cyprinidae       | <i>Rasbora</i>           | <i>einthovenii</i>   | (Bleeker, 1851)                                | Einthoven's rasbora           | Not Listed  | VU          |
| Cyprinidae       | <i>Rasbora</i>           | <i>elegans</i>       | Volz, 1903                                     | Two-spot rasbora              | Not Listed  | VU          |
| Cyprinidae       | <i>Rasbora</i>           | <i>paucisqualis</i>  | Ahl, 1935                                      | Large-scaled rasbora          | Not Listed  | NEx         |
| Cyprinidae       | <i>Trigonostigma</i>     | <i>heteromorpha</i>  | (Duncker, 1904)                                | Harlequin rasbora             | EN          | EN          |
| Cobitidae        | <i>Pangio</i>            | <i>muraeniformis</i> | (de Beaufort, 1933)                            | Spotted eel-loach             | EN          | CR          |
| Cobitidae        | <i>Pangio</i>            | <i>semicincta</i>    | (Fraser-Brunner, 1940)                         | Malayan banded eel-loach      | Not Listed  | NEx         |
| Nemacheilidae    | <i>Nemacheilus</i>       | <i>selangoricus</i>  | Duncker, 1904                                  | Grey-banded sand loach        | CR          | CR          |
| Bagridae         | <i>Mystus</i>            | <i>gurio</i>         | (Hamilton, 1822)                               | Long-whiskered catfish        | Not Listed  | LC          |
| Bagridae         | <i>Pseudomystus</i>      | <i>leiacanthus</i>   | (Weber & de Beaufort, 1912)                    | Dwarf bumblebee catfish       | CR          | CR          |
| Siluridae        | <i>Ompok</i>             | <i>fumidus</i>       | Tan & Ng, 1996                                 | Swamp ompok                   | Not Listed  | NEx         |
| Siluridae        | <i>Silurichthys</i>      | <i>hasseltii</i>     | Bleeker, 1858                                  | Hasselt's leaf catfish        | CR          | CR          |
| Akysidae         | <i>Parakysis</i>         | <i>longirostris</i>  | Ng & Lim, 1995                                 | Longnose little warty catfish | CR          | CR          |
| Clariidae        | <i>Clarias</i>           | <i>batrachus</i>     | (Linnaeus, 1758)                               | Common walking catfish        | Not Listed  | NT          |
| Clariidae        | <i>Clarias</i>           | <i>leiacanthus</i>   | Bleeker, 1851                                  | Forest walking catfish        | Not Listed  | VU          |
| Clariidae        | <i>Clarias</i>           | <i>nieuhofii</i>     | Valenciennes, 1840                             | Slender walking catfish       | CR          | EN          |
| Clariidae        | <i>Encheloclarias</i>    | <i>kelioides</i>     | Ng & Lim, 1993                                 | Bladefin catfish              | Not Listed  | CR          |
| Sisoridae        | <i>Glyptothorax</i>      | <i>fuscus</i>        | Fowler, 1934                                   | Wrinkle-bellied catfish       | Not Listed  | NEx         |
| Synbranchidae    | <i>Monopterus</i>        | <i>javanensis</i>    | Lacepède, 1800                                 | Sunda swamp eel               | Not Listed  | LC          |
| Mastacembelidae  | <i>Macrognathus</i>      | <i>maculatus</i>     | (Cuvier, 1831)                                 | Buff-backed spiny eel         | CR          | CR          |
| Zenarchopteridae | <i>Dermogenys</i>        | <i>collettei</i>     | Meisner, 2001                                  | Sunda pygmy halfbeak          | Not Listed  | LC          |
| Zenarchopteridae | <i>Hemirhamphodon</i>    | <i>pogonognathus</i> | (Bleeker, 1853)                                | Malayan forest halfbeak       | Not Listed  | EN          |
| Aplocheilidae    | <i>Aplocheilus</i>       | <i>armatus</i>       | (van Hasselt, 1823)                            | Whitespot                     | Not Listed  | LC          |
| Gobinellidae     | <i>Eugnathogobius</i>    | <i>siamensis</i>     | (Fowler, 1934)                                 | Roundhead stream goby         | Not Listed  | CR          |



| Family        | Genus                  | Species             | Authority                                | Common Name              | RDB2       | RDB3 |
|---------------|------------------------|---------------------|------------------------------------------|--------------------------|------------|------|
| Gobinellidae  | <i>Pseudogobiopsis</i> | <i>oligactis</i>    | (Bleeker, 1875)                          | Broadhead stream goby    | Not Listed | VU   |
| Nandidae      | <i>Nandus</i>          | <i>nebulosus</i>    | (Gray, 1835)                             | Sunda leaf fish          | CR         | EN   |
| Anabantidae   | <i>Anabas</i>          | <i>testudineus</i>  | (Bloch, 1792)                            | Climbing perch           | Not Listed | LC   |
| Osphronemidae | <i>Belontia</i>        | <i>hasseltii</i>    | (Cuvier, 1831)                           | Javan combtail           | Not Listed | NEx  |
| Osphronemidae | <i>Betta</i>           | <i>imbellis</i>     | Ladiges, 1975                            | Crescent betta           | Not Listed | EN   |
| Osphronemidae | <i>Betta</i>           | <i>pugnax</i>       | (Cantor, 1850)                           | Malayan forest betta     | Not Listed | LC   |
| Osphronemidae | <i>Betta</i>           | <i>tomi</i>         | Ng & Kottelat,                           | Mawai giant betta        | Not Listed | NEx  |
| Osphronemidae | <i>Luciocephalus</i>   | <i>pulcher</i>      | (Gray, 1830)                             | Brown pikehead           | CR         | EN   |
| Osphronemidae | <i>Trichopodus</i>     | <i>trichopterus</i> | (Pallas, 1770)                           | Three-spot gourami       | Not Listed | VU   |
| Osphronemidae | <i>Trichopsis</i>      | <i>vittata</i>      | (Cuvier, 1831)                           | Striped croaking gourami | Not Listed | LC   |
| Channidae     | <i>Channa</i>          | <i>limbata</i>      | (Cuvier, in Cuvier & Valenciennes, 1831) | Dwarf snakehead          | CR         | EN   |
| Channidae     | <i>Channa</i>          | <i>lucius</i>       | (Cuvier, 1831)                           | Forest snakehead         | Not Listed | VU   |
| Channidae     | <i>Channa</i>          | <i>melasoma</i>     | (Bleeker, 1851)                          | Black snakehead          | CR         | EN   |
| Channidae     | <i>Channa</i>          | <i>striata</i>      | (Bloch, 1793)                            | Common snakehead; Haruan | Not Listed | LC   |

# Checklist of Marine Fish Species with their Category of Threat Status for Singapore

Prepared by Zeehan Jaafar, Jeffrey K.Y. Low, Kelvin K.P. Lim

| Family         | Taxon Name                             | Authority                   | Common Name                   | RDB2       | RDB3 |
|----------------|----------------------------------------|-----------------------------|-------------------------------|------------|------|
| Elopidae       | <i>Elops hawaiiensis</i>               | Regan, 1909                 | Hawaiian tenpounder           | Not Listed | DD   |
| Megalopidae    | <i>Megalops cyprinoides</i>            | (Broussonet, 1782)          | Indo-Pacific tarpon           | Not Listed | DD   |
| Albulidae      | <i>Albula argentea</i>                 | (Forster, 1801)             | Longjaw bonefish              | Not Listed | DD   |
| Muraenidae     | <i>Gymnothorax annulatus</i>           | Smith & Böhlke, 1997        | Ringed moray                  | Not Listed | DD   |
| Muraenidae     | <i>Gymnothorax javanicus</i>           | (Bleeker, 1859)             | Giant moray                   | Not Listed | DD   |
| Muraenidae     | <i>Gymnothorax reevesii</i>            | (Richardson, 1845)          | Reeve's moray                 | Not Listed | DD   |
| Muraenidae     | <i>Gymnothorax tile</i>                | (Hamilton, 1822)            | Indian mud moray              | Not Listed | LC   |
| Muraenidae     | <i>Strophidon sathete</i>              | (Hamilton, 1822)            | Slender giant moray           | Not Listed | DD   |
| Ophichthidae   | <i>Scolecenchelys macroptera</i>       | (Bleeker, 1857)             | Narrow worm-eel               | Not Listed | DD   |
| Ophichthidae   | <i>Ophichthus lithinus</i>             | (Jordan & Richardson, 1908) | Evermann's snake-eel          | Not Listed | DD   |
| Ophichthidae   | <i>Pisodonophis boro</i>               | (Hamilton, 1822)            | Boro snake-eel                | Not Listed | DD   |
| Ophichthidae   | <i>Pisodonophis cancrivorus</i>        | (Richardson, 1848)          | Longfin snake-eel             | Not Listed | DD   |
| Muraenesocidae | <i>Muraenesox bagio</i>                | (Hamilton, 1822)            | Common pike-eel               | Not Listed | DD   |
| Muraenesocidae | <i>Muraenesox cinereus</i>             | (Forsskål, 1775)            | Daggertooth pike-eel          | Not Listed | DD   |
| Congridae      | <i>Conger cinereus</i>                 | Rüppell, 1830               | Ashen conger-eel              | Not Listed | DD   |
| Clupeidae      | <i>Spratelloides delicatulus</i>       | (Bennett, 1832)             | Delicate round herring        | Not Listed | DD   |
| Clupeidae      | <i>Anodontostoma chacunda</i>          | (Hamilton, 1822)            | Chacunda gizzard shad         | Not Listed | LC   |
| Clupeidae      | <i>Escualosa thoracata</i>             | (Valenciennes, 1847)        | White sardine                 | Not Listed | LC   |
| Clupeidae      | <i>Herklotsichthys dispilonotus</i>    | (Bleeker, 1852)             | Blacksaddle herring           | Not Listed | LC   |
| Clupeidae      | <i>Hilsa kelee</i>                     | (Cuvier, 1829)              | Kelee shad                    | Not Listed | LC   |
| Clupeidae      | <i>Nematalosa nasus</i>                | (Bloch, 1795)               | Bloch's gizzard shad          | Not Listed | DD   |
| Clupeidae      | <i>Nematalosa galathea</i>             | Nelson & Rothman, 1973      | Galathea gizzard shad         | Not Listed | DD   |
| Clupeidae      | <i>Sardinella albella</i>              | (Valenciennes, 1847)        | White sardinella              | Not Listed | LC   |
| Dussumieriidae | <i>Dussumieria acuta</i>               | Valenciennes, 1847          | Rainbow sardine               | Not Listed | DD   |
| Dussumieriidae | <i>Dussumieria elopsoides</i>          | Bleeker, 1849               | Slender rainbow sardine       | Not Listed | DD   |
| Engraulidae    | <i>Coilia dussumieri</i>               | Valenciennes, 1848          | Goldspotted grenadier anchovy | Not Listed | DD   |
| Engraulidae    | <i>Encrasicholina heteroloba</i>       | (Rüppell, 1837)             | Devis' anchovy                | Not Listed | DD   |
| Engraulidae    | <i>Encrasicholina pseudoheteroloba</i> | (Hardenberg, 1933)          | Shorthead anchovy             | Not Listed | DD   |
| Engraulidae    | <i>Setipinna breviceps</i>             | (Cantor, 1849)              | Shorthead hairfin anchovy     | Not Listed | DD   |
| Engraulidae    | <i>Setipinna taty</i>                  | (Valenciennes, 1848)        | Scaly hairfin anchovy         | Not Listed | DD   |
| Engraulidae    | <i>Stolephorus baganensis</i>          | Hardenberg, 1933            | Bagan anchovy                 | Not Listed | DD   |
| Engraulidae    | <i>Stolephorus bataviensis</i>         | Hardenberg, 1933            | Batavia anchovy               | Not Listed | DD   |

| Family           | Taxon Name                      | Authority                   | Common Name             | RDB2       | RDB3 |
|------------------|---------------------------------|-----------------------------|-------------------------|------------|------|
| Engraulidae      | <i>Stolephorus baweanensis</i>  | Hardenberg, 1933            | Spotty-face anchovy     | Not Listed | DD   |
| Engraulidae      | <i>Stolephorus bengalensis</i>  | (Dutt & Babu Rao, 1959)     | Hardenberg's anchovy    | Not Listed | DD   |
| Engraulidae      | <i>Stolephorus commersonnii</i> | Lacepède, 1803              | Commerson's anchovy     | Not Listed | LC   |
| Engraulidae      | <i>Stolephorus indicus</i>      | (van Hasselt, 1823)         | Indian anchovy          | Not Listed | LC   |
| Engraulidae      | <i>Thrissina dussumieri</i>     | (Valenciennes, 1848)        | Dussumier's thryssa     | Not Listed | LC   |
| Engraulidae      | <i>Thrissina hamiltonii</i>     | Gray, 1835                  | Hamilton's thryssa      | Not Listed | LC   |
| Engraulidae      | <i>Thrissina kammalensis</i>    | (Bleeker, 1849)             | Kammal thryssa          | Not Listed | DD   |
| Engraulidae      | <i>Thrissina mystax</i>         | (Bloch & Schneider, 1801)   | Moustached thryssa      | Not Listed | DD   |
| Engraulidae      | <i>Thrissina setirostris</i>    | (Broussonet, 1782)          | Longjaw thryssa         | Not Listed | LC   |
| Chirocentridae   | <i>Chirocentrus dorab</i>       | (Forsskål, 1775)            | Dorab wolf herring      | Not Listed | VU   |
| Chirocentridae   | <i>Chirocentrus nudus</i>       | (Forsskål, 1775)            | Dorab wolf herring      | Not Listed | DD   |
| Pristigasteridae | <i>Ilisha elongata</i>          | (Anonymous [Bennett], 1830) | Elongate ilisha         | Not Listed | LC   |
| Pristigasteridae | <i>Ilisha megaloptera</i>       | (Swainson, 1839)            | Bigeye ilisha           | Not Listed | LC   |
| Pristigasteridae | <i>Ilisha indica</i>            | (Bloch & Schneider, 1801)   | Indian ilisha           | Not Listed | LC   |
| Pristigasteridae | <i>Opisthopterus tardoore</i>   | (Cuvier, 1829)              | Longfin shad            | Not Listed | DD   |
| Pristigasteridae | <i>Pellona ditchela</i>         | Valenciennes, 1847          | Toothed shad            | Not Listed | DD   |
| Pristigasteridae | <i>Raconda russeliana</i>       | Gray, 1831                  | Raconda                 | Not Listed | DD   |
| Plotosidae       | <i>Paraplotosus albilabris</i>  | (Valenciennes, 1840)        | Whitelipped eel-catfish | Not Listed | LC   |
| Plotosidae       | <i>Plotosus canius</i>          | Hamilton, 1822              | Gray eel-catfish        | Not Listed | LC   |
| Plotosidae       | <i>Plotosus lineatus</i>        | (Thunberg, 1787)            | Striped eel-catfish     | Not Listed | LC   |
| Bagridae         | <i>Mystus gulio</i>             | (Hamilton, 1822)            | Long whiskers catfish   | Not Listed | LC   |
| Bagridae         | <i>Mystus wolffii</i>           | (Bleeker, 1851)             | Wolff's catfish         | Not Listed | LC   |
| Ariidae          | <i>Arius gagora</i>             | (Hamilton, 1822)            | Gagora catfish          | Not Listed | DD   |
| Ariidae          | <i>Arius leptanotacanthus</i>   | Bleeker, 1849               | Smooth-spined catfish   | Not Listed | DD   |
| Ariidae          | <i>Arius oetik</i>              | Bleeker, 1846               | Lowly sea catfish       | Not Listed | LC   |
| Ariidae          | <i>Hemiaris sona</i>            | (Hamilton, 1822)            | Sona sea catfish        | Not Listed | LC   |
| Ariidae          | <i>Hexanematichthys sagor</i>   | (Hamilton, 1822)            | Sagor catfish           | Not Listed | LC   |
| Ariidae          | <i>Netuma bilineata</i>         | (Valenciennes, 1840)        | Bronze catfish          | Not Listed | DD   |
| Ariidae          | <i>Netuma thalassina</i>        | (Rüppell 1837)              | Giant catfish           | Not Listed | DD   |
| Ariidae          | <i>Osteogeneiosus militaris</i> | (Linnaeus, 1758)            | Soldier catfish         | Not Listed | DD   |
| Ariidae          | <i>Plicofollis argyroleuron</i> | (Valenciennes, 1840)        | Longsnouted catfish     | Not Listed | DD   |
| Ariidae          | <i>Plicofollis nella</i>        | (Valenciennes, 1840)        | Shieldhead catfish      | Not Listed | LC   |
| Synodontidae     | <i>Saurida micropectoralis</i>  | Shindo & Yamada, 1972       | Shortfin lizardfish     | Not Listed | VU   |
| Bregmacerotidae  | <i>Bregmaceros maclellandi</i>  | Thompson, 1840              | Spotted codlet          | Not Listed | LC   |
| Holocentridae    | <i>Sargocentron rubrum</i>      | (Forsskål, 1775)            | Redcoat                 | Not Listed | VU   |
| Holocentridae    | <i>Myripristis hexagona</i>     | (Lacepède, 1802)            | Doubletooth soldierfish | Not Listed | VU   |

| Family         | Taxon Name                           | Authority                  | Common Name                     | RDB2       | RDB3 |
|----------------|--------------------------------------|----------------------------|---------------------------------|------------|------|
| Bythitidae     | <i>Ungusurculus riauensis</i>        | Schwarzhans & Møller, 2007 | Riau viviparous brotula         | Not Listed | LC   |
| Batrachoididae | <i>Allenbatrachus reticulatus</i>    | (Steindachner, 1870)       | Singapore toadfish              | Not Listed | LC   |
| Batrachoididae | <i>Batrachomoeus trispinosus</i>     | (Günther, 1861)            | Three-spined toadfish           | Not Listed | LC   |
| Trichiuridae   | <i>Eupleurogrammus glossodon</i>     | (Bleeker, 1860)            | Longtooth hairtail              | Not Listed | DD   |
| Trichiuridae   | <i>Lepturacanthus savala</i>         | (Cuvier, 1829)             | Savalai hairtail                | Not Listed | DD   |
| Trichiuridae   | <i>Trichiurus lepturus</i>           | Linnaeus, 1758             | Largehead hairtail              | Not Listed | DD   |
| Scombridae     | <i>Rastrelliger brachysoma</i>       | (Bleeker, 1851)            | Short mackerel                  | Not Listed | DD   |
| Scombridae     | <i>Rastrelliger kanagurta</i>        | (Cuvier, 1816)             | Indian mackerel                 | Not Listed | DD   |
| Scombridae     | <i>Scomberomorus commerson</i>       | (Lacepède, 1800)           | Narrow-barred Spanish mackerel  | Not Listed | VU   |
| Scombridae     | <i>Scomberomorus guttatus</i>        | (Bloch & Schneider, 1801)  | Indo-Pacific king mackerel      | Not Listed | DD   |
| Scombridae     | <i>Scomberomorus lineolatus</i>      | (Cuvier, 1829)             | Streaked Spanish mackerel       | Not Listed | DD   |
| Stromateidae   | <i>Pampus argenteus</i>              | (Euphrasen, 1788)          | White pomfret                   | Not Listed | DD   |
| Stromateidae   | <i>Pampus chinensis</i>              | (Euphrasen, 1788)          | Chinese silver pomfret          | Not Listed | DD   |
| Fistulariidae  | <i>Fistularia petimba</i>            | Lacepède, 1803             | Red cornetfish                  | Not Listed | DD   |
| Centriscidae   | <i>Aeoliscus strigatus</i>           | (Günther, 1861)            | Coral shrimpfish                | Not Listed | NT   |
| Centriscidae   | <i>Centriscus scutatus</i>           | Linnaeus, 1758             | Grooved razorfish               | Not Listed | NT   |
| Syngnathidae   | <i>Choeroichthys brachysoma</i>      | (Bleeker, 1855)            | Pacific short-bodied pipefish   | Not Listed | DD   |
| Syngnathidae   | <i>Doryrhamphus janssi</i>           | (Herald & Randall, 1972)   | Janss' pipefish                 | Not Listed | VU   |
| Syngnathidae   | <i>Dunckerocampus dactyliophorus</i> | (Bleeker, 1853)            | Ringed pipefish                 | Not Listed | VU   |
| Syngnathidae   | <i>Bhanotia fasciolata</i>           | (Duméril, 1870)            | Corrugated pipefish             | Not Listed | DD   |
| Syngnathidae   | <i>Corythoichthys amplexus</i>       | Dawson & Randall, 1975     | Brown-banded pipefish           | Not Listed | DD   |
| Syngnathidae   | <i>Corythoichthys ocellatus</i>      | Herald, 1953               | Ocellated pipefish              | Not Listed | DD   |
| Syngnathidae   | <i>Corythoichthys schultzi</i>       | Herald, 1953               | Schultz's pipefish              | Not Listed | DD   |
| Syngnathidae   | <i>Halicampus brocki</i>             | (Herald, 1953)             | Brock's pipefish                | Not Listed | DD   |
| Syngnathidae   | <i>Halicampus nitidus</i>            | (Günther, 1873)            | Glittering pipefish             | Not Listed | DD   |
| Syngnathidae   | <i>Hippichthys cyanospilos</i>       | (Bleeker, 1854)            | Bluespeckled pipefish           | Not Listed | DD   |
| Syngnathidae   | <i>Hippichthys heptagonus</i>        | Bleeker, 1849              | Reticulated freshwater pipefish | Not Listed | DD   |
| Syngnathidae   | <i>Hippichthys penicillus</i>        | (Cantor, 1849)             | Beady pipefish                  | Not Listed | DD   |
| Syngnathidae   | <i>Hippichthys spicifer</i>          | (Rüppell, 1838)            | Barred-belly pipefish           | Not Listed | DD   |
| Syngnathidae   | <i>Hippocampus comes</i>             | Cantor, 1849               | Tiger tail seahorse             | VU         | CR   |
| Syngnathidae   | <i>Hippocampus kuda</i>              | Bleeker, 1852              | Spotted seahorse                | VU         | CR   |
| Syngnathidae   | <i>Hippocampus mohnikei</i>          | Bleeker, 1853              | Japanese seahorse               | Not Listed | CR   |
| Syngnathidae   | <i>Ichthyocampus carce</i>           | (Hamilton, 1822)           | Indian freshwater pipefish      | Not Listed | VU   |
| Syngnathidae   | <i>Micrognathus micronopterus</i>    | (Fowler, 1938)             | Tidepool pipefish               | Not Listed | DD   |
| Syngnathidae   | <i>Phoxocampus belcheri</i>          | (Kaup, 1856)               | Rock pipefish                   | Not Listed | DD   |

| Family       | Taxon Name                         | Authority                   | Common Name                 | RDB2       | RDB3 |
|--------------|------------------------------------|-----------------------------|-----------------------------|------------|------|
| Syngnathidae | <i>Syngnathoides biaculeatus</i>   | (Bloch, 1785)               | Alligator pipefish          | Not Listed | DD   |
| Syngnathidae | <i>Trachyrhamphus bicoarctatus</i> | (Bleeker, 1857)             | Double-ended pipefish       | Not Listed | DD   |
| Syngnathidae | <i>Trachyrhamphus serratus</i>     | (Temminck & Schlegel, 1850) | Saw pipefish                | Not Listed | DD   |
| Pegasidae    | <i>Pegasus volitans</i>            | Linnaeus, 1758              | Longtail seamoth            | Not Listed | LC   |
| Pegasidae    | <i>Spinipegasus laternarius</i>    | Cuvier, 1816                | Brick seamoth               | Not Listed | DD   |
| Eleotridae   | <i>Butis butis</i>                 | (Hamilton, 1822)            | Crimson-tipped gudgeon      | Not Listed | NT   |
| Eleotridae   | <i>Butis humeralis</i>             | (Valenciennes, 1837)        | Olive flathead-gudgeon      | Not Listed | NT   |
| Eleotridae   | <i>Butis koilomatodon</i>          | (Bleeker, 1849)             | Mud sleeper                 | Not Listed | NT   |
| Eleotridae   | <i>Ophiocara porocephala</i>       | (Valenciennes, 1837)        | Spangled gudgeon            | Not Listed | NT   |
| Eleotridae   | <i>Oxyleotris marmorata</i>        | (Bleeker, 1852)             | Marbled goby                | Not Listed | NT   |
| Eleotridae   | <i>Oxyleotris urophthalmus</i>     | (Bleeker, 1851)             | Sinuous gudgeon             | Not Listed | NT   |
| Gobiidae     | <i>Brachygobius kabiliensis</i>    | Inger, 1958                 | Mangrove bumbee goby        | Not Listed | NT   |
| Gobiidae     | <i>Brachygobius sabanus</i>        | Inger, 1958                 | Sabanus bumbee goby         | Not Listed | NT   |
| Gobiidae     | <i>Eugnathogobius illothus</i>     | (Larson, 1999)              | Dirtyface brackish-goby     | Not Listed | NT   |
| Gobiidae     | <i>Eugnathogobius polylepis</i>    | Wu & Ni, 1985               | Malayan tailring-goby       | Not Listed | NT   |
| Gobiidae     | <i>Eugnathogobius siamensis</i>    | (Fowler, 1934)              | Siam stream-goby            | Not Listed | LC   |
| Gobiidae     | <i>Eugnathogobius variegatus</i>   | (Peters, 1868)              | Stripeface goby             | Not Listed | NT   |
| Gobiidae     | <i>Gobiopterus birtwistlei</i>     | (Herre, 1935)               | Birtwistle's glass-goby     | Not Listed | NT   |
| Gobiidae     | <i>Gobiopterus brachypterus</i>    | (Bleeker, 1855)             | Greater glass-goby          | Not Listed | NT   |
| Gobiidae     | <i>Gobiopterus panayensis</i>      | (Herre, 1944)               | Panay glass-goby            | Not Listed | NT   |
| Gobiidae     | <i>Hemigobius hoevenii</i>         | (Bleeker, 1851)             | Banded mullet-goby          | Not Listed | LC   |
| Gobiidae     | <i>Hemigobius melanurus</i>        | (Herre, 1936)               | Banded goby                 | Not Listed | NT   |
| Gobiidae     | <i>Mugilogobius chulae</i>         | (Smith, 1932)               | Chulae's goby               | Not Listed | LC   |
| Gobiidae     | <i>Mugilogobius fasciatus</i>      | Larson, 2001                | Broad-barred mangrove-goby  | Not Listed | NT   |
| Gobiidae     | <i>Mugilogobius mertoni</i>        | (Weber, 1911)               | Chequered mangrove-goby     | Not Listed | NT   |
| Gobiidae     | <i>Mugilogobius rambaiae</i>       | (Smith, 1945)               | Queen of Siam mangrove-goby | Not Listed | NT   |
| Gobiidae     | <i>Mugilogobius tigrinus</i>       | Larson, 2001                | Narrow-barred mangrove-goby | Not Listed | NT   |
| Gobiidae     | <i>Oxyurichthys auchenolepis</i>   | Bleeker, 1876               | Scaly-nape tentacle-goby    | Not Listed | NT   |
| Gobiidae     | <i>Oxyurichthys longicauda</i>     | (Steindachner, 1893)        | Long-tail tentacle-goby     | Not Listed | NT   |
| Gobiidae     | <i>Oxyurichthys microlepis</i>     | (Bleeker, 1849)             | Maned goby                  | Not Listed | NT   |
| Gobiidae     | <i>Pandaka rouxi</i>               | (Weber, 1911)               | Roux's pgymy-goby           | Not Listed | NT   |
| Gobiidae     | <i>Pseudogobiopsis oligactis</i>   | (Bleeker, 1875)             | Bigmouth steam-goby         | Not Listed | NT   |
| Gobiidae     | <i>Pseudogobius avicennia</i>      | (Herre, 1940)               | Avicennia snubnose-goby     | Not Listed | NT   |

| Family   | Taxon Name                            | Authority                   | Common Name                    | RDB2       | RDB3 |
|----------|---------------------------------------|-----------------------------|--------------------------------|------------|------|
| Gobiidae | <i>Pseudogobius fulvicaudus</i>       | Huang, Shao & Chen, 2014    | Yellowfin snubnose-goby        | Not Listed | NT   |
| Gobiidae | <i>Pseudogobius masago</i>            | (Tomiya, 1936)              | Masago snubnose-goby           | Not Listed | NT   |
| Gobiidae | <i>Pseudogobius melanosticta</i>      | (Day, 1876)                 | Black-spotted snubnose-goby    | Not Listed | NT   |
| Gobiidae | <i>Pseudogobius poecilosoma</i>       | (Bleeker, 1849)             | Spotted snubnose-goby          | Not Listed | LC   |
| Gobiidae | <i>Pseudogobius verticalis</i>        | Larson & Hammer 2021        | Blackline snubnose-goby        | Not Listed | NT   |
| Gobiidae | <i>Pseudogobius yanamensis</i>        | (Rao 1971)                  | Barfin snubnose-goby           | Not Listed | LC   |
| Gobiidae | <i>Redigobius bikolanus</i>           | (Herre, 1927)               | Mangrove bigmouth-goby         | Not Listed | LC   |
| Gobiidae | <i>Rhinogobius similis</i>            | Gill, 1859                  | Barcheek river-goby            | Not Listed | LC   |
| Gobiidae | <i>Stigmatogobius pleurostigma</i>    | (Bleeker, 1849)             | Peach knight-goby              | Not Listed | NT   |
| Gobiidae | <i>Stigmatogobius sadanundio</i>      | (Hamilton, 1822)            | Grey knight-goby               | Not Listed | LC   |
| Gobiidae | <i>Apocryptodon madurensis</i>        | (Bleeker, 1849)             | Spotted mudskipper             | Not Listed | VU   |
| Gobiidae | <i>Boleophthalmus boddarti</i>        | (Pallas, 1770)              | Blue-spotted mudskipper        | Not Listed | VU   |
| Gobiidae | <i>Parapocryptes serperaster</i>      | (Richardson, 1846)          | Serpent mudskipper             | Not Listed | VU   |
| Gobiidae | <i>Periophthalmodon schlosseri</i>    | (Pallas, 1770)              | Giant mudskipper               | Not Listed | LC   |
| Gobiidae | <i>Periophthalmus argentilineatus</i> | Valenciennes, 1837          | Silver-lined mudskipper        | Not Listed | VU   |
| Gobiidae | <i>Periophthalmus chrysospilos</i>    | Bleeker, 1853               | Gold-spotted mudskipper        | Not Listed | VU   |
| Gobiidae | <i>Periophthalmus gracilis</i>        | Eggert, 1935                | Graceful mudskipper            | Not Listed | VU   |
| Gobiidae | <i>Periophthalmus variabilis</i>      | Eggert, 1935                | Dusky-gilled mudskipper        | Not Listed | VU   |
| Gobiidae | <i>Periophthalmus walailakae</i>      | Darumas & Tantichodok, 2002 | Yellow-spotted mudskipper      | Not Listed | VU   |
| Gobiidae | <i>Pseudapocryptes elongatus</i>      | (Cuvier, 1816)              | Elongate mudskipper            | Not Listed | VU   |
| Gobiidae | <i>Scartelaos histophorus</i>         | (Valenciennes, 1837)        | Bearded mudskipper             | Not Listed | VU   |
| Gobiidae | <i>Brachyamblyopus brachysoma</i>     | (Bleeker, 1854)             | Short eel-goby                 | Not Listed | VU   |
| Gobiidae | <i>Paratrypauchen microcephalus</i>   | (Bleeker, 1860)             | Comb goby                      | Not Listed | VU   |
| Gobiidae | <i>Taenioides gracilis</i>            | (Valenciennes, 1837)        | Slender eel-goby               | Not Listed | DD   |
| Gobiidae | <i>Trypauchen pelaeos</i>             | Murdy, 2006                 |                                | Not Listed | VU   |
| Gobiidae | <i>Trypauchen vagina</i>              | (Bloch & Schneider, 1801)   | Pink eel-goby                  | Not Listed | VU   |
| Gobiidae | <i>Trypauchenichthys sumatrensis</i>  | Hardenberg, 1931            | Sumatran eel-goby              | Not Listed | VU   |
| Gobiidae | <i>Trypauchenichthys typus</i>        | Bleeker, 1860               | Typical eel-goby               | Not Listed | VU   |
| Gobiidae | <i>Acentrogobius caninus</i>          | (Valenciennes, 1837)        | Green-shouldered acentrogobius | Not Listed | LC   |
| Gobiidae | <i>Acentrogobius cyanomos</i>         | (Bleeker, 1849)             | Blue-spotted acentrogobius     | Not Listed | LC   |
| Gobiidae | <i>Acentrogobius janthinopterus</i>   | (Bleeker, 1853)             | Green-spotted acentrogobius    | Not Listed | VU   |

| Family   | Taxon Name                             | Authority              | Common Name                   | RDB2       | RDB3 |
|----------|----------------------------------------|------------------------|-------------------------------|------------|------|
| Gobiidae | <i>Acentrogobius viridipunctatus</i>   | (Valenciennes, 1837)   | Papillose<br>acentrogobius    | Not Listed | LC   |
| Gobiidae | <i>Amblyeleotris fontanesii</i>        | (Bleeker, 1853)        | Giant shrimp-goby             | Not Listed | VU   |
| Gobiidae | <i>Amblyeleotris gymnocephala</i>      | (Bleeker, 1853)        | Masked shrimp-<br>goby        | Not Listed | VU   |
| Gobiidae | <i>Amblyeleotris periophthalma</i>     | (Bleeker, 1853)        | Blotchy shrimp-<br>goby       | Not Listed | VU   |
| Gobiidae | <i>Amblygobius buanensis</i>           | Herre, 1927            | Buan blunthead-<br>goby       | Not Listed | NT   |
| Gobiidae | <i>Amblygobius phalaena</i>            | (Valenciennes, 1837)   | Banded blunthead-<br>goby     | Not Listed | NT   |
| Gobiidae | <i>Amblygobius stethophthalmus</i>     | (Bleeker, 1851)        | Headstripe<br>blunthead-goby  | Not Listed | LC   |
| Gobiidae | <i>Amoya gracilis</i>                  | (Bleeker, 1875)        | Slender amoya                 | Not Listed | NT   |
| Gobiidae | <i>Amoya moloanus</i>                  | (Herre, 1927)          | Bar-cheeked amoya             | Not Listed | NT   |
| Gobiidae | <i>Arcygobius baliurus</i>             | (Valenciennes, 1837)   | Isthmus goby                  | Not Listed | VU   |
| Gobiidae | <i>Bathygobius fuscus</i>              | (Rüppell, 1830)        | Dusky frillfin-goby           | Not Listed | LC   |
| Gobiidae | <i>Bathygobius meggitti</i>            | (Hora & Mukerji, 1936) | Meggitt's frillfin-<br>goby   | Not Listed | VU   |
| Gobiidae | <i>Bryaninops amplus</i>               | Larson, 1985           | Large gorgonian-<br>goby      | Not Listed | VU   |
| Gobiidae | <i>Bryaninops loki</i>                 | Larson, 1985           | Loki gorgonian-<br>goby       | Not Listed | VU   |
| Gobiidae | <i>Callogobius hasseltii</i>           | (Bleeker, 1851)        | Hasselt's goby                | Not Listed | VU   |
| Gobiidae | <i>Callogobius maculipinnis</i>        | (Fowler, 1918)         | Ostrich goby                  | Not Listed | VU   |
| Gobiidae | <i>Cryptocentroides insignis</i>       | (Seale, 1910)          | Crested shrimp-<br>goby       | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus caeruleomaculatus</i> | (Herre, 1933)          | Blue-speckled<br>shrimp-goby  | Not Listed | NT   |
| Gobiidae | <i>Cryptocentrus cinctus</i>           | (Herre, 1936)          | Yellow shrimp-goby            | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus cyanospilotus</i>     | Allen & Randall, 2011  | Blue-spotted<br>shrimp-goby   | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus cyanotaenia</i>       | (Bleeker, 1853)        | Lagoon shrimp-<br>goby        | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus inexplicatus</i>      | (Herre, 1934)          | Inexplicable shrimp-<br>goby  | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus leptcephalus</i>      | Bleeker, 1876          | Pink-speckled<br>shrimp-goby  | Not Listed | DD   |
| Gobiidae | <i>Cryptocentrus madae</i>             | Fowler, 1937           | Saddled shrimp-<br>goby       | Not Listed | LC   |
| Gobiidae | <i>Cryptocentrus melanopus</i>         | (Bleeker, 1860)        | Singapore shrimp-<br>goby     | Not Listed | LC   |
| Gobiidae | <i>Cryptocentrus pavoninoides</i>      | (Bleeker, 1849)        | Peacock shrimp-<br>goby       | Not Listed | VU   |
| Gobiidae | <i>Cryptocentrus sericus</i>           | Herre, 1932            | Ventral-barred<br>shrimp-goby | Not Listed | LC   |
| Gobiidae | <i>Cryptocentrus strigiliceps</i>      | (Jordan & Seale, 1906) | Target shrimp-goby            | Not Listed | VU   |
| Gobiidae | <i>Drombus globiceps</i>               | (Hora, 1923)           | Kranji drombus                | Not Listed | NT   |
| Gobiidae | <i>Drombus ocyurus</i>                 | (Jordan & Seale, 1907) | Blue-marked<br>drombus        | Not Listed | NT   |

| Family   | Taxon Name                         | Authority                   | Common Name                         | RDB2       | RDB3 |
|----------|------------------------------------|-----------------------------|-------------------------------------|------------|------|
| Gobiidae | <i>Drombus triangularis</i>        | (Weber, 1909)               | Brown drombus                       | Not Listed | LC   |
| Gobiidae | <i>Eviota queenslandica</i>        | Whitley, 1932               | Queensland dwarf-goby               | Not Listed | VU   |
| Gobiidae | <i>Eviota storthynx</i>            | (Rofen, 1959)               | Storthynx dwarf-goby                | Not Listed | VU   |
| Gobiidae | <i>Exyrias belissimus</i>          | (Smith, 1959)               | Barred highfin-goby                 | Not Listed | LC   |
| Gobiidae | <i>Exyrias puntang</i>             | (Bleeker, 1851)             | Estuarine highfin-goby              | Not Listed | LC   |
| Gobiidae | <i>Favonigobius melanobranchus</i> | (Fowler, 1934)              | Blackthroat sand-goby               | Not Listed | LC   |
| Gobiidae | <i>Favonigobius opalescens</i>     | (Herre, 1936)               | Opalescent sand-goby                | Not Listed | NT   |
| Gobiidae | <i>Favonigobius reichei</i>        | (Bleeker, 1854)             | Reiche's sand-goby                  | Not Listed | LC   |
| Gobiidae | <i>Glossogobius aureus</i>         | Akihito & Meguro, 1975      | Golden flathead-goby                | Not Listed | LC   |
| Gobiidae | <i>Glossogobius circumspectus</i>  | (Macleay, 1883)             | Circumspect flathead-goby           | Not Listed | NT   |
| Gobiidae | <i>Glossogobius giuris</i>         | (Hamilton, 1822)            | Bareye flathead-goby                | Not Listed | LC   |
| Gobiidae | <i>Glossogobius sparsipapillus</i> | Akihito & Meguro, 1976      | Linecheek flathead-goby             | Not Listed | NT   |
| Gobiidae | <i>Gobiodon heterospilos</i>       | Bleeker, 1856               | Head-and-tail spotted acropora-goby | Not Listed | VU   |
| Gobiidae | <i>Gobiodon histrio</i>            | (Valenciennes, 1837)        | Broad-barred acropora-goby          | Not Listed | NT   |
| Gobiidae | <i>Gobiodon quinquestrigatus</i>   | (Valenciennes, 1837)        | Five-lined acropora-goby            | Not Listed | VU   |
| Gobiidae | <i>Gobiopsis macrostomus</i>       | Steindachner, 1861          | Bigmouth barbel-goby                | Not Listed | VU   |
| Gobiidae | <i>Istigobius decoratus</i>        | (Herre, 1927)               | Decorative lagoon-goby              | Not Listed | VU   |
| Gobiidae | <i>Istigobius diadema</i>          | (Steindachner, 1876)        | Black-lined lagoon-goby             | Not Listed | VU   |
| Gobiidae | <i>Istigobius goldmanni</i>        | (Bleeker, 1852)             | Goldmann's lagoon-goby              | Not Listed | LC   |
| Gobiidae | <i>Istigobius ornatus</i>          | (Rüppell, 1830)             | Ornate lagoon-goby                  | Not Listed | LC   |
| Gobiidae | <i>Lubricogobius ornatus</i>       | Fourmanoir, 1966            | Yellow ornate-goby                  | Not Listed | VU   |
| Gobiidae | <i>Macrodontogobius wilburi</i>    | Herre, 1936                 | Wilbur's goby                       | Not Listed | VU   |
| Gobiidae | <i>Mahidolia mystacina</i>         | (Valenciennes, 1837)        | Flagfin shrimp-goby                 | Not Listed | VU   |
| Gobiidae | <i>Myersina adonis</i>             | Shibukawa & Satapoomin 2006 | Adonis shrimp-goby                  | Not Listed | VU   |
| Gobiidae | <i>Myersina crocata</i>            | (Wongratana, 1975)          | Yellow-spotted shrimp-goby          | Not Listed | VU   |
| Gobiidae | <i>Myersina macrostoma</i>         | Herre, 1934                 | Bigmouth shrimp-goby                | Not Listed | VU   |
| Gobiidae | <i>Oplopomops diacanthus</i>       | (Schultz, 1943)             | Hole goby                           | Not Listed | NT   |
| Gobiidae | <i>Oplopomus caninoides</i>        | (Bleeker, 1852)             | Triplespot goby                     | Not Listed | NT   |
| Gobiidae | <i>Oplopomus oplopomus</i>         | (Valenciennes, 1837)        | Spine-cheek goby                    | Not Listed | NT   |



| Family          | Taxon Name                           | Authority                   | Common Name             | RDB2       | RDB3 |
|-----------------|--------------------------------------|-----------------------------|-------------------------|------------|------|
| Gobiidae        | <i>Parachaeturichthys polynema</i>   | (Bleeker, 1853)             | Lancet-tail goby        | Not Listed | DD   |
| Gobiidae        | <i>Priolepis nuchifasciata</i>       | (Günther, 1873)             | Orange reef-goby        | Not Listed | NT   |
| Gobiidae        | <i>Priolepis semidoliata</i>         | (Valenciennes, 1837)        | Half-barred reef-goby   | Not Listed | VU   |
| Gobiidae        | <i>Psammogobius biocellatus</i>      | (Valenciennes, 1837)        | Crocodile flathead-goby | Not Listed | NT   |
| Gobiidae        | <i>Silhouettea nuchipunctata</i>     | (Herre, 1934)               | Vanishing sand-goby     | Not Listed | NT   |
| Gobiidae        | <i>Tomiyamichthys russus</i>         | (Cantor, 1849)              | Ocellated shrimp-goby   | Not Listed | DD   |
| Gobiidae        | <i>Valenciennea immaculata</i>       | (Ni, 1981)                  | Red-striped glider-goby | Not Listed | EN   |
| Gobiidae        | <i>Valenciennea muralis</i>          | (Valenciennes, 1837)        | Mural glider-goby       | Not Listed | EN   |
| Gobiidae        | <i>Yongeichthys madraspatensis</i>   | (Day, 1868)                 | Manyband goby           | Not Listed | VU   |
| Gobiidae        | <i>Yongeichthys nebulosus</i>        | (Forsskål, 1775)            | Shadow goby             | Not Listed | LC   |
| Microdesmidae   | <i>Oxymetopon compressus</i>         | Chan, 1966                  | Robust ribbon-goby      | Not Listed | VU   |
| Microdesmidae   | <i>Parioglossus palustris</i>        | (Herre, 1945)               | Estuarine dart-goby     | Not Listed | EN   |
| Microdesmidae   | <i>Parioglossus philippinus</i>      | (Herre, 1945)               | Philippine dart-goby    | Not Listed | VU   |
| Microdesmidae   | <i>Ptereleotris hanae</i>            | (Jordan & Snyder, 1901)     | Hana dart-goby          | Not Listed | VU   |
| Microdesmidae   | <i>Ptereleotris microlepis</i>       | (Bleeker, 1856)             | Small-scaled dart-goby  | Not Listed | VU   |
| Istiophoridae   | <i>Istiophorus platypterus</i>       | (Shaw, 1792)                | Indo-Pacific sailfish   | Not Listed | CR   |
| Istiophoridae   | <i>Istiompax indica</i>              | (Cuvier, 1832)              | Black marlin            | Not Listed | CR   |
| Psettodidae     | <i>Psettodes erumei</i>              | (Bloch & Schneider, 1801)   | Indian halibut          | Not Listed | DD   |
| Paralichthyidae | <i>Pseudorhombus arsius</i>          | (Hamilton, 1822)            | Largetooth flounder     | Not Listed | LC   |
| Paralichthyidae | <i>Pseudorhombus elevatus</i>        | Ogilby, 1912                | Deep flounder           | Not Listed | DD   |
| Paralichthyidae | <i>Pseudorhombus javanicus</i>       | (Bleeker, 1853)             | Javan flounder          | Not Listed | DD   |
| Paralichthyidae | <i>Pseudorhombus malayanus</i>       | Bleeker, 1865               | Malayan flounder        | Not Listed | DD   |
| Paralichthyidae | <i>Pseudorhombus neglectus</i>       | Bleeker, 1865               |                         | Not Listed | DD   |
| Bothidae        | <i>Asterorhombus intermedius</i>     | (Bleeker, 1865)             | Intermediate flounder   | Not Listed | DD   |
| Bothidae        | <i>Engyprosopon grandisquama</i>     | (Temminck & Schlegel, 1846) | Largescale flounder     | Not Listed | DD   |
| Bothidae        | <i>Grammatobothus polyophthalmus</i> | (Bleeker, 1865)             | Threespot flounder      | Not Listed | DD   |
| Bothidae        | <i>Laeops guentheri</i>              | Alcock, 1890                | Günther's flounder      | Not Listed | DD   |
| Soleidae        | <i>Brachirus heterolepis</i>         | (Bloch & Schneider, 1801)   | Oriental sole           | Not Listed | DD   |
| Soleidae        | <i>Brachirus orientalis</i>          | (Bloch & Schneider, 1801)   | Oriental sole           | Not Listed | DD   |
| Soleidae        | <i>Dagetichthys commersonii</i>      | (Lacepède, 1802)            | Commerson's sole        | Not Listed | DD   |
| Soleidae        | <i>Heteromycteris hartzfeldii</i>    | (Bleeker, 1853)             | Hook-nosed sole         | Not Listed | DD   |
| Soleidae        | <i>Pardachirus pavoninus</i>         | (Lacepède, 1802)            | Peacock sole            | Not Listed | DD   |
| Soleidae        | <i>Solea ovata</i>                   | Richardson, 1846            | Ovate sole              | Not Listed | DD   |

| Family           | Taxon Name                       | Authority                 | Common Name                | RDB2       | RDB3 |
|------------------|----------------------------------|---------------------------|----------------------------|------------|------|
| Soleidae         | <i>Zebrias quagga</i>            | (Bloch, 1787)             | Zebra sole                 | Not Listed | DD   |
| Soleidae         | <i>Zebrias zebra</i>             | (Bloch, 1787)             | Zebra sole                 | Not Listed | VU   |
| Cynoglossidae    | <i>Cynoglossus arel</i>          | (Bloch & Schneider, 1801) | Largescale sole            | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus bilineatus</i>    | (Lacepède, 1802)          | Fourlined tonguesole       | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus cynoglossus</i>   | (Lacepède, 1802)          | Bengal tonguesole          | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus itinus</i>        | (Snyder, 1909)            | Shortheaded tonguesole     | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus kopsii</i>        | (Bleeker, 1851)           | Shortheaded tonguesole     | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus lingua</i>        | Hamilton, 1822            | Long tonguesole            | Not Listed | DD   |
| Cynoglossidae    | <i>Cynoglossus puncticeps</i>    | (Richardson, 1846)        | Speckled tonguesole        | Not Listed | DD   |
| Atherinidae      | <i>Atherinomorus lacunosus</i>   | (Forster, 1801)           | Wide-banded silverside     | Not Listed | LC   |
| Atherinidae      | <i>Doboatherina duodecimalis</i> | (Valenciennes, 1835)      | Tropical silverside        | Not Listed | LC   |
| Atherinidae      | <i>Hypoatherina celebesensis</i> | Sasaki & Kimura, 2012     | Sulawesi silverside        | Not Listed | DD   |
| Atherinidae      | <i>Hypoatherina temminckii</i>   | (Bleeker, 1854)           | Samoa silverside           | Not Listed | DD   |
| Phallostethidae  | <i>Neostethus bicornis</i>       | Regan, 1916               |                            | Not Listed | VU   |
| Phallostethidae  | <i>Neostethus lankesteri</i>     | Regan, 1916               |                            | Not Listed | EN   |
| Belonidae        | <i>Strongylura incisa</i>        | (Valenciennes, 1846)      | Reef needlefish            | Not Listed | NT   |
| Belonidae        | <i>Strongylura leiura</i>        | (Bleeker, 1850)           | Banded needlefish          | Not Listed | NT   |
| Belonidae        | <i>Strongylura strongylura</i>   | (van Hasselt, 1823)       | Spottail needlefish        | Not Listed | NT   |
| Belonidae        | <i>Tylosurus crocodilus</i>      | (Péron & Lesueur, 1821)   | Hound needlefish           | Not Listed | NT   |
| Hemiramphidae    | <i>Hemiramphus far</i>           | (Forsskål, 1775)          | Black-barred halfbeak      | Not Listed | NT   |
| Hemiramphidae    | <i>Hyporhamphus limbatus</i>     | (Valenciennes, 1847)      | Congaturi halfbeak         | Not Listed | NT   |
| Hemiramphidae    | <i>Hyporhamphus quoyi</i>        | (Valenciennes, 1847)      | Quoy's garfish             | Not Listed | LC   |
| Hemiramphidae    | <i>Rhynchorhamphus georgii</i>   | (Valenciennes, 1847)      | Long billed halfbeak       | Not Listed | DD   |
| Zenarchopteridae | <i>Zenarchopterus buffonis</i>   | (Valenciennes, 1847)      | Buffon's river-garfish     | Not Listed | LC   |
| Zenarchopteridae | <i>Zenarchopterus kneri</i>      | Fowler, 1934              | Viviparous halfbeak        | Not Listed | DD   |
| Exocoetidae      | <i>Parexocoetus mento</i>        | (Valenciennes, 1847)      | African sailfin flyingfish | Not Listed | NT   |
| Adrianichthyidae | <i>Oryzias javanicus</i>         | (Bleeker, 1854)           | Javan ricefish             | Not Listed | LC   |
| Mugilidae        | <i>Chelon melinopterus</i>       | (Valenciennes, 1836)      | Otomebora mullet           | Not Listed | LC   |
| Mugilidae        | <i>Chelon subviridis</i>         | (Valenciennes, 1836)      | Greenback mullet           | Not Listed | LC   |
| Mugilidae        | <i>Crenimugil heterocheilus</i>  | (Bleeker, 1855)           | Half fringelip mullet      | Not Listed | DD   |
| Mugilidae        | <i>Ellochelon vaigiensis</i>     | (Quoy & Gaimard, 1825)    | Squaretail mullet          | Not Listed | LC   |
| Mugilidae        | <i>Moolgarda perusii</i>         | (Valenciennes, 1836)      | Longfinned mullet          | Not Listed | LC   |
| Mugilidae        | <i>Moolgarda seheli</i>          | (Forsskål, 1775)          | Bluespot mullet            | Not Listed | LC   |
| Mugilidae        | <i>Mugil cephalus</i>            | Linnaeus, 1758            | Flathead mullet            | Not Listed | DD   |
| Mugilidae        | <i>Planiliza macrolepis</i>      | (Smith, 1846)             | Largescale mullet          | Not Listed | DD   |
| Mugilidae        | <i>Planiliza tade</i>            | (Fabricius, 1775)         | Tade gray mullet           | Not Listed | DD   |

| Family         | Taxon Name                          | Authority                 | Common Name                  | RDB2       | RDB3 |
|----------------|-------------------------------------|---------------------------|------------------------------|------------|------|
| Mugilidae      | <i>Paramugil parmatas</i>           | (Cantor, 1849)            | Broad-mouthed mullet         | Not Listed | DD   |
| Gobiesocidae   | <i>Diademichthys lineatus</i>       | (Sauvage, 1883)           | Urchin clingfish             | Not Listed | EN   |
| Tripterygiidae | <i>Enneapterygius fasciatus</i>     | (Weber, 1909)             | Banded triplefin             | Not Listed | NT   |
| Blenniidae     | <i>Enchelyurus flavipes</i>         | Peters, 1868              | Yellowfin blenny             | Not Listed | EN   |
| Blenniidae     | <i>Laiphognathus multimaculatus</i> |                           |                              | Not Listed | DD   |
| Blenniidae     | <i>Meiakanthus grammistes</i>       | (Valenciennes, 1836)      | Striped poison-fang blenny   | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus elongatus</i>        | (Peters, 1855)            | Chevroned blenny             | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus ferox</i>            | (Herre, 1927)             | Gossamer blenny              | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus germaini</i>         | (Sauvage, 1883)           | Germain's blenny             | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus punctatus</i>        | (Valenciennes, 1836)      | Muzzled blenny               | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus smithi</i>           | (Rao, 1974)               | Smith's blenny               | Not Listed | VU   |
| Blenniidae     | <i>Omobranchus zebra</i>            | (Bleeker, 1868)           | Zebra blenny                 | Not Listed | VU   |
| Blenniidae     | <i>Petroscirtes breviceps</i>       | (Valenciennes, 1836)      | Short-head sabretooth blenny | Not Listed | DD   |
| Blenniidae     | <i>Petroscirtes variabilis</i>      | Cantor, 1849              | Variable sabretooth blenny   | Not Listed | NT   |
| Blenniidae     | <i>Entomacrodus lighti</i>          | (Herre, 1938)             | Light's combtooth blenny     | Not Listed | DD   |
| Blenniidae     | <i>Entomacrodus striatus</i>        | (Valenciennes, 1836)      | Blackspotted rockskipper     | Not Listed | DD   |
| Blenniidae     | <i>Istiblennius dussumieri</i>      | (Valenciennes, 1836)      | Streaky rockskipper          | Not Listed | EN   |
| Blenniidae     | <i>Parablennius thysanurus</i>      | (Jordan & Seale, 1907)    | Tasseled blenny              | Not Listed | DD   |
| Blenniidae     | <i>Salarias fasciatus</i>           | (Bloch, 1786)             | Jewelled blenny              | Not Listed | EN   |
| Antennariidae  | <i>Antennatus nummifer</i>          | (Cuvier, 1817)            | Spotfin frogfish             | Not Listed | CR   |
| Antennariidae  | <i>Lophiocharon trisignatus</i>     | (Richardson, 1844)        | Three-spot frogfish          | Not Listed | EN   |
| Triacanthidae  | <i>Triacanthus biaculeatus</i>      | (Bloch, 1786)             | Short-nosed tripodfish       | Not Listed | NT   |
| Triacanthidae  | <i>Tripodichthys blochii</i>        | (Bleeker, 1852)           | Long-tail tripodfish         | Not Listed | NT   |
| Triacanthidae  | <i>Tripodichthys oxycephalus</i>    | (Bleeker, 1851)           | Short-tail tripodfish        | Not Listed | DD   |
| Diodontidae    | <i>Diodon hystrix</i>               | Linnaeus, 1758            | Spot-fin porcupinefish       | Not Listed | VU   |
| Diodontidae    | <i>Diodon holocanthus</i>           | Linnaeus, 1758            | Longspined porcupinefish     | Not Listed | VU   |
| Diodontidae    | <i>Diodon liturosus</i>             | Shaw, 1804                | Black-bloated porcupinefish  | Not Listed | VU   |
| Tetraodontidae | <i>Arothron caeruleopunctatus</i>   | Matsuura, 1994            | Blue-spotted puffer          | Not Listed | VU   |
| Tetraodontidae | <i>Arothron hispidus</i>            | (Linnaeus, 1758)          | White-spotted puffer         | Not Listed | VU   |
| Tetraodontidae | <i>Arothron immaculatus</i>         | (Bloch & Schneider, 1801) | Immaculate puffer            | Not Listed | VU   |
| Tetraodontidae | <i>Arothron mappa</i>               | (Lesson, 1831)            | Map puffer                   | Not Listed | VU   |
| Tetraodontidae | <i>Arothron reticularis</i>         | (Bloch & Schneider, 1801) | Reticulated pufferfish       | Not Listed | VU   |
| Tetraodontidae | <i>Arothron stellatus</i>           | (Anonymous, 1798)         | Stellate puffer              | Not Listed | VU   |
| Tetraodontidae | <i>Chelonodontops patoca</i>        | (Hamilton, 1822)          | Milkspotted puffer           | Not Listed | NT   |

| Family         | Taxon Name                            | Authority                 | Common Name               | RDB2       | RDB3 |
|----------------|---------------------------------------|---------------------------|---------------------------|------------|------|
| Tetraodontidae | <i>Dichomyctere nigroviridis</i>      | (Marion de Procé, 1822)   | Spotted green pufferfish  | Not Listed | NT   |
| Tetraodontidae | <i>Gastrophysus oblongus</i>          | (Bloch, 1786)             | Lattice blaasop           | Not Listed | NT   |
| Tetraodontidae | <i>Lagocephalus lunaris</i>           | (Bloch & Schneider, 1801) | Lunartail puffer          | Not Listed | NT   |
| Ostraciidae    | <i>Lactoria cornuta</i>               | (Linnaeus, 1758)          | Longhorn pufferfish       | Not Listed | DD   |
| Ostraciidae    | <i>Ostracion nasus</i>                | (Bloch, 1785)             | Shortnose boxfish         | Not Listed | VU   |
| Ostraciidae    | <i>Ostracion rhinorhynchus</i>        | Bleeker, 1851             | Horn-nosed boxfish        | Not Listed | DD   |
| Monacanthidae  | <i>Acreichthys tomentosus</i>         | (Linnaeus, 1758)          | Bristletail filefish      | Not Listed | NT   |
| Monacanthidae  | <i>Aluterus scriptus</i>              | (Osbeck, 1765)            | Scribbled filefish        | Not Listed | CR   |
| Monacanthidae  | <i>Anacanthus barbatus</i>            | Gray, 1830                | Bearded leatherjacket     | Not Listed | EN   |
| Monacanthidae  | <i>Brachaluteres taylori</i>          | Woods, 1966               | Taylor's filefish         | Not Listed | DD   |
| Monacanthidae  | <i>Chaetodermis penicilligerus</i>    | (Cuvier, 1816)            | Leafy filefish            | Not Listed | VU   |
| Monacanthidae  | <i>Monacanthus chinensis</i>          | (Osbeck, 1765)            | Fan-bellied leatherjacket | Not Listed | LC   |
| Monacanthidae  | <i>Paramonacanthus choirocephalus</i> | (Bleeker, 1851)           | White-blotched filefish   | Not Listed | DD   |
| Monacanthidae  | <i>Pseudomonacanthus macrurus</i>     | (Bleeker, 1856)           | Strap-weed filefish       | Not Listed | VU   |
| Monacanthidae  | <i>Rudarius excelsus</i>              | (Bleeker, 1856)           | Diamond leatherjacket     | Not Listed | DD   |
| Balistidae     | <i>Abalistes stellatus</i>            | (Bloch & Schneider, 1801) | Starry triggerfish        | Not Listed | CR   |
| Balistidae     | <i>Balistapus undulatus</i>           | (Park, 1797)              | Orange-lined triggerfish  | Not Listed | CR   |
| Balistidae     | <i>Balistoides viridescens</i>        | (Bloch & Schneider, 1801) | Titan triggerfish         | Not Listed | CR   |
| Apistidae      | <i>Apistus carinatus</i>              | (Bloch & Schneider, 1801) | Ocellated waspfish        | Not Listed | DD   |
| Scorpaenidae   | <i>Parascorpaena picta</i>            | (Cuvier, 1829)            | Painted scorpionfish      | Not Listed | NT   |
| Scorpaenidae   | <i>Scorpaenopsis diabolus</i>         | (Cuvier, 1829)            | False stonefish           | Not Listed | DD   |
| Scorpaenidae   | <i>Scorpaenopsis possi</i>            | Randall & Eschmeyer, 2001 | Poss' scorpionfish        | Not Listed | DD   |
| Scorpaenidae   | <i>Scorpaenopsis ramaraoi</i>         | Randall & Eschmeyer, 2001 | Rama Rao's scorpionfish   | Not Listed | DD   |
| Scorpaenidae   | <i>Pterois russellii</i>              | Bennett, 1831             | Russel's lionfish         | Not Listed | CR   |
| Scorpaenidae   | <i>Pterois volitans</i>               | (Linnaeus, 1758)          | Red lionfish              | Not Listed | CR   |
| Tetrarogidae   | <i>Cottapistus cottoides</i>          | (Linnaeus, 1758)          | Marbled stingfish         | Not Listed | DD   |
| Tetrarogidae   | <i>Paracentropogon longispinis</i>    | (Cuvier, 1829)            | Wispy waspfish            | Not Listed | LC   |
| Tetrarogidae   | <i>Richardsonichthys leucogaster</i>  | (Richardson, 1848)        | Whiteface waspfish        | Not Listed | DD   |
| Tetrarogidae   | <i>Trichosomus trachinoides</i>       | (Cuvier, 1829)            | Mangrove goblinfish       | Not Listed | DD   |
| Synanceiidae   | <i>Minous monodactylus</i>            | (Bloch & Schneider, 1801) | Grey stingfish            | Not Listed | DD   |
| Synanceiidae   | <i>Inimicus brachyrhynchus</i>        | (Bleeker, 1874)           | Singapore stinger         | Not Listed | DD   |
| Synanceiidae   | <i>Inimicus cuvieri</i>               | (Gray, 1835)              | Longsnout stinger         | Not Listed | DD   |
| Synanceiidae   | <i>Inimicus didactylus</i>            | (Pallas, 1769)            | Bearded ghoulfish         | Not Listed | DD   |

| Family          | Taxon Name                           | Authority                 | Common Name                 | RDB2       | RDB3 |
|-----------------|--------------------------------------|---------------------------|-----------------------------|------------|------|
| Synanceiidae    | <i>Leptosynanceia asteroblepa</i>    | (Richardson, 1844)        | Star-eyed stonefish         | Not Listed | DD   |
| Synanceiidae    | <i>Synanceia horrida</i>             | (Linnaeus, 1766)          | Estuarine stonefish         | Not Listed | NT   |
| Synanceiidae    | <i>Synanceia verrucosa</i>           | (Bloch & Schneider, 1801) | Reef stonefish              | Not Listed | VU   |
| Synanceiidae    | <i>Trachicephalus uranoscopus</i>    | (Bloch & Schneider, 1801) | Stargazing stonefish        | Not Listed | NT   |
| Aploactinidae   | <i>Acanthosphex leuynnis</i>         | (Jordan & Seale, 1905)    | Wasp-spine velvetfish       | Not Listed | DD   |
| Aploactinidae   | <i>Sthenopus mollis</i>              | Richardson, 1848          | Soft velvetfish             | Not Listed | DD   |
| Platycephalidae | <i>Cociella punctata</i>             | (Cuvier, 1829)            | Spotted flathead            | Not Listed | DD   |
| Platycephalidae | <i>Cymbacephalus bosschei</i>        | (Bleeker, 1860)           | Small-eyed flathead         | Not Listed | DD   |
| Platycephalidae | <i>Cymbacephalus nematophthalmus</i> | (Günther, 1860)           | Fringe-eyed flathead        | Not Listed | VU   |
| Platycephalidae | <i>Elates ransonnetii</i>            | (Steindachner, 1876)      | Dwarf flathead              | Not Listed | VU   |
| Platycephalidae | <i>Grammoplites knappi</i>           | Imamura & Amaoka, 1994    | Small-spined flathead       | Not Listed | DD   |
| Platycephalidae | <i>Grammoplites scaber</i>           | (Linnaeus, 1758)          | Rough flathead              | Not Listed | DD   |
| Platycephalidae | <i>Inegocia japonica</i>             | (Cuvier, 1829)            | Japanese flathead           | Not Listed | VU   |
| Platycephalidae | <i>Platycephalus cultellatus</i>     | Richardson, 1846          | Knife flathead              | Not Listed | DD   |
| Platycephalidae | <i>Platycephalus indicus</i>         | (Linnaeus, 1758)          | Bartail flathead            | Not Listed | VU   |
| Platycephalidae | <i>Rogadius tuberculatus</i>         | (Cuvier, 1829)            | Tuberculated flathead       | Not Listed | DD   |
| Platycephalidae | <i>Sunagocia carbunculus</i>         | (Valenciennes, 1833)      | Papillose flathead          | Not Listed | VU   |
| Terapontidae    | <i>Eutherapon therapus</i>           | Cuvier, 1829              | Largescaled terapon         | Not Listed | LC   |
| Terapontidae    | <i>Pelates quadrilineatus</i>        | (Bloch, 1790)             | Fourlined terapon           | Not Listed | LC   |
| Terapontidae    | <i>Pelates sexlineatus</i>           | (Quoy & Gaimard, 1825)    | Eastern striped grunter     | Not Listed | NT   |
| Terapontidae    | <i>Terapon jarbua</i>                | (Forsskål, 1775)          | Tiger perch; Jarbua terapon | Not Listed | LC   |
| Terapontidae    | <i>Terapon puta</i>                  | Cuvier, 1829              | Small-scaled terapon        | Not Listed | NT   |
| Kyphosidae      | <i>Kyphosus vaigiensis</i>           | (Quoy & Gaimard, 1825)    | Brassy chub                 | Not Listed | NT   |
| Pempheridae     | <i>Pempheris adusta</i>              | Bleeker 1877              | Dusky sweeper               | Not Listed | EN   |
| Pempheridae     | <i>Pempheris malabarica</i>          | Cuvier, 1831              | Malabar sweeper             | Not Listed | EN   |
| Pempheridae     | <i>Pempheris molucca</i>             | Cuvier, 1829              | Moluccan sweeper            | Not Listed | EN   |
| Ambassidae      | <i>Ambassis interrupta</i>           | Bleeker, 1853             | Long-spined glass-perchlet  | Not Listed | LC   |
| Ambassidae      | <i>Ambassis kopsii</i>               | Bleeker, 1858             | Singapore glass-perchlet    | Not Listed | LC   |
| Ambassidae      | <i>Ambassis nalua</i>                | (Hamilton, 1822)          | Scalloped glass-perchlet    | Not Listed | DD   |
| Ambassidae      | <i>Ambassis urotaenia</i>            | Bleeker 1852              | Banded-tail glass-perchlet  | Not Listed | DD   |
| Ambassidae      | <i>Ambassis vachellii</i>            | Richardson, 1846          | Vachelli's glass-perchlet   | Not Listed | LC   |
| Latidae         | <i>Lates calcarifer</i>              | (Bloch, 1790)             | Asian seabass               | Not Listed | DD   |
| Latidae         | <i>Psammoperca waigiensis</i>        | (Cuvier, 1828)            | Waigieu seaperch            | Not Listed | NT   |

| Family          | Taxon Name                            | Authority                 | Common Name                | RDB2       | RDB3 |
|-----------------|---------------------------------------|---------------------------|----------------------------|------------|------|
| Serranidae      | <i>Cephalopholis argus</i>            | Schneider, 1801           | Peacock hind               | Not Listed | VU   |
| Serranidae      | <i>Cephalopholis boenak</i>           | (Bloch, 1790)             | Chocolate hind             | Not Listed | LC   |
| Serranidae      | <i>Cephalopholis formosa</i>          | (Shaw, 1812)              | Bluelined hind             | Not Listed | VU   |
| Serranidae      | <i>Cephalopholis microprion</i>       | (Bleeker, 1852)           | Freckled hind              | Not Listed | DD   |
| Serranidae      | <i>Cromileptes altivelis</i>          | (Valenciennes, 1828)      | Humpback grouper           | Not Listed | CR   |
| Serranidae      | <i>Epinephelus areolatus</i>          | (Forsskål, 1775)          | Areolate grouper           | Not Listed | VU   |
| Serranidae      | <i>Epinephelus bleekeri</i>           | (Vaillant, 1878)          | Duskytail grouper          | Not Listed | VU   |
| Serranidae      | <i>Epinephelus coioides</i>           | (Hamilton, 1822)          | Orange-spotted grouper     | Not Listed | VU   |
| Serranidae      | <i>Epinephelus corallicola</i>        | (Valenciennes, 1828)      | Coral grouper              | Not Listed | EN   |
| Serranidae      | <i>Epinephelus erythrurus</i>         | (Valenciennes, 1828)      | Cloudy grouper             | Not Listed | VU   |
| Serranidae      | <i>Epinephelus fasciatus</i>          | (Forsskål, 1775)          | Blacktip grouper           | Not Listed | DD   |
| Serranidae      | <i>Epinephelus fuscoguttatus</i>      | (Forsskål, 1775)          | Brown-marbled grouper      | Not Listed | VU   |
| Serranidae      | <i>Epinephelus lanceolatus</i>        | (Bloch, 1790)             | Giant grouper              | Not Listed | DD   |
| Serranidae      | <i>Epinephelus malabaricus</i>        | (Bloch & Schneider, 1801) | Malabar grouper            | Not Listed | VU   |
| Serranidae      | <i>Epinephelus ongus</i>              | (Bloch, 1790)             | Specklefin grouper         | Not Listed | EN   |
| Serranidae      | <i>Epinephelus quoyanus</i>           | (Valenciennes, 1830)      | Longfin Grouper            | Not Listed | VU   |
| Serranidae      | <i>Epinephelus sexfasciatus</i>       | (Valenciennes, 1828)      | Sixbar grouper             | Not Listed | DD   |
| Serranidae      | <i>Plectropomus leopardus</i>         | (Lacepède, 1802)          | Leopard coral-grouper      | Not Listed | EN   |
| Serranidae      | <i>Plectropomus maculatus</i>         | (Bloch, 1790)             | Spotted coral-grouper      | Not Listed | EN   |
| Serranidae      | <i>Diploprion bifasciatum</i>         | Cuvier, 1828              | Barred soapfish            | Not Listed | LC   |
| Centrogenyidae  | <i>Centrogenys vaigiensis</i>         | (Quoy & Gaimard, 1824)    | False scorpionfish         | Not Listed | LC   |
| Pseudochromidae | <i>Pseudochromis ransonneti</i>       | Steindachner, 1870        | Karimunjawa dottyback      | Not Listed | LC   |
| Pseudochromidae | <i>Congrogadus subducens</i>          | (Richardson, 1843)        | Carpenter eel-blenny       | Not Listed | LC   |
| Plesiopidae     | <i>Callopleksiops altivelis</i>       | (Steindachner, 1903)      | Comet                      | Not Listed | CR   |
| Opistognathidae | <i>Stalix novikovi</i>                | Prokofiev, 2015           | Novikov's jawfish          | Not Listed | CR   |
| Priacanthidae   | <i>Priacanthus tayenus</i>            | Richardson, 1846          | Purple-spotted bigeye      | Not Listed | DD   |
| Apogonidae      | <i>Apogon crassiceps</i>              | Garman, 1903              | Transparent cardinalfish   | Not Listed | VU   |
| Apogonidae      | <i>Apogonichthyoides melas</i>        | (Bleeker, 1848)           | Black cardinalfish         | Not Listed | NT   |
| Apogonidae      | <i>Apogonichthyoides timorensis</i>   | (Bleeker, 1854)           | Timor cardinalfish         | Not Listed | VU   |
| Apogonidae      | <i>Archamia bleekeri</i>              | (Günther, 1859)           | Gon's cardinalfish         | Not Listed | NT   |
| Apogonidae      | <i>Cheilodipterus artus</i>           | Smith, 1961               | Wolf cardinalfish          | Not Listed | DD   |
| Apogonidae      | <i>Cheilodipterus macrodon</i>        | (Lacepède, 1802)          | Large toothed cardinalfish | Not Listed | NT   |
| Apogonidae      | <i>Cheilodipterus quinquelineatus</i> | Cuvier, 1828              | Five-lined cardinalfish    | Not Listed | NT   |
| Apogonidae      | <i>Cheilodipterus singapurensis</i>   | Bleeker, 1860             | Truncate cardinalfish      | Not Listed | NT   |
| Apogonidae      | <i>Fibramia amboinensis</i>           | (Bleeker, 1853)           | Ambonia cardinalfish       | Not Listed | DD   |
| Apogonidae      | <i>Fibramia lateralis</i>             | (Valenciennes, 1832)      | Humpback cardinal          | Not Listed | NT   |

| Family     | Taxon Name                          | Authority                        | Common Name                | RDB2       | RDB3 |
|------------|-------------------------------------|----------------------------------|----------------------------|------------|------|
| Apogonidae | <i>Fibramia thermalis</i>           | (Cuvier, 1829)                   | Half-barred cardinal       | Not Listed | VU   |
| Apogonidae | <i>Fowleria variegata</i>           | (Valenciennes, 1832)             | Variegated cardinalfish    | Not Listed | NT   |
| Apogonidae | <i>Jaydia lineata</i>               | (Temminck & Schlegel, 1842)      | Indian perch               | Not Listed | DD   |
| Apogonidae | <i>Jaydia truncata</i>              | (Bleeker, 1855)                  | Flagfin cardinalfish       | Not Listed | DD   |
| Apogonidae | <i>Lepidamia kalosoma</i>           | (Bleeker, 1852)                  | Pinstripe cardinalfish     | Not Listed | VU   |
| Apogonidae | <i>Nectamia savayensis</i>          | (Günther, 1872)                  | Samoan cardinalfish        | Not Listed | EN   |
| Apogonidae | <i>Nectamia similis</i>             | Fraser, 2008                     | Similar cardinalfish       | Not Listed | EN   |
| Apogonidae | <i>Ostorhinchus cavitensis</i>      | (Jordan & Seale, 1907)           | Whiteline cardinalfish     | Not Listed | VU   |
| Apogonidae | <i>Ostorhinchus chrysopomus</i>     | (Bleeker, 1854)                  | Spotted-gill cardinalfish  | Not Listed | DD   |
| Apogonidae | <i>Ostorhinchus compressus</i>      | (Smith & Radcliffe, 1911)        | Ochre-striped cardinalfish | Not Listed | NT   |
| Apogonidae | <i>Ostorhinchus cookii</i>          | (Macleay, 1881)                  | Cook's cardinalfish        | Not Listed | VU   |
| Apogonidae | <i>Ostorhinchus cyanosoma</i>       | (Bleeker, 1853)                  | Orange-lined cardinalfish  | Not Listed | VU   |
| Apogonidae | <i>Ostorhinchus endekataenia</i>    | (Bleeker, 1852)                  | Candystripe cardinalfish   | Not Listed | LC   |
| Apogonidae | <i>Ostorhinchus fasciatus</i>       | (Shaw, 1790)                     | Broadbanded cardinalfish   | Not Listed | DD   |
| Apogonidae | <i>Ostorhinchus fleurieu</i>        | Lacepède, 1802                   | Flower cardinalfish        | Not Listed | VU   |
| Apogonidae | <i>Ostorhinchus margaritophorus</i> | (Bleeker, 1855)                  | Red-striped cardinalfish   | Not Listed | LC   |
| Apogonidae | <i>Ostorhinchus nanus</i>           | (Allen, Kuitert & Randall, 1994) | Tiny cardinalfish          | Not Listed | DD   |
| Apogonidae | <i>Ostorhinchus pleuron</i>         | (Fraser, 2005)                   | Rib-bar cardinalfish       | Not Listed | NT   |
| Apogonidae | <i>Ostorhinchus urostigma</i>       | (Bleeker, 1874)                  | Spiny-head cardinalfish    | Not Listed | DD   |
| Apogonidae | <i>Ostorhinchus wassinki</i>        | (Bleeker, 1861)                  | Kupang cardinalfish        | Not Listed | VU   |
| Apogonidae | <i>Pristicon rhodopterus</i>        | Bleeker, 1852)                   | Redfin cardinalfish        | Not Listed | VU   |
| Apogonidae | <i>Pristicon trimaculatus</i>       | (Cuvier, 1828)                   | Three-spot cardinalfish    | Not Listed | DD   |
| Apogonidae | <i>Siphamia tubifer</i>             | Weber, 1909                      | Tubifer cardinalfish       | Not Listed | VU   |
| Apogonidae | <i>Sphaeramia nematoptera</i>       | (Bleeker, 1856)                  | Pajama cardinalfish        | Not Listed | DD   |
| Apogonidae | <i>Sphaeramia orbicularis</i>       | (Cuvier, 1828)                   | Orbiculate cardinalfish    | Not Listed | NT   |
| Apogonidae | <i>Taeniamia fucata</i>             | (Cantor, 1849)                   | Orangelined cardinalfish   | Not Listed | VU   |
| Apogonidae | <i>Taeniamia macroptera</i>         | (Cuvier, 1828)                   | Dusky-tailed cardinalfish  | Not Listed | DD   |
| Apogonidae | <i>Yarica hyalosoma</i>             | (Bleeker, 1852)                  | Humpbacked cardinal        | Not Listed | LC   |
| Apogonidae | <i>Pseudamia amblyuropterus</i>     | (Bleeker, 1856)                  | White-jawed cardinalfish   | Not Listed | DD   |

| Family         | Taxon Name                         | Authority                   | Common Name             | RDB2       | RDB3 |
|----------------|------------------------------------|-----------------------------|-------------------------|------------|------|
| Sillaginidae   | <i>Sillago aeolus</i>              | Jordan & Evermann, 1902     | Oriental sillago        | Not Listed | LC   |
| Sillaginidae   | <i>Sillago sihama</i>              | (Forsskål, 1775)            | Silver sillago          | Not Listed | LC   |
| Rachycentridae | <i>Rachycentron canadum</i>        | (Linnaeus, 1766)            | Cobia                   | Not Listed | NT   |
| Echeneidae     | <i>Echeneis naucrates</i>          | Linnaeus, 1758              | Slender sharksucker     | Not Listed | NT   |
| Carangidae     | <i>Alectis indica</i>              | (Rüppell, 1830)             | Indian threadfish       | Not Listed | NT   |
| Carangidae     | <i>Alepes djedaba</i>              | (Forsskål, 1775)            | Shrimp scad             | Not Listed | DD   |
| Carangidae     | <i>Alepes kleinii</i>              | (Bloch 1793)                | Razorbelly scad         | Not Listed | NT   |
| Carangidae     | <i>Alepes melanoptera</i>          | (Swainson, 1839)            | Blackfin scad           | Not Listed | DD   |
| Carangidae     | <i>Alepes vari</i>                 |                             |                         | Not Listed | DD   |
| Carangidae     | <i>Atule mate</i>                  | (Cuvier, 1833)              | Yellowtail scad         | Not Listed | VU   |
| Carangidae     | <i>Carangoides armatus</i>         | (Rüppell, 1830)             | Longfin trevally        | Not Listed | VU   |
| Carangidae     | <i>Carangoides praeustus</i>       | (Anonymous [Bennett], 1830) | Brownback trevally      | Not Listed | VU   |
| Carangidae     | <i>Caranx ignobilis</i>            | (Forsskål, 1775)            | Giant trevally          | Not Listed | EN   |
| Carangidae     | <i>Caranx melampygus</i>           | Cuvier, 1833                | Bluefin trevally        | Not Listed | VU   |
| Carangidae     | <i>Caranx sexfasciatus</i>         | Quoy & Gaimard, 1825        | Bieye trevally          | Not Listed | EN   |
| Carangidae     | <i>Decapterus russelli</i>         | (Rüppell, 1830)             | Indian scad             | Not Listed | DD   |
| Carangidae     | <i>Elagatis bipinnulata</i>        | (Quoy & Gaimard, 1825)      | Rainbow runner          | Not Listed | DD   |
| Carangidae     | <i>Gnathanodon speciosus</i>       | (Forsskål, 1775)            | Golden trevally         | Not Listed | VU   |
| Carangidae     | <i>Selaroides leptolepis</i>       | (Cuvier, 1833)              | Yellowstripe scad       | Not Listed | VU   |
| Carangidae     | <i>Megalaspis cordyla</i>          | (Linnaeus, 1758)            | Torpedo scad            | Not Listed | VU   |
| Carangidae     | <i>Parastromateus niger</i>        | (Bloch, 1795)               | Black pomfret           | Not Listed | VU   |
| Carangidae     | <i>Scomberoides commersonianus</i> | Lacepède, 1801              | Talang queenfish        | Not Listed | EN   |
| Carangidae     | <i>Scomberoides tol</i>            | (Cuvier, 1832)              | Needle-scaled queenfish | Not Listed | EN   |
| Carangidae     | <i>Trachinotus blochii</i>         | (Lacepède, 1801)            | Snubnose pompano        | Not Listed | EN   |
| Carangidae     | <i>Trachinotus mookalee</i>        | Cuvier, 1832                | Indian pompano          | Not Listed | DD   |
| Carangidae     | <i>Ulua mentalis</i>               | (Cuvier, 1833)              | Longrakered trevally    | Not Listed | VU   |
| Menidae        | <i>Mene maculata</i>               | (Bloch & Schneider, 1801)   | Moonfish                | Not Listed | DD   |
| Leiognathidae  | <i>Aurigequula fasciata</i>        | (Lacepède, 1803)            | Threadfin ponyfish      | Not Listed | DD   |
| Leiognathidae  | <i>Aurigequula longispina</i>      | (Valenciennes, 1835)        | Longspine ponyfish      | Not Listed | LC   |
| Leiognathidae  | <i>Leiognathus equula</i>          | (Forsskål, 1775)            | Common ponyfish         | Not Listed | LC   |
| Leiognathidae  | <i>Leiognathus robustus</i>        | Sparks & Dunlap, 2004       | Robust ponyfish         | Not Listed | DD   |
| Leiognathidae  | <i>Leiognathus ruconius</i>        | (Hamilton, 1822)            | Deep pugnose ponyfish   | Not Listed | NT   |
| Leiognathidae  | <i>Deveximentum hanedai</i>        | (Mochizuki & Hayashi, 1989) | Haneda's ponyfish       | Not Listed | LC   |
| Leiognathidae  | <i>Deveximentum insidiator</i>     | (Bloch, 1787)               | Pugnose ponyfish        | Not Listed | LC   |
| Leiognathidae  | <i>Deveximentum interruptum</i>    | (Valenciennes, 1835)        | Pig-nosed ponyfish      | Not Listed | DD   |
| Leiognathidae  | <i>Deveximentum megalolepis</i>    | (Mochizuki & Hayashi, 1989) | Big-scale ponyfish      | Not Listed | DD   |
| Leiognathidae  | <i>Equulites lineolatus</i>        | (Valenciennes, 1835)        | Ornate ponyfish         | Not Listed | DD   |



| Family        | Taxon Name                         | Authority                         | Common Name                  | RDB2       | RDB3 |
|---------------|------------------------------------|-----------------------------------|------------------------------|------------|------|
| Leiognathidae | <i>Eubleekeria jonesi</i>          | (James, 1971)                     | Jones' pony fish             | Not Listed | DD   |
| Leiognathidae | <i>Eubleekeria splendens</i>       | (Cuvier, 1829)                    | Splendid ponyfish            | Not Listed | DD   |
| Leiognathidae | <i>Gazza minuta</i>                | (Bloch, 1795)                     | Toothed ponyfish             | Not Listed | LC   |
| Leiognathidae | <i>Karalla daura</i>               | (Cuvier, 1829)                    | Goldstripe ponyfish          | Not Listed | LC   |
| Leiognathidae | <i>Karalla dussumieri</i>          | (Valenciennes, 1835)              | Dussumier's ponyfish         | Not Listed | DD   |
| Leiognathidae | <i>Nuchequula blochii</i>          | (Valenciennes, 1835)              | Twoblotch ponyfish           | Not Listed | DD   |
| Leiognathidae | <i>Nuchequula gerreoides</i>       | (Bleeker, 1851)                   | Decorated ponyfish           | Not Listed | DD   |
| Leiognathidae | <i>Nuchequula longicornis</i>      | Kimura, Kimura & Ikejima, 2008    | Long-horn ponyfish           | Not Listed | DD   |
| Leiognathidae | <i>Nuchequula mannusella</i>       | Chakrabarty & Sparks, 2007        | Saddle ponyfish              | Not Listed | DD   |
| Leiognathidae | <i>Photolateralis stercorarius</i> | (Evermann & Seale, 1907)          | Oblong slipmouth             | Not Listed | LC   |
| Lutjanidae    | <i>Lutjanus argentimaculatus</i>   | (Forsskål, 1775)                  | Mangrove red snapper         | Not Listed | NT   |
| Lutjanidae    | <i>Lutjanus carponotatus</i>       | (Richardson, 1842)                | Spanish flag snapper         | Not Listed | VU   |
| Lutjanidae    | <i>Lutjanus decussatus</i>         | (Cuvier, 1828)                    | Checkered snapper            | Not Listed | EN   |
| Lutjanidae    | <i>Lutjanus erythropterus</i>      | Bloch, 1790                       | Crimson snapper              | Not Listed | DD   |
| Lutjanidae    | <i>Lutjanus fulvivlamma</i>        | (Forsskål, 1775)                  | Dory snapper                 | Not Listed | DD   |
| Lutjanidae    | <i>Lutjanus johnii</i>             | (Bloch, 1792)                     | John's snapper               | Not Listed | NT   |
| Lutjanidae    | <i>Lutjanus lutjanus</i>           | Bloch, 1790                       | Bigeye snapper               | Not Listed | VU   |
| Lutjanidae    | <i>Lutjanus malabaricus</i>        | (Bloch & Schneider, 1801)         | Malabar blood snapper        | Not Listed | VU   |
| Lutjanidae    | <i>Lutjanus rivulatus</i>          | (Cuvier, 1828)                    | Blubberlip snapper           | Not Listed | DD   |
| Lutjanidae    | <i>Lutjanus russelli</i>           | (Bleeker, 1849)                   | Russell's snapper            | Not Listed | NT   |
| Lutjanidae    | <i>Lutjanus sebae</i>              | (Cuvier, 1816)                    | Emperor red snapper          | Not Listed | CR   |
| Lutjanidae    | <i>Lutjanus stellatus</i>          | Akazaki, 1983                     | Star snapper                 | Not Listed | DD   |
| Lutjanidae    | <i>Lutjanus vitta</i>              | (Quoy & Gaimard, 1824)            | Brownstripe red snapper      | Not Listed | VU   |
| Lutjanidae    | <i>Lutjanus xanثopinnis</i>        | Iwatsuki, Tanaka & Allen, 2015    | Yellowfin snapper            | Not Listed | DD   |
| Caesionidae   | <i>Caesio caerulaurea</i>          | Lacepède, 1801                    | Blue and gold fusilier       | Not Listed | CR   |
| Caesionidae   | <i>Caesio cuning</i>               | (Bloch, 1791)                     | Redbelly yellowtail fusilier | Not Listed | LC   |
| Lobotidae     | <i>Lobotes surinamensis</i>        | (Bloch, 1790)                     | Tripletail                   | Not Listed | VU   |
| Haplogenyidae | <i>Haplogenyis analis</i>          | Richardson, 1845                  | Broadbanded velvetchin       | Not Listed | CR   |
| Gerreidae     | <i>Gerres erythrourus</i>          | (Bloch, 1791)                     | Deep-bodied mojarra          | Not Listed | NT   |
| Gerreidae     | <i>Gerres filamentosus</i>         | Cuvier, 1829                      | Whipfin mojarra              | Not Listed | NT   |
| Gerreidae     | <i>Gerres oyena</i>                | (Forsskål, 1775)                  | Common mojarra               | Not Listed | LC   |
| Gerreidae     | <i>Gerres shima</i>                | Iwatsuki, Kimura & Yoshi no, 2007 | Banded silver-biddy          | Not Listed | DD   |

| Family       | Taxon Name                            | Authority                      | Common Name                | RDB2       | RDB3 |
|--------------|---------------------------------------|--------------------------------|----------------------------|------------|------|
| Gerreidae    | <i>Pentapirion longimanus</i>         | (Cantor, 1849)                 | Longfin morjarra           | Not Listed | DD   |
| Haemulidae   | <i>Pomadasys argenteus</i>            | (Forsskål, 1775)               | Silver grunt               | Not Listed | NT   |
| Haemulidae   | <i>Pomadasys auritus</i>              | (Cuvier, 1830)                 | Longhead grunt             | Not Listed | NT   |
| Haemulidae   | <i>Pomadasys kaakan</i>               | (Cuvier, 1830)                 | Javelin grunt              | Not Listed | LC   |
| Haemulidae   | <i>Pomadasys maculatus</i>            | (Bloch, 1793)                  | Saddle grunt               | Not Listed | NT   |
| Haemulidae   | <i>Pomadasys trifasciatus</i>         | Fowler, 1937                   | Black-ear grunt            | Not Listed | DD   |
| Haemulidae   | <i>Pomadasys unimaculatus</i>         | Tian, 1982                     | Red-patched grunt          | Not Listed | DD   |
| Haemulidae   | <i>Diagramma pictum</i>               | (Thunberg, 1792)               | Painted sweetlips          | Not Listed | VU   |
| Haemulidae   | <i>Plectorhinchus chaetodonoides</i>  | Lacepède, 1801                 | Harlequin sweetlips        | Not Listed | EN   |
| Haemulidae   | <i>Plectorhinchus chrysotaenia</i>    | (Bleeker, 1855)                | Yellow-striped sweetlips   | Not Listed | EN   |
| Haemulidae   | <i>Plectorhinchus gibbosus</i>        | (Lacepède, 1802)               | Brown sweetlips            | Not Listed | VU   |
| Sparidae     | <i>Acanthopagrus pacificus</i>        | Iwatsuki, Kume & Yoshino, 2010 | Pikey bream                | Not Listed | DD   |
| Lethrinidae  | <i>Lethrinus lentjan</i>              | (Lacepède, 1802)               | Pinkear emperor            | Not Listed | LC   |
| Lethrinidae  | <i>Lethrinus nebulosus</i>            | (Forsskål, 1775)               | Spangled emperor           | Not Listed | NT   |
| Nemipteridae | <i>Nemipterus nemurus</i>             | (Bleeker, 1857)                | Redspine threadfin bream   | Not Listed | DD   |
| Nemipteridae | <i>Nemipterus peronii</i>             | (Valenciennes, 1830)           | Notchedfin threadfin bream | Not Listed | DD   |
| Nemipteridae | <i>Pentapodus bifasciatus</i>         | (Bleeker, 1848)                | White-shoulder whiptail    | Not Listed | VU   |
| Nemipteridae | <i>Pentapodus setosus</i>             | (Valenciennes, 1830)           | Butterfly whiptail         | Not Listed | LC   |
| Nemipteridae | <i>Pentapodus trivittatus</i>         | (Bloch, 1791)                  | Three-striped whiptail     | Not Listed | VU   |
| Nemipteridae | <i>Scolopsis bilineata</i>            | (Bloch, 1793)                  | Two-lined monocle bream    | Not Listed | VU   |
| Nemipteridae | <i>Scolopsis ciliata</i>              | (Lacepède, 1802)               | Saw-jawed monocle bream    | Not Listed | LC   |
| Nemipteridae | <i>Scolopsis margaritifera</i>        | (Cuvier, 1830)                 | Pearly monocle bream       | Not Listed | VU   |
| Nemipteridae | <i>Scolopsis monogramma</i>           | (Cuvier, 1830)                 | Monogrammed monocle bream  | Not Listed | LC   |
| Nemipteridae | <i>Scolopsis japonica</i>             | (Cuvier, 1830)                 | Lattice monocle bream      | Not Listed | VU   |
| Nemipteridae | <i>Scolopsis vosmeri</i>              | (Bloch, 1792)                  | Whitecheek monocle bream   | Not Listed | NT   |
| Sciaenidae   | <i>Dendrophysa russelli</i>           | (Cuvier, 1829)                 | Goatee croaker             | Not Listed | DD   |
| Sciaenidae   | <i>Johnius belangerii</i>             | (Cuvier, 1830)                 | Belanger's croaker         | Not Listed | NT   |
| Sciaenidae   | <i>Johnius carouna</i>                | (Cuvier, 1830)                 | Caroun croaker             | Not Listed | DD   |
| Sciaenidae   | <i>Nibea soldado</i>                  | (Lacepède, 1802)               | Soldier croaker            | Not Listed | DD   |
| Sciaenidae   | <i>Otolithes ruber</i>                | (Bloch & Schneider, 1801)      | Tigetooth croaker          | Not Listed | NT   |
| Sciaenidae   | <i>Otolithoides biauritus</i>         | (Cantor, 1849)                 | Bronze croaker             | Not Listed | NT   |
| Sciaenidae   | <i>Pennahia anea</i>                  | (Bloch, 1793)                  | Donkey croaker             | Not Listed | DD   |
| Sciaenidae   | <i>Pseudolarimichthys terengganui</i> |                                |                            | Not Listed | DD   |
| Sciaenidae   | <i>Sciaenops ocellatus</i>            | (Linnaeus, 1766)               | Red drum                   | Not Listed | NT   |
| Polynemidae  | <i>Eleutheronema tetradactylum</i>    | (Shaw, 1804)                   | Fourfinger threadfin       | Not Listed | NT   |

| Family         | Taxon Name                        | Authority                 | Common Name              | RDB2       | RDB3 |
|----------------|-----------------------------------|---------------------------|--------------------------|------------|------|
| Polynemidae    | <i>Leptomelanosoma indicum</i>    | (Shaw, 1804)              | Indian threadfin         | Not Listed | DD   |
| Polynemidae    | <i>Polydactylus sextarius</i>     | (Bloch & Schneider, 1801) | Blackspot threadfin      | Not Listed | DD   |
| Mullidae       | <i>Parupeneus cyclostomus</i>     | (Lacepède, 1801)          | Gold-saddle goatfish     | Not Listed | DD   |
| Mullidae       | <i>Parupeneus heptacanthus</i>    | (Lacepède, 1802)          | Cinnabar goatfish        | Not Listed | DD   |
| Mullidae       | <i>Upeneus heterospinus</i>       | Uiblein & Pavlov, 2019    | Varied-spine goatfish    | Not Listed | DD   |
| Mullidae       | <i>Upeneus sulphureus</i>         | Cuvier, 1829              | Sulphur goatfish         | Not Listed | DD   |
| Mullidae       | <i>Upeneus sundaicus</i>          | (Bleeker, 1855)           | Ochre-banded goatfish    | Not Listed | DD   |
| Mullidae       | <i>Upeneus tragula</i>            | Richardson, 1846          | Freckled goatfish        | Not Listed | NT   |
| Toxotidae      | <i>Toxotes chatareus</i>          | (Hamilton, 1822)          | Spotted archerfish       | Not Listed | NT   |
| Toxotidae      | <i>Toxotes jaculatrix</i>         | (Pallas, 1767)            | Banded archerfish        | Not Listed | LC   |
| Drepaneidae    | <i>Drepane longimana</i>          | (Bloch & Schneider, 1801) | Concertina fish          | Not Listed | VU   |
| Drepaneidae    | <i>Drepane punctata</i>           | (Linnaeus, 1758)          | Spotted sicklefish       | Not Listed | NT   |
| Monodactylidae | <i>Monodactylus argenteus</i>     | (Linnaeus, 1758)          | Silver moony             | Not Listed | NT   |
| Cepolidae      | <i>Acanthocephala abbreviata</i>  | (Valenciennes, 1835)      | Bandfish                 | Not Listed | DD   |
| Chaetodontidae | <i>Chaetodon adiergastos</i>      | Seale, 1910               | Philippine butterflyfish | Not Listed | DD   |
| Chaetodontidae | <i>Chaetodon collare</i>          | Bloch, 1787               | Redtail butterflyfish    | Not Listed | DD   |
| Chaetodontidae | <i>Chaetodon kleinii</i>          | Bloch, 1790               | Sunburst butterflyfish   | Not Listed | DD   |
| Chaetodontidae | <i>Chaetodon lunula</i>           | (Lacepède, 1802)          | Raccoon butterflyfish    | Not Listed | DD   |
| Chaetodontidae | <i>Chaetodon oligacanthus</i>     | (Cuvier, 1831)            | Sixspine butterflyfish   | Not Listed | VU   |
| Chaetodontidae | <i>Chaetodon octofasciatus</i>    | Bloch, 1787               | Eightband butterflyfish  | Not Listed | NT   |
| Chaetodontidae | <i>Chelmon rostratus</i>          | (Linnaeus, 1758)          | Copperband butterflyfish | Not Listed | LC   |
| Chaetodontidae | <i>Coradion chrysozonus</i>       | (Cuvier, 1831)            | Goldengirdled coralfish  | Not Listed | VU   |
| Chaetodontidae | <i>Heniochus acuminatus</i>       | (Linnaeus, 1758)          | Pennant coral fish       | Not Listed | CR   |
| Chaetodontidae | <i>Heniochus monoceros</i>        | Cuvier, 1831              | Masked bannerfish        | Not Listed | CR   |
| Chaetodontidae | <i>Heniochus varius</i>           | (Cuvier, 1829)            | Horned bannerfish        | Not Listed | CR   |
| Pomacanthidae  | <i>Chaetodontoplus mesoleucus</i> | (Bloch, 1787)             | Vermiculated angelfish   | Not Listed | NT   |
| Pomacanthidae  | <i>Pomacanthus annularis</i>      | (Bloch, 1787)             | Bluering angelfish       | Not Listed | EN   |
| Pomacanthidae  | <i>Pomacanthus imperator</i>      | (Bloch, 1787)             | Emperor angelfish        | Not Listed | DD   |
| Pomacanthidae  | <i>Pomacanthus semicirculatus</i> | (Cuvier, 1831)            | Semicircle angelfish     | Not Listed | DD   |
| Pomacanthidae  | <i>Pomacanthus sexstriatus</i>    | (Cuvier, 1831)            | Sixbar angelfish         | Not Listed | NT   |
| Pomacentridae  | <i>Amphiprion clarkii</i>         | (Bennett, 1830)           | Yellowtail clownfish     | VU         | CR   |
| Pomacentridae  | <i>Amphiprion ocellaris</i>       | Cuvier, 1830              | Clown anemonefish        | VU         | NT   |
| Pomacentridae  | <i>Amphiprion frenatus</i>        | Brevoort, 1856            | Tomato clownfish         | VU         | NT   |

| Family        | Taxon Name                           | Authority                      | Common Name                       | RDB2       | RDB3 |
|---------------|--------------------------------------|--------------------------------|-----------------------------------|------------|------|
| Pomacentridae | <i>Amphiprion perideraion</i>        | Bleeker, 1855                  | Pink anemonefish                  | VU         | CR   |
| Pomacentridae | <i>Amphiprion polymnus</i>           | (Linnaeus, 1758)               | Saddleback clownfish              | VU         | DD   |
| Pomacentridae | <i>Abudefduf bengalensis</i>         | (Bloch, 1787)                  | Bengal sergeant                   | Not Listed | LC   |
| Pomacentridae | <i>Abudefduf notatus</i>             | (Day, 1870)                    | Dusky damsel; Yellowtail sergeant | Not Listed | DD   |
| Pomacentridae | <i>Abudefduf sexfasciatus</i>        | (Lacepède, 1801)               | Scissortail sergeant              | Not Listed | LC   |
| Pomacentridae | <i>Abudefduf sordidus</i>            | (Forsskål, 1775)               | Blackspot sergeant                | Not Listed | DD   |
| Pomacentridae | <i>Abudefduf vaigiensis</i>          | (Quoy & Gaimard, 1825)         | Indo-Pacific sergeant             | Not Listed | NT   |
| Pomacentridae | <i>Amblyglyphidodon curacao</i>      | (Bloch, 1787)                  | Staghorn damselfish               | Not Listed | CR   |
| Pomacentridae | <i>Chromis atripectoralis</i>        | Welanders & Schultz, 1951      | Black-axil chromis                | Not Listed | DD   |
| Pomacentridae | <i>Chromis cinerascens</i>           | (Cuvier, 1830)                 | Green puller                      | Not Listed | LC   |
| Pomacentridae | <i>Chrysiptera parasema</i>          | (Fowler, 1918)                 | Goldtail demoiselle               | Not Listed | DD   |
| Pomacentridae | <i>Chrysiptera unimaculata</i>       | (Cuvier, 1830)                 | Onespot demoiselle                | Not Listed | DD   |
| Pomacentridae | <i>Dascyllus aruanus</i>             | (Linnaeus, 1758)               | Whitetail dascyllus               | Not Listed | CR   |
| Pomacentridae | <i>Dascyllus trimaculatus</i>        | (Rüppell, 1829)                | Threespot dascyllus               | Not Listed | EN   |
| Pomacentridae | <i>Dascyllus reticulatus</i>         | (Richardson, 1846)             | Reticulate dascyllus              | Not Listed | CR   |
| Pomacentridae | <i>Dischistodus chrysopoecilus</i>   | (Schlegel & Müller, 1839)      | White-spot damsel                 | Not Listed | DD   |
| Pomacentridae | <i>Dischistodus fasciatus</i>        | (Cuvier, 1830)                 | Banded damsel                     | Not Listed | NT   |
| Pomacentridae | <i>Dischistodus perspicillatus</i>   | (Cuvier, 1830)                 | White damsel                      | Not Listed | VU   |
| Pomacentridae | <i>Dischistodus prosopotaenia</i>    | (Bleeker, 1852)                | Honey-head damsel                 | Not Listed | NT   |
| Pomacentridae | <i>Hemiglyphidodon plagiometopon</i> | (Bleeker, 1852)                | Lagoon damselfish                 | Not Listed | VU   |
| Pomacentridae | <i>Neoglyphidodon melas</i>          | (Cuvier, 1830)                 | Bowtie damselfish                 | Not Listed | CR   |
| Pomacentridae | <i>Neoglyphidodon nigroris</i>       | (Cuvier, 1830)                 | Black-gold chromis                | Not Listed | CR   |
| Pomacentridae | <i>Neopomacentrus anabatooides</i>   | (Bleeker, 1847)                | Silver demoiselle                 | Not Listed | DD   |
| Pomacentridae | <i>Neopomacentrus bankieri</i>       | (Richardson, 1846)             | Chinese demoiselle                | Not Listed | LC   |
| Pomacentridae | <i>Neopomacentrus cyanomos</i>       | (Bleeker, 1856)                | Regal demoiselle                  | Not Listed | LC   |
| Pomacentridae | <i>Neopomacentrus filamentosus</i>   | (Macleay, 1882)                | Brown demoiselle                  | Not Listed | LC   |
| Pomacentridae | <i>Pomacentrus alexanderae</i>       | Evermann & Seale, 1907         | Alexander's damsel                | Not Listed | EN   |
| Pomacentridae | <i>Pomacentrus bankanensis</i>       | Bleeker, 1854                  | Speckled damsel                   | Not Listed | DD   |
| Pomacentridae | <i>Pomacentrus cheraphilus</i>       | Allen, Erdmann & Hiloman, 2011 |                                   | Not Listed | LC   |
| Pomacentridae | <i>Pomacentrus littoralis</i>        | Cuvier, 1830                   | Smoky damsel                      | Not Listed | LC   |
| Pomacentridae | <i>Pomacentrus moluccensis</i>       | Bleeker, 1853                  | Lemon damsel                      | Not Listed | EN   |
| Pomacentridae | <i>Pomacentrus simsiang</i>          | Bleeker, 1856                  | Blueback damsel                   | Not Listed | VU   |
| Pomacentridae | <i>Pomacentrus tripunctatus</i>      | Cuvier, 1830                   | Threespot damsel                  | Not Listed | LC   |
| Pomacentridae | <i>Stegastes obreptus</i>            | (Whitley, 1948)                | Western gregory                   | Not Listed | EN   |
| Labridae      | <i>Cheilinus chlorourus</i>          | (Bloch, 1791)                  | Floral wrasse                     | Not Listed | LC   |

| Family        | Taxon Name                      | Authority                 | Common Name               | RDB2       | RDB3 |
|---------------|---------------------------------|---------------------------|---------------------------|------------|------|
| Labridae      | <i>Cheilinus fasciatus</i>      | (Bloch, 1791)             | Redbreasted wrasse        | Not Listed | EN   |
| Labridae      | <i>Choerodon anchorago</i>      | (Bloch, 1791)             | Orange-dotted tuskfish    | Not Listed | LC   |
| Labridae      | <i>Choerodon oligacanthus</i>   | (Bleeker, 1851)           | White-patch tuskfish      | Not Listed | NT   |
| Labridae      | <i>Choerodon schoenleinii</i>   | (Valenciennes, 1839)      | Blackspot tuskfish        | Not Listed | NT   |
| Labridae      | <i>Epibulus insidiator</i>      | (Pallas, 1770)            | Sling-jaw wrasse          | Not Listed | VU   |
| Labridae      | <i>Halichoeres argus</i>        | (Bloch & Schneider, 1801) | Argus wrasse              | Not Listed | CR   |
| Labridae      | <i>Halichoeres bicolor</i>      | (Bloch & Schneider, 1801) | Pearly-spotted wrasse     | Not Listed | LC   |
| Labridae      | <i>Halichoeres binotopsis</i>   | (Bleeker, 1849)           | Saowisata wrasse          | Not Listed | DD   |
| Labridae      | <i>Halichoeres chloropterus</i> | (Bloch, 1791)             | Pastel-green wrasse       | Not Listed | NT   |
| Labridae      | <i>Halichoeres erdmanni</i>     | Randall & Allen, 2010     | Erdmann's wrasse          | Not Listed | LC   |
| Labridae      | <i>Halichoeres kneri</i>        | Bleeker, 1862             | Kner's wrasse             | Not Listed | NT   |
| Labridae      | <i>Halichoeres leucurus</i>     | (Walbaum, 1792)           | Greyhead wrasse           | Not Listed | LC   |
| Labridae      | <i>Halichoeres melanochir</i>   | Fowler & Bean, 1928       | Orangefin wrasse          | Not Listed | VU   |
| Labridae      | <i>Halichoeres melanurus</i>    | (Bleeker, 1851)           | Tail-spot wrasse          | Not Listed | VU   |
| Labridae      | <i>Halichoeres nigrescens</i>   | (Bloch & Schneider, 1801) | Bubblefin wrasse          | Not Listed | LC   |
| Labridae      | <i>Hemigymnus melapterus</i>    | (Bloch, 1791)             | Blackeye thicklip         | Not Listed | VU   |
| Labridae      | <i>Iniistius trivittatus</i>    | (Randall & Cornish, 2000) | Three banded razorfish    | Not Listed | DD   |
| Labridae      | <i>Labroides dimidiatus</i>     | (Valenciennes, 1839)      | Bluestreak cleaner wrasse | Not Listed | CR   |
| Labridae      | <i>Leptojulis cyanopleura</i>   | (Bleeker, 1853)           | Shoulder-spot wrasse      | Not Listed | NT   |
| Labridae      | <i>Leptojulis urostigma</i>     | Randall, 1996             | Tailmark wrasse           | Not Listed | NT   |
| Labridae      | <i>Oxycheilinus digrammus</i>   | (Lacepède, 1801)          | Cheeklined wrasse         | Not Listed | DD   |
| Labridae      | <i>Pteragogus flagellifer</i>   | (Valenciennes, 1839)      | Cocktail wrasse           | Not Listed | DD   |
| Labridae      | <i>Stethojulis interrupta</i>   | (Bleeker, 1851)           | Cutribbon wrasse          | Not Listed | DD   |
| Labridae      | <i>Thalassoma lunare</i>        | (Linnaeus, 1758)          | Moon wrasse               | Not Listed | CR   |
| Scaridae      | <i>Scarus ghobban</i>           | Forsskål, 1775            | Blue-barred parrotfish    | Not Listed | VU   |
| Scaridae      | <i>Scarus rivulatus</i>         | Valenciennes, 1840        | Rivulated parrotfish      | Not Listed | VU   |
| Scaridae      | <i>Scarus schlegeli</i>         | (Bleeker, 1861)           | Yellowband parrotfish     | Not Listed | DD   |
| Scaridae      | <i>Scarus quoyi</i>             | Valenciennes, 1840        | Quoy's parrotfish         | Not Listed | VU   |
| Uranoscopidae | <i>Ichthyscopus lebeck</i>      | (Bloch & Schneider, 1801) | Longnosed stargazer       | Not Listed | NT   |
| Trichonotidae | <i>Trichonotus setiger</i>      | Bloch & Schneider, 1801   | Spotted sand diver        | Not Listed | NT   |
| Pinguipedidae | <i>Parapercis filamentosa</i>   | (Steindachner, 1878)      | Threadfin sandperch       | Not Listed | DD   |
| Pinguipedidae | <i>Parapercis lineopunctata</i> | Randall, 2003             | Nosestripe sandperch      | Not Listed | VU   |
| Pinguipedidae | <i>Parapercis snyderi</i>       | Jordan & Starks, 1905     | U-mark sandperch          | Not Listed | VU   |

| Family             | Taxon Name                          | Authority                   | Common Name               | RDB2       | RDB3 |
|--------------------|-------------------------------------|-----------------------------|---------------------------|------------|------|
| Pinguipedidae      | <i>Parapercis xanthozona</i>        | (Bleeker, 1849)             | Yellowbar sandperch       | Not Listed | NT   |
| Callionymidae      | <i>Callionymus enneactis</i>        | Bleeker, 1879               | Mangrove dragonet         | Not Listed | NT   |
| Callionymidae      | <i>Callionymus erythraeus</i>       | Ninni, 1934                 | Smallhead dragonet        | Not Listed | DD   |
| Callionymidae      | <i>Callionymus hindsii</i>          | Richardson, 1844            | Hinds' dragonet           | Not Listed | DD   |
| Callionymidae      | <i>Callionymus melanotopterus</i>   | Bleeker, 1850               | Indonesian flag dragonet  | Not Listed | DD   |
| Callionymidae      | <i>Callionymus sagitta</i>          | Pallas, 1770                | Arrow dragonet            | Not Listed | DD   |
| Callionymidae      | <i>Callionymus schappii</i>         | Bleeker, 1852               | Short-snout sand-dragonet | Not Listed | NT   |
| Callionymidae      | <i>Dactylopus dactylopus</i>        | (Valenciennes, 1837)        | Fingered dragonet         | Not Listed | CR   |
| Callionymidae      | <i>Dactylopus kuiteri</i>           | (Fricke, 1992)              | Orange-black dragonet     | Not Listed | CR   |
| Callionymidae      | <i>Synchiropus lineolatus</i>       | (Valenciennes, 1837)        | Indian ornate dragonet    | Not Listed | DD   |
| Ephippidae         | <i>Ephippus orbis</i>               | (Bloch, 1787)               | Orbfish                   | Not Listed | EN   |
| Ephippidae         | <i>Platax batavianus</i>            | Cuvier, 1831                | Humpback batfish          | Not Listed | EN   |
| Ephippidae         | <i>Platax orbicularis</i>           | (Forsskål, 1775)            | Orbicular batfish         | Not Listed | EN   |
| Ephippidae         | <i>Platax pinnatus</i>              | (Linnaeus, 1758)            | Dusky batfish             | Not Listed | EN   |
| Ephippidae         | <i>Platax teira</i>                 | (Forsskål, 1775)            | Longfin batfish           | Not Listed | EN   |
| Ephippidae         | <i>Proteracanthus sarissophorus</i> | (Cantor, 1849)              | Harpoon spadefish         | Not Listed | DD   |
| Scatophagidae      | <i>Scatophagus argus</i>            | (Linnaeus, 1766)            | Spotted Scat              | Not Listed | LC   |
| Siganidae          | <i>Siganus canaliculatus</i>        | (Park, 1797)                | White-spotted spinefoot   | Not Listed | NT   |
| Siganidae          | <i>Siganus corallinus</i>           | (Valenciennes, 1835)        | Blue-spotted spinefoot    | Not Listed | VU   |
| Siganidae          | <i>Siganus guttatus</i>             | (Bloch, 1787)               | Orange-spotted spinefoot  | Not Listed | NT   |
| Siganidae          | <i>Siganus javus</i>                | (Linnaeus, 1766)            | Streaked spinefoot        | Not Listed | NT   |
| Siganidae          | <i>Siganus punctatus</i>            | (Schneider & Forster, 1801) | Goldspotted spinefoot     | Not Listed | VU   |
| Siganidae          | <i>Siganus virgatus</i>             | (Valenciennes, 1835)        | Barhead spinefoot         | Not Listed | EN   |
| Siganidae          | <i>Siganus vulpinus</i>             | (Schlegel & Müller, 1845)   | Foxface spinefoot         | Not Listed | CR   |
| Acanthuridae       | <i>Acanthurus mata</i>              | (Cuvier, 1829)              | Elongate Surgeonfish      | Not Listed | CR   |
| Acanthuridae       | <i>Zebbrasoma velifer</i>           | (Bloch, 1795)               | Sailfin tang              | Not Listed | DD   |
| Sphyraenidae       | <i>Sphyraena barracuda</i>          | (Edwards, 1771)             | Great barracuda           | Not Listed | EN   |
| Sphyraenidae       | <i>Sphyraena jello</i>              | Cuvier, 1829                | Pickhandle barracuda      | Not Listed | NT   |
| Sphyraenidae       | <i>Sphyraena obtusata</i>           | Cuvier, 1829                | Obtuse barracuda          | Not Listed | VU   |
| Rhincodontidae     | <i>Rhincodon typus</i>              | Smith, 1829                 | Whale shark               | Not Listed | CR   |
| Hemiscylliidae     | <i>Chiloscyllium griseum</i>        | Müller & Henle, 1838        | Grey bambooshark          | Not Listed | CR   |
| Stegostomatidae    | <i>Stegostoma fasciatum</i>         | (Hermann, 1783)             | Zebra shark               | Not Listed | CR   |
| Ginglymostomatidae | <i>Nebrius ferrugineus</i>          | (Lesson, 1831)              | Tawny nurse shark         | Not Listed | CR   |
| Carcharhinidae     | <i>Carcharhinus falciformis</i>     | Müller & Henle, 1839        | Silky shark               | Not Listed | CR   |
| Carcharhinidae     | <i>Carcharhinus leucas</i>          | Müller & Henle, 1839        | Bull shark                | Not Listed | CR   |

| Family         | Taxon Name                       | Authority                   | Common Name              | RDB2       | RDB3 |
|----------------|----------------------------------|-----------------------------|--------------------------|------------|------|
| Carcharhinidae | <i>Carcharhinus sealei</i>       | (Pietschmann, 1913)         | Blackspot shark          | Not Listed | CR   |
| Narkidae       | <i>Narke dipterygia</i>          | (Bloch & Schneider, 1801)   | Spottail sleeper-ray     | Not Listed | CR   |
| Narcinidae     | <i>Narcine maculata</i>          | (Shaw, 1804)                | Darkfinned numbfish      | Not Listed | CR   |
| Glaucostegidae | <i>Glaucostegus typus</i>        | (Bennett, 1830)             | Giant shovelnosed ray    | Not Listed | CR   |
| Rhinidae       | <i>Rhina ancylostoma</i>         | Bloch & Schneider, 1801     | Bowmouth guitarfish      | Not Listed | CR   |
| Rhinidae       | <i>Rhynchobatus australiae</i>   | Whitley, 1939               | White-spotted wedgefish  | Not Listed | CR   |
| Rhinidae       | <i>Rhynchobatus springeri</i>    | Compagno & Last, 2010       | Broadnose wedgefish      | Not Listed | CR   |
| Pristidae      | <i>Pristis pristis</i>           | (Linnaeus, 1758)            | Largetooth sawfish       | Not Listed | CR   |
| Dasyatidae     | <i>Taeniurops meyeri</i>         | (Müller & Henle, 1841)      | Round ribbontail-ray     | Not Listed | CR   |
| Dasyatidae     | <i>Himantura uarnak</i>          | (Gmelin, 1789)              | Reticulate whipray       | Not Listed | CR   |
| Dasyatidae     | <i>Himantura undulata</i>        | (Bleeker, 1852)             | Honeycomb whipray        | Not Listed | CR   |
| Dasyatidae     | <i>Urogymnus granulatus</i>      | (Macleay, 1883)             | Whitetail stingray       | Not Listed | CR   |
| Dasyatidae     | <i>Pastinachus ater</i>          | (Macleay, 1883)             | Broad cowtail-ray        | Not Listed | CR   |
| Gymnuridae     | <i>Gymnura poecilura</i>         | (Shaw, 1804)                | Longtail butterfly-ray   | Not Listed | CR   |
| Aetobatidae    | <i>Aetobatus ocellatus</i>       | (Kuhl, 1823)                | Ocellated eagle-ray      | Not Listed | CR   |
| Rhinopteridae  | <i>Rhinoptera javanica</i>       | Müller & Henle, 1841        | Javan cownose-ray        | Not Listed | CR   |
| Mobulidae      | <i>Mobula kuhlii</i>             | (Müller & Henle, 1841)      | Shortfin devil-ray       | Not Listed | CR   |
| Carcharhinidae | <i>Galeocerdo cuvier</i>         | (Péron & Lesueur, 1822)     | Tiger shark              | Not Listed | DD   |
| Narkidae       | <i>Temera hardwickii</i>         | Gray, 1831                  | Finless sleeper-ray      | Not Listed | DD   |
| Gymnuridae     | <i>Gymnura zonura</i>            | (Bleeker, 1852)             | Zonetail butterfly-ray   | Not Listed | DD   |
| Myliobatidae   | <i>Aetomylaeus nichofii</i>      | (Bloch & Schneider, 1801)   | Banded eagle-ray         | Not Listed | DD   |
| Hemiscylliidae | <i>Chiloscyllium indicum</i>     | (Gmelin, 1789)              | Slender bambooshark      | Not Listed | EN   |
| Hemiscylliidae | <i>Chiloscyllium plagiosum</i>   | (Anonymous [Bennett], 1830) | Whitespotted bambooshark | Not Listed | EN   |
| Hemiscylliidae | <i>Chiloscyllium punctatum</i>   | Müller & Henle, 1838        | Brownbanded bambooshark  | Not Listed | EN   |
| Scyliorhinidae | <i>Atelomycterus marmoratus</i>  | (Anonymous [Bennett], 1830) | Coral catshark           | Not Listed | EN   |
| Carcharhinidae | <i>Carcharhinus melanopterus</i> | Quoy & Gaimard, 1824        | Blacktip reef shark      | Not Listed | EN   |
| Dasyatidae     | <i>Telatrygon biasa</i>          | Last, White & Naylor, 2016  | Indonesian sharpnose ray | Not Listed | EN   |
| Dasyatidae     | <i>Maculabatis macrura</i>       | (Bleeker, 1852)             | Sharpnose whipray        | Not Listed | EN   |
| Dasyatidae     | <i>Neotrygon varidens</i>        | Last, White & Serét, 2016   | Mahogany maskray         | Not Listed | VU   |
| Dasyatidae     | <i>Taeniura lymma</i>            | (Forsskål, 1775)            | Bluespotted fantail-ray  | Not Listed | VU   |
| Dasyatidae     | <i>Brevitrygon heterura</i>      | (Bleeker, 1852)             | Dwarf whipray            | Not Listed | VU   |

## Checklist of Amphibian Species with their Category of Threat Status for Singapore

Prepared by Noel Thomas, Law Ing Sind, Kelvin K.P. Lim

| Family         | Taxon Name                          | Common Name                   | Origin     | RDB2       | RDB3 |
|----------------|-------------------------------------|-------------------------------|------------|------------|------|
| Ichthyophiidae | <i>Ichthyophis paucisulcus</i>      | Asian Striped Caecilian       | Native     | CR         | CR   |
| Bufo           | <i>Duttaphrynus bengalensis</i>     | Asian Toad                    | Introduced | Not Listed | NA   |
| Bufo           | <i>Ingerophrynus quadriporcatus</i> | Four-ridged Toad              | Native     | Not Listed | VU   |
| Bufo           | <i>Pelophryne ingeri</i>            | Inger's Cross Toadlet         | Native     | CR         | CR   |
| Megophryidae   | <i>Pelobatrachus nasutus</i>        | Malayan Horned Frog           | Native     | EN         | CR   |
| Megophryidae   | <i>Leptobrachium nigrops</i>        | Black-eyed Litter Frog        | Native     | Not Listed | NT   |
| Dicroglossidae | <i>Fejervarya limnocharis</i>       | Field Frog                    | Native     | Not Listed | LC   |
| Dicroglossidae | <i>Fejervarya cancrivora</i>        | Crab-eating Frog              | Native     | Not Listed | LC   |
| Dicroglossidae | <i>Limnonectes blythii</i>          | Malayan Giant Frog            | Native     | Not Listed | LC   |
| Dicroglossidae | <i>Limnonectes paramacrodon</i>     | Lesser Swamp Frog             | Native     | EN         | CR   |
| Dicroglossidae | <i>Limnonectes plicatellus</i>      | Rhinoceros Frog               | Native     | EN         | CR   |
| Dicroglossidae | <i>Limnonectes malesianus</i>       | Malesian Frog                 | Native     | Not Listed | NT   |
| Dicroglossidae | <i>Occidozyga sumatrana</i>         | Yellow-bellied Puddle Frog    | Native     | Not Listed | NT   |
| Ranidae        | <i>Hylarana erythraea</i>           | Common Greenback              | Native     | Not Listed | LC   |
| Ranidae        | <i>Hylarana labialis</i>            | Copper-cheeked Frog           | Native     | Not Listed | LC   |
| Ranidae        | <i>Hylarana laterimaculata</i>      | Masked Rough-sided Frog       | Native     | Not Listed | NT   |
| Ranidae        | <i>Hylarana baramica</i>            | Golden-eared Rough-sided Frog | Native     | VU         | VU   |
| Rhacophoridae  | <i>Polypedates leucomystax</i>      | Common Tree Frog              | Native     | Not Listed | LC   |
| Rhacophoridae  | <i>Nyctixalus pictus</i>            | Cinnamon Bush Frog            | Native     | VU         | VU   |
| Rhacophoridae  | <i>Leptomantis cyanopunctatus</i>   | Blue-legged Bush Frog         | Native     | CR         | CR   |
| Rhacophoridae  | <i>Theloderma horridum</i>          | Thorny Bush Frog              | Native     | CR         | CR   |
| Microhylidae   | <i>Kalophrynus limbooliati</i>      | Limbooliat's Sticky Frog      | Native     | VU         | VU   |
| Microhylidae   | <i>Micryletta subaraji</i>          | Subaraj's Paddy Frog          | Native     | Not Listed | CR   |
| Microhylidae   | <i>Microhyla butleri</i>            | Painted Chorus Frog           | Native     | Not Listed | LC   |
| Microhylidae   | <i>Microhyla heymonsi</i>           | Dark-sided Chorus Frog        | Native     | Not Listed | LC   |
| Microhylidae   | <i>Microhyla mantheyi</i>           | Manthey's Chorus Frog         | Native     | CR         | VU   |



## Checklist of Reptile Species with their Category of Threat Status for Singapore

Prepared by Noel Thomas, Law Ing Sind, Kelvin K.P. Lim

| Family         | Taxon Name                            | Common Name                  | RDB2       | RDB3 |
|----------------|---------------------------------------|------------------------------|------------|------|
| Geomydidae     | <i>Cuora couro</i>                    | Malayan Box Turtle           | Not Listed | NT   |
| Trionychidae   | <i>Amyda cartilaginea</i>             | Asian Softshell              | EN         | VU   |
| Geoemydidae    | <i>Cyclemys dentata</i>               | Asian Leaf Turtle            | CR         | CR   |
| Trionychidae   | <i>Dogania supлана</i>                | Malayan Softshell Turtle     | CR         | CR   |
| Geoemydidae    | <i>Heosemys spinosa</i>               | Spiny Hill Turtle            | VU         | EN   |
| Geoemydidae    | <i>Notochelys platynota</i>           | Malayan Flatshell Turtle     | EN         | CR   |
| Cheloniidae    | <i>Eretmochelys imbricata</i>         | Hawksbill Turtle             | CR         | CR   |
| Cheloniidae    | <i>Chelonia mydas</i>                 | Green Sea Turtle             | CR         | CR   |
| Crocodylidae   | <i>Crocodylus porosus</i>             | Estuarine Crocodile          | CR         | CR   |
| Agamidae       | <i>Aphaniotis fusca</i>               | Earless Agamid               | EN         | EN   |
| Agamidae       | <i>Bronchocela cristatella</i>        | Green Crested Lizard         | Not Listed | LC   |
| Agamidae       | <i>Draco melanopogon</i>              | Black-bearded Gliding Lizard | VU         | VU   |
| Agamidae       | <i>Draco quinquefasciatus</i>         | Five-banded Gliding Lizard   | EN         | EN   |
| Agamidae       | <i>Draco sumatranus</i>               | Common Gliding Lizard        | Not Listed | LC   |
| Gekkonidae     | <i>Aeluroscalabotes felinus</i>       | Fox-faced Gecko              | CR         | CR   |
| Gekkonidae     | <i>Cnemaspis peninsularis</i>         | Peninsular Rock Gecko        | VU         | VU   |
| Gekkonidae     | <i>Cyrtodactylus consobrinus</i>      | Peter's Bent-toed Gecko      | CR         | CR   |
| Gekkonidae     | <i>Cyrtodactylus majulah</i>          | Singapore Bent-toed Gecko    | Not Listed | VU   |
| Gekkonidae     | <i>Cyrtodactylus pantiensis</i>       | Panti Bent-toed Gecko        | Not Listed | CR   |
| Gekkonidae     | <i>Cyrtodactylus semenanjungensis</i> | Peninsular Bent-toed Gecko   | Not Listed | CR   |
| Gekkonidae     | <i>Cyrtodactylus quadrivirgatus</i>   | Striped Bent-toed Gecko      | VU         | CR   |
| Gekkonidae     | <i>Gekko hulk</i>                     | Green-eyed Forest Gecko      | CR         | CR   |
| Gekkonidae     | <i>Hemidactylus frenatus</i>          | Common House Gecko           | Not Listed | LC   |
| Gekkonidae     | <i>Cosymbotus craspedotus</i>         | Friilly Gecko                | CR         | CR   |
| Gekkonidae     | <i>Hemidactylus platyurus</i>         | Flat-tailed Gecko            | Not Listed | LC   |
| Gekkonidae     | <i>Gehyra multilata</i>               | Four-clawed Gecko            | Not Listed | LC   |
| Gekkonidae     | <i>Lepidodactylus lugubris</i>        | Maritime Gecko               | Not Listed | LC   |
| Gekkonidae     | <i>Gekko monarchus</i>                | Spotted House Gecko          | Not Listed | LC   |
| Gekkonidae     | <i>Hemiphyllodactylus typus</i>       | Lowland Dwarf Gecko          | VU         | NT   |
| Gekkonidae     | <i>Gekko browni</i>                   | Flap-legged Gecko            | CR         | CR   |
| Gekkonidae     | <i>Gekko kuhli</i>                    | Kuhl's Gliding Gecko         | CR         | CR   |
| Scincidae      | <i>Dasia grisea</i>                   | Brown Tree Skink             | EN         | VU   |
| Scincidae      | <i>Dasia olivacea</i>                 | Olive Tree Skink             | EN         | CR   |
| Scincidae      | <i>Emoia atrocostata</i>              | Mangrove Skink               | EN         | CR   |
| Scincidae      | <i>Eutropis multifasciatus</i>        | Common Sun Skink             | Not Listed | LC   |
| Scincidae      | <i>Eutropis longicaudata</i>          | Long-tailed Sun Skink        | Not Listed | DD   |
| Scincidae      | <i>Eutropis rugifera</i>              | Rough-scaled Sun Skink       | EN         | VU   |
| Scincidae      | <i>Lygosoma bowringii</i>             | Supple Skink                 | Not Listed | LC   |
| Scincidae      | <i>Lygosoma siamense</i>              | Thai Supple Skink            | Not Listed | DD   |
| Scincidae      | <i>Lipinia vittigera</i>              | Striped Tree Skink           | EN         | EN   |
| Scincidae      | <i>Tytthoscincus temasekensis</i>     | Swamp Skink                  | CR         | EN   |
| Varanidae      | <i>Varanus dumerili</i>               | Dumeril's Monitor            | Not Listed | CR   |
| Varanidae      | <i>Varanus nebulosus</i>              | Clouded Monitor              | Not Listed | LC   |
| Varanidae      | <i>Varanus salvator</i>               | Malayan Water Monitor        | Not Listed | LC   |
| Acrochordidae  | <i>Acrochordus granulatus</i>         | Banded File Snake            | Not Listed | NT   |
| Typhlopidae    | <i>Indotyphlops braminus</i>          | Brahminy Blind Snake         | Not Listed | LC   |
| Typhlopidae    | <i>Ramphotyphlops lineatus</i>        | Lineated Blind Snake         | Not Listed | CR   |
| Typhlopidae    | <i>Argyrophis muelleri</i>            | White-bellied Blind Snake    | CR         | CR   |
| Cylindrophidae | <i>Cylindrophis cf. ruffus</i>        | Red-tailed Pipe Snake        | CR         | VU   |

| Family       | Taxon Name                         | Common Name                 | RDB2       | RDB3 |
|--------------|------------------------------------|-----------------------------|------------|------|
| Xenopeltidae | <i>Xenopeltis unicolor</i>         | Sunbeam Snake               | Not Listed | LC   |
| Pythonidae   | <i>Malayopython reticulatus</i>    | Reticulated Python          | Not Listed | LC   |
| Colubridae   | <i>Ahaetulla fasciolata</i>        | Speckle-headed Whip Snake   | CR         | CR   |
| Colubridae   | <i>Ahaetulla mycterizans</i>       | Big-eyed Whip Snake         | CR         | VU   |
| Colubridae   | <i>Ahaetulla prasina</i>           | Oriental Whip Snake         | Not Listed | LC   |
| Colubridae   | <i>Boiga cynodon</i>               | Dog-toothed Cat Snake       | EN         | VU   |
| Colubridae   | <i>Boiga dendrophila</i>           | Gold-ringed Cat Snake       | VU         | NT   |
| Colubridae   | <i>Boiga drapiezii</i>             | White-spotted Cat Snake     | Not Listed | CR   |
| Colubridae   | <i>Boiga jaspidea</i>              | Jasper's Cat Snake          | CR         | CR   |
| Colubridae   | <i>Calamara schlegeli</i>          | Pink-headed Reed Snake      | VU         | NT   |
| Colubridae   | <i>Calamaria lumbricoidea</i>      | Variable Reed Snake         | EN         | EN   |
| Colubridae   | <i>Calamaria lovi gimletti</i>     | Gimlet's Reed Snake         | Not Listed | EN   |
| Colubridae   | <i>Chrysopelea paradisi</i>        | Paradise Tree Snake         | Not Listed | LC   |
| Colubridae   | <i>Chrysopelea pelias</i>          | Twin-barred Tree Snake      | Not Listed | NT   |
| Colubridae   | <i>Coelognathus flavolineatus</i>  | Malayan Racer               | EN         | LC   |
| Colubridae   | <i>Dendrelaphis caudolineatus</i>  | Striped Bronzeback          | Not Listed | LC   |
| Colubridae   | <i>Dendrelaphis haasi</i>          | Haas' Bronzeback            | Not Listed | CR   |
| Colubridae   | <i>Dendrelaphis formosus</i>       | Elegant Bronzeback          | EN         | VU   |
| Colubridae   | <i>Dendrelaphis cyanochloris</i>   | Blue Bronzeback             | Not Listed | EN   |
| Colubridae   | <i>Dendrelaphis kopsteini</i>      | Kopstein's Bronzeback       | VU         | NT   |
| Colubridae   | <i>Dendrelaphis pictus</i>         | Painted Bronzeback          | LC         | LC   |
| Colubridae   | <i>Lycodon subannulatus</i>        | Malayan Bridle Snake        | EN         | EN   |
| Colubridae   | <i>Dryophiops rubescens</i>        | Keel-bellied Whip Snake     | CR         | EN   |
| Colubridae   | <i>Gongyosoma baliodeirum</i>      | Orange-bellied Ringneck     | EN         | EN   |
| Colubridae   | <i>Gonyosoma oxycephalum</i>       | Red-tailed Racer            | EN         | VU   |
| Colubridae   | <i>Lycodon subcinctus</i>          | Banded Wolf Snake           | CR         | CR   |
| Colubridae   | <i>Lycodon capucinus</i>           | Common House Snake          | Not Listed | LC   |
| Colubridae   | <i>Oligodon octolineatus</i>       | Striped Kukri Snake         | Not Listed | LC   |
| Colubridae   | <i>Oligodon purpurascens</i>       | Brown Kukri Snake           | CR         | CR   |
| Colubridae   | <i>Oligodon signatus</i>           | Barred Kukri Snake          | CR         | EN   |
| Colubridae   | <i>Pseudorabdion longiceps</i>     | Dwarf Reed Snake            | EN         | NT   |
| Colubridae   | <i>Ptyas carinata</i>              | Keeled Rat Snake            | Not Listed | VU   |
| Colubridae   | <i>Ptyas fusca</i>                 | White-bellied Rat Snake     | EN         | VU   |
| Colubridae   | <i>Ptyas korros</i>                | Indochinese Rat Snake       | Not Listed | LC   |
| Colubridae   | <i>Sibynophis melanocephalus</i>   | Black-headed Collared Snake | EN         | VU   |
| Colubridae   | <i>Xenelaphis hexagonatus</i>      | Malayan Brown Snake         | EN         | CR   |
| Paretidae    | <i>Asthenodipsas laevis</i>        | Smooth Slug Snake           | Not Listed | CR   |
| Homalopsidae | <i>Cantorina violacea</i>          | Cantor's Water Snake        | CR         | EN   |
| Homalopsidae | <i>Cerberus schneiderii</i>        | Dog-faced Water Snake       | Not Listed | LC   |
| Homalopsidae | <i>Fordonia leucobalia</i>         | Crab-eating Water Snake     | EN         | EN   |
| Homalopsidae | <i>Gerarda prevostiana</i>         | Gerard's Water Snake        | EN         | EN   |
| Homalopsidae | <i>Homalopsis buccata</i>          | Puff-faced Water Snake      | VU         | VU   |
| Homalopsidae | <i>Phytolopsis punctata</i>        | Blackwater Mud Snake        | Not Listed | CR   |
| Homalopsidae | <i>Raclinia indica</i>             | Selangor Mud Snake          | Not Listed | CR   |
| Natricidae   | <i>Rhabdophis rhodomelas</i>       | Blue-necked Keelback        | EN         | VU   |
| Natricidae   | <i>Psammodynastes pictus</i>       | Painted Mock Viper          | CR         | CR   |
| Natricidae   | <i>Xenochrophis maculatus</i>      | Spotted Keelback            | VU         | VU   |
| Natricidae   | <i>Xenochrophis trianguligerus</i> | Triangle Keelback           | CR         | CR   |
| Elapidae     | <i>Bungarus fasciatus</i>          | Banded Krait                | EN         | VU   |
| Elapidae     | <i>Calliophis bivirgatus</i>       | Malayan Blue Coral Snake    | VU         | VU   |
| Elapidae     | <i>Calliophis intestinalis</i>     | Malayan Banded Coral Snake  | VU         | NT   |
| Elapidae     | <i>Naja sumatrana</i>              | Equatorial Spitting Cobra   | LC         | LC   |

| Family    | Taxon Name                            | Common Name              | RDB2       | RDB3 |
|-----------|---------------------------------------|--------------------------|------------|------|
| Elapidae  | <i>Ophiophagus hannah</i>             | King Cobra               | EN         | VU   |
| Elapidae  | <i>Laticauda colubrina</i>            | Yellow-lipped Sea Krait  | EN         | VU   |
| Viperidae | <i>Trimeresurus purpureomaculatus</i> | Shore Pit Viper          | EN         | VU   |
| Viperidae | <i>Tropidolaemus wagleri</i>          | Wagler's Pit Viper       | EN         | NT   |
| Elapidae  | <i>Aipysurus eydouxii</i>             | Marbled Sea Snake        | Not Listed | EN   |
| Elapidae  | <i>Hydrophis hardwickii</i>           | Hardwicke's Sea Snake    | Not Listed | EN   |
| Elapidae  | <i>Hydrophis platurus</i>             | Yellow-bellied Sea Snake | Not Listed | EN   |

## Checklist of Bird Species with their Category of Threat Status for Singapore

Prepared by Yong D.L., Chia A., Jain A., Lee B.P.Y.-H., Li D.Z.W., Davison G.W.H., Lim G., Tan G.C., Lee J., Lim K.C., Lim K.S., Nyanasengaran M.

| Family        | Taxon Name                         | Common Name                 | Origin     | RDB2       | RDB3 |
|---------------|------------------------------------|-----------------------------|------------|------------|------|
| Phasianidae   | <i>Excalfactoria chinensis</i>     | King Quail                  | Native     | Not Listed | LC   |
| Phasianidae   | <i>Gallus gallus</i>               | Red Junglefowl              | Native     | EN         | NT   |
| Anatidae      | <i>Dendrocygna arcuata</i>         | Wandering Whistling Duck    | Introduced | Not Listed | NA   |
| Anatidae      | <i>Dendrocygna javanica</i>        | Lesser Whistling Duck       | Native     | EN         | EN   |
| Anatidae      | <i>Nettapus coromandelianus</i>    | Cotton Pygmy Goose          | Native     | CR         | CR   |
| Anatidae      | <i>Spatula querquedula</i>         | Garganey                    | Native     | Not Listed | VU   |
| Anatidae      | <i>Spatula clypeata</i>            | Northern Shoveler           | Native     | Not Listed | NE   |
| Anatidae      | <i>Mareca strepera</i>             | Gadwall                     | Native     | Not Listed | NE   |
| Anatidae      | <i>Mareca penelope</i>             | Eurasian Wigeon             | Native     | Not Listed | NE   |
| Anatidae      | <i>Anas acuta</i>                  | Northern Pintail            | Native     | Not Listed | NE   |
| Anatidae      | <i>Anas crecca</i>                 | Eurasian Teal               | Native     | Not Listed | NE   |
| Anatidae      | <i>Aythya fuligula</i>             | Tufted Duck                 | Native     | Not Listed | NE   |
| Caprimulgidae | <i>Lyncornis temminckii</i>        | Malaysian Eared Nightjar    | Native     | CR         | CR   |
| Caprimulgidae | <i>Caprimulgus jotaka</i>          | Grey Nightjar               | Native     | Not Listed | LC   |
| Caprimulgidae | <i>Caprimulgus macrurus</i>        | Large-tailed Nightjar       | Native     | Not Listed | LC   |
| Caprimulgidae | <i>Caprimulgus affinis</i>         | Savanna Nightjar            | Native     | LC         | LC   |
| Hemiprocidae  | <i>Hemiprocne longipennis</i>      | Grey-rumped Treeswift       | Native     | Not Listed | NT   |
| Hemiprocidae  | <i>Hemiprocne comata</i>           | Whiskered Treeswift         | Native     | Not Listed | LC   |
| Apodidae      | <i>Collocalia affinis</i>          | Plume-toed Swiftlet         | Native     | CR         | VU   |
| Apodidae      | <i>Aerodramus maximus</i>          | Black-nest Swiftlet         | Native     | Not Listed | NT   |
| Apodidae      | <i>Aerodramus germani</i>          | Germain's Swiftlet          | Native     | Not Listed | LC   |
| Apodidae      | <i>Hirundapus cochinchinensis</i>  | Silver-backed Needletail    | Native     | Not Listed | LC   |
| Apodidae      | <i>Hirundapus giganteus</i>        | Brown-backed Needletail     | Native     | Not Listed | LC   |
| Apodidae      | <i>Hirundapus caudacutus</i>       | White-throated Needletail   | Native     | Not Listed | LC   |
| Apodidae      | <i>Cypsiurus balasiensis</i>       | Asian Palm Swift            | Native     | Not Listed | NT   |
| Apodidae      | <i>Apus pacificus</i>              | Pacific Swift               | Native     | Not Listed | LC   |
| Apodidae      | <i>Apus nipalensis</i>             | House Swift                 | Native     | Not Listed | VU   |
| Apodidae      | <i>Apus apus</i>                   | Common Swift                | Native     | Not Listed | NE   |
| Cuculidae     | <i>Centropus sinensis</i>          | Greater Coucal              | Native     | Not Listed | NT   |
| Cuculidae     | <i>Centropus bengalensis</i>       | Lesser Coucal               | Native     | Not Listed | LC   |
| Cuculidae     | <i>Phaenicophaeus sumatranus</i>   | Chestnut-bellied Malkoha    | Native     | NT         | NT   |
| Cuculidae     | <i>Clamator coromandus</i>         | Chestnut-winged Cuckoo      | Native     | Not Listed | LC   |
| Cuculidae     | <i>Clamator jacobinus</i>          | Jacobin Cuckoo              | Native     | Not Listed | NE   |
| Cuculidae     | <i>Eudynamis scolopaceus</i>       | Asian Koel                  | Native     | Not Listed | LC   |
| Cuculidae     | <i>Chrysococcyx maculatus</i>      | Asian Emerald Cuckoo        | Native     | Not Listed | NE   |
| Cuculidae     | <i>Chrysococcyx xanthorhynchus</i> | Violet Cuckoo               | Native     | EN         | VU   |
| Cuculidae     | <i>Chrysococcyx basalis</i>        | Horsfield's Bronze Cuckoo   | Native     | Not Listed | LC   |
| Cuculidae     | <i>Chrysococcyx minutillus</i>     | Little Bronze Cuckoo        | Native     | Not Listed | LC   |
| Cuculidae     | <i>Cacomantis sonneratii</i>       | Banded Bay Cuckoo           | Native     | Not Listed | LC   |
| Cuculidae     | <i>Cacomantis merulinus</i>        | Plaintive Cuckoo            | Native     | Not Listed | LC   |
| Cuculidae     | <i>Cacomantis sepulchralis</i>     | Rusty-breasted Cuckoo       | Native     | VU         | NT   |
| Cuculidae     | <i>Surniculus lugubris</i>         | Square-tailed Drongo-Cuckoo | Native     | CR         | VU   |
| Cuculidae     | <i>Hierococcyx sparveroides</i>    | Large Hawk-Cuckoo           | Native     | Not Listed | LC   |
| Cuculidae     | <i>Hierococcyx fugax</i>           | Malaysian Hawk-Cuckoo       | Native     | Not Listed | NT   |
| Cuculidae     | <i>Hierococcyx nisicolor</i>       | Hodgson's Hawk-Cuckoo       | Native     | Not Listed | NT   |
| Cuculidae     | <i>Cuculus micropterus</i>         | Indian Cuckoo               | Native     | Not Listed | LC   |
| Cuculidae     | <i>Cuculus saturatus</i>           | Himalayan Cuckoo            | Native     | Not Listed | LC   |
| Columbidae    | <i>Columba livia</i>               | Rock Dove                   | Introduced | Not Listed | NA   |

| Family           | Taxon Name                        | Common Name                  | Origin                 | RDB2       | RDB3 |
|------------------|-----------------------------------|------------------------------|------------------------|------------|------|
| Columbidae       | <i>Streptopelia orientalis</i>    | Oriental Turtle Dove         | Native                 | Not Listed | NE   |
| Columbidae       | <i>Streptopelia tranquebarica</i> | Red Turtle Dove              | Introduced             | Not Listed | NA   |
| Columbidae       | <i>Spilopelia chinensis</i>       | Spotted Dove                 | Native                 | Not Listed | LC   |
| Columbidae       | <i>Chalcophaps indica</i>         | Common Emerald Dove          | Native                 | Not Listed | LC   |
| Columbidae       | <i>Geopelia striata</i>           | Zebra Dove                   | Native                 | Not Listed | LC   |
| Columbidae       | <i>Treron fulvicollis</i>         | Cinnamon-headed Green Pigeon | Native                 | Not Listed | EN   |
| Columbidae       | <i>Treron olax</i>                | Little Green Pigeon          | Native                 | CR         | CR   |
| Columbidae       | <i>Treron vernans</i>             | Pink-necked Green Pigeon     | Native                 | Not Listed | LC   |
| Columbidae       | <i>Treron bicinctus</i>           | Orange-breasted Green Pigeon | Native                 | Not Listed | LC   |
| Columbidae       | <i>Treron curvirostra</i>         | Thick-billed Green Pigeon    | Native                 | EN         | VU   |
| Columbidae       | <i>Ptilinopus jambu</i>           | Jambu Fruit Dove             | Native                 | Not Listed | VU   |
| Columbidae       | <i>Ducula aenea</i>               | Green Imperial Pigeon        | Native                 | Not Listed | EN   |
| Columbidae       | <i>Ducula badia</i>               | Mountain Imperial Pigeon     | Native                 | Not Listed | LC   |
| Columbidae       | <i>Ducula bicolor</i>             | Pied Imperial Pigeon         | Native +<br>Introduced | Not Listed | DD   |
| Heliornithidae   | <i>Heliopais personatus</i>       | Masked Finfoot               | Native                 | Not Listed | EN   |
| Rallidae         | <i>Rallina fasciata</i>           | Red-legged Crake             | Native                 | VU         | NT   |
| Rallidae         | <i>Rallina eurizonoides</i>       | Slaty-legged Crake           | Native                 | Not Listed | LC   |
| Rallidae         | <i>Gallirallus striatus</i>       | Slaty-breasted Rail          | Native                 | Not Listed | LC   |
| Rallidae         | <i>Amaurornis phoenicurus</i>     | White-breasted Waterhen      | Native                 | Not Listed | LC   |
| Rallidae         | <i>Porzana pusilla</i>            | Baillon's Crake              | Native                 | Not Listed | VU   |
| Rallidae         | <i>Porzana fusca</i>              | Ruddy-breasted Crake         | Native                 | NT         | NT   |
| Rallidae         | <i>Porzana paykullii</i>          | Band-bellied Crake           | Native                 | Not Listed | NT   |
| Rallidae         | <i>Porzana cinerea</i>            | White-browed Crake           | Native                 | Not Listed | VU   |
| Rallidae         | <i>Gallicrex cinerea</i>          | Watercock                    | Native                 | Not Listed | EN   |
| Rallidae         | <i>Porphyrio poliocephalus</i>    | Grey-headed Swampphen        | Native                 | NT         | CR   |
| Rallidae         | <i>Gallinula chloropus</i>        | Common Moorhen               | Native                 | Not Listed | EN   |
| Rallidae         | <i>Fulica atra</i>                | Eurasian Coot                | Native                 | Not Listed | NE   |
| Podicipedidae    | <i>Tachybaptus ruficollis</i>     | Little Grebe                 | Native                 | CR         | CR   |
| Turnicidae       | <i>Turnix suscitator</i>          | Barred Buttonquail           | Native                 | Not Listed | LC   |
| Burhinidae       | <i>Esacus magnirostris</i>        | Beach Stone-curlew           | Native                 | CR         | CR   |
| Recurvirostridae | <i>Himantopus himantopus</i>      | Black-winged Stilt           | Native                 | Not Listed | DD   |
| Recurvirostridae | <i>Himantopus leucocephalus</i>   | Pied Stilt                   | Native                 | Not Listed | DD   |
| Charadriidae     | <i>Vanellus cinereus</i>          | Grey-headed Lapwing          | Native                 | Not Listed | NE   |
| Charadriidae     | <i>Vanellus indicus</i>           | Red-wattled Lapwing          | Native                 | EN         | NT   |
| Charadriidae     | <i>Pluvialis fulva</i>            | Pacific Golden Plover        | Native                 | Not Listed | VU   |
| Charadriidae     | <i>Pluvialis squatarola</i>       | Grey Plover                  | Native                 | Not Listed | NT   |
| Charadriidae     | <i>Charadrius hiaticula</i>       | Common Ringed Plover         | Native                 | Not Listed | NE   |
| Charadriidae     | <i>Charadrius dubius</i>          | Little Ringed Plover         | Native                 | Not Listed | EN   |
| Charadriidae     | <i>Charadrius alexandrinus</i>    | Kentish Plover               | Native                 | Not Listed | EN   |
| Charadriidae     | <i>Anarhynchus dealbatus</i>      | White-faced Plover           | Native                 | Not Listed | EN   |
| Charadriidae     | <i>Charadrius peronii</i>         | Malaysian Plover             | Native                 | CR         | CR   |
| Charadriidae     | <i>Charadrius mongolus</i>        | Lesser Sand Plover           | Native                 | Not Listed | NT   |
| Charadriidae     | <i>Charadrius leschenaultii</i>   | Greater Sand Plover          | Native                 | Not Listed | NT   |
| Charadriidae     | <i>Charadrius veredus</i>         | Oriental Plover              | Native                 | Not Listed | LC   |
| Rostratulidae    | <i>Rostratula benghalensis</i>    | Greater Painted-snipe        | Native                 | CR         | EN   |
| Jacaniidae       | <i>Hydrophasianus chirurgus</i>   | Pheasant-tailed Jacana       | Native                 | Not Listed | VU   |
| Scolopacidae     | <i>Numenius phaeopus</i>          | Eurasian Whimbrel            | Native                 | Not Listed | NT   |
| Scolopacidae     | <i>Numenius minutus</i>           | Little Whimbrel              | Native                 | Not Listed | NE   |
| Scolopacidae     | <i>Numenius madagascariensis</i>  | Far Eastern Curlew           | Native                 | Not Listed | EN   |
| Scolopacidae     | <i>Numenius arquata</i>           | Eurasian Curlew              | Native                 | Not Listed | EN   |
| Scolopacidae     | <i>Limosa lapponica</i>           | Bar-tailed Godwit            | Native                 | Not Listed | VU   |

| Family         | Taxon Name                            | Common Name             | Origin | RDB2       | RDB3 |
|----------------|---------------------------------------|-------------------------|--------|------------|------|
| Scolopacidae   | <i>Limosa limosa</i>                  | Black-tailed Godwit     | Native | Not Listed | CR   |
| Scolopacidae   | <i>Arenaria interpres</i>             | Ruddy Turnstone         | Native | Not Listed | EN   |
| Scolopacidae   | <i>Calidris tenuirostris</i>          | Great Knot              | Native | Not Listed | EN   |
| Scolopacidae   | <i>Calidris canutus</i>               | Red Knot                | Native | Not Listed | NT   |
| Scolopacidae   | <i>Calidris pugnax</i>                | Ruff                    | Native | Not Listed | LC   |
| Scolopacidae   | <i>Calidris falcinellus</i>           | Broad-billed Sandpiper  | Native | Not Listed | VU   |
| Scolopacidae   | <i>Calidris acuminata</i>             | Sharp-tailed Sandpiper  | Native | Not Listed | NE   |
| Scolopacidae   | <i>Calidris ferruginea</i>            | Curlew Sandpiper        | Native | Not Listed | EN   |
| Scolopacidae   | <i>Calidris temminckii</i>            | Temminck's Stint        | Native | Not Listed | NE   |
| Scolopacidae   | <i>Calidris subminuta</i>             | Long-toed Stint         | Native | Not Listed | EN   |
| Scolopacidae   | <i>Calidris ruficollis</i>            | Red-necked Stint        | Native | Not Listed | NT   |
| Scolopacidae   | <i>Calidris pygmaea</i>               | Spoon-billed Sandpiper  | Native | Not Listed | CR   |
| Scolopacidae   | <i>Calidris alba</i>                  | Sanderling              | Native | Not Listed | EN   |
| Scolopacidae   | <i>Calidris alpina</i>                | Dunlin                  | Native | Not Listed | NE   |
| Scolopacidae   | <i>Calidris minuta</i>                | Little Stint            | Native | Not Listed | DD   |
| Scolopacidae   | <i>Calidris melanotos</i>             | Pectoral Sandpiper      | Native | Not Listed | NE   |
| Scolopacidae   | <i>Limnodromus semipalmatus</i>       | Asian Dowitcher         | Native | Not Listed | VU   |
| Scolopacidae   | <i>Scolopax rusticola</i>             | Eurasian Woodcock       | Native | Not Listed | NE   |
| Scolopacidae   | <i>Gallinago stenura</i>              | Pin-tailed Snipe        | Native | Not Listed | VU   |
| Scolopacidae   | <i>Gallinago megala</i>               | Swinhoe's Snipe         | Native | Not Listed | VU   |
| Scolopacidae   | <i>Gallinago gallinago</i>            | Common Snipe            | Native | Not Listed | VU   |
| Scolopacidae   | <i>Xenus cinereus</i>                 | Terek Sandpiper         | Native | Not Listed | EN   |
| Scolopacidae   | <i>Phalaropus lobatus</i>             | Red-necked Phalarope    | Native | Not Listed | DD   |
| Scolopacidae   | <i>Actitis hypoleucos</i>             | Common Sandpiper        | Native | Not Listed | VU   |
| Scolopacidae   | <i>Tringa ochropus</i>                | Green Sandpiper         | Native | Not Listed | LC   |
| Scolopacidae   | <i>Tringa brevipes</i>                | Grey-tailed Tattler     | Native | Not Listed | VU   |
| Scolopacidae   | <i>Tringa totanus</i>                 | Common Redshank         | Native | Not Listed | VU   |
| Scolopacidae   | <i>Tringa stagnatilis</i>             | Marsh Sandpiper         | Native | Not Listed | EN   |
| Scolopacidae   | <i>Tringa glareola</i>                | Wood Sandpiper          | Native | Not Listed | EN   |
| Scolopacidae   | <i>Tringa erythropus</i>              | Spotted Redshank        | Native | Not Listed | NE   |
| Scolopacidae   | <i>Tringa nebularia</i>               | Common Greenshank       | Native | Not Listed | VU   |
| Scolopacidae   | <i>Tringa guttifer</i>                | Nordmann's Greenshank   | Native | Not Listed | EN   |
| Glareolidae    | <i>Glareola maldivarum</i>            | Oriental Pratincole     | Native | Not Listed | EN   |
| Glareolidae    | <i>Glareola lactea</i>                | Small Pratincole        | Native | Not Listed | NE   |
| Laridae        | <i>Chroicocephalus brunnicephalus</i> | Brown-headed Gull       | Native | Not Listed | NE   |
| Laridae        | <i>Chroicocephalus ridibundus</i>     | Black-headed Gull       | Native | Not Listed | NT   |
| Sternidae      | <i>Gelochelidon nilotica</i>          | Gull-billed Tern        | Native | Not Listed | DD   |
| Sternidae      | <i>Hydroprogne caspia</i>             | Caspian Tern            | Native | Not Listed | NE   |
| Sternidae      | <i>Thalasseus bergii</i>              | Greater Crested Tern    | Native | Not Listed | EN   |
| Sternidae      | <i>Thalasseus bengalensis</i>         | Lesser Crested Tern     | Native | Not Listed | EN   |
| Sternidae      | <i>Sternula albifrons</i>             | Little Tern             | Native | EN         | EN   |
| Sternidae      | <i>Onychoprion aleuticus</i>          | Aleutian Tern           | Native | Not Listed | VU   |
| Sternidae      | <i>Onychoprion anaethetus</i>         | Bridled Tern            | Native | Not Listed | EN   |
| Sternidae      | <i>Sterna dougallii</i>               | Roseate Tern            | Native | Not Listed | NE   |
| Sternidae      | <i>Sterna sumatrana</i>               | Black-naped Tern        | Native | EN         | EN   |
| Sternidae      | <i>Sterna hirundo</i>                 | Common Tern             | Native | Not Listed | LC   |
| Sternidae      | <i>Chlidonias hybrida</i>             | Whiskered Tern          | Native | Not Listed | LC   |
| Sternidae      | <i>Chlidonias leucopterus</i>         | White-winged Tern       | Native | Not Listed | EN   |
| Stercorariidae | <i>Stercorarius parasiticus</i>       | Parasitic Jaeger        | Native | Not Listed | LC   |
| Stercorariidae | <i>Stercorarius longicaudus</i>       | Long-tailed Jaeger      | Native | Not Listed | LC   |
| Hydrobatidae   | <i>Oceanodroma monorhis</i>           | Swinhoe's Storm Petrel  | Native | Not Listed | NT   |
| Procellariidae | <i>Ardenna tenuirostris</i>           | Short-tailed Shearwater | Native | Not Listed | NE   |

| Family            | Taxon Name                     | Common Name               | Origin                 | RDB2       | RDB3 |
|-------------------|--------------------------------|---------------------------|------------------------|------------|------|
| Ciconiidae        | <i>Anastomus oscitans</i>      | Asian Openbill            | Native                 | Not Listed | LC   |
| Ciconiidae        | <i>Leptoptilos javanicus</i>   | Lesser Adjutant           | Native                 | Not Listed | VU   |
| Fregatidae        | <i>Fregata ariel</i>           | Lesser Frigatebird        | Native                 | Not Listed | LC   |
| Sulidae           | <i>Sula sula</i>               | Red-footed Booby          | Native                 | Not Listed | LC   |
| Sulidae           | <i>Sula leucogaster</i>        | Brown Booby               | Native                 | Not Listed | LC   |
| Anhingidae        | <i>Anhinga melanogaster</i>    | Oriental Darter           | Native                 | Not Listed | NT   |
| Threskiornithidae | <i>Plegadis falcinellus</i>    | Glossy Ibis               | Native                 | Not Listed | NE   |
| Ardeidae          | <i>Ixobrychus sinensis</i>     | Yellow Bittern            | Native                 | Not Listed | VU   |
| Ardeidae          | <i>Ixobrychus eurhythmus</i>   | Von Schrenck's Bittern    | Native                 | Not Listed | NT   |
| Ardeidae          | <i>Ixobrychus cinnamomeus</i>  | Cinnamon Bittern          | Native                 | Not Listed | VU   |
| Ardeidae          | <i>Ixobrychus flavicollis</i>  | Black Bittern             | Native                 | Not Listed | LC   |
| Ardeidae          | <i>Gorsachius melanolophus</i> | Malayan Night Heron       | Native                 | Not Listed | NT   |
| Ardeidae          | <i>Nycticorax nycticorax</i>   | Black-crowned Night Heron | Native                 | CR         | EN   |
| Ardeidae          | <i>Butorides striata</i>       | Striated Heron            | Native                 | Not Listed | NT   |
| Ardeidae          | <i>Ardeola grayii</i>          | Indian Pond Heron         | Native                 | Not Listed | NE   |
| Ardeidae          | <i>Ardeola bacchus</i>         | Chinese Pond Heron        | Native                 | Not Listed | LC   |
| Ardeidae          | <i>Ardeola speciosa</i>        | Javan Pond Heron          | Native                 | Not Listed | LC   |
| Ardeidae          | <i>Bubulcus coromandus</i>     | Eastern Cattle Egret      | Native +<br>Introduced | Not Listed | VU   |
| Ardeidae          | <i>Ardea cinerea</i>           | Grey Heron                | Native                 | VU         | LC   |
| Ardeidae          | <i>Ardea sumatrana</i>         | Great-billed Heron        | Native                 | CR         | CR   |
| Ardeidae          | <i>Ardea purpurea</i>          | Purple Heron              | Native                 | EN         | EN   |
| Ardeidae          | <i>Ardea alba</i>              | Great Egret               | Native                 | Not Listed | VU   |
| Ardeidae          | <i>Ardea intermedia</i>        | Intermediate Egret        | Native                 | Not Listed | LC   |
| Ardeidae          | <i>Egretta garzetta</i>        | Little Egret              | Native                 | Not Listed | LC   |
| Ardeidae          | <i>Egretta sacra</i>           | Pacific Reef Heron        | Native                 | Not Listed | EN   |
| Ardeidae          | <i>Egretta eulophotes</i>      | Chinese Egret             | Native                 | Not Listed | EN   |
| Pandionidae       | <i>Pandion haliaetus</i>       | Western Osprey            | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Elanus caeruleus</i>        | Black-winged Kite         | Native                 | Not Listed | VU   |
| Accipitridae      | <i>Pernis ptilorhynchus</i>    | Crested Honey Buzzard     | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Aviceda jerdoni</i>         | Jerdon's Baza             | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Aviceda leuphotes</i>       | Black Baza                | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Gyps himalayensis</i>       | Himalayan Vulture         | Native                 | Not Listed | NT   |
| Accipitridae      | <i>Spilornis cheela</i>        | Crested Serpent Eagle     | Native                 | CR         | CR   |
| Accipitridae      | <i>Circaetus gallicus</i>      | Short-toed Snake Eagle    | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Macheiramphus alcinus</i>   | Bat Hawk                  | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Nisaetus cirrhatus</i>      | Changeable Hawk-Eagle     | Native                 | EN         | VU   |
| Accipitridae      | <i>Lophotriorchis kienerii</i> | Rufous-bellied Eagle      | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Clanga clanga</i>           | Greater Spotted Eagle     | Native                 | Not Listed | VU   |
| Accipitridae      | <i>Hieraeetus pennatus</i>     | Booted Eagle              | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Aquila nipalensis</i>       | Steppe Eagle              | Native                 | Not Listed | NE   |
| Accipitridae      | <i>Aquila heliaca</i>          | Eastern Imperial Eagle    | Native                 | Not Listed | NE   |
| Accipitridae      | <i>Accipiter brevipes</i>      | Crested Goshawk           | Native                 | CR         | NT   |
| Accipitridae      | <i>Accipiter tridivus</i>      | Shikra                    | Native                 | Not Listed | NE   |
| Accipitridae      | <i>Accipiter soloensis</i>     | Chinese Sparrowhawk       | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Accipiter gularis</i>       | Japanese Sparrowhawk      | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Accipiter virgatus</i>      | Besra                     | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Accipiter nisus</i>         | Eurasian Sparrowhawk      | Native                 | Not Listed | NE   |
| Accipitridae      | <i>Circus spilonotus</i>       | Eastern Marsh Harrier     | Native                 | Not Listed | EN   |
| Accipitridae      | <i>Circus melanoleucos</i>     | Pied Harrier              | Native                 | Not Listed | LC   |
| Accipitridae      | <i>Milvus migrans</i>          | Black Kite                | Native                 | Not Listed | EN   |
| Accipitridae      | <i>Haliastur indus</i>         | Brahminy Kite             | Native                 | Not Listed | LC   |

| Family        | Taxon Name                         | Common Name               | Origin     | RDB2       | RDB3 |
|---------------|------------------------------------|---------------------------|------------|------------|------|
| Accipitridae  | <i>Haliaeetus leucogaster</i>      | White-bellied Sea Eagle   | Native     | Not Listed | LC   |
| Accipitridae  | <i>Haliaeetus ichthyaetus</i>      | Grey-headed Fish Eagle    | Native     | CR         | VU   |
| Accipitridae  | <i>Butastur indicus</i>            | Grey-faced Buzzard        | Native     | Not Listed | NT   |
| Accipitridae  | <i>Buteo buteo</i>                 | Common Buzzard            | Native     | Not Listed | LC   |
| Tytonidae     | <i>Tyto javanica</i>               | Eastern Barn Owl          | Native     | Not Listed | LC   |
| Strigidae     | <i>Otus lempiji</i>                | Sunda Scops Owl           | Native     | Not Listed | LC   |
| Strigidae     | <i>Otus sunia</i>                  | Oriental Scops Owl        | Native     | Not Listed | NT   |
| Strigidae     | <i>Bubo sumatranus</i>             | Barred Eagle Owl          | Native     | Not Listed | CR   |
| Strigidae     | <i>Ketupa ketupu</i>               | Buffy Fish Owl            | Native     | CR         | VU   |
| Strigidae     | <i>Strix seloputo</i>              | Spotted Wood Owl          | Native     | CR         | VU   |
| Strigidae     | <i>Strix leptogrammica</i>         | Brown Wood Owl            | Native     | Not Listed | CR   |
| Strigidae     | <i>Ninox scutulata</i>             | Brown Hawk-Owl            | Native     | Not Listed | LC   |
| Strigidae     | <i>Ninox japonica</i>              | Northern Boobook          | Native     | Not Listed | DD   |
| Strigidae     | <i>Asio flammeus</i>               | Short-eared Owl           | Native     | Not Listed | LC   |
| Bucerotidae   | <i>Anthraceroceros albirostris</i> | Oriental Pied Hornbill    | Native     | CR         | NT   |
| Bucerotidae   | <i>Anthraceroceros malayanus</i>   | Black Hornbill            | Native     | Not Listed | NT   |
| Coraciidae    | <i>Eurystomus orientalis</i>       | Oriental Dollarbird       | Native     | Not Listed | LC   |
| Alcedinidae   | <i>Pelargopsis capensis</i>        | Stork-billed Kingfisher   | Native     | Not Listed | LC   |
| Alcedinidae   | <i>Halcyon coromanda</i>           | Ruddy Kingfisher          | Native     | CR         | CR   |
| Alcedinidae   | <i>Halcyon smyrnensis</i>          | White-throated Kingfisher | Native     | Not Listed | LC   |
| Alcedinidae   | <i>Halcyon pileata</i>             | Black-capped Kingfisher   | Native     | Not Listed | VU   |
| Alcedinidae   | <i>Todiramphus chloris</i>         | Collared Kingfisher       | Native     | Not Listed | LC   |
| Alcedinidae   | <i>Alcedo meninting</i>            | Blue-eared Kingfisher     | Native     | CR         | EN   |
| Alcedinidae   | <i>Alcedo atthis</i>               | Common Kingfisher         | Native     | Not Listed | VU   |
| Alcedinidae   | <i>Ceyx erithaca</i>               | Oriental Dwarf Kingfisher | Native     | Not Listed | NT   |
| Alcedinidae   | <i>Ceryle rudis</i>                | Pied Kingfisher           | Native     | Not Listed | NE   |
| Meropidae     | <i>Merops philippinus</i>          | Blue-tailed Bee-eater     | Native     | Not Listed | LC   |
| Meropidae     | <i>Merops viridis</i>              | Blue-throated Bee-eater   | Native     | Not Listed | LC   |
| Megalaimidae  | <i>Psilopogon lineatus</i>         | Lineated Barbet           | Introduced | Not Listed | NA   |
| Megalaimidae  | <i>Psilopogon rafflesii</i>        | Red-crowned Barbet        | Native     | Not Listed | VU   |
| Megalaimidae  | <i>Psilopogon haemacephalus</i>    | Coppersmith Barbet        | Native     | Not Listed | LC   |
| Picidae       | <i>Yungipicus moluccensis</i>      | Sunda Pygmy Woodpecker    | Native     | Not Listed | LC   |
| Picidae       | <i>Dryocopus javensis</i>          | White-bellied Woodpecker  | Native     | CR         | CR   |
| Picidae       | <i>Chrysophlegma miniaceum</i>     | Banded Woodpecker         | Native     | Not Listed | LC   |
| Picidae       | <i>Picus puniceus</i>              | Crimson-winged Woodpecker | Native     | Not Listed | LC   |
| Picidae       | <i>Picus vittatus</i>              | Laced Woodpecker          | Native     | Not Listed | LC   |
| Picidae       | <i>Dinopium javanense</i>          | Common Flameback          | Native     | Not Listed | LC   |
| Picidae       | <i>Micropternus brachyurus</i>     | Rufous Woodpecker         | Native     | Not Listed | LC   |
| Picidae       | <i>Meiglyptes tristis</i>          | Buff-rumped Woodpecker    | Native     | Not Listed | LC   |
| Picidae       | <i>Mulleripicus pulverulentus</i>  | Great Slaty Woodpecker    | Native     | Not Listed | VU   |
| Falconidae    | <i>Microhierax fringillarius</i>   | Black-thighed Falconet    | Native     | CR         | LC   |
| Falconidae    | <i>Falco naumanni</i>              | Lesser Kestrel            | Native     | Not Listed | NE   |
| Falconidae    | <i>Falco tinnunculus</i>           | Common Kestrel            | Native     | Not Listed | LC   |
| Falconidae    | <i>Falco amurensis</i>             | Amur Falcon               | Native     | Not Listed | NE   |
| Falconidae    | <i>Falco peregrinus</i>            | Peregrine Falcon          | Native     | Not Listed | LC   |
| Falconidae    | <i>Falco subbuteo</i>              | Eurasian Hobby            | Native     | Not Listed | NE   |
| Cacatuidae    | <i>Cacatua goffiniana</i>          | Tanimbar Corella          | Introduced | Not Listed | NA   |
| Cacatuidae    | <i>Cacatua sulphurea</i>           | Yellow-crested Cockatoo   | Introduced | Not Listed | NA   |
| Psittaculidae | <i>Psittinus cyanurus</i>          | Blue-rumped Parrot        | Native     | CR         | EN   |
| Psittaculidae | <i>Psittacula alexandri</i>        | Red-breasted Parakeet     | Introduced | Not Listed | NA   |
| Psittaculidae | <i>Psittacula longicauda</i>       | Long-tailed Parakeet      | Native     | Not Listed | NT   |
| Psittaculidae | <i>Psittacula krameri</i>          | Rose-ringed Parakeet      | Introduced | Not Listed | NA   |



| Family          | Taxon Name                         | Common Name                    | Origin     | RDB2       | RDB3 |
|-----------------|------------------------------------|--------------------------------|------------|------------|------|
| Psittaculidae   | <i>Trichoglossus haematodus</i>    | Coconut Lorikeet               | Introduced | Not Listed | NA   |
| Psittaculidae   | <i>Loriculus galgulus</i>          | Blue-crowned Hanging Parrot    | Native     | EN         | LC   |
| Eurylaimidae    | <i>Cymbirhynchus macrorhynchos</i> | Black-and-red Broadbill        | Native     | Not Listed | CR   |
| Calyptomenidae  | <i>Calyptomena viridis</i>         | Green Broadbill                | Native     | Not Listed | NT   |
| Pittidae        | <i>Pitta sordida</i>               | Hooded Pitta                   | Native     | Not Listed | LC   |
| Pittidae        | <i>Pitta nympha</i>                | Fairy Pitta                    | Native     | Not Listed | DD   |
| Pittidae        | <i>Pitta moluccensis</i>           | Blue-winged Pitta              | Native     | Not Listed | LC   |
| Pittidae        | <i>Pitta megarhyncha</i>           | Mangrove Pitta                 | Native     | CR         | CR   |
| Acanthizidae    | <i>Gerygone sulphurea</i>          | Golden-bellied Gerygone        | Native     | Not Listed | NT   |
| Vangidae        | <i>Hemipus hirundinaceus</i>       | Black-winged Flycatcher-shrike | Native     | Not Listed | DD   |
| Vangidae        | <i>Tephrodornis virgatus</i>       | Large Woodshrike               | Native     | Not Listed | DD   |
| Aegithinidae    | <i>Aegithina tiphia</i>            | Common Iora                    | Native     | Not Listed | LC   |
| Campephagidae   | <i>Pericrocotus speciosus</i>      | Scarlet Minivet                | Native     | CR         | CR   |
| Campephagidae   | <i>Pericrocotus divaricatus</i>    | Ashy Minivet                   | Native     | Not Listed | LC   |
| Campephagidae   | <i>Lalage nigra</i>                | Pied Triller                   | Native     | Not Listed | LC   |
| Campephagidae   | <i>Lalage fimbriata</i>            | Lesser Cuckooshrike            | Native     | CR         | CR   |
| Pachycephalidae | <i>Pachycephala cinerea</i>        | Mangrove Whistler              | Native     | NT         | EN   |
| Laniidae        | <i>Lanius tigrinus</i>             | Tiger Shrike                   | Native     | Not Listed | NT   |
| Laniidae        | <i>Lanius cristatus</i>            | Brown Shrike                   | Native     | Not Listed | VU   |
| Laniidae        | <i>Lanius schach</i>               | Long-tailed Shrike             | Native     | Not Listed | LC   |
| Vireonidae      | <i>Erpornis zantholeuca</i>        | White-bellied Erpornis         | Native     | Not Listed | LC   |
| Oriolidae       | <i>Oriolus chinensis</i>           | Black-naped Oriole             | Native     | Not Listed | LC   |
| Dicruridae      | <i>Dicrurus macrocercus</i>        | Black Drongo                   | Native     | Not Listed | VU   |
| Dicruridae      | <i>Dicrurus leucophaeus</i>        | Ashy Drongo                    | Native     | Not Listed | LC   |
| Dicruridae      | <i>Dicrurus annectens</i>          | Crow-billed Drongo             | Native     | Not Listed | NT   |
| Dicruridae      | <i>Dicrurus hottentottus</i>       | Hair-crested Drongo            | Native     | Not Listed | NE   |
| Dicruridae      | <i>Dicrurus paradiseus</i>         | Greater Racket-tailed Drongo   | Native     | Not Listed | LC   |
| Rhipiduridae    | <i>Rhipidura javanica</i>          | Malaysian Pied Fantail         | Native     | Not Listed | LC   |
| Monarchidae     | <i>Hypothymis azurea</i>           | Black-naped Monarch            | Native     | CR         | CR   |
| Monarchidae     | <i>Terpsiphone paradisei</i>       | Indian Paradise Flycatcher     | Native     | Not Listed | NE   |
| Monarchidae     | <i>Terpsiphone affinis</i>         | Blyth's Paradise Flycatcher    | Native     | Not Listed | LC   |
| Monarchidae     | <i>Terpsiphone incei</i>           | Amur Paradise Flycatcher       | Native     | Not Listed | LC   |
| Monarchidae     | <i>Terpsiphone atrocauda</i>       | Japanese Paradise Flycatcher   | Native     | Not Listed | NT   |
| Corvidae        | <i>Corvus splendens</i>            | House Crow                     | Introduced | Not Listed | NA   |
| Corvidae        | <i>Corvus macrorhynchos</i>        | Large-billed Crow              | Native     | Not Listed | VU   |
| Paridae         | <i>Parus minor</i>                 | Japanese Tit                   | Native     | Not Listed | NE   |
| Alaudidae       | <i>Alauda arvensis</i>             | Eurasian Skylark               | Native     | Not Listed | NE   |
| Pycnonotidae    | <i>Pycnonotus zeylanicus</i>       | Straw-headed Bulbul            | Native     | EN         | EN   |
| Pycnonotidae    | <i>Pycnonotus melanoleucos</i>     | Black-and-white Bulbul         | Native     | Not Listed | NT   |
| Pycnonotidae    | <i>Pycnonotus atriceps</i>         | Black-headed Bulbul            | Native     | CR         | CR   |
| Pycnonotidae    | <i>Pycnonotus flaviventris</i>     | Black-crested Bulbul           | Introduced | Not Listed | NA   |
| Pycnonotidae    | <i>Pycnonotus jocosus</i>          | Red-whiskered Bulbul           | Introduced | Not Listed | NA   |
| Pycnonotidae    | <i>Pycnonotus aurigaster</i>       | Sooty-headed Bulbul            | Introduced | Not Listed | NA   |
| Pycnonotidae    | <i>Pycnonotus goiavier</i>         | Yellow-vented Bulbul           | Native     | Not Listed | LC   |
| Pycnonotidae    | <i>Pycnonotus plumosus</i>         | Olive-winged Bulbul            | Native     | Not Listed | LC   |
| Pycnonotidae    | <i>Pycnonotus simplex</i>          | Cream-vented Bulbul            | Native     | NT         | VU   |
| Pycnonotidae    | <i>Pycnonotus brunneus</i>         | Asian Red-eyed Bulbul          | Native     | EN         | VU   |
| Pycnonotidae    | <i>Iole crypta</i>                 | Buff-vented Bulbul             | Native     | CR         | CR   |
| Pycnonotidae    | <i>Ixos malaccensis</i>            | Streaked Bulbul                | Native     | Not Listed | NT   |
| Pycnonotidae    | <i>Hemixos cinereus</i>            | Cinereous Bulbul               | Native     | Not Listed | LC   |
| Hirundinidae    | <i>Riparia riparia</i>             | Sand Martin                    | Native     | Not Listed | LC   |
| Hirundinidae    | <i>Hirundo rustica</i>             | Barn Swallow                   | Native     | Not Listed | NT   |

| Family         | Taxon Name                         | Common Name                  | Origin                 | RDB2       | RDB3 |
|----------------|------------------------------------|------------------------------|------------------------|------------|------|
| Hirundinidae   | <i>Hirundo tahitica</i>            | Pacific Swallow              | Native                 | Not Listed | LC   |
| Hirundinidae   | <i>Delichon dasypus</i>            | Asian House Martin           | Native                 | Not Listed | LC   |
| Hirundinidae   | <i>Delichon urbica (lagopodum)</i> | Common House Martin          | Native                 | Not Listed | NE   |
| Hirundinidae   | <i>Cecropsis daurica</i>           | Red-rumped Swallow           | Native                 | Not Listed | LC   |
| Phylloscopidae | <i>Phylloscopus inornatus</i>      | Yellow-browed Warbler        | Native                 | Not Listed | LC   |
| Phylloscopidae | <i>Phylloscopus fuscatus</i>       | Dusky Warbler                | Native                 | Not Listed | NE   |
| Phylloscopidae | <i>Phylloscopus coronatus</i>      | Eastern Crowned Warbler      | Native                 | Not Listed | LC   |
| Phylloscopidae | <i>Phylloscopus borealoides</i>    | Sakhalin Leaf Warbler        | Native                 | Not Listed | NT   |
| Phylloscopidae | <i>Phylloscopus borealis</i>       | Arctic Warbler               | Native                 | Not Listed | LC   |
| Acrocephalidae | <i>Acrocephalus orientalis</i>     | Oriental Reed Warbler        | Native                 | Not Listed | VU   |
| Acrocephalidae | <i>Acrocephalus bistrigiceps</i>   | Black-browed Reed Warbler    | Native                 | Not Listed | NT   |
| Acrocephalidae | <i>Iduna caligata</i>              | Booted Warbler               | Native                 | Not Listed | NE   |
| Locustellidae  | <i>Helopsaltes certhiola</i>       | Pallas' Grasshopper Warbler  | Native                 | Not Listed | LC   |
| Locustellidae  | <i>Locustella lanceolata</i>       | Lanceolated Warbler          | Native                 | Not Listed | NT   |
| Cisticolidae   | <i>Cisticola juncidis</i>          | Zitting Cisticola            | Native                 | Not Listed | VU   |
| Cisticolidae   | <i>Prinia flavicentris</i>         | Yellow-bellied Prinia        | Native                 | Not Listed | NT   |
| Cisticolidae   | <i>Orthotomus sutorius</i>         | Common Tailorbird            | Native                 | Not Listed | LC   |
| Cisticolidae   | <i>Orthotomus atrogularis</i>      | Dark-necked Tailorbird       | Native                 | Not Listed | LC   |
| Cisticolidae   | <i>Orthotomus sericeus</i>         | Rufous-tailed Tailorbird     | Native                 | Not Listed | NT   |
| Cisticolidae   | <i>Orthotomus ruficeps</i>         | Ashy Tailorbird              | Native                 | Not Listed | LC   |
| Timaliidae     | <i>Mixornis gularis</i>            | Pin-striped Tit-Babbler      | Native                 | Not Listed | LC   |
| Timaliidae     | <i>Cyanoderma erythroptera</i>     | Chestnut-winged Babbler      | Native                 | EN         | CR   |
| Pellorneidae   | <i>Malacocincla abbotti</i>        | Abbott's Babbler             | Native                 | Not Listed | LC   |
| Pellorneidae   | <i>Malacopteron magnirostre</i>    | Moustached Babbler           | Native                 | CR         | CR   |
| Pellorneidae   | <i>Pellorneum malaccensis</i>      | Short-tailed Babbler         | Native                 | Not Listed | VU   |
| Pellorneidae   | <i>Pellorneum rostratum</i>        | White-chested Babbler        | Native                 | CR         | CR   |
| Leiotrichidae  | <i>Garrulax leucolophus</i>        | White-crested Laughingthrush | Introduced             | Not Listed | NA   |
| Leiotrichidae  | <i>Garrulax canorus</i>            | Chinese Hwamei               | Introduced             | Not Listed | NA   |
| Zosteropidae   | <i>Zosterops simplex</i>           | Swinhoe's White-eye          | Native +<br>Introduced | Not Listed | VU   |
| Irenidae       | <i>Irena puella</i>                | Asian Fairy-bluebird         | Native                 | NT         | NT   |
| Sittidae       | <i>Sitta frontalis</i>             | Velvet-fronted Nuthatch      | Native                 | Not Listed | LC   |
| Sturnidae      | <i>Aplonis panayensis</i>          | Asian Glossy Starling        | Native                 | Not Listed | LC   |
| Sturnidae      | <i>Gracula religiosa</i>           | Common Hill Myna             | Native                 | NT         | NT   |
| Sturnidae      | <i>Acridotheres cristatellus</i>   | Crested Myna                 | Introduced             | Not Listed | NA   |
| Sturnidae      | <i>Acridotheres javanicus</i>      | Javan Myna                   | Introduced             | Not Listed | NA   |
| Sturnidae      | <i>Acridotheres tristis</i>        | Common Myna                  | Native                 | Not Listed | LC   |
| Sturnidae      | <i>Acridotheres melanopterus</i>   | Black-winged Starling        | Introduced             | Not Listed | NA   |
| Sturnidae      | <i>Spodiopsar sericeus</i>         | Red-billed Starling          | Native                 | Not Listed | NE   |
| Sturnidae      | <i>Spodiopsar cineraceus</i>       | White-cheeked Starling       | Native                 | Not Listed | NE   |
| Sturnidae      | <i>Agropsar sturninus</i>          | Daurian Starling             | Native                 | Not Listed | LC   |
| Sturnidae      | <i>Agropsar philippensis</i>       | Chestnut-cheeked Starling    | Native                 | Not Listed | DD   |
| Sturnidae      | <i>Sturnia sinensis</i>            | White-shouldered Starling    | Native                 | Not Listed | LC   |
| Sturnidae      | <i>Sturnia pagodarum</i>           | Brahminy Starling            | Native/<br>Introduced? | Not Listed | NE   |
| Sturnidae      | <i>Pastor roseus</i>               | Rosy Starling                | Native                 | Not Listed | NE   |
| Turdidae       | <i>Geokichla citrina</i>           | Orange-headed Thrush         | Native                 | Not Listed | NT   |
| Turdidae       | <i>Geokichla sibirica</i>          | Siberian Thrush              | Native                 | Not Listed | NT   |
| Turdidae       | <i>Turdus mandarinus</i>           | Chinese Blackbird            | Native                 | Not Listed | NE   |
| Turdidae       | <i>Turdus obscurus</i>             | Eye-browed Thrush            | Native                 | Not Listed | NT   |
| Muscicapidae   | <i>Copsychus saularis</i>          | Oriental Magpie-Robin        | Native                 | EN         | VU   |

| Family        | Taxon Name                        | Common Name                     | Origin                 | RDB2       | RDB3 |
|---------------|-----------------------------------|---------------------------------|------------------------|------------|------|
| Muscicapidae  | <i>Copsychus malabaricus</i>      | White-rumped Shama              | Native +<br>Introduced | CR         | EN   |
| Muscicapidae  | <i>Muscicapa griseisticta</i>     | Grey-streaked Flycatcher        | Native                 | Not Listed | NE   |
| Muscicapidae  | <i>Muscicapa sibirica</i>         | Dark-sided Flycatcher           | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Muscicapa dauurica</i>         | Asian Brown Flycatcher          | Native                 | Not Listed | LC   |
| Muscicapidae  | <i>Muscicapa williamsoni</i>      | Brown-streaked Flycatcher       | Native                 | Not Listed | LC   |
| Muscicapidae  | <i>Muscicapa ferruginea</i>       | Ferruginous Flycatcher          | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Cyornis glaucicomans</i>       | Chinese Blue Flycatcher         | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Cyornis rufigastra</i>         | Mangrove Blue Flycatcher        | Native                 | CR         | CR   |
| Muscicapidae  | <i>Cyornis brunneatus</i>         | Brown-chested Jungle Flycatcher | Native                 | Not Listed | VU   |
| Muscicapidae  | <i>Cyanoptila cyanomelana</i>     | Blue-and-white Flycatcher       | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Cyanoptila cumatilis</i>       | Zaprey's Flycatcher             | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Eumyias thalassinus</i>        | Verditer Flycatcher             | Native                 | Not Listed | NE   |
| Muscicapidae  | <i>Larivora cyane</i>             | Siberian Blue Robin             | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Ficedula zanthopgia</i>        | Yellow-rumped Flycatcher        | Native                 | Not Listed | LC   |
| Muscicapidae  | <i>Ficedula narcissina</i>        | Narcissus Flycatcher            | Native                 | Not Listed | DD   |
| Muscicapidae  | <i>Ficedula elisae</i>            | Green-backed Flycatcher         | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Ficedula mugimaki</i>          | Mugimaki Flycatcher             | Native                 | Not Listed | LC   |
| Muscicapidae  | <i>Ficedula albicilla</i>         | Taiga Flycatcher                | Native                 | Not Listed | NE   |
| Muscicapidae  | <i>Phoenicurus aureoreus</i>      | Daurian Redstart                | Native                 | Not Listed | NE   |
| Muscicapidae  | <i>Monticola solitarius</i>       | Blue Rock Thrush                | Native                 | Not Listed | LC   |
| Muscicapidae  | <i>Monticola gularis</i>          | White-throated Rock Thrush      | Native                 | Not Listed | NT   |
| Muscicapidae  | <i>Saxicola stejnegeri</i>        | Stejneger's Stonechat           | Native                 | Not Listed | NT   |
| Chloropseidae | <i>Chloropsis sonnerati</i>       | Greater Green Leafbird          | Native                 | CR         | CR   |
| Chloropseidae | <i>Chloropsis cyanopogon</i>      | Lesser Green Leafbird           | Native                 | CR         | CR   |
| Chloropseidae | <i>Chloropsis cochinchinensis</i> | Blue-winged Leafbird            | Native                 | NT         | NT   |
| Dicaeidae     | <i>Prionochilus thoracicus</i>    | Scarlet-breasted Flowerpecker   | Native                 | Not Listed | NT   |
| Dicaeidae     | <i>Dicaeum agile</i>              | Thick-billed Flowerpecker       | Native                 | Not Listed | DD   |
| Dicaeidae     | <i>Dicaeum chrysorrheum</i>       | Yellow-vented Flowerpecker      | Native                 | CR         | CR   |
| Dicaeidae     | <i>Dicaeum trigonostigma</i>      | Orange-bellied Flowerpecker     | Native                 | Not Listed | NT   |
| Dicaeidae     | <i>Dicaeum cruentatum</i>         | Scarlet-backed Flowerpecker     | Native                 | Not Listed | LC   |
| Nectariniidae | <i>Chalcoparia singalensis</i>    | Ruby-cheeked Sunbird            | Native                 | Not Listed | DD   |
| Nectariniidae | <i>Anthreptes simplex</i>         | Plain Sunbird                   | Native                 | CR         | CR   |
| Nectariniidae | <i>Anthreptes malacensis</i>      | Brown-throated Sunbird          | Native                 | Not Listed | LC   |
| Nectariniidae | <i>Leptocoma brasiliana</i>       | Van Hasselt's Sunbird           | Native                 | Not Listed | LC   |
| Nectariniidae | <i>Leptocoma calcostetha</i>      | Copper-throated Sunbird         | Native                 | NT         | VU   |
| Nectariniidae | <i>Cinnyris jugularis</i>         | Olive-backed Sunbird            | Native                 | Not Listed | LC   |
| Nectariniidae | <i>Aethopyga siparaja</i>         | Crimson Sunbird                 | Native                 | Not Listed | LC   |
| Nectariniidae | <i>Arachnothera longirostra</i>   | Little Spiderhunter             | Native                 | Not Listed | NT   |
| Nectariniidae | <i>Arachnothera crassirostris</i> | Thick-billed Spiderhunter       | Native                 | CR         | CR   |
| Nectariniidae | <i>Arachnothera chrysogenys</i>   | Yellow-eared Spiderhunter       | Native                 | CR         | CR   |
| Passeridae    | <i>Passer domesticus</i>          | House Sparrow                   | Introduced             | Not Listed | NA   |
| Passeridae    | <i>Passer montanus</i>            | Eurasian Tree Sparrow           | Native?                | Not Listed | LC   |
| Ploceidae     | <i>Ploceus manyar</i>             | Streaked Weaver                 | Introduced             | Not Listed | NA   |
| Ploceidae     | <i>Ploceus philippinus</i>        | Bay Weaver                      | Native                 | Not Listed | VU   |
| Estrildidae   | <i>Amandava amandava</i>          | Red Avadavat                    | Introduced             | Not Listed | NA   |
| Estrildidae   | <i>Lonchura striata</i>           | White-rumped Munia              | Native                 | CR         | CR   |
| Estrildidae   | <i>Lonchura leucogastroides</i>   | Javan Munia                     | Introduced             | Not Listed | NA   |
| Estrildidae   | <i>Lonchura punctulata</i>        | Scaly-breasted Munia            | Native                 | Not Listed | LC   |
| Estrildidae   | <i>Lonchura atricapilla</i>       | Chestnut Munia                  | Native                 | Not Listed | VU   |
| Estrildidae   | <i>Lonchura maja</i>              | White-headed Munia              | Native                 | Not Listed | LC   |
| Motacillidae  | <i>Dendronanthus indicus</i>      | Forest Wagtail                  | Native                 | Not Listed | LC   |

| Family       | Taxon Name                      | Common Name            | Origin | RDB2       | RDB3 |
|--------------|---------------------------------|------------------------|--------|------------|------|
| Motacillidae | <i>Motacilla tschutschensis</i> | Eastern Yellow Wagtail | Native | Not Listed | VU   |
| Motacillidae | <i>Motacilla citreola</i>       | Citrine Wagtail        | Native | Not Listed | NE   |
| Motacillidae | <i>Motacilla cinerea</i>        | Grey Wagtail           | Native | Not Listed | LC   |
| Motacillidae | <i>Motacilla alba</i>           | White Wagtail          | Native | Not Listed | LC   |
| Motacillidae | <i>Anthus rufulus</i>           | Paddyfield Pipit       | Native | Not Listed | LC   |
| Motacillidae | <i>Anthus hodgsoni</i>          | Olive-backed Pipit     | Native | Not Listed | NE   |
| Motacillidae | <i>Anthus cervinus</i>          | Red-throated Pipit     | Native | Not Listed | LC   |

## Checklist of Marine Mammal Species with their Category of Threat Status for Singapore

Prepared by Sirius Z.H. Ng, Zeehan Jaafar

| Family       | Genus              | Species              | Authority            | Common Name                     | RDB2       | RDB3 |
|--------------|--------------------|----------------------|----------------------|---------------------------------|------------|------|
| Delphinidae  | <i>Orcaella</i>    | <i>brevirostris</i>  | (Owen in Gray, 1866) | Irrawaddy Dolphin               | Not Listed | CR   |
| Delphinidae  | <i>Pseudorca</i>   | <i>crassidens</i>    | (Owen, 1846)         | False Killer Whale              | Not Listed | NE   |
| Delphinidae  | <i>Sousa</i>       | <i>chinensis</i>     | (Osbeck, 1765)       | Indo-Pacific Humpback Dolphin   | EN         | CR   |
| Delphinidae  | <i>Tursiops</i>    | <i>aduncus</i>       | (Ehrenberg, 1833)    | Indo-Pacific Bottlenose Dolphin | Not Listed | CR   |
| Phocoenidae  | <i>Neophocaena</i> | <i>phocaenoides</i>  | (Cuvier, 1829)       | Finless Porpoise                | CR         | CR   |
| Physeteridae | <i>Physeter</i>    | <i>macrocephalus</i> | Linnaeus, 1758       | Sperm Whale                     | Not Listed | NE   |
| Dugongidae   | <i>Dugong</i>      | <i>dugon</i>         | (Müller, 1776)       | Dugong                          | CR         | CR   |

**Checklist of Terrestrial Mammal Species with their Category of Threat Status for Singapore**

Prepared by Norman T-L. Lim, Benjamin P.Y.-H. Lee, Robert C.H. Teo, Marcus A.H. Chua,  
Suay Hwee Yeo, Max D.Y. Khoo, Tze Kwan Fung

| Family         | Genus               | Species              | Authority                      | Common Name                   | Origin     | RDB2       | RDB3 |
|----------------|---------------------|----------------------|--------------------------------|-------------------------------|------------|------------|------|
| Cynocephalidae | <i>Galeopterus</i>  | <i>variegatus</i>    | (Audebert, 1799)               | Sunda Colugo                  | Native     | Not Listed | NT   |
| Manidae        | <i>Manis</i>        | <i>javanica</i>      | Desmarest, 1822                | Sunda Pangolin                | Native     | CR         | CR   |
| Sciuridae      | <i>Callosciurus</i> | <i>notatus</i>       | (Boddaert, 1785)               | Plantain Squirrel             | Native     | Not Listed | LC   |
| Sciuridae      | <i>Callosciurus</i> | <i>finlaysonii</i>   | (Horsfield, 1823)              | Variable Squirrel             | Introduced | Not Listed | NA   |
| Sciuridae      | <i>Hylopetes</i>    | <i>spadiceus</i>     | (Blyth, 1847)                  | Red-cheeked Flying Squirrel   | Native     | CR         | CR   |
| Sciuridae      | <i>Iomys</i>        | <i>horsfieldii</i>   | (Waterhouse, 1838)             | Horsfield's Flying Squirrel   | Native     | Not Listed | EN   |
| Sciuridae      | <i>Lariscus</i>     | <i>insignis</i>      | (F. Cuvier, 1821)              | Three-striped Ground Squirrel | Native     | Not Listed | NEx  |
| Sciuridae      | <i>Petaurista</i>   | <i>petaurista</i>    | (Pallas, 1766)                 | Red Giant Flying Squirrel     | Native     | CR         | CR   |
| Sciuridae      | <i>Ratufa</i>       | <i>affinis</i>       | (Raffles, 1821)                | Cream-coloured Giant Squirrel | Native     | CR         | NEx  |
| Sciuridae      | <i>Rhinosciurus</i> | <i>laticaudatus</i>  | (Müller, 1840)                 | Shrew-faced Ground Squirrel   | Native     | CR         | CR   |
| Sciuridae      | <i>Sundasciurus</i> | <i>tenuis</i>        | (Horsfield, 1824)              | Slender Squirrel              | Native     | Not Listed | LC   |
| Muridae        | <i>Maxomys</i>      | <i>rajah</i>         | (Thomas, 1894)                 | Brown Spiny Rat               | Native     | EN         | CR   |
| Muridae        | <i>Maxomys</i>      | <i>surifer</i>       | (Miller, 1900)                 | Red Spiny Rat                 | Native     | Not Listed | NEx  |
| Muridae        | <i>Mus</i>          | <i>musculus</i>      | Linnaeus, 1758                 | Asian House Mouse             | Native     | Not Listed | LC   |
| Muridae        | <i>Rattus</i>       | <i>exulans</i>       | (Peale, 1848)                  | Pacific Rat                   | Native     | Not Listed | LC   |
| Muridae        | <i>Rattus</i>       | <i>norvegicus</i>    | (Berkenhout, 1769)             | Brown Rat                     | Introduced | Not Listed | NA   |
| Muridae        | <i>Rattus</i>       | <i>tanezumi</i>      | (Temminck, 1845)               | Asian House Rat               | Native     | Not Listed | LC   |
| Muridae        | <i>Rattus</i>       | <i>tiomanicus</i>    | (Miller, 1900)                 | Malaysian Wood Rat            | Native     | Not Listed | LC   |
| Muridae        | <i>Sundamys</i>     | <i>annandalei</i>    | (Bonhote, 1903)                | Annandale's Rat               | Native     | Not Listed | LC   |
| Hystricidae    | <i>Hystrix</i>      | <i>brachyura</i>     | Linnaeus, 1758                 | Malayan Porcupine             | Native     | CR         | CR   |
| Felidae        | <i>Panthera</i>     | <i>pardus</i>        | (Linnaeus, 1758)               | Leopard                       | Native     | Not Listed | NEx  |
| Felidae        | <i>Panthera</i>     | <i>tigris</i>        | (Linnaeus, 1758)               | Tiger                         | Native     | Not Listed | NEx  |
| Felidae        | <i>Prionailurus</i> | <i>bengalensis</i>   | (Kerr, 1792)                   | Mainland Leopard Cat          | Native     | CR         | CR   |
| Viverridae     | <i>Arctogalidia</i> | <i>trivirgata</i>    | (Gray, 1832)                   | Small-toothed Palm Civet      | Native     | CR         | CR   |
| Viverridae     | <i>Paguma</i>       | <i>larvata</i>       | (C.E.H. Smith, 1827)           | Masked Palm Civet             | Native     | CR         | CR   |
| Viverridae     | <i>Paradoxurus</i>  | <i>musangus</i>      | (Raffles, 1821)                | Sumatran Palm Civet           | Native     | Not Listed | LC   |
| Viverridae     | <i>Viverra</i>      | <i>tangalunga</i>    | Gray, 1832                     | Malay Civet                   | Native     | Not Listed | CR   |
| Viverridae     | <i>Viverra</i>      | <i>zibetha</i>       | Linnaeus, 1758                 | Large Indian Civet            | Native     | CR         | CR   |
| Mustelidae     | <i>Aonyx</i>        | <i>cinereus</i>      | (Illiger, 1815)                | Asian Small-clawed Otter      | Native     | CR         | CR   |
| Mustelidae     | <i>Lutra</i>        | <i>sumatrana</i>     | (Gray, 1865)                   | Hairy-nosed Otter             | Native     | Not Listed | NEx  |
| Mustelidae     | <i>Lutrogale</i>    | <i>perspicillata</i> | (Geoffroy Saint Hilaire, 1826) | Smooth Otter                  | Native     | CR         | EN   |
| Suidae         | <i>Sus</i>          | <i>scrofa</i>        | Linnaeus, 1758                 | Eurasian Wild Boar            | Native     | Not Listed | LC   |
| Tragulidae     | <i>Tragulus</i>     | <i>kanchil</i>       | (Raffles, 1821)                | Lesser Mouse-deer             | Native     | CR         | EN   |
| Tragulidae     | <i>Tragulus</i>     | <i>napu</i>          | (F. Cuvier, 1822)              | Greater Mouse-deer            | Native     | Not Listed | CR   |

| Family           | Genus                 | Species             | Authority              | Common Name                    | Origin           | RDB2       | RDB3 |
|------------------|-----------------------|---------------------|------------------------|--------------------------------|------------------|------------|------|
| Cervidae         | <i>Muntiacus</i>      | <i>muntjak</i>      | (Zimmermann, 1780)     | Red Muntjac                    | Native           | Not Listed | CR   |
| Cervidae         | <i>Rusa</i>           | <i>unicolor</i>     | (Kerr, 1792)           | Sambar Deer                    | Origin Uncertain | Not Listed | NA   |
| Lorisidae        | <i>Nycticebus</i>     | <i>coucang</i>      | (Boddaert, 1785)       | Sunda Slow Loris               | Native           | CR         | EN   |
| Cercopithecidae  | <i>Macaca</i>         | <i>fascicularis</i> | (Raffles, 1821)        | Long-tailed Macaque            | Native           | Not Listed | LC   |
| Cercopithecidae  | <i>Presbytis</i>      | <i>femoralis</i>    | (Martin, 1838)         | Raffles's Banded Langur        | Native           | CR         | CR   |
| Cercopithecidae  | <i>Trachypithecus</i> | <i>obscurus</i>     | (Reid, 1837)           | Dusky Langur                   | Origin Uncertain | Not Listed | NA   |
| Tupaiaidae       | <i>Tupaia</i>         | <i>glis</i>         | (Diard, 1820)          | Common Treeshrew               | Native           | Not Listed | LC   |
| Soricidae        | <i>Crociodura</i>     | <i>malayana</i>     | Robinson & Kloss, 1911 | Malayan Shrew                  | Native           | Not Listed | DD   |
| Soricidae        | <i>Suncus</i>         | <i>murinus</i>      | (Linnaeus, 1766)       | House Shrew                    | Native           | Not Listed | LC   |
| Pteropodidae     | <i>Cynopterus</i>     | <i>brachyotis</i>   | (Müller, 1838)         | Lesser Short-nosed Fruit Bat   | Native           | Not Listed | LC   |
| Pteropodidae     | <i>Eonycteris</i>     | <i>spelaea</i>      | (Dobson, 1871)         | Cave Nectar Bat                | Native           | Not Listed | VU   |
| Pteropodidae     | <i>MacroGLOSSUS</i>   | <i>minimus</i>      | (É. Geoffroy, 1810)    | Lesser Long-tongued Nectar Bat | Native           | VU         | VU   |
| Pteropodidae     | <i>Penthetor</i>      | <i>lucasi</i>       | (Dobson, 1880)         | Dusky Fruit Bat                | Native           | EN         | CR   |
| Pteropodidae     | <i>Pteropus</i>       | <i>vampyrus</i>     | (Linnaeus, 1758)       | Large Flying Fox               | Native           | Not Listed | CR   |
| Rhinolophidae    | <i>Rhinolophus</i>    | <i>refulgens</i>    | K. Andersen, 1905      | Glossy Horseshoe Bat           | Native           | Not Listed | LC   |
| Rhinolophidae    | <i>Rhinolophus</i>    | <i>morio</i>        | Gray, 1842             | Greater Woolly Horseshoe Bat   | Native           | CR         | CR   |
| Rhinolophidae    | <i>Rhinolophus</i>    | <i>stheno</i>       | K. Andersen, 1905      | Lesser Brown Horseshoe Bat     | Native           | Not Listed | CR   |
| Rhinolophidae    | <i>Rhinolophus</i>    | <i>trifolius</i>    | Temminck, 1834         | Trefoil Horseshoe Bat          | Native           | CR         | EN   |
| Hipposideridae   | <i>Hipposideros</i>   | <i>bicolor</i>      | Temminck, 1834         | Bicoloured Roundleaf Bat       | Native           | Not Listed | EN   |
| Hipposideridae   | <i>Hipposideros</i>   | <i>cervinus</i>     | (Gould, 1854)          | Fawn Roundleaf Bat             | Native           | Not Listed | CR   |
| Hipposideridae   | <i>Hipposideros</i>   | <i>cineraceus</i>   | Blyth, 1853            | Ashy Roundleaf Bat             | Native           | Not Listed | CR   |
| Hipposideridae   | <i>Hipposideros</i>   | <i>ridleyi</i>      | Robinson & Kloss, 1911 | Ridley's Roundleaf Bat         | Native           | Not Listed | CR   |
| Megadermatidae   | <i>Megaderma</i>      | <i>spasma</i>       | (Linnaeus, 1758)       | Lesser Asian False-Vampire Bat | Native           | CR         | EN   |
| Emballonuridae   | <i>Emballonura</i>    | <i>monticola</i>    | Temminck, 1838         | Lesser Sheath-tailed Bat       | Native           | CR         | CR   |
| Emballonuridae   | <i>Saccolaimus</i>    | <i>saccolaimus</i>  | (Temminck, 1838)       | Pouched Tomb Bat               | Native           | Not Listed | LC   |
| Emballonuridae   | <i>Taphozous</i>      | <i>longimanus</i>   | Hardwicke, 1825        | Long-winged Tomb Bat           | Native           | Not Listed | CR   |
| Emballonuridae   | <i>Taphozous</i>      | <i>melanopogon</i>  | Temminck, 1841         | Black-bearded Tomb Bat         | Native           | EN         | LC   |
| Nycteridae       | <i>Nycteris</i>       | <i>tragata</i>      | (K. Andersen, 1912)    | Malayan Slit-faced Bat         | Native           | CR         | CR   |
| Molossidae       | <i>Chaerephon</i>     | <i>plicata</i>      | (Buchanan, 1800)       | Asian Wrinkle-lipped Bat       | Native           | Not Listed | NEx  |
| Molossidae       | <i>Cheiromeles</i>    | <i>torquatus</i>    | Horsfield, 1824        | Naked Bat                      | Native           | CR         | CR   |
| Vespertilionidae | <i>Hypsugo</i>        | <i>macrotis</i>     | (Temminck, 1840)       | Big-eared Pipistrelle          | Native           | Not Listed | CR   |
| Vespertilionidae | <i>Kerivoula</i>      | <i>hardwickii</i>   | (Horsfield, 1824)      | Hardwicke's Woolly Bat         | Native           | Not Listed | CR   |

| Family           | Genus               | Species            | Authority                      | Common Name               | Origin  | RDB2       | RDB3 |
|------------------|---------------------|--------------------|--------------------------------|---------------------------|---------|------------|------|
| Vespertilionidae | <i>Murina</i>       | <i>suilla</i>      | (Temminck, 1840)               | Lesser Tube-nosed Bat     | Native  | CR         | CR   |
| Vespertilionidae | <i>Myotis</i>       | <i>horsfieldii</i> | (Temminck, 1840)               | Horsfield's Myotis        | Native  | Not Listed | LC   |
| Vespertilionidae | <i>Myotis</i>       | <i>muricola</i>    | (Gray, 1846)                   | Asian Whiskered Myotis    | Native  | Not Listed | LC   |
| Vespertilionidae | <i>Pipistrellus</i> | <i>javanicus</i>   | (Gray, 1838)                   | Javan Pipistrelle         | Native  | Not Listed | LC   |
| Vespertilionidae | <i>Pipistrellus</i> | <i>stenopterus</i> | (Dobson, 1875)                 | Narrow-winged Pipistrelle | Native  | CR         | LC   |
| Vespertilionidae | <i>Scotophilus</i>  | <i>kuhlii</i>      | Leach, 1821                    | Lesser Asian House Bat    | Native  | Not Listed | LC   |
| Vespertilionidae | <i>Tylonycteris</i> | <i>fulvida</i>     | (Blyth, 1859) / (Peters, 1872) | Lesser Bamboo Bat         | Native  | CR         | VU   |
| Vespertilionidae | <i>Tylonycteris</i> | <i>malayana</i>    | Chasen, 1940                   | Greater Bamboo Bat        | Native  | Not Listed | VU   |
| Tapiridae        | <i>Tapirus</i>      | <i>indicus</i>     | Desmarest, 1819                | Malayan Tapir             | Vagrant | Not Listed | NA   |
| Elephantidae     | <i>Elephas</i>      | <i>maximus</i>     | Linnaeus, 1758                 | Asian Elephant            | Vagrant | Not Listed | NA   |



