

Gippsland Lakes

Ramsar site

Ecological Character Description

March 2010

Appendices

Other chapters can be downloaded from:

[www.environment.gov.au/water/publications/environmental/wetlands/21-ecd.html](http://www.environment.gov.au/water/publications/environmental/wetlands/21-ecd.html)

Detailed Methodology

This ECD report has been prepared by a consultant study team led by BMT WBM Pty Ltd under contract with the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). This has occurred with input from a Project Steering Committee made up of officials from DSEWPaC, the Victorian Department of Sustainability and the Environment (DSE), Parks Victoria (Parks Victoria), the Gippsland Coastal Board (GCB), the Department of Defence (DoD) and the West Gippsland Catchment Management Authority (WGCMA).

This report updates and replaces an unpublished draft ECD document for the site prepared by the Ecos Consortium (Ecos 2008). However, the draft Ecos document was regarded as an important source of technical information about the site and where appropriate, figures, data analysis and conclusions drawn from the draft Ecos document have been referenced in this ECD report.

**A1 Steering Committee**

A Steering Committee was created as part of the study and was chaired independently. The organisations represented on the Steering Committee were as follows:

|  |
| --- |
| **Department or Organisation** |
| Independent Chair |
| Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) |
| Department of Sustainability and Environment (DSE) |
| Parks Victoria |
| Department of Defence |
| Gippsland Coastal Board |
| West Gippsland Catchment Management Authority |

**A2 Methodology – Information collation and review stage**

The first step in ECD preparation as outlined in the National ECD Framework is to identify the wetland services/benefits, wetland components and wetland processes present in the Ramsar site. These key terms are defined in Section 3 of the Report and the Glossary. This was initiated by undertaking a process of information collation and literature review.

As part of the information collation phase, literature and existing data relevant to the study area (site boundary and surrounds) were collated and reviewed. Relevant existing information was sourced from the following:

* published scientific papers
* database records (EPBC, DSE, etc.)
* quantitative data (Birds Australia, Victorian EPA, etc.)
* mapping products supplied by the DSE and Parks Victoria (vegetation and wetland mapping)
* management plans, strategies and other policy documents
* grey literature from internet searches and other sources of data.

Each article of information was collated to a cursory level sufficient to determine its relevance to the study. The collected information was then reviewed to prioritise and identify information of direct relevance to the ECD.

As part of the information collation phase, key information sources to be used in the study were presented to the project Steering Committee and gaps were identified on the basis of these reviews. In some cases, additional information was supplied directly by Steering Committee representatives.

**A3 Selection of critical components, processes and services/benefits**

A wide range of ecosystem components, processes and services/benefits were seen as being represented within the Ramsar site. Following the method within the National ECD Framework, the assignment of a given wetland component, process or service/benefit as critical was determined with reference to the following criteria:

* The component, process or service/benefit is an important determinant of the uniqueness of the site, or is widely accepted as representing a particularly outstanding example of an environmental value supported by the site.
* The component, process or service/benefit is important for supporting one or more of the Ramsar Nomination Criteria under which the site was listed.
* A change in a component, process or service/benefit is reasonably likely to occur over short or medium times scales (less than 100 years).
* A change to the component, process or service/benefit would result in a fundamental change in ecological values of the site.

The views of the Steering Committee were also considered in the assignment of critical elements. Justification for inclusion of critical and supporting components, processes or services/benefits is provided in the body of this report.

In selecting key species/groups that underpin critical components, the following methods were considered:

Flora species

In nominating particular wetland flora species or communities for consideration under the critical components, the following considerations were applied:

* Species should generally occur in aquatic environments (for example, macrophytes) or are otherwise considered to be wetland-associated species or communities.
* Species or communities should be listed as threatened (that is, vulnerable or endangered) at the national (threatened under EPBC Act) and/or international (IUCN) level or are considered to be particularly noteworthy or critical from a regional biodiversity perspective (refer to Nomination Criterion 3). This includes species or communities that are perceived by the authors to be iconic to the site, or are designated as threatened under Victorian legislation (endangered or vulnerable at a State/Territory scale).

Fauna species

In nominating particular fauna species/groups for consideration under the critical components, the following considerations were applied:

1. Species should generally occur in aquatic or marine environments or are otherwise considered to be wetland-dependent terrestrial species (refer Glossary for definitions of these terms and Appendix D for list of species).
2. Species should be either:
   * designated as threatened (for example, endangered or vulnerable) at a national scale (under the EPBC Act) or international scale (under IUCN Red List)
   * particularly noteworthy or critical from a regional biodiversity perspective. This includes species that are perceived by the authors to be iconic to the site, or are designated as threatened under Victorian legislation (endangered or vulnerable at a State/Territory scale).
3. Given the boundaries of the Ramsar site are largely confined to near-shore areas or internal waters, emphasis has been placed on inclusion of those species that use the site as core habitat, have significant population numbers and spend a large proportion of their life cycle within the site boundaries. This excludes vagrant species of conservation significance such as whales, sharks and migratory seabirds that may only occur in the Ramsar site infrequently but for which species records within the site exist.

**A4 Derivation of limits of acceptable change**

Limits of Acceptable Change (LAC) were derived using a staged approach as follows:

* determine values of the site. These represent the critical components and/or services/benefits
* identify critical processes underpinning site values
* describe patterns in natural variability in critical components, processes and services/benefits indicators
* define the relative magnitude of acceptable change. The relative magnitude of acceptable change was determined on the basis of (i) an assessment of criticality of the site to the maintenance of species populations or habitats, based on known or likely patterns in geographic distribution, abundance and criticality of the site to maintaining the survival of a species; (ii) patterns (short-term and long-term) in natural variability; and (iii) a qualitative assessment of the vulnerability of changes outside bounds of natural variability
* derive specific limits of acceptable change. The broad relative magnitude of acceptable change definitions was used to describe specific limits of acceptable change.

The specific values of the site was determined on the basis of (i) known or likely patterns in the distribution and abundance of species and habitats that comprise the critical components, processes and services/ benefits of the site, and (ii) expert opinion and or empirical data describing the criticality of the site to maintaining the survival of a species. Three levels of criticality were derived based on these factors (Least, Moderate and Highest Concern), as described in Table A-1 below.

Table A-1 Categories describing importance of the site to maintaining habitats and species that underpin the critical services/benefits and components

|  |  |  |
| --- | --- | --- |
| **Distribution and criticality to populations** | **Abundant** | **Uncommon** |
| Widespread globally and nationally, life-history functions supported in many areas elsewhere (species). | 1a | 2b |
| High diversity feature (habitat and community descriptor). | 1b | 2c |
| Habitat specialist with disjunct and very limited number of populations globally and nationally (species). | 3a | 3d |
| May be widespread nationally or regionally but is a critical breeding, staging or feeding site that is critical to survival of population (habitat and species). | 3b | 3e |
| Limited to bioregion but found in numerous basins, and is not known to be critical to survival of a species (habitat and species). | 2a | 3f |
| Limited to bioregion, found in a small number of basins and has limited distribution in the site (species). | 3c | 3g |

Where least concern = 1 (green), of concern = 2 (yellow), most concern = 3 (orange)

The relative magnitude of acceptable change was then determined based on:

* The categories describing site values/importance described in Table A-1 above.
* Whether species/habitats that underpin the critical components or services/benefits are known or likely to be highly sensitive/intolerant to changes in environmental conditions.
* Known/likely patterns in natural temporal variability of indicators in the short-term (based on inter-annual cycles or episodic disturbance) and long-term (based on processes operating over time scales measured in decades).
* A high level qualitative assessment of the consequences associated with changes in parameters outside natural variability was undertaken. Five consequence categories were derived, and are based in part on general risk categories developed by the SCFA – FRDC Project Team (2001) for the Risk Assessment Process for Wild Capture Fisheries (Version 3.2) (refer Table A-2).
* Consideration of patterns in natural variability, site values/importance and the consequence ratings for assessing sensitivity to change were used to derive three relative magnitudes of acceptable change categories: (i) no change; (ii) small change; (iii) moderate to large change. These are shown in Table A-3.

**Table A-2 Defining impact magnitude**

| **Category** | **Habitat** **affected/modified** | **Key species** | **Ecosystem functioning** |
| --- | --- | --- | --- |
| Major | greater than 60 per cent habitat | Mortality likely local extinction | Total ecosystem collapse |
| High | 30 to 60 per cent | Mortality may affect recruitment and capacity to increase | Measurable impact to functions, and some functions are missing/ declining/ increasing outside historical range and/or facilitate new species to appear |
| Moderate | five to 30 per cent | Mortality within some spp. Levels of impact at the maximum acceptable level | Measurable changes to ecosystem components but no loss of functions (no loss of components) |
| Minor | less than five per cent | Affected but no impact on local population status (for example, stress or behavioural change to individuals) | Keystone species not affected, minor changes in relative abundance |
| Negligible | less than one per cent | No impact | Possible changes, but inside natural variation |

Table A-3 Relative magnitude of acceptable change categories for LAC indicators

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Impact Significance** | **Level 3 species or habitat** | **Level 2 species or its habitat** | | **Level 1 species or its habitat** | | | |
| **Short-term, localised** | **Long-term or multiple areas** | **Short-term, localised** | **Short-term, multiple areas** | **Long-term, localised** | **Long-term, multiple areas** |
| Major | No change | No change | No change | No change | No change | No change | No change |
| High | No change | No change | No change | Moderate change | No change | No change | No change |
| Moderate | No change | Small change | No change | Moderate change | Small change | Small change | No change |
| Minor | No change | Moderate change | Small change | Moderate change | Moderate change | Moderate change | Small change |

Water Quality Information

**Source and Analysis of Water Quality Data**

Water quality monitoring data was obtained from the EPA Victoria from five monitoring sites within Lakes Wellington, Victoria and King (refer Figure B-1). The dataset consists of two main monitoring periods, 1) data from 1976 to 1980 from the Victoria State Rivers and Waters Commission (not longer existing) and 2) data from 1986 to present from the Victoria EPA fixed monitoring sites. No data exists from these five sites between 1980 and 1986. Data for catchment flow into the Gippsland Lakes was sourced from the Gippsland Catchment Management Authorities.

The periods 1976-1980 (pre-Ramsar listing) and 1986-2008 (Ramsar period) were analysed separately by calculating the range, 10th, 20th, 50th, 80th and 90th percentiles. The analysed parameters represent surface water measurements (0.5 metre water depth) and include salinity, pH, dissolved oxygen concentration, per cent saturation of dissolved oxygen, total suspended solids, total nitrogen, total phosphorus and chlorophyll *a*.

Where applicable, the calculated values were compared to the guideline values listed in Water of Victoria Schedule F3 (Gippsland Lakes and Catchment, No. S13, Gazette 26/2/1988). The guideline values listed in Schedule F3 differ between Lake Wellington and the eastern Gippsland Lakes. Schedule F3 uses minimum values, 50th and 90th percentiles as water quality objectives.

Total nitrogen, total phosphorus and chlorophyll *a* are not listed in Schedule F3 and therefore the ANZECC (2000) guideline values for southeast Australian estuarine systems were adopted for these parameters. The ANZECC guidelines use the 20th and 80th percentiles as lower and upper low-risk trigger values. It should be noted that the ANZECC guidelines are not specific to the Gippsland Lakes. It is recommended that trigger values for these parameters are developed, which are specific to the Gippsland Lakes ecosystem.

Water quality time series plots and the summed catchment flow discharging into the Gippsland Lakes is shown for Lake Wellington in Figure B-2 and for the eastern Lake Victoria in Figure B-3. Table B-1 and Table B-2 show the calculated percentiles and comparison to guideline values for Lake Wellington and the eastern Lake Victoria sites, respectively. Additional data plots were generated for monitoring data at the other eastern lakes sampling locations and are shown in Figures B-4, B-5 and B-6. Generally, these data plots show similar trends to those presented in Figure B-3.

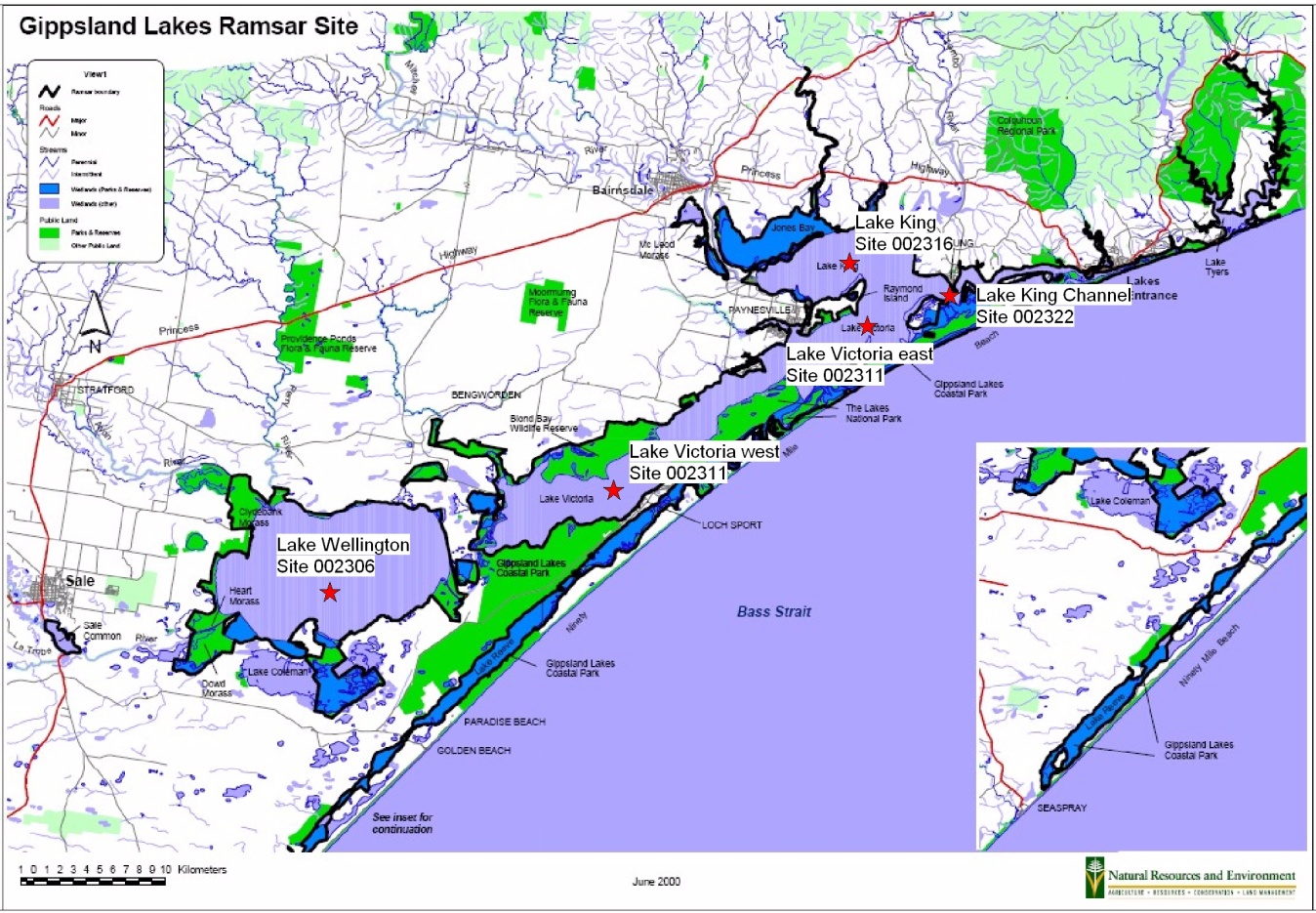


Figure B- Locations of EPA water quality monitoring sites in the Gippsland Lakes. Figure modified from the Victorian Department of Sustainability and Environment.

The water quality in Lake Wellington is strongly determined by flows entering the lake from the catchment (Figure B-2). About one third of river flows in to the Gippsland Lakes and over half of the total nutrient load is supplied to Lake Wellington from the western rivers (mainly the La Trobe, Thomson and Avon Rivers. Due to these high catchment inflows and its distance from the Lakes Entrance in the east, Lake Wellington is less saline than the eastern lakes. Salinities are generally higher during years of low flow compared to lower salinities observed during high flow years (Figure B-2). Correspondingly, increased input of sediments and nutrients during high flow years is reflected in higher concentrations of total suspended solids, total nitrogen and total phosphorus during these periods (Figure B-2). As expected, the higher nutrient availability during high flow years ensues in higher chlorophyll *a* concentrations in the water column. Dissolved oxygen concentrations vary seasonally with higher concentrations during the cold winter months and lower concentrations during the warm summer months due to increased oxygen solubility with decreasing temperatures.

**Notable events (refer to Figure B-2):**

1. High catchment inflow during the hydrological year 1978-1979 results in freshwater salinities, the highest suspended solid concentration on record and very high total phosphorus concentrations. High flushing of Lake Wellington and high turbidity may explain why the increased nutrient input is not reflected in chlorophyll a concentrations.
2. Several high catchment inflow events during the wetter years 1985 to 1995 lead to increased input of sediments, total nitrogen and total phosphorus from the catchment and corresponding increases in chlorophyll a concentrations. Several blooms of *Nodularia*, dinoflagellates and *Microcystis* fall into this period (Stephens et al. 2004).
3. Notable Nodularia bloom in 1998-1999 associated with high total nitrogen and phosphorus concentrations and high suspended solids concentration.
4. The extended drought period during 1999-2007 and associated reduced catchment input results in decreasing total nutrient concentrations, very low suspended solid concentrations and low chlorophyll.
5. Bushfires in 2006-2007 burning 32 per cent of Gippsland Lakes catchment followed by the 2007 flood period, resulted in the highest nutrient concentrations on record. A massive increase in nitrate loads likely resulted in an unprecedented *Synechococcus* bloom persisting to winter 2008 (Cook et al. 2008). The bloom is reflected in the high chlorophyll *a* concentrations during this period.

**Comparison to guideline values (refer to Table B-1)**

**Salinity** – Salinity ranged between 0.3 and 12.8 grams per litre in the period 1976-1980 and between 0.2 and 21.2 grams per litre in 1986-2008. The median salinity marginally exceeded the Waters of Victoria Schedule F3 (WV) guideline value in the period 1976-1980. During the period 1986-2008, the median salinity (6.1 grams per litre) was well below the WV guideline value.

**pH** – The maximum pH only marginally exceeded the maximum range specified in the WV guideline in the period 1986-2008. Over 90 per cent of all data was well within the range of the guideline values for 1976-1980 and 1986-2008. Median pH was 7.8 in 1976-1980 and 8.0 in 1986-2008.

**Dissolved Oxygen** – Dissolved oxygen concentrations were always well over the minimum guideline value specified in the WV guideline. 10th percentile values of 8.5 milligrams per litre for 1976-1980 and 8.3 milligrams per litre for 1986-2008 indicates that the surface water was well oxygenised and close to saturation most of the time.

**Total suspended solids** – Median suspended solid concentrations were below the WV trigger limit for both periods. The 90th percentile of suspended solids exceeded the WV guideline value during the period 1976-1980, whereas the 90th percentile for 1986-2008 was below the guideline trigger value. Median suspended solids concentration was slightly lower for the period 1986-2008.

**Total nitrogen** – Total nitrogen ranged between 311 micrograms per litre and 1694 micrograms per litre during 1986-2008. No data exists for the period 1976-1980. The median and 80th percentile of total nitrogen exceeded the ANZECC guideline value. It should be noted, however, that the ANZECC guidelines cover the broad area of southeast Australian estuaries and are not specific to the Gippsland Lakes.

**Total phosphorus** – Total phosphorus ranged between 8.0 micrograms per litre and 225 micrograms per litre during 1976-1980 and between 0.4 micrograms per litre and 285 micrograms per litre in the period 1986-2008. Median total phosphorus was about two times higher in 1986-2008 compared to 1976-1980. The median and 80th percentile exceeded the ANZECC guideline value during both periods. It should be noted, however, that the ANZECC guidelines cover the broad area of southeast Australian estuaries and are not specific to the Gippsland Lakes.

**Chlorophyll *a*** – Chlorophyll *a* concentrations reached maximum values of 41 micrograms per litre and 53 micrograms per litre for the periods 1976-1980 and 1986-2008, respectively. Median Chlorophyll was more than two times higher in 1986-2008 compared to the pre-Ramsar period. The median and 80th percentile of Chlorophyll *a* exceeded the ANZECC guideline trigger value.



Figure B- Lake Wellington surface water quality data (EPA monitoring site 002306). Total flow represents the summed flow recorded for all major catchment rivers and is given as hydrological year (June-May). Red dotted line denotes listing of Gippsland Lakes as Ramsar wetland in 1982. Refer to text for information on notable events A-E.

Table B- Lake Wellington surface water quality parameters and guideline values from EPA site 002306. Orange and red colour represents slight and distinct exceedance of guideline trigger limits, respectively. Note that the ANZECC guideline values are representative of the broad southeast Australia estuaries and not specific to the Gippsland Lakes.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Minimum** | | **Maximum** | | **10th percentile** | | **20th percentile** | | **50th percentile** | | **80th percentile** | | **90th percentile** | | **Guideline** | **Source** |
|  | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** |  |  |
| Salinity (g/L) | 0.3 | 0.2 | 12.8 | 21.2 | 0.5 | 1.8 | 0.8 | 2.9 | 8.1 | 6.1 | 10.2 | 10.4 | 11.5 | 13.2 | 8 | Waters of Victoria |
| pH | 6.8 | 6.8 | 8.6 | 9.1 | 7.1 | 7.4 | 7.2 | 7.6 | 7.8 | 8.0 | 8.1 | 8.3 | 8.2 | 8.5 | 6-9 | Waters of Victoria |
| Dissolved oxygen (mg/L) | 6.8 | 6.2 | 11.7 | 15.7 | 8.5 | 8.3 | 9.0 | 8.7 | 9.6 | 9.7 | 10.6 | 11.0 | 11.1 | 11.6 | 6 | Waters of Victoria |
| Dissolved oxygen (% saturation) |  | 71.0 |  | 149.6 |  | 92.9 |  | 95.7 |  | 102.3 |  | 110.4 |  | 117.0 | 60 | Waters of Victoria |
| Total suspended solids (mg/L) | 4.0 | 0.9 | 379.0 | 253.3 | 7.4 | 4.6 | 11.6 | 10.0 | 21.0 | 18.7 | 96.2 | 39.6 | 129.0 | 74.5 | 25/80 | Waters of Victoria |
| Total nitrogen (μg/L) |  | 311.3 |  | 1693.9 |  | 451.6 |  | 490.0 |  | 587.1 |  | 830.0 |  | 1248.0 | 300 | ANZECC |
| Total phosphorus (μg/L) | 8.0 | 0.4 | 225.0 | 285.0 | 20.3 | 32.5 | 24.6 | 41.8 | 33.0 | 60.4 | 77.8 | 96.9 | 99.4 | 172.4 | 30 | ANZECC |
| Chlorophyll a (μg/L) | 0.1 | 0.6 | 41.0 | 52.8 | 0.2 | 4.2 | 1.4 | 7.8 | 5.7 | 13.8 | 11.3 | 24.0 | 20.1 | 31.2 | 4 | ANZECC |

**Eastern Lakes water quality**

Time series of water quality parameters for eastern Lake Victoria and total catchment inflow are shown in Figure B-3. Salinities are generally more saline in the eastern lakes compared to Lake Wellington due to their proximity to the Lakes Entrance. As observed for Lake Wellington, salinities in the surface water of the eastern lakes are generally higher during years of low flow and higher during high flow years. Concentrations of suspended solids, total nitrogen and total phosphorus are not as clearly related to flow compared to observations from Lake Wellington. Dissolved oxygen concentrations generally follow a seasonal pattern with higher concentrations during the colder months due to increased oxygen solubility. Relatively low oxygen concentrations during some occasions may have been caused by mixing events with hypoxic bottom water, while particularly high oxygen concentrations may in part be attributable to high oxygen production during periods of algal blooms (Figure B-3).

**Notable events (refer to** **Figure B-3):**

1. High catchment inflow during the hydrological year 1978-1979 resulted in relatively low salinities around seven grams per litre and high total suspended solids concentrations. While total phosphorus increased in the surface water, this increase was not as pronounced as observed in Lake Wellington during the same time. Chlorophyll *a* concentrations did not increase during that period, possibly due to high turbidity and flushing of the system.
2. Very high concentrations of total nitrogen and total phosphorus were observed in 1988. During the same time, total suspended solid concentrations also increased markedly. Several algal blooms (*Nodularia* and dinoflagellates) were noted in 1988-1989 (Stephens et al. 2004), which is reflected in the high chlorophyll *a* concentrations during that time. During this period of relatively moderate catchment inflow the high total nitrogen/phosphorus and suspended solid concentrations may have been in part caused by the bloom itself (autochthonous algae production contribute to measured total nutrient and suspended solid concentrations). Photosynthetic activity of the algal bloom is reflected in increased oxygen concentrations.
3. Another *Nodularia* bloom was observed in 2001-2002 (Cook et al. 2008), which is reflected in high total nitrogen and chlorophyll *a* concentrations and moderate increase in suspended solid and total phosphorus concentrations. Photosynthetic activity of the algal bloom manifests in a pronounced peak in oxygen concentration during that time.
4. Bushfires in 2006/2007 burning 32 per cent of Gippsland Lakes catchment followed by the 2007 flood period, resulted in high total nitrogen and total phosphorus concentrations. A massive increase in nitrate loads likely resulted in an unprecedented *Synechococcus* bloom persisting to winter 2008 (Cook et al. 2008). The bloom is reflected in relatively high chlorophyll *a* concentrations as well as an increase in surface water oxygen concentrations during this period.

**Comparison to guideline values eastern Lake Victoria (refer to Table B-2)**

The observed patterns described below for the eastern Lake Victoria were similar for the other three eastern Lakes monitoring sites, including Lake King. Refer to Figures B-4, B-5 and B-6 for these plots.

**Salinity –** Salinity ranged between 7.0 grams per litre and 27.6 grams per litre in 1976-1980 and between 4.2 grams per litre and 32.4 grams per litre in the period 1986-2008. Median salinity was slightly lower for the period 1986-2008 (21.2 grams per litre) compared to 1976-1980 (24.1 grams per litre). No guideline value for salinity is given in the Waters of Victoria Schedule F3 guidelines (WV) for the eastern Gippsland Lakes.

**pH –** The maximum pH exceeded the WV guideline value for the eastern Gippsland Lakes during the period 1986-2008. However, the 10th and 80th percentiles were within the range specified in the guidelines, indicating that pH was within guideline limits most of the time. Median pH was 8.2 in 1976-1980 and 8.3 in the period 1986-2008.

**Dissolved oxygen –** Minimum dissolved oxygen concentration was within guideline limits during 1976-1980. In contrast, minimum dissolved oxygen concentrations and per cent saturation of dissolved oxygen were distinctly below the WV trigger limits in the period 1986-2008. It should be noted, however, that the 10th percentile of dissolved oxygen was eight milligrams per litre and close to saturation during this period, indicating that the surface water of the eastern Lake Victoria was well oxygenised for over 90 per cent of the time. The particularly low oxygen concentrations may have been caused by transient mixing of the surface water with hypoxic bottom water.

**Total suspended solids –** The median and 90th percentile of total suspended sediment was well below the WV trigger limit for both periods. Median suspended solid concentration was three times lower during 1986-2008 compared to 1976-1980.

**Total nitrogen –** Total nitrogen ranged between 219 micrograms per litre and 4730 micrograms per litre for the period 1986-2008. No data exists for the period 1976-1980. The median and 80th percentile of total nitrogen exceeded the ANZECC guideline value. It should be noted, however, that the ANZECC guidelines cover the broad area of southeast Australian estuaries and are not specific to the Gippsland Lakes.

**Total phosphorus –** Total phosphorus ranged between 8.0 micrograms per litre and 95 micrograms per litre during 1976-1980 and between 13.8 micrograms per litre and 627 micrograms per litre in the period 1986-2008. Median total phosphorus concentration was about 1.5 times higher during 1986-2008 compared to 1976-1980. The median and 80th percentile exceeded the ANZECC guideline value during both periods. It should be noted, however, that the ANZECC guidelines cover the broad area of southeast Australian estuaries and are not specific to the Gippsland Lakes.

**Chlorophyll *a* –** Chlorophyll a concentrations reached maximum values of 26 micrograms per litre and 183 micrograms per litre for the periods 1976-1980 and 1986-2008, respectively. While the 80th percentile of chlorophyll was below the ANZECC trigger level for the period 1976-1980, the 80th percentile during 1986-2008 exceeded the guideline value about three-fold. However, median chlorophyll a concentrations were close to the guideline value for both periods.



Figure B- Eastern Lake Victoria surface water quality data (EPA monitoring site 002314). Total flow represents the summed flow recorded for all major catchment rivers and is given as hydrological year (June-May). Red dotted line denotes listing of Gippsland Lakes as Ramsar wetland in 1982. Refer to text for information on notable events A-D.

Table B- Eastern Lake Victoria surface water quality parameters and guideline values from EPA site 002314. Red colour represents exceedance of guideline trigger limits. Note that the ANZECC guideline values are representative of the broad southeast Australia estuaries and not specific to the Gippsland Lakes.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Minimum** | | **Maximum** | | **10th percentile** | | **20th percentile** | | **50th percentile** | | **80th percentile** | | **90th percentile** | | **Guideline** | **Source** |
|  | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** | **1976-1980** | **1986-2008** |  |  |
| Salinity (g/L) | 7.0 | 4.2 | 27.6 | 32.4 | 10.6 | 11.2 | 15.7 | 15.2 | 24.1 | 21.2 | 26.1 | 24.5 | 26.7 | 27.5 | N/A |  |
| pH | 7.5 | 7.4 | 8.5 | 9.4 | 7.8 | 7.9 | 8.0 | 8.1 | 8.2 | 8.3 | 8.3 | 8.5 | 8.4 | 8.7 | 6.5-8.5 | Waters of Victoria |
| Dissolved oxygen (mg/L) | 6.8 | 4.6 | 13.6 | 17.7 | 7.9 | 8.0 | 8.2 | 8.5 | 9.1 | 9.4 | 10.0 | 10.9 | 10.3 | 11.6 | 6 | Waters of Victoria |
| Dissolved oxygen (% saturation) |  | 60.9 |  | 240.2 |  | 97.4 |  | 100.4 |  | 109.8 |  | 121.5 |  | 132.6 | 75 | Waters of Victoria |
| Total suspended solids (mg/L) | 3.0 | 1.0 | 74.0 | 97.8 | 7.0 | 1.8 | 9.0 | 2.3 | 12.0 | 4.2 | 14.0 | 9.2 | 18.8 | 15.2 | 25/80 | Waters of Victoria |
| Total nitrogen (μg/L) |  | 218.9 |  | 4730.0 |  | 270.0 |  | 295.7 |  | 393.7 |  | 526.7 |  | 834.4 | 300 | ANZECC |
| Total phosphorus (μg/L) | 8.0 | 13.8 | 95.0 | 627.2 | 16.3 | 20.5 | 18.0 | 26.0 | 25.5 | 40.0 | 41.4 | 57.7 | 56.0 | 80.5 | 30 | ANZECC |
| Chlorophyll a (μg/L) | 0.1 | 0.5 | 26.0 | 182.9 | 0.3 | 1.4 | 0.4 | 1.9 | 1.7 | 4.3 | 3.3 | 12.9 | 4.3 | 24.0 | 4 | ANZECC |



Figure B- Western Lake Victoria surface water quality data (EPA monitoring site 002311). Total flow represents the summed flow recorded for all major catchment rivers and is given as hydrological year (June-May). Red dotted line denotes listing of Gippsland Lakes as Ramsar wetland in 1982.



Figure B- Lake King surface water quality data (EPA monitoring site 002316). Total flow represents the summed flow recorded for all major catchment rivers and is given as hydrological year (June-May). Red dotted line denotes listing of Gippsland Lakes as Ramsar wetland in 1982.



Figure B- Lake King Channel surface water quality data (EPA monitoring site 002322). Total flow represents the summed flow recorded for all major catchment rivers and is given as hydrological year (June-May). Red dotted line denotes listing of Gippsland Lakes as Ramsar wetland in 1982.

Additional Bird Count Data Analysis

**Data sources**

Two data-sets were considered in this assessment:

* DSE Fauna database records outlined in the file titled “fauna100\_gippslakes\_ramsar\_dd94”. This database has count data for fauna species recorded at stations within the Gippsland Lakes Ramsar site.
* Birds Australia Atlas data. The Atlas contains counts and survey effort for numerous stations in the Ramsar site.

**Selected species**

The following species were selected for analysis as they have been identified in this ECD as significant species in the context of meeting the one per cent of the flyway population criterion:

* black swan
* musk duck
* chestnut teal
* Eurasian coot
* fairy tern
* little tern

**DSE data**

The DSE fauna database contains a comprehensive bird count dataset, although it is noted that counts are not standardised and therefore should be considered as indicative only.

For each species, the following is provided:

* Total numbers of individuals recorded in each year (stations pooled), together with total annual river inflows superimposed (Figure C-1).
* Descriptive statistics for count data for each year (shows number of records/episodes (not counts) per year), as well as average abundance per year (stations pooled) (Tables C-1 to C-6)).

It is apparent that there is great year to year variability in counts. The data shows:

* More little tern were recorded in the last decade than in previous years. This could reflect actual increases in abundance or higher sampling effort for this species.
* Fairy tern – highest counts were recorded in two years in the last decade, however records/counts were very patchy over time.
* Musk duck counts have been consistently low since the late-1990s. In previous decades, numbers were relatively high (approximately 100 individuals counted), but variable between years.
* Black swan and Eurasian coot – It is unclear there is any clear temporal trend for these two species.
* Chestnut teal – numbers appear to have been relatively stable over time, the exception being a peak in 1984.

It is important to note the following when interpreting data:

* A variety of sampling methods have been used with varying levels of sampling effort applied.
* There are no metadata describing sampling effort at each station over time.
* Over time, there has been a change in species targeted in surveys. For example, there has been greater scientific interest and therefore survey effort given to fairy tern. While counts of this species have been higher in recent years compared to prior to listing, it is likely that this could relate to differences in sampling effort over time. Therefore, data cannot be scaled as counts per unit effort in its existing format.

For these reasons, it is not possible or meaningful to derive empirical indices describing changes in bird abundance over time or among stations. Systematic sampling using standardised count methods would be required to develop appropriate bird abundance metrics.

Figure C-1 Total number of individuals recorded in each year for black swan, Eurasian coot, chestnut teal, fairy tern, little tern and musk duck, together with total annual river inflows into the site (DSE Database)

Table C- Summary statistics describing patterns in musk duck abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

Table C- Summary statistics describing patterns in Eurasian coot abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

Table C- Summary statistics describing patterns in black swan abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

Table C- Summary statistics describing patterns in chestnut teal abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

Table C- Summary statistics describing patterns in fairy tern abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

Table C- Summary statistics describing patterns in little tern abundance (Uppercount) over time at the Gippsland Lake Ramsar site



*Note: First column is the year of the surveys (referred to as Uppercount). Within each year, the mean (and standard deviation and standard error) number of birds recorded on each survey occasion was calculated. The “Count” column is the number of survey occasions within each year. The minimum and maximum values are the lowest and highest number of birds recorded during surveys.*

**Birds Australia Atlas data**

Table C-7 is a summary of trends in bird count data as determined from the Bird Australia Atlas data. Data were only assessed where counts were standardised to 20 minute counts. This reduces some of the sampling effort biases inherent in the DSE data noted above.

While broad trends in habitat use can be derived from the data, there are insufficient data to develop a robust baseline description of abundance for most of the target species. There are exceptions to this, as follows:

* Black swan - there is a good data set describing black swan abundance in the period 1987 to 1990, however very few count data post 2002 (see also Figure C-2). The reason/s for this difference over time is uncertain. Based on available data, counts greater than 100 individuals per 20 minute search occurred in 23 per cent of surveys.
* Chestnut teal – similar to black swan, most surveys containing 20 minute count data occurred in the period 1988 through the 1990’s. There are few count data post 2000. Based on available data, counts greater than 50 individuals per 20 minute search occurred in 20 per cent of surveys.
* Eurasian coot – consistent with patterns in black swan and chestnut teal, most 20 minute count data were for the period 1988 to 1999. Based on available data, counts greater than 50 individuals per 20 minute search occurred in 23 per cent of surveys.

There was insufficient data to determine trends in fairy tern, little tern and musk duck abundance.

It is important to note that for all these surveys, while survey effort at a given station in time is standardised, the specific locations of surveys, timing of surveys (seasonality) and frequency of surveys is not inconsistent. This prevents meaningful interpretation of long-term trends in bird abundance. Nonetheless, the Bird Australia data provide a basis for establishing baseline waterbird abundance, focussing on key habitats used by these species.



**Figure C-2 Mean abundance (error bars ± S.E.) of black swan per 20 minute search (Data source: Birds Australia unpublished)**

Table C- Summary of Trends in Birds Australia Atlas Count Data (based on standardised 20 minute search data only)

| **Species** | **Number of surveys with 20 min. search count data** | **Spatial trend** | **Temporal trend** |
| --- | --- | --- | --- |
| Black swan | 97 surveys | Of the 97 20-minute surveys containing count data:   * eight surveys had counts ≥500 individuals per 20 minute search (eight per cent of surveys). * 23 surveys had counts ≥100 individuals per 20 minute search (23 per cent of surveys. * 28 surveys had counts ≥50 individuals per 20 minute search (29 per cent of surveys.   Counts ≥100 individuals per 20 minute search recorded at: Bancroft Bay, Bosses Swamp, Bunga Arm, Cunningham Arm, Jones Bay, Lake Bunga and STP, Nicholson River Floodplain and Point Dawson (Lake King).  The overall average count (all stations and times pooled) was 148 ± 48.01 S.E. individuals/ 20 minute search. | All records with counts ≥100 individuals occurred pre-2002. In 1987 to 1990 mean bird counts exceeded 200 individuals per 20 minute search (Figure E2).  Highest counts recorded Jan to Apr. |
| Musk duck | 19 surveys | Almost all data with counts are located at Lake Bunga Sewage Treatment Plant.  Insufficient data assess other trends. | Insufficient data to assess trends. |
| Chestnut teal | 111 surveys | Of the 111 20-minute surveys containing count data:   * three surveys had counts ≥500 individuals per 20 minute search (three per cent of surveys. * 12 surveys had counts ≥100 individuals per 20 minute search (11 per cent of surveys. * 22 surveys had counts ≥50 individuals per 20 minute search (20 per cent of surveys.   Counts greater than 49 individuals per 20 minute search recorded at: Blue Horizons Main, Aqualand Estate, Jones Bay, Bunga Arm, Cunningham Arm, Lake Bunga & Sewage Ponds, Nicholson floodplain, Picnic Arm, Lake King.  The overall average count (all stations and times pooled, using only records with count data) was 58 ± 18.3 S.E. individuals/ 20 minute search. | Highest counts recorded Feb to Apr inclusive.  All records with counts greater than 20 individuals/20 minute search were recorded in the period 1988 to 1999 (n = 38 surveys). |
| Eurasian coot | 84 surveys | Of the 84 20-minute surveys containing count data:   * three surveys had counts ≥500 individuals per 20 minute search (three per cent of surveys. * 13 surveys had counts ≥100 individuals per 20 min search (15 per cent of surveys. * 20 surveys had counts ≥50 individuals per 20 min search (23 per cent of surveys.   Counts greater than 100 individuals per 20 minute search recorded at: Nicholson River floodplain, Blue Horizons Main, Aqualand Estate, Jones Bay, Bunga Arm, Lake Bunga & Sewage Ponds.  The overall average count (all stations and times pooled, using only records with count data) was 254 ± 69.3 S.E. individuals/ 20 minute search. | All records with counts greater than 100 individuals/20 minute search were recorded in the period 1988 to 1999 (n = 13 records). |
| Fairy tern | 2 surveys | Both records from Jones Bay. Sitings at other locations but no count data. | Insufficient data to assess trends. |
| Little tern | 12 surveys | Most records from Lake Tyers, Tambo River mouth, Bunga Arm, Lake Bunga, and Jones Bay. | All records from 1988 to 1999. Insufficient data to assess long term trends. Only recorded in summer months, reflecting migratory nature. |

**Comparison of Data Sets**

Table C-8 is a summary of key temporal trends in the counts of key species based on DSE and birds Australia datasets, and findings of the Ecos (unpublished) analysis. In summary, the long-term temporal trends noted in the analysis of DSE data (that is, increase in little tern and fairy tern, decrease in musk duck) were not apparent in the Birds Australia data. As mentioned, inconsistencies in sampling effort in both data sets preclude meaningful analysis of long term trends.

Overall, Ecos (unpublished) suggests that the largest observed declines in waterbird abundance and reporting rate were observed for Eurasian coot and musk duck. While such changes may occurred, the absence of standardised surveys prevents a definitive assessment of changes in abundance of these species since site listing in 1982.

**Table C-8 Long-term trend analysis in the abundance of the key species**

| **Species** | **Ecos analysis** | **DSE Data (not standardised for effort)** | **Standarised Birds Australia Atlas count data** | **Summary** |
| --- | --- | --- | --- | --- |
| Black swan | Average annual count sizes have declined substantially since the mid 1990s.  As common now as in the 1980s, when populations were at a low ebb.  Reporting rate has halved since early 1980s but has remained stable since about 1988. | Average annual counts for black swan abundance has been relatively stable since listing. | Low reporting rate (and low average annual abundance) since 1990. | Insufficient information to quantify trends in time |
| Eurasian coot | Very substantial declines in average annual count size (75 per cent) and reporting rate (60 per cent) since early 1980s | Average annual counts highly variable over time with a peak in 1990 (mean equals 8000 birds). No apparent long term trend could be discerned. | Overall average count of 254 ± 69.3 S.E. individuals/ 20 minute search over monitoring period (1988-2008).  Lowest counts occurred in the period after 1999. | Insufficient information to quantify trends in time |
| Musk duck | Average annual count size and reporting rate very similar.  Has substantially declined since the late 1970s, with some recovery in the 1990s but it currently in steep decline. | Musk duck counts have been consistently low since the late-1990s. In previous decades, numbers were relatively high (approximately 100 individuals counted), but variable between years. | Insufficient data to assess trends. | Insufficient information to quantify trends in time |
| Chestnut teal | Stable noting slight decrease in reporting rates but substantial increases in flock size since the 1980s. | Numbers appear to have been relatively stable over time, the exception being a peak in 1984. | Most surveys containing 20 minute count data occurred in the period 1988 through the 1990’s. There are few count data post 2000. | Insufficient information to quantify trends in time |
| Fairy tern | Stable - No substantial variation reported since 1980s. | Highest counts were recorded in two years in the last decade, however records/counts were very patchy over time. | Insufficient data to assess trends. | Insufficient information to quantify trends in time |
| Little tern | Stable - May have increased since the 1980s. | More little tern were recorded in the last decade than in previous years. This could reflect actual increases in abundance or higher sampling effort for this species. | Insufficient data to assess trends. | Insufficient information to quantify trends in time |

Species List

**Mammal List**

| **Scientific Name** | **Common Name** | **EPBC Status** |
| --- | --- | --- |
| *Acrobates pygmaeus* | feathertail glider |  |
| *Antechinus agilis* | agile antechinus |  |
| *Antechinus swainsonii* | dusky antechinus |  |
| *Cercartetus nanus* | Eastern pygmy-possum |  |
| *Cervus porcinus* | hog deer |  |
| *Cervus unicolor* | Sambar |  |
| *Chalinolobus gouldii* | Gould's wattled bat |  |
| *Chalinolobus morio* | chocolate wattled bat |  |
| *Dasyurus maculatus* | spot-tailed quoll | Endangered |
| *Felis catus* | cat |  |
| *Hydromys chrysogaster* | water rat |  |
| *Isoodon obesulus obesulus* | southern brown bandicoot | Endangered |
| *Lepus europeaus* | European hare |  |
| *Macropus giganteus* | eastern grey kangaroo |  |
| *Macropus rufogriseus* | red-necked wallaby |  |
| *Miniopterus schreibersii* (group) | common bent-wing bat |  |
| *Mormopterus sp. EG* | freetail bat (eastern form) |  |
| *Mus musculus* | house mouse |  |
| *Myotis macropus* | southern myotis |  |
| *Nyctophilus geoffroyi* | lesser long-eared bat |  |
| *Nyctophilus gouldi* | Gould's long-eared bat |  |
| *Ornithorhynchus anatinus* | platypus |  |
| *Oryctolagus cuniculus* | European rabbit |  |
| *Perameles nasuta* | long-nosed bandicoot |  |
| *Petauroides volans* | greater glider |  |
| *Petaurus australis* | yellow-bellied glider |  |
| *Petaurus breviceps* | sugar glider |  |
| *Phascolarctos cinereus* | koala |  |
| *Potorous tridactylus* | long-nosed potoroo | Vulnerable |
| *Pseudocheirus peregrinus* | common ringtail possum |  |
| *Pseudomys novaehollandiae* | New Holland mouse | Vulnerable |
| *Pteropus poliocephalus* | grey-headed flying-fox | Vulnerable |
| *Rattus fuscipes* | bush rat |  |
| *Rattus lutreolus* | swamp rat |  |
| *Rattus rattus* | black rat |  |
| *Rhinolophus megaphyllus* | eastern horseshoe bat |  |
| *Saccolaimus flaviventris* | yellow-bellied sheathtail bat |  |
| *Scotorepens orion* | eastern broad-nosed bat |  |
| *Sminthopsis leucopus* | white-footed dunnart |  |
| *Sus scrofa* | pig (feral) |  |
| *Tachyglossus aculeatus* | short-beaked echidna |  |
| *Tadarida australis* | white-striped freetail bat |  |
| *Trichosurus cunninghami* | mountain brushtail possum |  |
| *Trichosurus vulpecula* | common brushtail possum |  |
| *Vespadelus darlingtoni* | large forest bat |  |
| *Vespadelus regulus* | southern forest bat |  |
| *Vespadelus vulturnus* | little forest bat |  |
| *Vombatus ursinus* | common wombat |  |
| *Vulpes vulpes* | red fox |  |
| *Wallabia bicolor* | black wallaby |  |

**Reptile List**

|  |  |  |
| --- | --- | --- |
| **Scientific Name** | **Common Name** | **EPBC Status** |
| *Amphibolurus muricatus* | tree dragon |  |
| *Austrelaps superbus* | lowland copperhead |  |
| *Bassiana duperreyi* | eastern three-lined skink |  |
| *Chelodina longicollis* | common long-necked turtle |  |
| *Drysdalia coronoides* | white-lipped snake |  |
| *Egernia coventryi* | swamp skink |  |
| *Egernia saxatilis intermedia* | black rock skink |  |
| *Eulamprus heatwolei* | yellow-bellied water skink |  |
| *Lampropholis delicata* | delicate skink |  |
| *Lampropholis guichenoti* | garden skink |  |
| *Lerista bougainvillii* | Bougainville's skink |  |
| *Nannoscincus maccoyi* | McCoy's skink |  |
| *Notechis scutatus* | tiger snake |  |
| *Pseudechis porphyriacus* | red-bellied black snake |  |
| *Pseudemoia entrecasteauxii* | southern grass skink |  |
| *Pseudemoia rawlinsoni* | glossy grass skink |  |
| *Rhinoplocephalus nigrescens* | eastern small-eyed snake |  |
| *Saproscincus mustelinus* | weasel skink |  |
| *Tiliqua nigrolutea* | blotched blue-tongued lizard |  |
| *Tiliqua scincoides* | common blue-tongued lizard |  |
| *Varanus varius* | lace goanna |  |

**Frog List**

|  |  |  |
| --- | --- | --- |
| **Scientific Name** | **Common Name** | **EPBC Status** |
| *Crinia signifera* | common froglet |  |
| *Geocrinia victoriana* | Victorian smooth froglet |  |
| *Limnodynastes dumerilii* | southern bullfrog (ssp. unknown) |  |
| *Limnodynastes dumerilii insularis* |  |  |
| *Limnodynastes peronii* | striped marsh frog |  |
| *Limnodynastes tasmaniensis* | spotted marsh frog (race unknown) |  |
| *Litoria aurea* | green and golden bell frog | Vulnerable |
| *Litoria ewingii* | southern brown tree frog |  |
| *Litoria lesueuri* | Lesueur's frog |  |
| *Litoria peronii* | Peron's tree frog |  |
| *Litoria raniformis* | growling grass frog | Vulnerable |
| *Litoria verreauxii verreauxii* | Verreaux's tree frog |  |
| *Paracrinia haswelli* | Haswell's froglet |  |
| *Pseudophryne dendyi* | Dendy's toadlet |  |
| *Pseudophryne semimarmorata* | southern toadlet |  |

**Bird List**

| **Scientific Name** | **Common Name** | **EPBC Status** |
| --- | --- | --- |
| *Acanthagenys rufogularis* | spiny-cheeked honeyeater |  |
| *Acanthiza chrysorrhoa* | yellow-rumped thornbill |  |
| *Acanthiza lineata* | striated thornbill |  |
| *Acanthiza nana* | yellow thornbill |  |
| *Acanthiza pusilla* | brown thornbill |  |
| *Acanthiza reguloides* | buff-rumped thornbill |  |
| *Acanthorhynchus tenuirostris* | eastern spinebill |  |
| *Accipiter cirrhocephalus* | collared sparrowhawk |  |
| *Accipiter fasciatus* | brown goshawk |  |
| *Accipiter novaehollandiae* | grey goshawk |  |
| *Acridotheres tristis* | common myna |  |
| *Acrocephalus australis* | Australian reed warbler |  |
| *Acrocephalus stentoreus* | clamorous reed warbler |  |
| *Actitis hypoleucos* | common sandpiper |  |
| *Aegotheles cristatus* | Australian owlet-nightjar |  |
| *Alauda arvensis* | European skylark |  |
| *Alcedo azurea* | azure kingfisher |  |
| *Alisterus scapularis* | Australian king-parrot |  |
| *Anas castanea* | chestnut teal |  |
| *Anas gracilis* | grey teal |  |
| *Anas platyrhynchos* | northern mallard |  |
| *Anas rhynchotis* | Australasian shoveler |  |
| *Anas superciliosa* | Pacific black duck |  |
| *Anhinga novaehollandiae* | Australasian darter |  |
| *Anser anser* | domestic goose |  |
| *Anseranas semipalmata* | magpie goose |  |
| *Anthochaera carunculata* | red wattlebird |  |
| *Anthochaera chrysoptera* | little wattlebird |  |
| *Anthochaera phrygia* | regent honeyeater | Endangered |
| *Anthus novaeseelandiae* | Australasian pipit |  |
| *Apus pacificus* | fork-tailed swift | Migratory, Listed |
| *Aquila audax* | wedge-tailed eagle |  |
| *Ardea ibis* | cattle egret | Migratory, Listed |
| *Ardea intermedia* | intermediate egret |  |
| *Ardea modesta* | eastern great egret |  |
| *Ardea pacifica* | white-necked heron |  |
| *Ardenna carneipes* | flesh-footed shearwater |  |
| *Ardenna grisea* | sooty shearwater |  |
| *Ardenna tenuirostris* | short-tailed shearwater |  |
| *Arenaria interpres* | ruddy turnstone |  |
| *Artamus cyanopterus* | dusky woodswallow |  |
| *Artamus personatus* | masked woodswallow |  |
| *Artamus superciliosus* | white-browed woodswallow |  |
| *Aythya australis* | hardhead |  |
| *Biziura lobata* | musk duck |  |
| *Botaurus poiciloptilus* | Australasian bittern |  |
| *Cacatua galerita* | sulphur-crested cockatoo |  |
| *Cacatua sanguinea* | little corella |  |
| *Cacatua tenuirostris* | long-billed corella |  |
| *Cacomantis flabelliformis* | fan-tailed cuckoo |  |
| *Cacomantis variolosus* | brush cuckoo |  |
| *Calamanthus pyrrhopygius* | chestnut-rumped heathwren |  |
| *Calidris acuminata* | sharp-tailed sandpiper | Migratory, Listed |
| *Calidris alba* | sanderling |  |
| *Calidris canutus* | red knot | Migratory, Listed |
| *Calidris ferruginea* | curlew sandpiper | Migratory, Listed |
| *Calidris melanotos* | pectoral sandpiper |  |
| *Calidris ruficollis* | red-necked stint | Migratory, Listed |
| *Calidris tenuirostris* | great knot |  |
| *Callocephalon fimbriatum* | gang-gang cockatoo |  |
| *Calyptorhynchus funereus* | yellow-tailed black-cockatoo |  |
| *Carduelis carduelis* | European goldfinch |  |
| *Carduelis chloris* | European greenfinch |  |
| *Cereopsis novaehollandiae* | Cape Barren goose |  |
| *Charadrius bicinctus* | double-banded plover |  |
| *Charadrius mongolus* | lesser sand plover |  |
| *Charadrius ruficapillus* | red-capped plover | Listed |
| *Chenonetta jubata* | Australian wood duck |  |
| *Chlidonias hybridus* | whiskered tern |  |
| *Chlidonias leucopterus* | white-winged black tern |  |
| *Chroicocephalus novaehollandiae* | silver gull |  |
| *Chrysococcyx basalis* | Horsfield's bronze-cuckoo |  |
| *Chrysococcyx lucidus* | Shining bronze-cuckoo |  |
| *Cincloramphus cruralis* | brown songlark |  |
| *Cincloramphus mathewsi* | rufous songlark |  |
| *Cinclosoma punctatum* | spotted quail-thrush |  |
| *Circus approximans* | swamp harrier |  |
| *Circus assimilis* | spotted harrier |  |
| *Cisticola exilis* | golden-headed cisticola |  |
| *Cladorhynchus leucocephalus* | banded stilt |  |
| *Climacteris affinis* | white-browed treecreeper |  |
| *Climacteris erythrops* | red-browed treecreeper |  |
| *Climacteris picumnus victoriae* | brown treecreeper (south-eastern ssp.) |  |
| *Colluricincla harmonica* | grey shrike-thrush |  |
| *Columba leucomela* | white-headed pigeon |  |
| *Columba livia* | rock dove |  |
| *Coracina novaehollandiae* | black-faced cuckoo-shrike |  |
| *Coracina papuensis* | white-bellied cuckoo-shrike |  |
| *Coracina tenuirostris* | cicadabird |  |
| *Coracina tenuirostris* | common cicadabird |  |
| *Corcorax melanorhamphos* | white-winged chough |  |
| *Cormobates leucophaeus* | white-throated treecreeper |  |
| *Corvus coronoides* | Australian raven |  |
| *Corvus mellori* | little raven |  |
| *Corvus orru* | Torresian crow |  |
| *Corvus tasmanicus* | forest raven |  |
| *Coturnix pectoralis* | stubble quail |  |
| *Coturnix ypsilophora* | brown quail |  |
| *Cracticus nigrogularis* | pied butcherbird |  |
| *Cracticus torquatus* | grey butcherbird |  |
| *Cuculus pallidus* | pallid cuckoo |  |
| *Cygnus atratus* | black swan |  |
| *Dacelo novaeguineae* | laughing kookaburra |  |
| *Daphoenositta chrysoptera* | varied sittella |  |
| *Daption capense* | cape petrel |  |
| *Dasyornis brachypterus* | eastern bristlebird |  |
| *Dicaeum hirundinaceum* | mistletoebird |  |
| *Dicrurus bracteatus* | spangled drongo |  |
| *Diomedea exulans* | wandering albatross | Vulnerable, Migratory, Listed |
| *Dromaius novaehollandiae* | emu |  |
| *Egretta garzetta* | little egret |  |
| *Egretta novaehollandiae* | white-faced heron |  |
| *Elanus axillaris* | black-shouldered kite |  |
| *Elseyornis melanops* | black-fronted dotterel |  |
| *Eolophus roseicapillus* | galah |  |
| *Eopsaltria australis* | eastern yellow robin |  |
| *Epthianura albifrons* | white-fronted chat |  |
| *Erythrogonys cinctus* | red-kneed dotterel |  |
| *Eudynamys orientalis* | eastern koel |  |
| *Eudyptula minor* | little penguin |  |
| *Eurostopodus mystacalis* | white-throated nightjar |  |
| *Eurystomus orientalis* | dollarbird |  |
| *Falco berigora* | brown falcon |  |
| *Falco cenchroides* | nankeen kestrel |  |
| *Falco hypoleucos* | grey falcon |  |
| *Falco longipennis* | Australian hobby |  |
| *Falco peregrinus* | peregrine falcon |  |
| *Falco subniger* | black falcon |  |
| *Falcunculus frontatus* | crested shrike-tit |  |
| *Fulica atra* | Eurasian coot |  |
| *Gallinago hardwickii* | Latham's snipe | Migratory, Listed |
| *Gallinula tenebrosa* | dusky moorhen |  |
| *Gallinula ventralis* | black-tailed native-hen |  |
| *Gallirallus philippensis* | buff-banded rail |  |
| *Gelochelidon nilotica* | gull-billed tern |  |
| *Geopelia striata* | peaceful dove |  |
| *Gerygone mouki* | brown gerygone |  |
| *Gerygone olivacea* | white-throated gerygone |  |
| *Glossopsitta concinna* | musk lorikeet |  |
| *Glossopsitta porphyrocephala* | purple-crowned lorikeet |  |
| *Glossopsitta pusilla* | little lorikeet |  |
| *Grallina cyanoleuca* | magpie-lark |  |
| *Grantiella picta* | painted honeyeater |  |
| *Gymnorhina tibicen* | Australian magpie |  |
| *Haematopus fuliginosus* | sooty oystercatcher |  |
| *Haematopus longirostris* | pied oystercatcher |  |
| *Haliaeetus leucogaster* | white-bellied sea-eagle | Migratory, Listed |
| *Haliastur sphenurus* | whistling kite |  |
| *Hamirostra melanosternon* | black-breasted buzzard |  |
| *Heteroscelus brevipes* | grey-tailed tattler |  |
| *Hieraaetus morphnoides* | little eagle |  |
| *Himantopus himantopus* | black-winged stilt | Listed |
| *Hirundapus caudacutus* | white-throated needletail | Migratory, Listed |
| *Hirundo ariel* | fairy martin |  |
| *Hirundo neoxena* | welcome swallow |  |
| *Hirundo nigricans* | tree martin |  |
| *Hydroprogne caspia* | Caspian tern |  |
| *Ixobrychus minutus* | little bittern |  |
| *Lalage sueurii* | white-winged triller |  |
| *Larus dominicanus* | kelp gull |  |
| *Larus pacificus pacificus* | Pacific gull |  |
| *Lathamus discolor* | swift parrot | Endangered, Listed |
| *Leucosarcia melanoleuca* | Wonga pigeon |  |
| *Lewinia pectoralis* | Lewin's rail |  |
| *Lichenostomus chrysops* | yellow-faced honeyeater |  |
| *Lichenostomus fuscus* | fuscous honeyeater |  |
| *Lichenostomus leucotis* | white-eared honeyeater |  |
| *Lichenostomus melanops* | yellow-tufted honeyeater |  |
| *Lichenostomus penicillatus* | white-plumed honeyeater |  |
| *Limicola falcinellus* | broad-billed sandpiper |  |
| *Limosa lapponica* | bar-tailed godwit |  |
| *Limosa limosa* | black-tailed godwit |  |
| *Lophoictinia isura* | square-tailed kite |  |
| *Lopholaimus antarcticus* | topknot pigeon |  |
| *Macronectes giganteus* | southern giant-petrel | Endangered, Migratory, Listed |
| *Malacorhynchus membranaceus* | pink-eared duck |  |
| *Malurus cyaneus* | superb fairy-wren |  |
| *Manorina flavigula* | yellow-throated miner |  |
| *Manorina melanocephala* | noisy miner |  |
| *Manorina melanophrys* | bell miner |  |
| *Megalurus gramineus* | little grassbird |  |
| *Melanodryas cucullata* | hooded robin |  |
| *Meliphaga lewinii* | Lewin's honeyeater |  |
| *Melithreptus brevirostris* | brown-headed honeyeater |  |
| *Melithreptus lunatus* | white-naped honeyeater |  |
| *Menura novaehollandiae* | superb lyrebird |  |
| *Merops ornatus* | rainbow bee-eater | Migratory, Listed |
| *Microcarbo melanoleucos* | little pied cormorant |  |
| *Microeca fascinans* | jacky winter |  |
| *Milvus migrans* | black kite |  |
| *Mirafra javanica* | Horsfield's bushlark |  |
| *Monarcha melanopsis* | black-faced monarch | Migratory, Listed |
| *Morus serrator* | Australasian gannet |  |
| *Myiagra cyanoleuca* | satin flycatcher | Migratory, Listed |
| *Myiagra inquieta* | restless flycatcher |  |
| *Myiagra rubecula* | leaden flycatcher |  |
| *Myzomela sanguinolenta* | scarlet honeyeater |  |
| *Neochmia temporalis* | red-browed finch |  |
| *Neophema chrysostoma* | blue-winged parrot |  |
| *Ninox connivens* | barking owl |  |
| *Ninox novaeseelandiae* | southern boobook |  |
| *Ninox strenua* | powerful owl |  |
| *Numenius madagascariensis* | eastern curlew |  |
| *Numenius phaeopus* | whimbrel |  |
| *Nycticorax caledonicus* | nankeen night heron |  |
| *Ocyphaps lophotes* | crested pigeon |  |
| *Oriolus sagittatus* | olive-backed oriole |  |
| *Oxyura australis* | blue-billed duck |  |
| *Pachycephala olivacea* | olive whistler |  |
| *Pachycephala pectoralis* | golden whistler |  |
| *Pachycephala rufiventris* | rufous whistler |  |
| *Pachyptila turtur* | fairy prion |  |
| *Pardalotus punctatus* | spotted pardalote |  |
| *Pardalotus striatus* | striated pardalote |  |
| *Passer domesticus* | house sparrow |  |
| *Passer montanus* | Eurasian tree sparrow |  |
| *Pavo cristatus* | Indian peafowl |  |
| *Pelecanoides urinatrix* | common diving-petrel |  |
| *Pelecanus conspicillatus* | Australian pelican |  |
| *Petroica boodang* | scarlet robin |  |
| *Petroica goodenovii* | red-capped robin |  |
| *Petroica phoenicea* | flame robin |  |
| *Petroica rodinogaster* | pink robin |  |
| *Petroica rosea* | rose robin |  |
| *Pezoporus wallicus* | ground parrot |  |
| *Phalacrocorax carbo* | great cormorant |  |
| *Phalacrocorax fuscescens* | black-faced cormorant |  |
| *Phalacrocorax sulcirostris* | little black cormorant |  |
| *Phalacrocorax varius* | pied cormorant |  |
| *Phaps chalcoptera* | common bronzewing |  |
| *Phaps elegans* | brush bronzewing |  |
| *Philemon citreogularis* | little friarbird |  |
| *Philemon corniculatus* | noisy friarbird |  |
| *Phylidonyris melanops* | tawny-crowned honeyeater |  |
| *Phylidonyris novaehollandiae* | New Holland honeyeater |  |
| *Phylidonyris pyrrhoptera* | crescent honeyeater |  |
| *Platalea flavipes* | yellow-billed spoonbill |  |
| *Platalea regia* | royal spoonbill |  |
| *Platycercus elegans* | crimson rosella |  |
| *Platycercus eximius* | eastern rosella |  |
| *Plegadis falcinellus* | glossy ibis |  |
| *Pluvialis fulva* | Pacific golden plover |  |
| *Pluvialis squatarola* | grey plover |  |
| *Podargus strigoides* | tawny frogmouth |  |
| *Podiceps cristatus* | great crested grebe |  |
| *Poliocephalus poliocephalus* | hoary-headed grebe |  |
| *Porphyrio porphyrio* | purple swamphen |  |
| *Porzana fluminea* | Australian spotted crake |  |
| *Porzana pusilla* | Baillon's crake |  |
| *Porzana tabuensis* | spotless crake |  |
| *Psophodes olivaceus* | eastern whipbird |  |
| *Pterodroma inexpectata* | mottled petrel |  |
| *Pterodroma macroptera* | great-winged petrel |  |
| *Ptilonorhynchus violaceus* | satin bowerbird |  |
| *Puffinus gavia* | fluttering shearwater |  |
| *Pycnoptilus floccosus* | pilotbird |  |
| *Recurvirostra novaehollandiae* | red-necked avocet |  |
| *Rhipidura albiscarpa* | grey fantail |  |
| *Rhipidura leucophrys* | willie wagtail |  |
| *Rhipidura rufifrons* | rufous fantail | Migratory, Listed |
| *Rostratula australis* | Australian painted snipe | Vulnerable |
| *Scythrops novaehollandiae* | channel-billed cuckoo |  |
| *Sericornis frontalis* | white-browed scrubwren |  |
| *Sericornis magnirostris* | large-billed scrubwren |  |
| *Smicrornis brevirostris* | weebill |  |
| *Stagonopleura bella* | beautiful firetail |  |
| *Stagonopleura guttata* | diamond firetail |  |
| *Stercorarius antarcticus* | brown skua |  |
| *Stercorarius parasiticus* | Arctic Jaeger |  |
| *Sterna hirundo* | common tern |  |
| *Sterna paradisaea* | Arctic tern |  |
| *Sterna striata* | white-fronted tern |  |
| *Sternula albifrons* | little tern | Migratory, Listed |
| *Sternula nereis* | fairy tern |  |
| *Stictonetta naevosa* | Freckled duck |  |
| *Stipiturus malachurus* | southern emu-wren |  |
| *Strepera graculina* | pied currawong |  |
| *Strepera versicolor* | grey currawong |  |
| *Streptopelia chinensis* | spotted turtle-dove |  |
| *Sturnus vulgaris* | common starling |  |
| *Sula leucogaster* | brown booby |  |
| *Tachybaptus novaehollandiae* | Australasian grebe |  |
| *Tadorna tadornoides* | Australian shelduck |  |
| *Taeniopygia bichenovii* | double-barred finch |  |
| *Thalaseus bergii* | crested tern |  |
| *Thalassarche cauta* | shy albatross | Vulnerable, Migratory, Listed |
| *Thalassarche chlororhynchos* | yellow-nosed albatross |  |
| *Thalassarche chrysostoma* | grey-headed albatross | Endangered, Migratory |
| *Thinornis rubricollis* | hooded plover | Listed |
| *Threskiornis molucca* | Australian white ibis |  |
| *Threskiornis spinicollis* | straw-necked ibis |  |
| *Todiramphus sanctus* | sacred kingfisher |  |
| *Trichoglossus haematodus* | rainbow lorikeet |  |
| *Tringa nebularia* | common greenshank |  |
| *Tringa stagnatilis* | marsh sandpiper |  |
| *Turdus merula* | common blackbird |  |
| *Turnix varia* | painted button-quail |  |
| *Tyto javanica* | Pacific barn owl |  |
| *Tyto novaehollandiae* | masked owl |  |
| *Tyto tenebricosa* | sooty owl |  |
| *Vanellus miles* | masked lapwing |  |
| *Vanellus tricolor* | banded lapwing |  |
| *Xenus cinereus* | terek sandpiper |  |
| *Zoothera lunulata* | Bassian Thrush |  |
| *Zosterops lateralis* | silvereye |  |

**Waterbird List**

| **Scientific Name** | **Common Name** | **EPBC Act** |
| --- | --- | --- |
| *Actitis hypoleucos* | common sandpiper |  |
| *Anas castanea* | chestnut teal |  |
| *Anas gracilis* | grey teal |  |
| *Anas rhynchotis* | Australasian shoveler |  |
| *Anas superciliosa* | Pacific black duck |  |
| *Anhinga novaehollandiae* | Australasian darter |  |
| *Anseranas semipalmata* | magpie goose |  |
| *Ardea intermedia* | intermediate egret |  |
| *Ardea modesta* | eastern great egret |  |
| *Ardea pacifica* | white-necked heron |  |
| *Arenaria interpres* | ruddy turnstone |  |
| *Aythya australis* | hardhead |  |
| *Biziura lobata* | musk duck |  |
| *Botaurus poiciloptilus* | Australasian bittern |  |
| *Calidris acuminata* | sharp-tailed sandpiper | Migratory, Listed |
| *Calidris canutus* | red knot | Migratory, Listed |
| *Calidris ferruginea* | curlew sandpiper | Migratory, Listd |
| *Calidris ruficollis* | red-necked stint | Migratory, Listed |
| *Calidris tenuirostris* | great knot |  |
| *Charadrius bicinctus* | double-banded plover |  |
| *Charadrius mongolus* | lesser sand plover |  |
| *Charadrius ruficapillus* | red-capped plover |  |
| *Chenonetta jubata* | Australian wood duck |  |
| *Chlidonias hybridus* | whiskered tern |  |
| *Chlidonias leucopterus* | white-winged black tern |  |
| *Chroicocephalus novaehollandiae* | silver gull |  |
| *Cladorhynchus leucocephalus* | banded stilt |  |
| *Cygnus atratus* | black swan |  |
| *Egretta garzetta* | little egret |  |
| *Egretta novaehollandiae* | white-faced heron |  |
| *Elseyornis melanops* | black-fronted dotterel |  |
| *Erythrogonys cinctus* | red-kneed dotterel |  |
| *Fulica atra* | Eurasian coot |  |
| *Gallinago hardwickii* | Latham's snipe | Migratory, Listed |
| *Gallinula tenebrosa* | dusky moorhen |  |
| *Gallinula ventralis* | black-tailed native-hen |  |
| *Gallirallus philippensis* | buff-banded rail |  |
| *Haematopus fuliginosus* | sooty oystercatcher |  |
| *Haematopus longirostris* | pied oystercatcher |  |
| *Heteroscelus brevipes* | grey-tailed tattler |  |
| *Himantopus himantopus* | black-winged stilt |  |
| *Hydroprogne caspia* | Caspian tern |  |
| *Larus dominicanus* | kelp gull |  |
| *Larus pacificus pacificus* | Pacific gull |  |
| *Lewinia pectoralis* | Lewin's rail |  |
| *Limosa lapponica* | bar-tailed godwit |  |
| *Microcarbo melanoleucos* | little pied cormorant |  |
| *Morus serrator* | Australasian gannet |  |
| *Numenius madagascariensis* | eastern curlew |  |
| *Numenius phaeopus* | whimbrel |  |
| *Nycticorax caledonicus* | nankeen night heron |  |
| *Oxyura australis* | blue-billed duck |  |
| *Pelecanus conspicillatus* | Australian pelican |  |
| *Phalacrocorax carbo* | great cormorant |  |
| *Phalacrocorax fuscescens* | black-faced cormorant |  |
| *Phalacrocorax sulcirostris* | little black cormorant |  |
| *Phalacrocorax varius* | pied cormorant |  |
| *Platalea flavipes* | yellow-billed spoonbill |  |
| *Platalea regia* | royal spoonbill |  |
| *Plegadis falcinellus* | glossy ibis |  |
| *Pluvialis fulva* | Pacific golden plover |  |
| *Podiceps cristatus* | great crested grebe |  |
| *Poliocephalus poliocephalus* | hoary-headed grebe |  |
| *Porphyrio porphyrio* | purple swamphen |  |
| *Porzana fluminea* | Australian spotted crake |  |
| *Porzana pusilla* | Baillon's crake |  |
| *Porzana tabuensis* | spotless crake |  |
| *Recurvirostra novaehollandiae* | red-necked avocet |  |
| *Rostratula australis* | Australian painted snipe | Vulnerable |
| *Sterna hirundo* | common tern |  |
| *Sterna striata* | white-fronted tern |  |
| *Sternula albifrons* | little tern | Migratory, Listed |
| *Sternula nereis* | fairy tern |  |
| *Stictonetta naevosa* | freckled duck |  |
| *Tachybaptus novaehollandiae* | Australasian grebe |  |
| *Tadorna tadornoides* | Australian shelduck |  |
| *Thalaseus bergii* | crested tern |  |
| *Thinornis rubricollis* | hooded plover | Listed |
| *Threskiornis molucca* | Australian white ibis |  |
| *Threskiornis spinicollis* | straw-necked ibis |  |
| *Tringa nebularia* | common greenshank |  |
| *Tringa stagnatilis* | marsh sandpiper |  |
| *Vanellus miles* | masked lapwing |  |
| *Vanellus tricolor* | banded lapwing |  |
| *Xenus cinereus* | terek sandpiper |  |

**Fish List**

*(Sourced from Ecos 2008, based mostly after Jeremy Hindell, unpublished data, 2007)*

| **Scientific Name** | **Common Name** | **EPBC Act** |
| --- | --- | --- |
| *Acanthaluteres spilomelanurus* | bridled leatherjacket |  |
| *Acanthaluteres vittiger* | toothbrush leatherjacket |  |
| *Acanthopagrus australis* | yellow-fin bream |  |
| *Acanthopagrus butcheri* | black bream |  |
| *Afurcagobius tamarensis* | Tamar River goby |  |
| *Alabes dorsalis* | common shore-eel |  |
| *Alabes hoesei* | dwarf shore-eel |  |
| *Alabes parvulus* | pygmy shore-eel |  |
| *Aldrichetta forsteri* | yellow-eye mullet |  |
| *Allomycterus pilatus* | small-spined porcupinefish |  |
| *Ambassis jacksoniensis* | Port Jackson chanda perch |  |
| *Ammotretis rostratus* | longsnout flounder |  |
| *Anguilla australis* | shortfin eel |  |
| *Anguilla reinhardtii* | Longfin eel |  |
| *Aracana aurita* | Shaw's cowfish |  |
| *Arenigobius bifrenatus* | bridled goby |  |
| *Arenigobius frenatus* | half-bridled goby |  |
| *Argyrosomus hololepidotus* | mulloway |  |
| *Arripis georgiana* | tommy rough |  |
| *Arripis trutta* | Eastern Australian salmon |  |
| *Arripis truttaceus* | Western Australian salmon |  |
| *Aspasmogaster tasmaniensis* | Tasmanian clingfish |  |
| *Atherinason hepsetoides* | deepwater hardyhead |  |
| *Atherinosoma microstoma* | smallmouthed hardyhead |  |
| *Atypichthys strigatus* | mado |  |
| *Bathygobius kreffti* | frayedfin goby |  |
| *Brachaluteres jacksonianus* | southern pygmy leatherjacket |  |
| *Brachynectes fasciatus* | weedy threefin |  |
| *Centropogon australis* | eastern fortesque |  |
| *Cepola australis* | bandfish |  |
| *Cheilodactylus fuscus* | red morwong |  |
| *Chelidonichthys kumu* | red gurnard |  |
| *Contusus brevicaudatus* | prickly toadfish |  |
| *Creocele cardinalis* | broad clingfish |  |
| *Cristiceps australis* | southern crested weedfish |  |
| *Dactylophora nigricans* | dusky morwong |  |
| *Dasyatis brevicaudata* | smooth stingray |  |
| *Dasyatis thetidis* | black stingray |  |
| *Dicotylichthys punctulatus* | three-barred porcupinefish |  |
| *Dinolestes lewini* | longfin pike |  |
| *Diodon nicthemerus* | globefish |  |
| *Engraulis australis* | Australian anchovy |  |
| *Enoplosus armatus* | old wife |  |
| *Eubalichthys mosaicus* | mosaic leatherjacket |  |
| *Favonigobius lateralis* | long-finned goby |  |
| *Gadopsis marmoratus* | river blackfish |  |
| *Galaxias olidus* | mountain galaxias |  |
| *Galaxias truttaceus* | spotted galaxias |  |
| *Galaxiella pusilla* | dwarf galaxias | Vulnerable |
| *Genus A sp. 2* | brownspotted spiny clingfish |  |
| *Genus B sp.* | rat clingfish |  |
| *Genus C sp.1* | grass clingfish |  |
| *Genypterus tigerinus* | rock ling |  |
| *Geotria australis* | pouched lamprey |  |
| *Gerres subfasciatus* | southern silver biddy |  |
| *Girella tricuspidata* | luderick |  |
| *Gobiomorphus australis* | striped gudgeon |  |
| *Gobiomorphus coxii* | Cox’s gudgeon |  |
| *Gobiopterus semivestitus* | glass goby |  |
| *Gonorynchus greyi* | beaked salmon |  |
| *Gymnapistes marmoratus* | soldierfish |  |
| *Haletta semifasciata* | blue rock whiting |  |
| *Herklotsichthys castelnaui* | sprat |  |
| *Heteroclinus kuiteri* | Kuiter's weedfish |  |
| *Heteroclinus perspicillatus* | spotshoulder weedfish |  |
| *Heteroclinus puellarum* | little weedfish |  |
| *Heteroclinus sp.3* | longtail weedfish |  |
| *Hippocampus abdominalis* | big-bellied seahorse | Listed |
| *Hippocampus breviceps* | shortsnout seahorse | Listed |
| *Hippocampus whitei* | white's seahorse | Listed |
| *Histiogamphelus briggsii* | Brigg's crested pipefish | Listed |
| *Hyperlophus vittatus* | sandy sprat |  |
| *Hypnos monopterygium* | Australian numbfish |  |
| *Hyporhamphus australis* | Eastern Sea garfish |  |
| *Hyporhamphus melanochir* | Southern Sea garfish |  |
| *Hyporhamphus regularis* | river garfish |  |
| *Hypselognathus rostratus* | knifesnout pipefish | Listed |
| *Hypseoltris compressa* | empire gudgeon |  |
| *Iso rhothophilus* | surf sardine |  |
| *Kathetostoma laeve* | common stargazer |  |
| *Lepidoblennius haplodactylus* | Jumping joey |  |
| *Lepidotrigla papilio* | spiny gurnard |  |
| *Leptatherina presbyteroides* | silver fish |  |
| *Lissocampus caudalis* | smooth pipefish |  |
| *Lissocampus runa* | javelin pipefish | Listed |
| *Liza argentea* | flat-tailed mullet |  |
| *Macquaria colonorum* | estuary perch |  |
| *Macquaria novemaculeata* | Australian bass |  |
| *Maxillicosta scabriceps* | little scorpionfish |  |
| *Meuschenia freycineti* | six-spined leatherjacket |  |
| *Meuschenia scaber* | velvet leatherjacket |  |
| *Meuschenia trachylepis* | yellow-finned leatherjacket |  |
| *Mitotichthys semistriatus* | halfbanded pipefish | Listed |
| *Monacanthus chinensis* | Fanbelly leatherjacket |  |
| *Mugil cephalus* | sea mullet |  |
| *Muraenichthys breviceps* | short-headed worm-eel |  |
| *Myliobatis australis* | eagle ray |  |
| *Myxus elongatus* | sand mullet |  |
| *Narcine tasmaniensis* | Tasmanian numbfish |  |
| *Nelusetta ayraudi* | Chinaman leatherjacket |  |
| *Neoodax balteatus* | little rock whiting |  |
| *Neoplatycephalus aurimaculatus* | toothy flathead |  |
| *Neoplatycephalus richardsoni* | tiger flathead |  |
| *Nesogobius hinsbyi* | orangespotted goby |  |
| *Nesogobius pulchellus* | Castelnau's goby |  |
| *Nesogobius sp. 1* | girdled goby |  |
| *Nesogobius sp. 3* | twinbar goby |  |
| *Nesogobius sp. 5* | sicklefin sandgoby |  |
| *Nesogobius sp. 6* | opalescent sandgoby |  |
| *Nesogobius sp. 7* | speckled sandgoby |  |
| *Norfolkia clarkei* | common threefin |  |
| *Notolabrus fucicola* | saddled wrasse |  |
| *Omobranchus anolius* | oyster blenny |  |
| *Ophiclinops varius* | variegated snakeblenny |  |
| *Ophisurus serpens* | serpent eel |  |
| *Pagrus auratus* | snapper |  |
| *Parablennius tasmanianus* | Tasmanian blenny |  |
| *Parequula melbournensis* | silverbelly |  |
| *Parvicrepis parvipinnis* | smallfin clingfish |  |
| *Parvicrepis sp. 1* | longsnout clingfish |  |
| *Parvicrepis sp. 2* | obscure clingfish |  |
| *Pegasus lancifer* | sculptured seamoth |  |
| *Phyllopteryx taeniolatus* | weedy Seadragon | Listed |
| *Platycephalus bassensis* | southern sand flathead |  |
| *Platycephalus caeruleopunctatus* | eastern blue-spotted flathead |  |
| *Platycephalus fuscus* | dusky flathead |  |
| *Platycephalus laevigatus* | rock flathead |  |
| *Pomatomus saltatrix* | tailor |  |
| *Potamalosa richmondia* | freshwater herring |  |
| *Pristiophorus nudipinnis* | southern sawshark |  |
| *Prototroctes maraena* | Australian grayling | Vulnerable |
| *Pseudocaranx dentex* | silver trevally |  |
| *Pseudocaranx wrighti* | skipjack trevally |  |
| *Pseudogobius olorum* | western blue-spotted goby |  |
| *Pseudogobius sp. 9* | eastern blue-spotted goby |  |
| *Pseudophycis breviuscula* | bastard red cod |  |
| *Pseudophysis bachus* | red rock cod |  |
| *Pseudophysis barbata* | bearded rock cod |  |
| *Pugnaso curtirostris* | pugnose pipefish |  |
| *Raja lemprieri* | thornback skate |  |
| *Raja whitleyi* | Melbourne skate |  |
| *Redigobius macrostoma* | large-mouthed goby |  |
| *Retropinna semoni* | Australian smelt |  |
| *Rhabdosargus sarba* | tarwhine |  |
| *Rhombosolea tapirina* | greenback flounder |  |
| *Salmo salar* | Atlantic salmon |  |
| *Salmo trutta* | brown trout |  |
| *Sardinops neopilchardus* | pilchard |  |
| *Scobinichthys granulatus* | rough leatherjacket |  |
| *Scorpaena papillosus* | red rock cod |  |
| *Scorpis aequipinnis* | sea sweep |  |
| *Sillaginodes punctata* | King George whiting |  |
| *Sillago ciliata* | sand whiting |  |
| *Sillago flindersi* | school whiting |  |
| *Siphaemia cephalotes* | Wood’s siphon fish |  |
| *Siphonognathus attenuatus* | slender weed whiting |  |
| *Solegnathus spinosissimus* | spiny pipehorse | Listed |
| *Sphyraena novaehollandiae* | shortfin seapike |  |
| *Spratelloides robustus* | blue sprat |  |
| *Sprattus novaehollandiae* | Australian sprat |  |
| *Stigmatopora argus* | spotted pipefish | Listed |
| *Stigmatopora nigra* | wide-bodied pipefish | Listed |
| *Stipecampus cristatus* | ring-backed pipefish | Listed |
| *Synaptura nigra* | black sole |  |
| *Taratretis derwentensis* | Derwent flounder |  |
| *Tasmanogobius gloveri* | marine goby |  |
| *Tasmanogobius lasti* | lagoon goby |  |
| *Tasmanogobius lordi* | Tasmanian goby |  |
| *Tetractenos glaber* | smooth toadfish |  |
| *Tetractenos hamiltoni* | common toadfish |  |
| *Torquigener pleurogramma* | weeping toado |  |
| *Trachurus novaezelandiae* | yellowtail |  |
| *Tridentiger trigonocephalus* | Japanese goby |  |
| *Trygonoptera mucosa* | western stingaree |  |
| *Trygonorrhina guanerius* | southern fiddler ray |  |
| *Urocampus carinirostris* | hairy pipefish | Listed |
| *Urolophus curciatus* | banded stingaree |  |
| *Urolophus gigas* | spotted stingaree |  |
| *Urolophus paucimaculatus* | sparsely-spotted stingaree |  |
| *Vanacampus margaritifer* | mother-of-pearl pipefish | Listed |
| *Vanacampus phillipi* | Port Phillip pipefish | Listed |
| *Zeus faber* | john dory |  |

**Flora List**

*Source: Data extracted from FIS database*

| **Scientific Name** | **Common name** | **EPBC Status** |
| --- | --- | --- |
| *Acacia caerulescens* | limestone blue wattle | Vulnerable |
| *Acacia dealbata* | silver wattle |  |
| *Acacia genistifolia* | spreading wattle |  |
| *Acacia implexa* | lightwood |  |
| *Acacia mearnsii* | black wattle |  |
| *Acacia melanoxylon* | blackwood |  |
| *Acacia oxycedrus* | spike wattle |  |
| *Acacia pycnantha* | golden wattle |  |
| *Acacia* spp*.* | wattle |  |
| *Acacia stricta* | hop wattle |  |
| *Acacia suaveolens* | sweet wattle |  |
| *Acacia terminalis* | sunshine wattle |  |
| *Acacia ulicifolia* | juniper wattle |  |
| *Acacia verticillata* | prickly moses |  |
| *Acacia verticillata subsp. ovoidea* | ovoid prickly moses |  |
| *Acacia verticillata subsp. verticillata* | prickly moses |  |
| *Acaena agnipila* | hairy sheep's burr |  |
| *Acaena agnipila/ovina complex* | hairy/Australian sheep's burr |  |
| *Acaena echinata* | sheep's burr |  |
| *Acaena novae-zelandiae* | bidgee-widgee |  |
| *Acaena ovina* | Australian sheep's burr |  |
| *Acaena* spp*.* | sheep's burr |  |
| *Acianthus exsertus s.l.* | gnat orchid |  |
| *Acianthus exsertus s.s.* | large mosquito-orchid |  |
| *Acianthus pusillus* | small mosquito-orchid |  |
| *Acianthus* spp*.* | mosquito orchid |  |
| *Acrocladium chlamydophyllum* | spear moss |  |
| *Acronychia oblongifolia* | yellow-wood |  |
| *Acrotriche serrulata* | honey-pots |  |
| *Actites megalocarpa* | dune thistle |  |
| *Adiantum aethiopicum* | common maidenhair |  |
| *Agrostis s.l.* spp*.* | bent/blown grass |  |
| *Ajuga australis* | Austral bugle |  |
| *Alisma plantago-aquatica* | water plantain |  |
| *Allocasuarina littoralis* | black sheoak |  |
| *Allocasuarina misera* | slender sheoak |  |
| *Allocasuarina misera/paradoxa* | slender/green sheoak |  |
| *Allocasuarina paludosa* | scrub sheoak |  |
| *Allocasuarina paradoxa* | green sheoak |  |
| *Allocasuarina* spp*.* | sheoak |  |
| *Allocasuarina verticillata* | drooping sheoak |  |
| *Almaleea subumbellata* | wiry bush-pea |  |
| *Alternanthera denticulata s.l.* | lesser joyweed |  |
| *Alternanthera denticulata s.s.* | lesser joyweed |  |
| *Alyxia buxifolia* | sea box |  |
| *Amperea xiphoclada var. xiphoclada* | broom spurge |  |
| *Amphipogon strictus* | grey-beard grass |  |
| *Amyema miquelii* | box mistletoe |  |
| *Amyema pendula* | drooping mistletoe |  |
| *Amyema pendula subsp. pendula (s.s.)* | drooping mistletoe |  |
| *Amyema spp.* | mistletoe |  |
| *Angianthus preissianus* | salt angianthus |  |
| *Anisopogon avenaceus* | oat spear-grass |  |
| *Aotus ericoides* | common aotus |  |
| *Apalochlamys spectabilis* | showy cassinia |  |
| *Aphelia pumilio* | dwarf aphelia |  |
| *Apium prostratum subsp. prostratum* | sea celery |  |
| *Apium prostratum subsp. prostratum var. filiforme* | sea celery |  |
| *Apium prostratum subsp. prostratum var.* | sea celery |  |
| *Apodasmia brownii* | coarse twine-rush |  |
| *Arthropodium minus* | small vanilla-lily |  |
| *Arthropodium strictum s.l.* | chocolate lily |  |
| *Asperula conferta* | common woodruff |  |
| *Asperula spp.* | woodruff |  |
| *Asperula subsimplex* | water woodruff |  |
| *Asplenium bulbiferum subsp. gracillimum* | mother spleenwort |  |
| *Asplenium flabellifolium* | necklace fern |  |
| *Asplenium flaccidum subsp. flaccidum* | weeping spleenwort |  |
| *Asplenium trichomanes* | common spleenwort |  |
| *Asterella drummondii* | licorice strap |  |
| *Astroloma humifusum* | cranberry heath |  |
| *Astroloma pinifolium* | pine heath |  |
| *Astrotricha parvifolia* | small-leaf star-hair |  |
| *Atriplex australasica* | native orache |  |
| *Atriplex cinerea* | coast saltbush |  |
| *Atriplex paludosa subsp. paludosa* | marsh saltbush |  |
| *Atriplex semibaccata* | berry saltbush |  |
| *Atriplex spp.* | saltbush |  |
| *Australina pusilla subsp. muelleri* | shade nettle |  |
| *Austrocynoglossum latifolium* | forest hound's-tongue |  |
| *Austrodanthonia caespitosa* | common wallaby-grass |  |
| *Austrodanthonia eriantha* | hill wallaby-grass |  |
| *Austrodanthonia geniculata* | kneed wallaby-grass |  |
| *Austrodanthonia penicillata* | weeping wallaby-grass |  |
| *Austrodanthonia pilosa* | velvet wallaby-grass |  |
| *Austrodanthonia racemosa var. racemosa* | slender wallaby-grass |  |
| *Austrodanthonia setacea* | bristly wallaby-grass |  |
| *Austrodanthonia setacea var. setacea* | bristly wallaby-grass |  |
| *Austrodanthonia spp.* | wallaby grass |  |
| *Austrodanthonia tenuior* | purplish wallaby-grass |  |
| *Austrofestuca littoralis* | coast fescue |  |
| *Austrostipa blackii* | crested spear-grass |  |
| *Austrostipa flavescens* | coast spear-grass |  |
| *Austrostipa mollis* | supple spear-grass |  |
| *Austrostipa pubinodis* | tall spear-grass |  |
| *Austrostipa rudis* | veined spear-grass |  |
| *Austrostipa rudis subsp. nervosa* | veined spear-grass |  |
| *Austrostipa rudis subsp. rudis* | veined spear-grass |  |
| *Austrostipa scabra* | rough spear-grass |  |
| *Austrostipa scabra subsp. scabra* | rough spear-grass |  |
| *Austrostipa semibarbata* | fibrous spear-grass |  |
| *Austrostipa spp.* | spear grass |  |
| *Austrostipa stuposa* | quizzical spear-grass |  |
| *Azolla filiculoides* | Pacific azolla |  |
| *Banksia integrifolia subsp. integrifolia* | coast banksia |  |
| *Banksia marginata* | silver banksia |  |
| *Banksia serrata* | saw banksia |  |
| *Baumea acuta* | pale twig-sedge |  |
| *Baumea articulata* | jointed twig-sedge |  |
| *Baumea juncea* | bare twig-sedge |  |
| *Baumea rubiginosa s.s.* | soft twig-sedge |  |
| *Baumea spp.* | twig sedge |  |
| *Bedfordia arborescens* | blanket leaf |  |
| *Berula erecta* | water parsnip |  |
| *Beyeria lasiocarpa* | wallaby-bush |  |
| *Beyeria lechenaultii* | pale turpentine-bush |  |
| *Beyeria viscosa* | pinkwood |  |
| *Billardiera scandens s.l.* | common apple-berry |  |
| *Blechnum cartilagineum* | gristle fern |  |
| *Blechnum nudum* | fishbone water-fern |  |
| *Blechnum patersonii subsp. patersonii* | strap water-fern |  |
| *Bolboschoenus caldwellii* | salt club-sedge |  |
| *Bolboschoenus medianus* | marsh club-sedge |  |
| *Bolboschoenus spp.* | club sedge |  |
| *Boronia anemonifolia* | sticky boronia |  |
| *Boronia anemonifolia subsp. anemonifolia* | sticky boronia |  |
| *Bossiaea cinerea* | showy bossiaea |  |
| *Bossiaea heterophylla* | variable bossiaea |  |
| *Bossiaea obcordata* | spiny bossiaea |  |
| *Bossiaea prostrata* | creeping bossiaea |  |
| *Bossiaea spp.* | bossiaea |  |
| *Botrychium australe* | Austral moonwort |  |
| *Brachyloma daphnoides* | daphne heath |  |
| *Brachyscome graminea* | grass daisy |  |
| *Brachyscome parvula* | coast daisy |  |
| *Brachyscome spathulata subsp. spathulata* | spoon daisy |  |
| *Brachyscome spp.* | daisy |  |
| *Brachythecium rutabulum* | rough-stalked feather-moss |  |
| *Bromus spp.* | brome |  |
| *Bulbine bulbosa* | bulbine Lily |  |
| *Bulbine semibarbata* | leek Lily |  |
| *Burchardia umbellata* | milkmaids |  |
| *Bursaria spinosa subsp. spinosa* | Sweet bursaria |  |
| *Caesia parviflora* | pale grass-lily |  |
| *Caladenia alata* | fairy orchid |  |
| *Caladenia carnea s.s.* | pink fingers |  |
| *Caladenia dilatata s.l.* | green-comb spider-orchid |  |
| *Caladenia latifolia* | pink fairies |  |
| *Caladenia phaeoclavia* | brown-clubbed spider-orchid |  |
| *Caladenia pusilla* | tiny pink-fingers |  |
| *Caladenia spp.* | caladenia |  |
| *Caladenia tentaculata* | mantis orchid |  |
| *Caladenia tessellata* | thick-lip spider-orchid |  |
| *Caladenia valida* | robust spider-orchid |  |
| *Caladenia vulgaris* | slender pink-fingers |  |
| *Caleana major* | large duck-orchid |  |
| *Callistemon pallidus* | lemon bottlebrush |  |
| *Callistemon sieberi* | river bottlebrush |  |
| *Callistemon subulatus* | dwarf bottlebrush |  |
| *Callitriche muelleri* | round water-starwort |  |
| *Callitriche spp.* | water starwort |  |
| *Calocephalus lacteus* | milky beauty-heads |  |
| *Calochilus robertsonii* | purple beard-orchid |  |
| *Calochlaena dubia* | common ground-fern |  |
| *Calyptrochaeta apiculata* | priest's-cap mitre-moss |  |
| *Calystegia marginata* | forest bindweed |  |
| *Calystegia sepium subsp. roseata* | large bindweed |  |
| *Calystegia spp.* | bindweed |  |
| *Calytrix spp.* | fringe myrtle |  |
| *Calytrix tetragona* | common fringe-myrtle |  |
| *Campylopus introflexus* | heath star moss |  |
| *Cardamine gunnii s.l.* | common bitter-cress |  |
| *Cardamine paucijuga s.l.* | annual bitter-cress |  |
| *Carex appressa* | tall sedge |  |
| *Carex breviculmis* | common grass-sedge |  |
| *Carex fascicularis* | tassel sedge |  |
| *Carex gaudichaudiana* | fen sedge |  |
| *Carex incomitata* | hillside sedge |  |
| *Carex inversa* | knob sedge |  |
| *Carex longebrachiata* | bergalia tussock |  |
| *Carex polyantha* | river sedge |  |
| *Carex pumila* | strand sedge |  |
| *Carex spp.* | sedge |  |
| *Carex tereticaulis* | poong'ort |  |
| *Carpobrotus glaucescens* | bluish pigface |  |
| *Carpobrotus rossii* | karkalla |  |
| *Cassinia aculeata* | common cassinia |  |
| *Cassinia longifolia* | shiny cassinia |  |
| *Cassinia maritima* | coast cassinia |  |
| *Cassinia spp.* | cassinia |  |
| *Cassinia trinerva* | three-nerved cassinia |  |
| *Cassytha glabella* | slender dodder-laurel |  |
| *Cassytha melantha* | coarse dodder-laurel |  |
| *Cassytha phaeolasia* | rusty dodder-laurel |  |
| *Cassytha pubescens s.s.* | downy dodder-laurel |  |
| *Cassytha spp.* | dodder laurel |  |
| *Casuarina spp.* | sheoak |  |
| *Caustis flexuosa* | curly Wig |  |
| *Caustis pentandra* | thick twist-rush |  |
| *Caustis spp.* | twist rush |  |
| *Celastrus australis* | staff climber |  |
| *Centaurium spicatum* | spiked centaury |  |
| *Centella cordifolia* | centella |  |
| *Centella spp.* | centella |  |
| *Centipeda cunninghamii* | common sneezeweed |  |
| *Centrolepis strigosa subsp. strigosa* | hairy centrolepis |  |
| *Cheilanthes austrotenuifolia* | green rock-fern |  |
| *Cheilanthes sieberi subsp. sieberi* | narrow rock-fern |  |
| *Chenopodiaceae spp.* | chenopod |  |
| *Chenopodium glaucum* | glaucous goosefoot |  |
| *Chenopodium pumilio* | clammy goosefoot |  |
| *Chenopodium spp.* | goosefoot |  |
| *Chiloglottis gunnii s.l.* | common bird-orchid |  |
| *Chiloglottis reflexa* | autumn wasp-orchid |  |
| *Chiloglottis trapeziformis* | dainty wasp-orchid |  |
| *Chloris truncata* | windmill grass |  |
| *Chrysocephalum semipapposum* | clustered everlasting |  |
| *Cissus hypoglauca* | jungle grape |  |
| *Cladium procerum* | leafy twig-sedge |  |
| *Clematis aristata* | mountain clematis |  |
| *Clematis glycinoides* | forest clematis |  |
| *Clematis microphylla s.l.* | small-leaved clematis |  |
| *Clematis microphylla var. microphylla spp. agg.* | small-leaved clematis |  |
| *Clematis spp.* | clematis |  |
| *Comesperma calymega* | blue-spike milkwort |  |
| *Comesperma defoliatum* | leafless milkwort |  |
| *Comesperma volubile* | love creeper |  |
| *Convolvulus erubescens spp. agg.* | pink bindweed |  |
| *Coprosma quadrifida* | prickly currant-bush |  |
| *Correa reflexa* | common correa |  |
| *Correa reflexa var. speciosa* | eastern correa |  |
| *Corunastylis despectans* | sharp midge-orchid |  |
| *Corybas aconitiflorus* | spurred helmet-orchid |  |
| *Corybas diemenicus s.l.* | veined helmet-orchid |  |
| *Corybas fimbriatus* | fringed helmet-orchid |  |
| *Corybas incurvus* | slaty helmet-orchid |  |
| *Corybas spp.* | helmet orchid |  |
| *Corybas unguiculatus* | small pelican-orchid |  |
| *Cotula australis* | common cotula |  |
| *Cotula spp.* | cotula |  |
| *Craspedia glauca spp. agg.* | common billy-buttons |  |
| *Crassula decumbens var. decumbens* | spreading crassula |  |
| *Crassula helmsii* | swamp crassula |  |
| *Crassula peduncularis* | purple crassula |  |
| *Crassula sieberiana s.l.* | sieber crassula |  |
| *Crassula sieberiana s.s.* | sieber crassula |  |
| *Crassula spp.* | crassula |  |
| *Crassula tetramera* | Australian stonecrop |  |
| *Cryptandra amara s.s.* | bitter cryptandra |  |
| *Cryptostylis subulata* | large tongue-orchid |  |
| *Cyathea australis* | rough tree-fern |  |
| *Cymbonotus lawsonianus* | bear's-ear |  |
| *Cymbonotus preissianus* | Austral bear's-ear |  |
| *Cynodon dactylon* | couch |  |
| *Cynoglossum australe* | Australian hound's-tongue |  |
| *Cynoglossum spp.* | hound's tongue |  |
| *Cynoglossum suaveolens* | sweet hound's-tongue |  |
| *Cyperaceae spp.* | sedge |  |
| *Cyperus lucidus* | leafy flat-sedge |  |
| *Cyrtostylis reniformis* | small gnat-orchid |  |
| *Cyrtostylis robusta* | large gnat-orchid |  |
| *Dampiera spp.* | dampiera |  |
| *Dampiera stricta* | blue dampiera |  |
| *Danthonia s.l. spp.* | wallaby grass |  |
| *Daucus glochidiatus* | Australian carrot |  |
| *Daviesia latifolia* | hop bitter-pea |  |
| *Daviesia leptophylla* | narrow-leaf bitter-pea |  |
| *Daviesia ulicifolia* | gorse bitter-pea |  |
| *Daviesia ulicifolia subsp. ulicifolia* | gorse bitter-pea |  |
| *Dennstaedtia davallioides* | lacy ground-fern |  |
| *Desmodium gunnii* | southern tick-trefoil |  |
| *Desmodium spp.* | tick trefoil |  |
| *Deyeuxia contracta* | compact bent-grass |  |
| *Deyeuxia minor* | small bent-grass |  |
| *Deyeuxia quadriseta* | reed bent-grass |  |
| *Deyeuxia rodwayi* | Tasman bent-grass |  |
| *Deyeuxia spp.* | bent-grass |  |
| *Dianella brevicaulis* | small-flower flax-lily |  |
| *Dianella caerulea s.l.* | paroo lily |  |
| *Dianella longifolia s.l.* | pale flax-lily |  |
| *Dianella revoluta s.l.* | black-anther flax-lily |  |
| *Dianella revoluta var. revoluta s.l.* | black-anther flax-lily |  |
| *Dianella spp.* | flax lily |  |
| *Dianella tasmanica* | Tasman flax-lily |  |
| *Dichelachne crinita* | long-hair plume-grass |  |
| *Dichelachne rara* | common plume-grass |  |
| *Dichelachne sciurea spp. agg.* | short-hair plume-grass |  |
| *Dichelachne sieberiana* | rough plume-grass |  |
| *Dichelachne spp.* | plume grass |  |
| *Dichondra repens* | kidney-weed |  |
| *Dicksonia antarctica* | soft tree-fern |  |
| *Dicranoloma dicarpum* | pale fork-moss |  |
| *Dillwynia cinerascens s.l.* | grey parrot-pea |  |
| *Dillwynia cinerascens s.s.* | grey parrot-pea |  |
| *Dillwynia glaberrima* | smooth parrot-pea |  |
| *Dillwynia sericea* | showy parrot-pea |  |
| *Dillwynia spp.* | parrot pea |  |
| *Diplazium australe* | Austral lady-fern |  |
| *Dipodium punctatum s.l.* | hyacinth orchid |  |
| *Dipodium punctatum s.s.* | purple hyacinth-orchid |  |
| *Dipodium roseum s.s.* | rosy hyacinth-orchid |  |
| *Disphyma crassifolium subsp. clavellatum* | rounded noon-flower |  |
| *Distichlis distichophylla* | Australian salt-grass |  |
| *Diuris orientis* | wallflower orchid |  |
| *Diuris pardina* | leopard orchid |  |
| *Diuris punctata var. punctata* | purple diuris |  |
| *Diuris sulphurea* | tiger orchid |  |
| *Dodonaea viscosa subsp. angustissima* | slender hop-bush |  |
| *Dodonaea viscosa subsp. spatulata* | sticky hop-bush |  |
| *Doodia aspera* | prickly rasp-fern |  |
| *Doodia australis* | common rasp-fern |  |
| *Drosera macrantha* | climbing sundew |  |
| *Drosera peltata* | pale sundew |  |
| *Drosera peltata subsp. auriculata* | tall sundew |  |
| *Drosera peltata subsp. peltata* | pale sundew |  |
| *Drosera spp.* | sundew |  |
| *Drymophila cyanocarpa* | turquoise berry |  |
| *Echinopogon caespitosus var. caespitosus* | bushy hedgehog-grass |  |
| *Echinopogon ovatus* | common hedgehog-grass |  |
| *Echinopogon spp.* | hedgehog grass |  |
| *Einadia hastata* | saloop |  |
| *Einadia nutans subsp. nutans* | hodding saltbush |  |
| *Einadia spp.* | einadia |  |
| *Einadia trigonos subsp. trigonos* | lax goosefoot |  |
| *Elaeocarpus reticulatus* | blue oliveberry |  |
| *Eleocharis acuta* | common spike-sedge |  |
| *Eleocharis atricha* | tuber spike-sedge |  |
| *Eleocharis gracilis* | slender spike-sedge |  |
| *Eleocharis pusilla* | small spike-sedge |  |
| *Eleocharis sphacelata* | tall spike-sedge |  |
| *Elymus scaber var. scaber* | common wheat-grass |  |
| *Empodisma minus* | spreading rope-rush |  |
| *Entolasia marginata* | bordered panic |  |
| *Epacris impressa* | common heath |  |
| *Epacris obtusifolia* | blunt-leaf heath |  |
| *Epilobium billardierianum* | variable willow-herb |  |
| *Epilobium billardierianum subsp. billardierianum* | smooth willow-herb |  |
| *Eragrostis spp.* | love grass |  |
| *Eriochilus cucullatus* | Parson's bands |  |
| *Eucalyptus aff. willisii (Gippsland Lakes)* | Gippsland Lakes peppermint |  |
| *Eucalyptus angophoroides* | apple box |  |
| *Eucalyptus baueriana* | blue box |  |
| *Eucalyptus bosistoana* | coast grey-box |  |
| *Eucalyptus bridgesiana s.l.* | but but |  |
| *Eucalyptus bridgesiana s.s.* | but but |  |
| *Eucalyptus camaldulensis* | river red-gum |  |
| *Eucalyptus cephalocarpa s.s.* | mealy stringybark |  |
| *Eucalyptus consideniana* | yertchuk |  |
| *Eucalyptus conspicua* | silver swamp stringybark |  |
| *Eucalyptus croajingolensis* | Gippsland peppermint |  |
| *Eucalyptus cypellocarpa* | mountain grey-gum |  |
| *Eucalyptus elata* | river peppermint |  |
| *Eucalyptus globoidea* | white stringybark |  |
| *Eucalyptus globulus subsp. bicostata* | eurabbie |  |
| *Eucalyptus globulus subsp. pseudoglobulus* | Gippsland blue-gum |  |
| *Eucalyptus melliodora* | yellow box |  |
| *Eucalyptus muelleriana* | yellow stringybark |  |
| *Eucalyptus obliqua* | messmate stringybark |  |
| *Eucalyptus ovata* | swamp gum |  |
| *Eucalyptus ovata var. ovata* | swamp gum |  |
| *Eucalyptus pauciflora subsp. pauciflora* | white sallee |  |
| *Eucalyptus polyanthemos* | red box |  |
| *Eucalyptus polyanthemos subsp. vestita* | red box |  |
| *Eucalyptus sieberi* | silvertop ash |  |
| *Eucalyptus spp.* | eucalypt |  |
| *Eucalyptus tereticornis subsp. mediana* | Gippsland red-gum |  |
| *Eucalyptus tricarpa* | red ironbark |  |
| *Eucalyptus tricarpa subsp. tricarpa* | red ironbark |  |
| *Eucalyptus viminalis* | manna gum |  |
| *Eucalyptus viminalis subsp. pryoriana* | coast manna-gum |  |
| *Eucalyptus X williamsonii* | mallacoota gum |  |
| *Euchiton collinus s.l.* | clustered/creeping cudweed |  |
| *Euchiton collinus s.s.* | creeping cudweed |  |
| *Euchiton involucratus s.l.* | common cudweed |  |
| *Euchiton involucratus s.s.* | star cudweed |  |
| *Euchiton sphaericus* | annual cudweed |  |
| *Euchiton spp.* | cudweed |  |
| *Eupomatia laurina* | bolwarra |  |
| *Euryomyrtus ramosissima subsp. prostrata* | Nnodding baeckea |  |
| *Eustrephus latifolius* | wombat berry |  |
| *Exocarpos cupressiformis* | cherry ballart |  |
| *Exocarpos spp.* | ballart |  |
| *Festuca spp.* | fescue |  |
| *Ficinia nodosa* | knobby club-sedge |  |
| *Ficus spp.* | fig |  |
| *Fissidens curvatus* | Portuguese pocket-moss |  |
| *Fissidens taylorii* | pygmy pocket-moss |  |
| *Gahnia clarkei* | tall saw-sedge |  |
| *Gahnia filum* | chaffy saw-sedge |  |
| *Gahnia melanocarpa* | black-fruit saw-sedge |  |
| *Gahnia radula* | thatch saw-sedge |  |
| *Gahnia sieberiana* | red-fruit saw-sedge |  |
| *Gahnia spp.* | saw sedge |  |
| *Gahnia trifida* | coast saw-sedge |  |
| *Galium australe* | tangled bedstraw |  |
| *Galium binifolium* | reflexed bedstraw |  |
| *Galium gaudichaudii* | rough bedstraw |  |
| *Galium migrans* | wandering bedstraw |  |
| *Galium propinquum* | Maori bedstraw |  |
| *Galium spp.* | bedstraw |  |
| *Gastrodia spp.* | potato orchid |  |
| *Geitonoplesium cymosum* | scrambling lily |  |
| *Gemmabryum sauteri* | Sauter's thread-moss |  |
| *Geranium gardneri* | rough crane's-bill |  |
| *Geranium homeanum* | rainforest crane's-bill |  |
| *Geranium potentilloides* | soft crane's-bill |  |
| *Geranium potentilloides var. potentilloides* | soft crane's-bill |  |
| *Geranium retrorsum s.l.* | grassland crane's-bill |  |
| *Geranium solanderi s.l.* | Austral crane's-bill |  |
| *Geranium sp. 2* | variable crane's-bill |  |
| *Geranium spp.* | crane's bill |  |
| *Gleichenia microphylla* | scrambling coral-fern |  |
| *Glossodia major* | wax-lip orchid |  |
| *Glyceria australis* | Australian sweet-grass |  |
| *Glycine clandestina* | twining glycine |  |
| *Glycine microphylla* | small-leaf glycine |  |
| *Glycine spp.* | glycine |  |
| *Glycine tabacina s.l.* | variable glycine |  |
| *Glycine tabacina s.s.* | variable glycine |  |
| *Gnaphalium indutum* | tiny cudweed |  |
| *Gnaphalium spp.* | cudweed |  |
| *Gompholobium huegelii* | common wedge-pea |  |
| *Gonocarpus humilis* | shade raspwort |  |
| *Gonocarpus micranthus* | creeping raspwort |  |
| *Gonocarpus micranthus subsp. micranthus* | creeping raspwort |  |
| *Gonocarpus spp.* | raspwort |  |
| *Gonocarpus tetragynus* | common raspwort |  |
| *Gonocarpus teucrioides s.l.* | germander raspwort |  |
| *Gonocarpus teucrioides s.s.* | germander raspwort |  |
| *Goodenia humilis* | swamp goodenia |  |
| *Goodenia ovata* | hop goodenia |  |
| *Goodenia paniculata* | branched goodenia |  |
| *Gratiola pedunculata* | stalked brooklime |  |
| *Gratiola peruviana* | Austral brooklime |  |
| *Gratiola peruviana* | Austral brooklime |  |
| *Grevillea celata* | Colquhoun grevillea | Vulnerable |
| *Grevillea chrysophaea* | golden grevillea |  |
| *Grevillea lanigera* | woolly grevillea |  |
| *Gymnostomum calcareum* | lime cave-moss |  |
| *Gynatrix pulchella s.l.* | hemp bush |  |
| *Hakea decurrens subsp. physocarpa* | bushy needlewood |  |
| *Hakea eriantha* | tree hakea |  |
| *Hakea teretifolia subsp. hirsuta* | dagger hakea |  |
| *Hakea ulicina* | furze hakea |  |
| *Haloragis brownii* | swamp raspwort |  |
| *Halosarcia pergranulata subsp. pergranulata* | blackseed glasswort |  |
| *Halosarcia spp.* | glasswort |  |
| *Hardenbergia violacea* | purple coral-pea |  |
| *Helichrysum leucopsideum* | satin everlasting |  |
| *Helichrysum rutidolepis s.l.* | pale everlasting |  |
| *Helichrysum rutidolepis s.s.* | pale everlasting |  |
| *Helichrysum scorpioides* | button everlasting |  |
| *Helichrysum spp.* | everlasting |  |
| *Hemarthria uncinata var. uncinata* | mat grass |  |
| *Hemichroa pentandra* | trailing hemichroa |  |
| *Hibbertia acicularis* | prickly Guinea-flower |  |
| *Hibbertia aspera s.l.* | rough Guinea-flower |  |
| *Hibbertia aspera subsp. aspera s.s.* | rough Guinea-flower |  |
| *Hibbertia calycina* | juniper Guinea-flower |  |
| *Hibbertia empetrifolia s.l.* | tangled Guinea-flower |  |
| *Hibbertia empetrifolia s.l.* | tangled Guinea-flower |  |
| *Hibbertia fasciculata var. prostrata* | bundled Guinea-flower |  |
| *Hibbertia obtusifolia* | grey Guinea-flower |  |
| *Hibbertia riparia* | erect Guinea-flower |  |
| *Hibbertia spp.* | Guinea-flower |  |
| *Hibbertia stricta s.l.* | upright Guinea-flower |  |
| *Hibbertia virgata* | twiggy Guinea-flower |  |
| *Histiopteris incisa* | bat's wing fern |  |
| *Howittia trilocularis* | blue wowittia |  |
| *Hydrocotyle acutiloba* | broad-leaf pennywort |  |
| *Hydrocotyle callicarpa* | small pennywort |  |
| *Hydrocotyle foveolata* | yellow pennywort |  |
| *Hydrocotyle hirta* | hairy pennywort |  |
| *Hydrocotyle laxiflora* | stinking pennywort |  |
| *Hydrocotyle pterocarpa* | wing pennywort |  |
| *Hydrocotyle sibthorpioides* | shining pennywort |  |
| *Hydrocotyle spp.* | pennywort |  |
| *Hydrocotyle tripartita* | slender pennywort |  |
| *Hydrocotyle verticillata* | shield pennywort |  |
| *Hymenophyllum cupressiforme* | common filmy-fern |  |
| *Hypericum gramineum* | small St John's wort |  |
| *Hypericum japonicum* | matted St John's wort |  |
| *Hypnum cupressiforme* | common plait-moss |  |
| *Hypolaena fastigiata* | tassel rope-rush |  |
| *Hypolepis glandulifera* | downy ground-fern |  |
| *Hypolepis muelleri* | harsh ground-fern |  |
| *Hypolepis rugosula* | ruddy ground-fern |  |
| *Hypolepis spp.* | ground-fern |  |
| *Hypoxis hygrometrica* | golden weather-glass |  |
| *Hypoxis hygrometrica var. villosisepala* | golden weather-glass |  |
| *Imperata cylindrica* | blady grass |  |
| *Indigofera australis* | Austral indigo |  |
| *Isolepis cernua* | nodding club-sedge |  |
| *Isolepis cernua var. cernua* | nodding club-sedge |  |
| *Isolepis cernua var. platycarpa* | broad-fruit club-sedge |  |
| *Isolepis fluitans* | floating club-sedge |  |
| *Isolepis fluitans var. fluitans* | floating club-sedge |  |
| *Isolepis fluitans var. lenticularis* | floating club-sedge |  |
| *Isolepis hookeriana* | grassy club-sedge |  |
| *Isolepis inundata* | swamp club-sedge |  |
| *Isolepis marginata* | little club-sedge |  |
| *Isolepis spp.* | club-sedge |  |
| *Isotoma fluviatilis subsp. australis* | swamp isotome |  |
| *Joycea pallida* | silvertop wallaby-grass |  |
| *Juncus australis* | Austral rush |  |
| *Juncus bufonius* | toad rush |  |
| *Juncus caespiticius* | grassy rush |  |
| *Juncus continuus* | pithy rush |  |
| *Juncus flavidus* | gold rush |  |
| *Juncus fockei* | slender joint-leaf rush |  |
| *Juncus gregiflorus* | green rush |  |
| *Juncus ingens* | giant rush |  |
| *Juncus ingens* | giant rush |  |
| *Juncus kraussii subsp. australiensis* | sea rush |  |
| *Juncus pallidus* | pale rush |  |
| *Juncus pauciflorus* | loose-flower rush |  |
| *Juncus planifolius* | broad-leaf rush |  |
| *Juncus prismatocarpus* | branching rush |  |
| *Juncus procerus* | tall rush |  |
| *Juncus revolutus* | creeping rush |  |
| *Juncus sarophorus* | broom rush |  |
| *Juncus spp.* | rush |  |
| *Juncus subsecundus* | finger rush |  |
| *Kennedia prostrata* | running postman |  |
| *Korthalsella rubra subsp. rubra* | jointed mistletoe |  |
| *Kunzea ericoides spp. agg.* | burgan |  |
| *Lachnagrostis aemula s.l.* | leafy blown-grass |  |
| *Lachnagrostis billardierei s.l.* | coast blown-grass |  |
| *Lachnagrostis billardierei subsp. billardierei* | coast blown-grass |  |
| *Lachnagrostis filiformis* | common blown-grass |  |
| *Lachnagrostis filiformis var. 1* | common blown-grass |  |
| *Lachnagrostis punicea subsp. filifolia* | purple blown-grass |  |
| *Lachnagrostis robusta* | salt blown-grass |  |
| *Lagenophora gracilis* | slender bottle-daisy |  |
| *Lagenophora spp.* | bottle-daisy |  |
| *Lagenophora stipitata* | common bottle-daisy |  |
| *Landoltia punctata* | thin duckweed |  |
| *Lasiopetalum macrophyllum* | shrubby velvet-bush |  |
| *Lastreopsis acuminata* | shiny shield-fern |  |
| *Lawrencia spicata* | salt lawrencia |  |
| *Laxmannia orientalis* | dwarf wire-lily |  |
| *Lemna disperma* | common duckweed |  |
| *Lepidium foliosum* | leafy peppercress |  |
| *Lepidium pseudotasmanicum* | shade peppercress |  |
| *Lepidium spp.* | peppercress |  |
| *Lepidosperma concavum* | sandhill sword-sedge |  |
| *Lepidosperma elatius* | tall sword-sedge |  |
| *Lepidosperma gladiatum* | coast sword-sedge |  |
| *Lepidosperma laterale* | variable sword-sedge |  |
| *Lepidosperma laterale var. laterale* | variable sword-sedge |  |
| *Lepidosperma longitudinale* | pithy sword-sedge |  |
| *Lepidosperma spp.* | sword-sedge |  |
| *Lepilaena spp.* | water mat |  |
| *Leptinella longipes* | coast cotula |  |
| *Leptinella reptans s.l.* | creeping cotula |  |
| *Leptinella reptans s.s.* | creeping cotula |  |
| *Leptocarpus tenax* | slender twine-rush |  |
| *Leptodictyum riparium* | marsh feather-moss |  |
| *Leptorhynchos nitidulus* | shiny buttons |  |
| *Leptospermum continentale* | prickly tea-tree |  |
| *Leptospermum emarginatum* | twin-flower tea-tree |  |
| *Leptospermum grandifolium* | mountain tea-tree |  |
| *Leptospermum lanigerum* | woolly tea-tree |  |
| *Leptospermum myrsinoides* | heath tea-tree |  |
| *Leptospermum spp.* | tea-tree |  |
| *Leptostigma reptans* | dwarf nertera |  |
| *Leucophyta brownii* | cushion bush |  |
| *Leucopogon ericoides* | pink beard-heath |  |
| *Leucopogon juniperinus* | long-flower beard-heath |  |
| *Leucopogon parviflorus* | coast beard-heath |  |
| *Leucopogon spp.* | beard-heath |  |
| *Leucopogon virgatus* | common beard-heath |  |
| *Leucopogon virgatus var. virgatus* | common beard-heath |  |
| *Lilaeopsis polyantha* | Australian lilaeopsis |  |
| *Lindsaea linearis* | screw fern |  |
| *Linum marginale* | native flax |  |
| *Lissanthe strigosa subsp. subulata* | peach heath |  |
| *Lobelia anceps* | angled lobelia |  |
| *Lobelia spp.* | lobelia |  |
| *Lomandra confertifolia subsp. leptostachya* | slender mat-rush |  |
| *Lomandra filiformis* | wattle mat-rush |  |
| *Lomandra filiformis subsp. filiformis* | wattle mat-rush |  |
| *Lomandra glauca s.s.* | blue mat-rush |  |
| *Lomandra longifolia* | spiny-headed mat-rush |  |
| *Lomandra longifolia subsp. exilis* | cluster-headed mat-rush |  |
| *Lomandra longifolia subsp. longifolia* | spiny-headed mat-rush |  |
| *Lomandra nana* | dwarf mat-rush |  |
| *Lomandra spp.* | mat-rush |  |
| *Lomatia ilicifolia* | holly lomatia |  |
| *Lotus australis var. australis* | Austral trefoil |  |
| *Ludwigia peploides subsp. montevidensis* | clove-strip |  |
| *Luzula campestris spp. agg.* | field woodrush |  |
| *Luzula meridionalis* | common woodrush |  |
| *Luzula meridionalis var. flaccida* | common woodrush |  |
| *Luzula meridionalis var. meridionalis* | common woodrush |  |
| *Luzula spp.* | woodrush |  |
| *Lycopus australis* | Australian gipsywort |  |
| *Lyperanthus suaveolens* | brown-beaks |  |
| *Lysimachia japonica* | creeping loosestrife |  |
| *Lythrum hyssopifolia* | small loosestrife |  |
| *Marsdenia flavescens* | yellow milk-vine |  |
| *Marsdenia rostrata* | milk-vine |  |
| *Marsilea hirsuta* | short-fruit nardoo |  |
| *Mazus pumilio* | swamp mazus |  |
| *Melaleuca ericifolia* | swamp paperbark |  |
| *Melaleuca parvistaminea* | rough-barked honey-myrtle |  |
| *Melaleuca squarrosa* | scented paperbark |  |
| *Melicytus dentatus s.l.* | tree violet |  |
| *Melicytus dentatus s.s.* | tree violet |  |
| *Mentha diemenica* | slender mint |  |
| *Micrantheum hexandrum* | box micrantheum |  |
| *Microlaena stipoides var. stipoides* | weeping grass |  |
| *Microseris scapigera spp. agg.* | yam daisy |  |
| *Microsorum pustulatum subsp. pustulatum* | kangaroo fern |  |
| *Microsorum scandens* | fragrant fern |  |
| *Microtis arenaria* | notched onion-orchid |  |
| *Microtis parviflora* | slender onion-orchid |  |
| *Microtis unifolia* | common onion-orchid |  |
| *Mimulus repens* | creeping monkey-flower |  |
| *Mimulus spp.* | monkey flower |  |
| *Monotoca elliptica s.l.* | tree broom-heath |  |
| *Monotoca elliptica s.s.* | tree broom-heath |  |
| *Monotoca scoparia* | prickly broom-heath |  |
| *Morinda jasminoides* | jasmine morinda |  |
| *Muehlenbeckia adpressa* | climbing lignum |  |
| *Muellerina celastroides* | coast mistletoe |  |
| *Muellerina eucalyptoides* | creeping mistletoe |  |
| *Myosotis australis* | Austral forget-me-not |  |
| *Myriophyllum caput-medusae* | coarse water-milfoil |  |
| *Myriophyllum crispatum* | upright water-milfoil |  |
| *Myriophyllum simulans* | amphibious water-milfoil |  |
| *Myriophyllum verrucosum* | red water-milfoil |  |
| *Myrsine howittiana* | mutton-wood |  |
| *Neckera pennata* | feathered neckera |  |
| *Neopaxia australasica* | white rurslane |  |
| *Notelaea venosa* | large mock-olive |  |
| *Notodanthonia longifolia* | long-leaf wallaby-grass |  |
| *Notodanthonia semiannularis* | wetland wallaby-grass |  |
| *Olearia argophylla* | musk daisy-bush |  |
| *Olearia axillaris* | coast daisy-Bush |  |
| *Olearia glutinosa* | sticky daisy-bush |  |
| *Olearia lirata* | snowy daisy-bush |  |
| *Olearia phlogopappa* | dusty daisy-bush |  |
| *Olearia ramulosa var. ramulosa* | twiggy daisy-bush |  |
| *Olearia viscosa* | viscid daisy-bush |  |
| *Opercularia aspera* | coarse stinkweed |  |
| *Opercularia hispida* | hairy stinkweed |  |
| *Opercularia spp.* | stinkweed |  |
| *Opercularia varia* | variable stinkweed |  |
| *Ophioglossum lusitanicum* | Austral adder's-tongue |  |
| *Oplismenus hirtellus* | Australian basket-grass |  |
| *Orthoceras strictum* | horned orchid |  |
| *Oxalis corniculata s.l.* | yellow wood-sorrel |  |
| *Oxalis exilis* | shady wood-sorrel |  |
| *Oxalis perennans* | grassland wood-sorrel |  |
| *Oxalis radicosa* | stout-rooted wood-sorrel |  |
| *Oxalis rubens* | dune wood-sorrel |  |
| *Oxalis spp.* | wood sorrel |  |
| *Ozothamnus argophyllus* | spicy everlasting |  |
| *Ozothamnus conditus* | pepper everlasting |  |
| *Ozothamnus cuneifolius* | wedge-leaf everlasting |  |
| *Ozothamnus ferrugineus* | tree everlasting |  |
| *Ozothamnus spp.* | everlasting |  |
| *Ozothamnus turbinatus* | coast everlasting |  |
| *Pandorea pandorana* | Wonga vine |  |
| *Papillaria flavolimbata* | festoon moss |  |
| *Paracaleana minor* | small duck-orchid |  |
| *Parietaria debilis s.l.* | shade pellitory |  |
| *Parietaria debilis s.s.* | shade pellitory |  |
| *Parsonsia brownii* | twining silkpod |  |
| *Pelargonium australe* | Austral stork's-bill |  |
| *Pelargonium inodorum* | kopata |  |
| *Pelargonium spp.* | stork's bill |  |
| *Pellaea falcata s.l.* | sickle fern |  |
| *Pellaea falcata s.s.* | sickle fern |  |
| *Pentapogon quadrifidus var. quadrifidus* | five-awned spear-grass |  |
| *Persicaria decipiens* | slender knotweed |  |
| *Persicaria hydropiper* | water pepper |  |
| *Persicaria lapathifolia* | pale knotweed |  |
| *Persicaria praetermissa* | spotted knotweed |  |
| *Persicaria subsessilis* | hairy knotweed |  |
| *Persoonia juniperina* | prickly geebung |  |
| *Persoonia linearis* | narrow-leaf geebung |  |
| *Phebalium squamulosum* | forest phebalium |  |
| *Philydrum lanuginosum* | woolly waterlily |  |
| *Phragmites australis* | common reed |  |
| *Phyllanthus gunnii* | shrubby spurge |  |
| *Phyllanthus hirtellus* | thyme spurge |  |
| *Pimelea axiflora* | bootlace bush |  |
| *Pimelea axiflora subsp. axiflora* | bootlace bush |  |
| *Pimelea curviflora s.s.* | curved rice-flower |  |
| *Pimelea glauca* | smooth rice-flower |  |
| *Pimelea humilis* | common rice-flower |  |
| *Pimelea linifolia subsp. linifolia* | slender rice-flower |  |
| *Pimelea serpyllifolia subsp. serpyllifolia* | thyme rice-flower |  |
| *Pimelea spp.* | rice flower |  |
| *Pittosporum spp.* | pittosporum |  |
| *Plantago debilis* | shade plantain |  |
| *Plantago gaudichaudii* | narrow plantain |  |
| *Plantago spp.* | plantain |  |
| *Plantago varia* | variable plantain |  |
| *Platylobium formosum* | handsome flat-pea |  |
| *Platylobium obtusangulum* | common flat-pea |  |
| *Platysace ericoides* | heath platysace |  |
| *Platysace lanceolata* | shrubby platysace |  |
| *Plectranthus parviflorus* | cockspur flower |  |
| *Poa australis spp. agg.* | tussock grass |  |
| *Poa clelandii* | Noah's Ark |  |
| *Poa ensiformis* | sword tussock-grass |  |
| *Poa fordeana* | forde poa |  |
| *Poa labillardierei* | common tussock-grass |  |
| *Poa labillardierei var. labillardierei* | common tussock-grass |  |
| *Poa morrisii* | soft tussock-grass |  |
| *Poa poiformis* | coast tussock-grass |  |
| *Poa poiformis var. poiformis* | coast tussock-grass |  |
| *Poa sieberiana* | grey tussock-grass |  |
| *Poa sieberiana var. hirtella* | grey tussock-grass |  |
| *Poa sieberiana var. sieberiana* | grey tussock-grass |  |
| *Poa spp.* | tussock grass |  |
| *Poa tenera* | slender tussock-grass |  |
| *Polystichum proliferum* | mother shield-fern |  |
| *Polytrichum juniperinum* | juniper haircap |  |
| *Pomaderris aspera* | hazel pomaderris |  |
| *Pomaderris elliptica var. elliptica* | smooth pomaderris |  |
| *Pomaderris eriocephala* | woolly-head pomaderris |  |
| *Pomaderris ferruginea* | rusty pomaderris |  |
| *Pomaderris oraria subsp. calcicola* | limestone pomaderris |  |
| *Pomaderris paniculosa subsp. paralia* | coast pomaderris |  |
| *Pomaderris prunifolia var. prunifolia* | prunus pomaderris |  |
| *Pomax umbellata* | pomax |  |
| *Poranthera microphylla s.l.* | small poranthera |  |
| *Potamogeton tricarinatus s.l.* | floating pondweed |  |
| *Prasophyllum correctum* | gaping leek-orchid | Endangered |
| *Prasophyllum elatum* | tall leek-orchid |  |
| *Prasophyllum frenchii* | maroon Leek-orchid | Endangered |
| *Prasophyllum spp.* | leek orchid |  |
| *Prostanthera lasianthos* | Victorian Christmas-bush |  |
| *Pseudanthus ovalifolius* | oval-leaf pseudanthus |  |
| *Pseudognaphalium luteoalbum* | jersey cudweed |  |
| *Pteridium esculentum* | Austral bracken |  |
| *Pteris tremula* | tender brake |  |
| *Pteris umbrosa* | jungle brake |  |
| *Pterostylis alpina s.s.* | mountain greenhood |  |
| *Pterostylis alveata* | coastal greenhood |  |
| *Pterostylis concinna* | trim greenhood |  |
| *Pterostylis curta* | blunt greenhood |  |
| *Pterostylis falcata s.s.* | large sickle greenhood |  |
| *Pterostylis fischii* | Fisch's greenhood |  |
| *Pterostylis grandiflora* | cobra greenhood |  |
| *Pterostylis longifolia s.l.* | tall greenhood |  |
| *Pterostylis nana* | dwarf greenhood |  |
| *Pterostylis nutans* | nodding greenhood |  |
| *Pterostylis parviflora s.l.* | tiny greenhood |  |
| *Pterostylis pedunculata* | maroonhood |  |
| *Pterostylis spp.* | greenhood |  |
| *Ptychomitrium mittenii* | pincushion |  |
| *Pultenaea daphnoides* | large-leaf bush-pea |  |
| *Pultenaea dentata* | clustered bush-pea |  |
| *Pultenaea humilis* | dwarf bush-pea |  |
| *Pultenaea retusa* | blunt bush-pea |  |
| *Pyrorchis nigricans* | red-beaks |  |
| *Pyrrosia rupestris* | rock felt-fern |  |
| *Racopilum cuspidigerum var. convolutaceum* | common carpet-moss |  |
| *Ranunculus amphitrichus* | small river buttercup |  |
| *Ranunculus inundatus* | river buttercup |  |
| *Ranunculus plebeius s.l.* | forest/hairy buttercup |  |
| *Ranunculus plebeius s.s.* | forest buttercup |  |
| *Ranunculus sessiliflorus* | annual buttercup |  |
| *Ranunculus sessiliflorus var. sessiliflorus* | annual buttercup |  |
| *Ranunculus spp.* | buttercup |  |
| *Rhagodia candolleana subsp. candolleana* | seaberry saltbush |  |
| *Rhagodia spp.* | saltbush |  |
| *Rhytidosporum procumbens* | white marianth |  |
| *Ricinocarpos pinifolius* | wedding bush |  |
| *Rubus parvifolius* | small-leaf bramble |  |
| *Rubus rosifolius var. rosifolius* | rose-leaf bramble |  |
| *Rubus spp.* | bramble |  |
| *Rulingia prostrata* | dwarf kerrawang | Endangered |
| *Rumex bidens* | mud dock |  |
| *Rumex brownii* | slender dock |  |
| *Rumex spp.* | dock |  |
| *Ruppia megacarpa* | large-fruit tassel |  |
| *Sambucus gaudichaudiana* | white elderberry |  |
| *Samolus repens* | creeping brookweed |  |
| *Sarcochilus australis* | butterfly orchid |  |
| *Sarcocornia blackiana* | thick-head glasswort |  |
| *Sarcocornia quinqueflora* | beaded glasswort |  |
| *Sarcocornia quinqueflora subsp. quinqueflora* | beaded glasswort |  |
| *Sarcocornia spp.* | glasswort |  |
| *Sarcopetalum harveyanum* | pearl vine |  |
| *Scaevola albida* | small-fruit fan-flower |  |
| *Scaevola hookeri* | creeping fan-flower |  |
| *Scaevola ramosissima* | hairy fan-flower |  |
| *Schizaea bifida s.s.* | forked comb-fern |  |
| *Schoenoplectus pungens* | sharp club-sedge |  |
| *Schoenoplectus tabernaemontani* | river club-sedge |  |
| *Schoenus apogon* | common bog-sedge |  |
| *Schoenus brevifolius* | zig-zag bog-sedge |  |
| *Schoenus ericetorum* | heathy bog-sedge |  |
| *Schoenus imberbis* | beardless bog-sedge |  |
| *Schoenus maschalinus* | leafy bog-sedge |  |
| *Schoenus nitens* | shiny bog-sedge |  |
| *Schoenus spp.* | bog sedge |  |
| *Scutellaria humilis* | dwarf skullcap |  |
| *Sebaea ovata* | yellow sebaea |  |
| *Selaginella uliginosa* | swamp selaginella |  |
| *Selliera radicans* | shiny swamp-mat |  |
| *Sematophyllum homomallum* | bronze signal-moss |  |
| *Senecio biserratus* | jagged fireweed |  |
| *Senecio glomeratus* | annual fireweed |  |
| *Senecio hispidulus s.l.* | rough fireweed |  |
| *Senecio hispidulus s.s.* | rough fireweed |  |
| *Senecio linearifolius* | fireweed groundsel |  |
| *Senecio minimus* | shrubby fireweed |  |
| *Senecio pinnatifolius* | variable groundsel |  |
| *Senecio quadridentatus* | cotton fireweed |  |
| *Senecio spathulatus s.l.* | dune groundsel |  |
| *Senecio spp.* | groundsel |  |
| *Senecio squarrosus s.s.* | leafy fireweed |  |
| *Senecio tenuiflorus spp. agg.* | slender fireweed |  |
| *Senecio X orarius* | coast fireweed |  |
| *Sicyos australis* | star cucumber |  |
| *Sigesbeckia orientalis subsp. orientalis* | Indian weed |  |
| *Smilax australis* | Austral sarsaparilla |  |
| *Solanum aviculare* | kangaroo apple |  |
| *Solanum laciniatum* | large kangaroo apple |  |
| *Solanum opacum* | green-berry nightshade |  |
| *Solanum prinophyllum* | forest nightshade |  |
| *Solanum pungetium* | eastern nightshade |  |
| *Solanum spp.* | nightshade |  |
| *Solanum vescum* | gunyang |  |
| *Solenogyne dominii* | smooth solenogyne |  |
| *Solenogyne gunnii* | hairy solenogyne |  |
| *Sonchus hydrophilus* | native sow-thistle |  |
| *Spergularia marina s.l.* | salt sand-spurrey |  |
| *Spergularia media s.l.* | coast sand-spurrey |  |
| *Spergularia sp. 1* | native sea-spurrey |  |
| *Sphaerolobium minus* | eastern globe-pea |  |
| *Sphaerolobium vimineum s.l.* | leafless globe-pea |  |
| *Sphaerolobium vimineum s.s.* | leafless globe-pea |  |
| *Sphagnum novozelandicum* | peat moss |  |
| *Spinifex sericeus* | hairy spinifex |  |
| *Sporobolus virginicus* | salt couch |  |
| *Sprengelia incarnata* | pink swamp-heath |  |
| *Spyridium parvifolium* | dusty miller |  |
| *Stackhousia monogyna* | creamy stackhousia |  |
| *Stackhousia spathulata* | coast stackhousia |  |
| *Stackhousia spp.* | stackhousia |  |
| *Stellaria angustifolia* | swamp starwort |  |
| *Stellaria flaccida* | forest starwort |  |
| *Stellaria multiflora* | rayless starwort |  |
| *Stellaria pungens* | prickly starwort |  |
| *Stellaria spp.* | starwort |  |
| *Stuartina muelleri* | spoon cudweed |  |
| *Stylidium armeria* | common triggerplant |  |
| *Stylidium graminifolium s.s.* | grass triggerplant |  |
| *Stylidium inundatum* | hundreds and thousands |  |
| *Stylidium spp.* | trigger plant |  |
| *Suaeda australis* | Austral seablite |  |
| *Suaeda spp.* | seablite |  |
| *Taraxacum spp.* | dandelion |  |
| *Tetragonia implexicoma* | bower spinach |  |
| *Tetragonia spp.* | native spinach |  |
| *Tetragonia tetragonioides* | New Zealand spinach |  |
| *Tetrarrhena juncea* | forest wire-grass |  |
| *Tetratheca ciliata* | pink-bells |  |
| *Tetratheca pilosa* | hairy pink-bells |  |
| *Tetratheca pilosa subsp. latifolia* | hairy pink-bells |  |
| *Thelionema spp.* | tufted lily |  |
| *Thelymitra arenaria* | forest sun-orchid |  |
| *Thelymitra aristata* | great sun-orchid |  |
| *Thelymitra circumsepta* | naked sun-orchid |  |
| *Thelymitra epipactoides* | metallic sun-orchid | Endangered |
| *Thelymitra flexuosa* | twisted sun-orchid |  |
| *Thelymitra ixioides s.s.* | spotted sun-orchid |  |
| *Thelymitra nuda* | plain sun-orchid |  |
| *Thelymitra planicola* | shy sun-orchid |  |
| *Thelymitra rubra* | salmon sun-orchid |  |
| *Thelymitra spp.* | sun orchid |  |
| *Themeda triandra* | kangaroo grass |  |
| *Thryptomene micrantha* | ribbed thryptomene |  |
| *Thuidiopsis furfurosa* | golden weft-moss |  |
| *Thysanotus patersonii* | twining fringe-lily |  |
| *Tricoryne elatior* | yellow rush-lily |  |
| *Triglochin microtuberosa* | eastern water-ribbons |  |
| *Triglochin minutissima* | tiny arrowgrass |  |
| *Triglochin mucronata* | prickly arrowgrass |  |
| *Triglochin procera s.l.* | water ribbons |  |
| *Triglochin procera s.s.* | common water-ribbons |  |
| *Triglochin spp.* | water ribbons |  |
| *Triglochin striata* | streaked arrowgrass |  |
| *Triquetrella papillata* | common twine-moss |  |
| *Tylophora barbata* | bearded tylophora |  |
| *Typha domingensis* | narrow-leaf cumbungi |  |
| *Typha orientalis* | broad-leaf cumbungi |  |
| *Typha spp.* | bulrush |  |
| *Urtica incisa* | scrub nettle |  |
| *Veronica calycina* | hairy speedwell |  |
| *Veronica gracilis* | slender speedwell |  |
| *Veronica plebeia* | trailing speedwell |  |
| *Veronica spp.* | speedwell |  |
| *Villarsia exaltata* | erect marsh-flower |  |
| *Villarsia reniformis* | running marsh-flower |  |
| *Viminaria juncea* | golden spray |  |
| *Viola hederacea sensu Entwisle (1996)* | ivy-leaf violet |  |
| *Viola hederacea sensu Willis (1972)* | ivy-leaf violet |  |
| *Vittadinia cuneata var. cuneata* | fuzzy New Holland daisy |  |
| *Wahlenbergia gracilenta s.l.* | annual bluebell |  |
| *Wahlenbergia gracilenta s.s.* | hairy annual-bluebell |  |
| *Wahlenbergia gracilis* | sprawling bluebell |  |
| *Wahlenbergia graniticola s.l.* | granite bluebell |  |
| *Wahlenbergia gymnoclada* | naked bluebell |  |
| *Wahlenbergia multicaulis* | branching bluebell |  |
| *Wahlenbergia spp.* | bluebell |  |
| *Wahlenbergia stricta subsp. stricta* | tall bluebell |  |
| *Westringia glabra* | violet westringia |  |
| *Wijkia extenuata* | spear moss |  |
| *Wilsonia backhousei* | narrow-leaf wilsonia |  |
| *Wurmbea dioica* | common early nancy |  |
| *Xanthorrhoea australis* | Austral grass-tree |  |
| *Xanthorrhoea minor subsp. lutea* | small grass-tree |  |
| *Xanthorrhoea resinosa* | spear grass-tree |  |
| *Xanthorrhoea spp.* | grass tree |  |
| *Xanthosia spp.* | xanthosia |  |
| *Xerochrysum bracteatum* | golden everlasting |  |
| *Xerochrysum palustre* | swamp everlasting | Vulnerable |
| *Zieria arborescens subsp. arborescens* | stinkwood |  |
| *Zieria smithii subsp. smithii* | sandfly zieria |  |
| *Zieria veronicea subsp. veronicea* | pink zieria |  |
| *Zoysia macrantha subsp. macrantha* | prickly couch |  |
| *Zoysia macrantha subsp. walshii* | walsh's couch |  |

EPBC Status indicates the listing of a particular species under the *Environmental Protection and Biodiversity Conservation Act 1999* as of October 29, 2010. ‘Migratory’ species are those listed under international and bilateral agreements for the conservation of migratory species (Bonn Convention, JAMBA, CAMBA). ‘Listed’ species include marine species declared under s248 of the Act and migratory species listed separate to international agreements.