



Lot 66 in DP 551005 Moonee Beach
'Moonee Waters'

Proposed Residential Development and Conservation Reserve

Response to the Sainty Report
and
Justification of the 2007 Concept Plan

Appendix A
Conservation Area Management Plan Principles

November 2007



Lot 66 in DP 551005 Moonee Beach
Moonee Waters

Proposed Residential Development and Conservation Reserve

Conservation Area Management Plan
Principles

November 2007

**LOT 66 in DP 551005 MOONEE BEACH
MOONEE WATERS**

PROPOSED RESIDENTIAL DEVELOPMENT and CONSERVATION RESERVE

**CONSERVATION AREA MANAGEMENT PLAN
PRINCIPLES**

November 2007

1 SCOPE of the CAMP

- The scope of this *Conservation Area Management Plan* (CAMP) for the 'Moonee Waters' development is the management of all activities within the *Conservation Area* (Lot 1 in the 2007 *Concept Plan*).
- Whilst the majority of the *Conservation Area* is to be maintained for biodiversity conservation purposes, small areas are also to be utilized for other purposes including:
 - the provision of three small 'local' parks, one adjacent to each of the development precincts, for public recreation purposes. These parks will maintain a native tree canopy as well as patches of native understorey vegetation but will also have childrens playground equipment, grassy areas and barbeque facilities;
 - bicycle tracks and pedestrian walkways through the *Conservation Area*. These will be carefully located to avoid features of particular sensitivity or conservation value (insofar as possible) and will be constructed using methods which impose minimum impacts on the natural environment (using elevated walkways, bridges over watercourses and appropriate substrate materials where 'on ground'); and
 - small areas required for bushfire protection purposes. These will include narrow bands (approximately 5-10m in width) around the two development precincts and broader bands (of up to 50m in width) along the access road for the Southern Precinct and the proposed service road (along the alignment of the existing transmission line).
- The process for implementation of the CAMP assessment that the *Conservation Area* is to be managed pursuant to a 'community title' agreement, and that all lot owners will be participants in the community scheme.

2 AIMS & OBJECTIVES

- The broad aims of the *Conservation Area Management Plan* (CAMP) for the 'Moonee Waters' development project are:
 - to facilitate the rehabilitation and maintenance of the *Conservation Area* within the 'Moonee Waters' development;
 - to facilitate the appropriate use of and enjoyment of the *Conservation Area* by residents and by members of the public;
 - to provide for the education of residents and members of the public with respect to biodiversity conservation values;
 - to ensure that management of those portions of the *Conservation Area* required for public recreation or bushfire protection is consistent with the maintenance of biodiversity conservation values; and
 - to provide a system for the management of the *Conservation Area* in perpetuity to achieve both biodiversity conservation outcomes and the appropriate use and enjoyment of the *Conservation Area* by resident and members of the public.

- The specific objectives of the CAMP for the 'Moonee Waters' development project are:
 - to identify, suppress and control all introduced weeds present in the *Conservation Area* on the 'Moonee Waters' project site;
 - to provide supplementary planting of native species where necessary (particularly in areas which had been heavily weed-infested and/or areas subject to disturbance during development activities for the project);
 - to provide specific protection for and enhancement of habitat for the two threatened plant species known to occur on the site (the Rusty Plum and the Moonee Quassia);
 - to identify and provide protection for relevant features and habitats for threatened fauna known or likely to occur within the *Conservation Area*;
 - to provide supplementary fauna resources where considered necessary (eg nest boxes or tree-hollows);
 - to provide for the installation and maintenance of environmentally sensitive walking tracks and bicycle paths through the *Conservation Area*;
 - to provide appropriate signage and educational material for residents and the general public indicating the environmental values of the *Conservation Area* and the habitats contained therein;
 - to provide an appropriate management regime for *Asset Protection Zones* (APZs) and areas of vegetation which are to be managed for bushfire protection purposes, with the intention of minimizing adverse impacts on the natural environment and maintaining biodiversity conservation values in those managed areas;
 - to facilitate and promote involvement of the local community in management and protection of the *Conservation Area*; and
 - to provide a monitoring program which identifies issues or problems and provides a means of rectification, which monitors the success of the rehabilitation and maintenance program and which provides a reporting regime for the *Conservation Area*.

3 VEGETATION MANAGEMENT

- Vegetation management within the *Conservation Area* (outside the local parks, pedestrian infrastructure and bushfire protection areas which are dealt with below) essentially involves two main activities:
 - weed suppression and control; and
 - replanting programs where necessary.
- A detailed weed map is to be prepared of the *Conservation Area* identifying areas of high weed infestation (eg in the previously mined area near Green Bluff, in the southeastern corner, and along the Crown Road Reserve on the southern boundary of the subject site), area of mild weed infestation and areas which are clear of introduced weeds.
- Application of primary weed control measures, which will include:
 - broad-scale weed removal at selected locations using brush-cutters, glyphosate-based weedicides or slashing;
 - the 'cut-and-paint' method for Lantana and larger woody weeds, as appropriate;
 - hand removal of smaller weeds or individual weeds at selected locations; and
 - the removal of flowering heads and seed capsules, as appropriate.
- The appropriate weed suppression and control methods will be determined by the Project Environmental Manager and the Bush Regeneration Consultant.
- All weed material will be stockpiled and burnt on site (within development areas) or disposed of in a Council-approved waste management facility, as appropriate.

- Ongoing monitoring of the *Conservation Area* (as documented in Chapter 9 below) will focus *inter alia* on the identification of new weed outbreaks, the monitoring of existing weed control areas, and the determination of additional suppression and control measure, as necessary.
- Most of the *Conservation Area* will require little, if any, active management given the excellent quality of the vegetation present and the absence (through much of the *Conservation Area*) of weeds or other disturbances.
- In addition, supplementary planting of native species is likely to be necessary at only a few locations where previous activities (such as sand mining and subsequent weed infestations) are likely to have depleted the native seed bank in the soil.
- Following the removal of dense weed infestations, a period of natural regeneration will be permitted to determine whether native seeds are present in the soil.
- The application of 'smoke water' will be considered at appropriate locations to stimulate native seed germination.
- Where supplementary planting of native species is required (as determined by the Project Environmental Manager and the Bush Regeneration Consultant):
 - an appropriate range of species will be determined based on the adjoining native plant communities; and
 - propagules of appropriate native species will be obtained from adjoining native plant communities, translocated into the regeneration area or grown in a local nursery and subsequently planted out.
- Any areas of native plantings will be maintained as required, including watering if necessary during dry periods.

4 ASSET PROTECTION ZONE MANAGEMENT

- Small parts of the *Conservation Area* are to be managed for bushfire protection purposes including:
 - a narrow band (approximately 5-10m wide outside the Northern and Southern Precincts) outside the perimeter roads, which will contain the bioretention swales and water cleaning ponds; and
 - broader bands (up to 50m wide) on the northern side of the access road for the Southern Precinct from the Pacific Highway, and on each side of the temporary access road to the Northern Precinct to the Pacific Highway as well as along the proposed future local access road located along the existing electricity transmission line easement.
- The majority of the *Asset Protection Zones* are located in areas of the Dry Blackbutt forest community or in the upper (and drier) areas of swamp forest vegetation.
- Management of the *Asset Protection Zones* and bushfire protection areas is to be conducted in an environmentally sensitive manner, using small machinery where necessary, hand tools where possible, and bush regeneration teams to ensure sensitive application of the required methods.
- The provision of appropriate bushfire protection measures will require the removal of some trees in some locations, the thinning of or removal of much of the shrub layer and/or midstorey vegetation, and controls on the levels of leaf litter and understorey vegetation present.
- Implementation of the bushfire protection measures is to be undertaken to the minimum extent necessary to achieve the required outcomes, and will utilize existing breaks in the vegetation or vegetation types to achieve the required goals.
- All *Asset Protection Zones* will be managed to continually suppress and control weeds, and to avoid providing circumstances which favor weed infestations.
- Native plant material removed from *Asset Protection Zones* will be utilized for bush regeneration purposes in other parts of the *Conservation Area*, as appropriate.
- Trees to be removed will be determined by the Project Environmental Manager and Bush Regeneration Consultant, in consultation with the bush fire expert, selecting existing dead trees (without hollows), introduced trees and weed species, and tree species determined not to be of

conservation value (eg avoiding hollow-bearing trees and individuals likely to develop tree-hollows).

5 FACILITIES and INFRASTRUCTURE

- The *Conservation Area* includes two elements designed for public access and public recreation purposes:
 - the three 'local parks' – one located at the eastern end of the Northern Precinct and a second located to the south of that Precinct, and a third located at the northeastern end of the Southern Precinct; and
 - the dedicated bicycle paths and walkways through the *Conservation Area*. These are to be constructed in an environmentally sensitive manner by the use of appropriate materials where those elements are 'on ground' and elevated boardwalks and bridges over wetlands or moist areas.
- The locations of all access tracks and pedestrian paths will be determined by the Project Environmental Manager by walked survey with the intention of avoiding specific features and/or species of relevance (eg threatened plants, hollow-bearing trees, ponds etc).
- Boardwalks will be constructed of materials which do not leach contaminants into the adjoining environment.
- Elevated parts of the pedestrian paths will be constructed in a manner which permits light penetration to allow plant growth beneath the boardwalks and to avoid the creation of areas of cleared and highly degraded lands.
- Educational material and signage will be placed along all pedestrian paths and in the local parks to encourage appropriate use and proper management of the natural environment, and to provide information about the ecological qualities and features of the environment.
- The local parks will be managed in a sensitive and appropriate manner without the use of herbicides or fertilizers.
- The local parks will be established and managed by:
 - the removal of only a limited number of trees, leaving a native tree canopy;
 - the removal of understorey and shrub layer vegetation in patches, leaving islands of native understorey and shrub layer vegetation;
 - the establishment of patches of open grassland using non-invasive species; and
 - the provision of public facilities (such as barbeques, seats and public toilets), located so as to minimise impacts on the natural environment.
- Plant material (particularly groundcover and understorey species) will be salvaged where disturbance is required for installation of the pedestrian and bicycle infrastructure, and re-used to rehabilitate areas so affected or in the rehabilitation of areas of high weed infestation.

6 THREATENED SPECIES MANAGEMENT

- Management of the *Conservation Area* generally will be a benefit to many threatened species as a result of a reduction in disturbance, weed infestation and rubbish dumping and in the identification and protection of particular habitats and features.
- For threatened fauna, no species specific management measures are required beyond the vegetation management measures proposed in the *Conservation Area* except that:
 - hollow limbs from large trees removed for development purposes will be installed in large remaining trees within the *Conservation Area* to provide supplementary habitat for threatened species;

- the bioretention swales and water treatment ponds will be planted with indigenous aquatic and semi-aquatic plant species to provide supplementary habitat for wetland and wading birds, amphibians and microchiropteran bats; and
- the *Conservation Area* will be regularly monitored to identify any additional threatened biota and their habitats or habitat requirements, and to provide recommendations regarding specific management measures, if necessary.
- Prior to clearing activities for development of the Northern and Southern Precincts, and for associated infrastructure, a pre-clearing survey will be undertaken by the Project Environmental Manager or an appointed ecologist to identify any threatened flora and fauna species present and to retrieve and/or salvage individuals as appropriate.
- There are two threatened plant species on the subject site at Moonee:
 - the Rusty Plum (which has a wide but scattered distribution in coastal NSW north from Taree); and
 - the Moonee Quassia (which has a restricted distribution from approximately Moonee north to Grafton).
- Both species were located on the banks of and in the immediate environs of the tributary to Moonee Creek which is located on and adjacent to the northern boundary of the subject site.
- The known specimens and habitat for these species is located outside of the northern development precinct, with some specimens present on the subject land and some along the tributary on other land to the immediate north.
- Specimens of both species have been adversely affected by existing uncontrolled human access, particularly off-road motorcycle riding. Some efforts have already been made (by discussions with local residents in the Moonee Village) to reduce impacts upon these species.
- Fencing of those areas occupied by the Rusty Plum and Moonee Quassia is to be undertaken in conjunction with the adjoining landowner(s) to the immediate north. In the event that no agreement can be reached with the adjoining landowner(s), that area of the *Conservation Area* on the subject site occupied by those two plant species will be fenced by the proponent, with signage to advise that the area is of special value and must not be disturbed.
- A program to propagate both the Rusty Plum and Moonee Quassia will be implemented, with additional specimens planted into the protected part of the *Conservation Area*.
- The 'Moonee Waters' site is characterised by extensive areas of swamp forest and wetland ecosystems which are listed as "*endangered ecological communities*" on the TSC Act.
- The overwhelming majority of the stands of "*endangered ecological communities*" (EECs) is contained within the *Conservation Area*, and will be protected by the array of environmental management and enhancement measures incorporated into the CAMP.
- No specific additional management measures are required for the EECs on the subject site beyond implementation of the vegetation management measures (as documented above).

7 MANAGEMENT ACTION PLAN

- The *Management Action Plan* (MAP) for implementation of the CAMP will include:
 - identification of the specific management measures to be implemented;
 - identification of the timetable for implementation of various measures;
 - identification of the persons responsible for implementation of those measures;
 - the establishment of a monitoring regime to determine the success of the management measures and to identify additional measures required to rectify any problems; and
 - the establishment of a reporting regime for the CAMP.
- The indicative MAP will be provided in tabular form, and will be refined and reviewed as part of the consent process for a *Development Application* (DA) for Stage 1 of the project.

IMPLEMENTATION

- The CAMP is to be implemented by the Community Association, formed of all landholders within the Northern and Southern Precincts of the 'Moonee Waters' development.
- The Community Association will be the owner of the *Conservation Area*, which constitutes the major part of the community property according to the *Community Title Arrangement* for the 'Moonee Waters' project.
- It is anticipated that the Community Association will appoint a Project Environmental Manager for the project and will also appoint (on an annual or other basis), a Bush Regeneration Contractor to undertake the management works within the *Conservation Area*.
- As indicated in the draft *Community Title Agreement*, individual lot owners within the 'Moonee Waters' project will be members of the Community Association and will be levied on an annual basis for the provision of funds to implement the CAMP.

8 MONITORING & REPORTING

- A monitoring and reporting regime will be established for the implementation of the CAMP.
- The initial element of the monitoring regime is the establishment of fixed survey points and quadrats within the *Conservation Area* to identify the condition and nature of vegetation and habitats and to provide baseline information against which the success of implementation of the CAMP can be measured.
- Baseline survey points and quadrats will be established both in location of excellent existing condition and of areas which are currently weed-infested and/or highly disturbed.
- A monitoring survey is to be undertaken each year to provide the basis for bush regeneration and maintenance works required during the ensuing twelve months.
- The baseline monitoring survey will also provide information regarding the success of rehabilitation and maintenance activities during the previous twelve months, and will identify specific locations and/or circumstances which require remediation or other works.
- The reporting regime for the 'Moonee Waters' CAMP includes:
 - the provision of baseline annual reports with a summary of the rehabilitation and maintenance activities over the previous twelve months; and
 - a five-year audit of the *Conservation Area* to quantify the success of rehabilitation and maintenance activities and to identify areas requiring additional works.
- Implementation of the monitoring and reporting regime will be the responsibility of the Project Environmental Manager, with information regarding the maintenance and rehabilitation activities provided by the Bush Regeneration Contractor.



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Appendix B
Matters of National Environmental Significance
Pursuant to the EPBC Act

October 2007



Protected Matters Search Tool

You are here: [Environment Home](#) > [EPBC Act](#) > [Search](#)

3 October 2007 16:58

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Search Type: Point
Buffer: 20 km
Coordinates: -30.21666,153.15



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Report Contents: [Summary](#)
[Details](#)
• [Matters of NES](#)
• [Other matters protected by the EPBC Act](#)

• [Extra Information](#)
[Caveat](#)
[Acknowledgments](#)

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties: None
National Heritage Places: None

Wetlands of International Significance: (Ramsar Sites)	1
Commonwealth Marine Areas:	Relevant
Threatened Ecological Communities:	None
Threatened Species:	56
Migratory Species:	50

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Places on the RNE:	10
Listed Marine Species:	75
Whales and Other Cetaceans:	30
Critical Habitats:	None
Commonwealth Reserves:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	10
Other Commonwealth Reserves:	None
Regional Forest Agreements:	1

Details

Matters of National Environmental Significance

Wetlands of International Significance [[Dataset Information](#)]
(Ramsar Sites)

[LITTLE LLANGOTHLIN NATURE RESERV](#)

Within same catchment as Ramsar site

Commonwealth Marine Areas [[Dataset Information](#)]

Approval may be required for a proposed activity that is likely to have a significant impact on the environment in a Commonwealth Marine Area, when the action is outside the Commonwealth Marine Area, or the environment anywhere when the action is taken within the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

EEZ and Territorial Sea

Threatened Species [[Dataset Information](#)]

Status	Type of Presence
Birds	
Diomedea amsterdamensis *	Endangered
Amsterdam Albatross	Species or species habitat may occur within area
Diomedea antipodensis *	Vulnerable
Antipodean Albatross	Species or species habitat may occur within area
Diomedea dabbenena *	Endangered
Tristan Albatross	Foraging may occur within area
Diomedea exulans *	Vulnerable
Wandering Albatross	Species or species habitat may occur within area
Diomedea gibsoni *	Vulnerable
Gibson's Albatross	Species or species habitat may occur within area
Lathamus discolor *	Endangered
Swift Parrot	Species or species habitat may occur within area
Macronectes giganteus *	Endangered
Southern Giant-Petrel	Species or species habitat may occur within area
Macronectes halli *	Vulnerable
Northern Giant-Petrel	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera *	Endangered
Gould's Petrel	Species or species habitat may occur within area
Pterodroma neglecta neglecta *	Vulnerable
Kermadec Petrel (western)	Species or species habitat may occur within area
Rostratula australis *	Vulnerable
Australian Painted Snipe	Species or species habitat may occur within area
Thalassarche bulleri *	Vulnerable
Buller's Albatross	Species or species habitat may occur within area
Thalassarche cauta *	Vulnerable
Shy Albatross	Species or species habitat may occur within area
Thalassarche eremita *	Endangered
Chatham Albatross	Foraging known to occur within area
Thalassarche impavida *	Vulnerable
Campbell Albatross	Species or species habitat may occur within area
Thalassarche melanophrys *	Vulnerable
Black-browed Albatross	Species or species habitat may occur within area
Thalassarche steadi *	Vulnerable
White-capped Albatross	Species or species habitat may occur within area
Turnix melanogaster *	Vulnerable
Black-breasted Button-quail	Species or species habitat likely to occur within area
Xanthomyza phrygia *	Endangered
Regent Honeyeater	Species or species habitat likely to occur within area
Frogs	
Litoria aurea *	Vulnerable
Green and Golden Bell Frog	Species or species habitat may occur within area
Litoria olongburensis *	Vulnerable
Wallum Sedge Frog	Species or species habitat likely to occur within area

[*Mixophyes balbus*](#) *
Stuttering Frog, Southern Barred Frog (in Victoria)

Vulnerable Species or species habitat likely to occur within area

[*Mixophyes iteratus*](#) *
Southern Barred Frog, Giant Barred Frog

Endangered Species or species habitat likely to occur within area

Insects

[*Phyllodes imperialis \(southern subsp. - ANIC 3333\)*](#) *
a moth

Endangered Species or species habitat likely to occur within area

Mammals

[*Balaenoptera musculus*](#) *
Blue Whale

Endangered Species or species habitat may occur within area

[*Chalinolobus dwyeri*](#) *
Large-eared Pied Bat, Large Pied Bat

Vulnerable Species or species habitat may occur within area

[*Dasyurus maculatus maculatus \(SE mainland population\)*](#) *
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)

Endangered Species or species habitat may occur within area

[*Eubalaena australis*](#) *
Southern Right Whale

Endangered Species or species habitat likely to occur within area

[*Megaptera novaeangliae*](#) *
Humpback Whale

Vulnerable Species or species habitat known to occur within area

[*Petrogale penicillata*](#) *
Brush-tailed Rock-wallaby

Vulnerable Species or species habitat may occur within area

[*Potorous tridactylus tridactylus*](#) *
Long-nosed Potoroo (SE mainland)

Vulnerable Species or species habitat may occur within area

[*Pseudomys oralis*](#) *
Hastings River Mouse

Endangered Species or species habitat likely to occur within area

[*Pteropus poliocephalus*](#) *
Grey-headed Flying-fox

Vulnerable Roosting known to occur within area

Ray-finned fishes

[*Nannoperca oxleyana*](#) *
Oxleyan Pygmy Perch

Endangered Species or species habitat likely to occur within area

Reptiles

[*Caretta caretta*](#) *
Loggerhead Turtle

Endangered Breeding known to occur within area

[*Chelonia mydas*](#) *
Green Turtle

Vulnerable Species or species habitat may occur within area

[*Coeranoscincus reticulatus*](#) *
Three-toed Snake-tooth Skink

Vulnerable Species or species habitat may occur within area

[*Dermochelys coriacea*](#) *
Leathery Turtle, Leatherback Turtle, Luth

Vulnerable Species or species habitat may occur within area

[*Emydura signata*](#) *
Bellinger River Emydura (Bellinger River, NSW)

Vulnerable Species or species habitat likely to occur within area

[*Underwoodisaurus sphyrurus*](#) *
Border Thick-tailed Gecko

Vulnerable Species or species habitat likely to occur within area

Sharks

[*Carcharias taurus \(east coast population\)*](#) *
Grey Nurse Shark (east coast population)

Critically Endangered Congregation or aggregation known to occur within area

[*Carcharodon carcharias*](#) *
Great White Shark

Vulnerable Species or species habitat may occur within area

[*Rhincodon typus*](#) *
Whale Shark

Vulnerable Species or species habitat may occur within area

Plants

<i>Acronychia littoralis</i> *	Endangered	Species or species habitat likely to occur within area
Scented Acronychia		
<i>Angophora robur</i> *	Vulnerable	Species or species habitat likely to occur within area
<i>Boronia umbellata</i> *	Vulnerable	Species or species habitat likely to occur within area
a shrub		
<i>Cynanchum elegans</i> *	Endangered	Species or species habitat likely to occur within area
White-flowered Wax Plant		
<i>Marsdenia longiloba</i> *	Vulnerable	Species or species habitat likely to occur within area
Clear Milkvine		
<i>Melichrus sp. Newfoundland State Forest (P.Gilmour 7852)</i> *	Endangered	Species or species habitat likely to occur within area
<i>Parsonsia dorrigoensis</i> *	Endangered	Species or species habitat likely to occur within area
Milky Silkpod		
<i>Persicaria elatior</i> *	Vulnerable	Species or species habitat likely to occur within area
Knotweed		
<i>Phaius australis</i> *	Endangered	Species or species habitat likely to occur within area
Lesser Swamp-orchid		
<i>Quassia sp. Moonee Creek (J.King s.n. 1949) NSW Herbarium</i> *	Endangered	Species or species habitat likely to occur within area
<i>Thesium australe</i> *	Vulnerable	Species or species habitat likely to occur within area
Austral Toadflax, Toadflax		
<i>Tylophora woollsii</i> *	Endangered	Species or species habitat likely to occur within area
<i>Zieria prostrata</i> *	Endangered	Species or species habitat likely to occur within area
Migratory Species [Dataset Information]	Status	Type of Presence

Migratory Terrestrial Species**Birds**

<i>Haliaeetus leucogaster</i>	Migratory	Species or species habitat likely to occur within area
White-bellied Sea-Eagle		
<i>Hirundapus caudacutus</i>	Migratory	Species or species habitat may occur within area
White-throated Needletail		
<i>Merops ornatus</i> *	Migratory	Species or species habitat may occur within area
Rainbow Bee-eater		
<i>Monarcha melanopsis</i>	Migratory	Breeding may occur within area
Black-faced Monarch		
<i>Monarcha trivirgatus</i>	Migratory	Breeding likely to occur within area
Spectacled Monarch		
<i>Myiagra cyanoleuca</i>	Migratory	Breeding likely to occur within area
Satin Flycatcher		
<i>Rhipidura rufifrons</i>	Migratory	Breeding may occur within area
Rufous Fantail		
<i>Xanthomyza phrygia</i>	Migratory	Species or species habitat likely to occur within area
Regent Honeyeater		

Migratory Wetland Species**Birds**

<i>Ardea alba</i>	Migratory	Breeding likely to occur within area
Great Egret, White Egret		
<i>Ardea ibis</i>	Migratory	Breeding likely to occur within area

Cattle Egret

[*Gallinago hardwickii*](#) *

Latham's Snipe, Japanese Snipe

Migratory

Species or species habitat may occur within area

[*Rostratula benghalensis s. lat.*](#)

Painted Snipe

Migratory

Species or species habitat may occur within area

Migratory Marine Birds[*Apus pacificus*](#)

Fork-tailed Swift

Migratory

Species or species habitat may occur within area

[*Ardea alba*](#)

Great Egret, White Egret

Migratory

Breeding likely to occur within area

[*Ardea ibis*](#)

Cattle Egret

Migratory

Breeding likely to occur within area

[*Calonectris leucomelas*](#)

Streaked Shearwater

Migratory

Species or species habitat may occur within area

[*Diomedea amsterdamensis*](#)

Amsterdam Albatross

Migratory

Species or species habitat may occur within area

[*Diomedea antipodensis*](#)

Antipodean Albatross

Migratory

Species or species habitat may occur within area

[*Diomedea dabbenena*](#)

Tristan Albatross

Migratory

Foraging may occur within area

[*Diomedea exulans*](#)

Wandering Albatross

Migratory

Species or species habitat may occur within area

[*Diomedea gibsoni*](#)

Gibson's Albatross

Migratory

Species or species habitat may occur within area

[*Macronectes giganteus*](#)

Southern Giant-Petrel

Migratory

Species or species habitat may occur within area

[*Macronectes halli*](#)

Northern Giant-Petrel

Migratory

Species or species habitat may occur within area

[*Pterodroma leucoptera leucoptera*](#)

Gould's Petrel

Migratory

Species or species habitat may occur within area

[*Puffinus griseus*](#)

Sooty Shearwater

Migratory

Breeding known to occur within area

[*Puffinus leucomelas*](#)

Streaked Shearwater

Migratory

Species or species habitat may occur within area

[*Puffinus pacificus*](#)

Wedge-tailed Shearwater

Migratory

Breeding known to occur within area

[*Puffinus tenuirostris*](#)

Short-tailed Shearwater

Migratory

Breeding known to occur within area

[*Sterna albifrons*](#)

Little Tern

Migratory

Breeding likely to occur within area

[*Thalassarche bulleri*](#)

Buller's Albatross

Migratory

Species or species habitat may occur within area

[*Thalassarche cauta*](#)

Shy Albatross

Migratory

Species or species habitat may occur within area

[*Thalassarche chlororhynchos*](#)

Yellow-nosed Albatross, Atlantic Yellow-nosed Albatross

Migratory

Species or species habitat may occur within area

[*Thalassarche eremita*](#)

Chatham Albatross

Migratory

Foraging known to occur within area

[*Thalassarche impavida*](#)

Campbell Albatross

Migratory

Species or species habitat may occur within area

[*Thalassarche melanophris*](#)

Migratory

Species or species habitat may occur within

Black-browed Albatross

area

[*Thalassarche steadi*](#)

Migratory

Species or species habitat may occur within area

White-capped Albatross

Migratory Marine Species**Mammals**[*Balaenoptera bonaerensis*](#)

Migratory

Species or species habitat may occur within area

Antarctic Minke Whale, Dark-shoulder Minke Whale

[*Balaenoptera edeni*](#)

Migratory

Species or species habitat may occur within area

Bryde's Whale

[*Balaenoptera musculus*](#) *

Migratory

Species or species habitat may occur within area

Blue Whale

[*Caperea marginata*](#)

Migratory

Species or species habitat may occur within area

Pygmy Right Whale

[*Eubalaena australis*](#) *

Migratory

Species or species habitat likely to occur within area

Southern Right Whale

[*Lagenorhynchus obscurus*](#)

Migratory

Species or species habitat may occur within area

Dusky Dolphin

[*Megaptera novaeangliae*](#) *

Migratory

Species or species habitat known to occur within area

Humpback Whale

[*Orcinus orca*](#)

Migratory

Species or species habitat may occur within area

Killer Whale, Orca

[*Physeter macrocephalus*](#)

Migratory

Species or species habitat may occur within area

Sperm Whale

Reptiles[*Caretta caretta*](#) *

Migratory

Breeding known to occur within area

Loggerhead Turtle

[*Chelonia mydas*](#) *

Migratory

Species or species habitat may occur within area

Green Turtle

[*Dermochelys coriacea*](#) *

Migratory

Species or species habitat may occur within area

Leathery Turtle, Leatherback Turtle, Luth

Sharks[*Carcharodon carcharias*](#)

Migratory

Species or species habitat may occur within area

Great White Shark

[*Rhincodon typus*](#)

Migratory

Species or species habitat may occur within area

Whale Shark

Other Matters Protected by the EPBC ActListed Marine Species [[Dataset Information](#)]

Status

Type of Presence

Birds[*Anseranas semipalmata*](#)Listed -
overfly
marine
area

Species or species habitat may occur within area

Magpie Goose

[*Apus pacificus*](#)Listed -
overfly
marine
area

Species or species habitat may occur within area

Fork-tailed Swift

[*Ardea alba*](#)Listed -
overfly
marine
area

Breeding likely to occur within area

Great Egret, White Egret

[*Ardea ibis*](#)Listed -
overfly

Breeding likely to occur within area

Cattle Egret

	marine area	
<i>Calonectris leucomelas</i> Streaked Shearwater	Listed	Species or species habitat may occur within area
<i>Catharacta skua</i> Great Skua	Listed	Species or species habitat may occur within area
<i>Diomedea amsterdamensis</i> Amsterdam Albatross	Listed	Species or species habitat may occur within area
<i>Diomedea antipodensis</i> Antipodean Albatross	Listed	Species or species habitat may occur within area
<i>Diomedea dabbenena</i> Tristan Albatross	Listed	Foraging may occur within area
<i>Diomedea exulans</i> Wandering Albatross	Listed	Species or species habitat may occur within area
<i>Diomedea gibsoni</i> Gibson's Albatross	Listed	Species or species habitat may occur within area
<i>Eudyptula minor</i> Little Penguin	Listed	Breeding known to occur within area
<i>Gallinago hardwickii</i> * Latham's Snipe, Japanese Snipe	Listed - overfly marine area	Species or species habitat may occur within area
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
<i>Hirundapus caudacutus</i> White-throated Needletail	Listed - overfly marine area	Species or species habitat may occur within area
<i>Larus novaehollandiae</i> Silver Gull	Listed	Breeding known to occur within area
<i>Lathamus discolor</i> * Swift Parrot	Listed - overfly marine area	Species or species habitat may occur within area
<i>Macronectes giganteus</i> Southern Giant-Petrel	Listed	Species or species habitat may occur within area
<i>Macronectes halli</i> Northern Giant-Petrel	Listed	Species or species habitat may occur within area
<i>Merops ornatus</i> * Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
<i>Monarcha melanopsis</i> Black-faced Monarch	Listed - overfly marine area	Breeding may occur within area
<i>Monarcha trivirgatus</i> Spectacled Monarch	Listed - overfly marine area	Breeding likely to occur within area
<i>Myiagra cyanoleuca</i> Satin Flycatcher	Listed - overfly marine area	Breeding likely to occur within area
<i>Pelagodroma marina</i>	Listed	Breeding known to occur within area

White-faced Storm-Petrel

[*Pterodroma nigripennis*](#)

Black-winged Petrel

Listed

Breeding known to occur within area

[*Puffinus griseus*](#)

Sooty Shearwater

Listed

Breeding known to occur within area

[*Puffinus pacificus*](#)

Wedge-tailed Shearwater

Listed

Breeding known to occur within area

[*Puffinus tenuirostris*](#)

Short-tailed Shearwater

Listed

Breeding known to occur within area

[*Rhipidura rufifrons*](#)

Rufous Fantail

Listed -
overfly
marine
area

Breeding may occur within area

[*Rostratula benghalensis s. lat.*](#)

Painted Snipe

Listed -
overfly
marine
area

Species or species habitat may occur within area

[*Sterna albifrons*](#)

Little Tern

Listed

Breeding likely to occur within area

[*Sterna bergii*](#)

Crested Tern

Listed

Breeding known to occur within area

[*Thalassarche bulleri*](#)

Buller's Albatross

Listed

Species or species habitat may occur within area

[*Thalassarche cauta*](#)

Shy Albatross

Listed

Species or species habitat may occur within area

[*Thalassarche chlororhynchos*](#)

Yellow-nosed Albatross, Atlantic Yellow-nosed Albatross

Listed

Species or species habitat may occur within area

[*Thalassarche eremita*](#)

Chatham Albatross

Listed

Foraging known to occur within area

[*Thalassarche impavida*](#)

Campbell Albatross

Listed

Species or species habitat may occur within area

[*Thalassarche melanophrys*](#)

Black-browed Albatross

Listed

Species or species habitat may occur within area

[*Thalassarche steadi*](#)

White-capped Albatross

Listed

Species or species habitat may occur within area

Ray-finned fishes[*Acentronura tentaculata*](#)

Hairy Pygmy Pipehorse

Listed

Species or species habitat may occur within area

[*Campichthys tryoni*](#)

Tryon's Pipefish

Listed

Species or species habitat may occur within area

[*Corythoichthys amplexus*](#)

Fijian Banded Pipefish, Brown-banded Pipefish

Listed

Species or species habitat may occur within area

[*Corythoichthys ocellatus*](#)

Orange-spotted Pipefish, Ocellated Pipefish

Listed

Species or species habitat may occur within area

[*Festucalex cinctus*](#)

Girdled Pipefish

Listed

Species or species habitat may occur within area

[*Filicampus tigris*](#)

Tiger Pipefish

Listed

Species or species habitat may occur within area

[*Halicampus grayi*](#)

Mud Pipefish, Gray's Pipefish

Listed

Species or species habitat may occur within area

[*Heraldia nocturna*](#)

Upside-down Pipefish

Listed

Species or species habitat may occur within area

<i>Hippichthys cyanospilos</i> Blue-speckled Pipefish, Blue-spotted Pipefish	Listed	Species or species habitat may occur within area
<i>Hippichthys heptagonus</i> Madura Pipefish, Reticulated Freshwater Pipefish	Listed	Species or species habitat may occur within area
<i>Hippichthys penicillus</i> Beady Pipefish, Steep-nosed Pipefish	Listed	Species or species habitat may occur within area
<i>Hippocampus kelloggi</i> Kellogg's Seahorse	Listed	Species or species habitat may occur within area
<i>Hippocampus kuda</i> Spotted Seahorse, Yellow Seahorse	Listed	Species or species habitat may occur within area
<i>Hippocampus planifrons</i> Flat-face Seahorse	Listed	Species or species habitat may occur within area
<i>Hippocampus whitei</i> White's Seahorse, Crowned Seahorse, Sydney Seahorse	Listed	Species or species habitat may occur within area
<i>Histiogamphelus briggsii</i> Briggs' Crested Pipefish, Briggs' Pipefish	Listed	Species or species habitat may occur within area
<i>Lissocampus runa</i> Javelin Pipefish	Listed	Species or species habitat may occur within area
<i>Maroubra perserrata</i> Sawtooth Pipefish	Listed	Species or species habitat may occur within area
<i>Micrognathus andersonii</i> Anderson's Pipefish, Shortnose Pipefish	Listed	Species or species habitat may occur within area
<i>Micrognathus brevirostris</i> Thorn-tailed Pipefish	Listed	Species or species habitat may occur within area
<i>Microphis manadensis</i> Manado River Pipefish, Manado Pipefish	Listed	Species or species habitat may occur within area
<i>Solegnathus dunckeri</i> Duncker's Pipehorse	Listed	Species or species habitat may occur within area
<i>Solegnathus hardwickii</i> Pipehorse	Listed	Species or species habitat may occur within area
<i>Solegnathus spinosissimus</i> Spiny Pipehorse, Australian Spiny Pipehorse	Listed	Species or species habitat may occur within area
<i>Solenostomus cyanopterus</i> Blue-finned Ghost Pipefish, Robust Ghost Pipefish	Listed	Species or species habitat may occur within area
<i>Solenostomus paradoxus</i> Harlequin Ghost Pipefish, Ornate Ghost Pipefish	Listed	Species or species habitat may occur within area
<i>Stigmatopora nigra</i> Wide-bodied Pipefish, Black Pipefish	Listed	Species or species habitat may occur within area
<i>Syngnathoides biaculeatus</i> Double-ended Pipehorse, Alligator Pipefish	Listed	Species or species habitat may occur within area
<i>Trachyrhamphus bicoarctatus</i> Bend Stick Pipefish, Short-tailed Pipefish	Listed	Species or species habitat may occur within area
<i>Urocampus carinirostris</i> Hairy Pipefish	Listed	Species or species habitat may occur within area
<i>Vanacampus margaritifer</i> Mother-of-pearl Pipefish	Listed	Species or species habitat may occur within area

Reptiles

<i>Caretta caretta</i> * Loggerhead Turtle	Listed	Breeding known to occur within area
<i>Chelonia mydas</i> * Green Turtle	Listed	Species or species habitat may occur within area

<i>Dermochelys coriacea</i> *	Listed	Species or species habitat may occur within area
Leathery Turtle, Leatherback Turtle, Luth		
<i>Hydrophis elegans</i>	Listed	Species or species habitat may occur within area
Elegant Seasnake		
<i>Pelamis platurus</i>	Listed	Species or species habitat may occur within area
Yellow-bellied Seasnake		
Whales and Other Cetaceans [Dataset Information]	Status	Type of Presence
<i>Balaenoptera acutorostrata</i>	Cetacean	Species or species habitat may occur within area
Minke Whale		
<i>Balaenoptera bonaerensis</i>	Cetacean	Species or species habitat may occur within area
Antarctic Minke Whale, Dark-shoulder Minke Whale		
<i>Balaenoptera edeni</i>	Cetacean	Species or species habitat may occur within area
Bryde's Whale		
<i>Balaenoptera musculus</i> *	Cetacean	Species or species habitat may occur within area
Blue Whale		
<i>Caperea marginata</i>	Cetacean	Species or species habitat may occur within area
Pygmy Right Whale		
<i>Delphinus delphis</i>	Cetacean	Species or species habitat may occur within area
Common Dolphin		
<i>Eubalaena australis</i> *	Cetacean	Species or species habitat likely to occur within area
Southern Right Whale		
<i>Feresa attenuata</i>	Cetacean	Species or species habitat may occur within area
Pygmy Killer Whale		
<i>Globicephala macrorhynchus</i>	Cetacean	Species or species habitat may occur within area
Short-finned Pilot Whale		
<i>Globicephala melas</i>	Cetacean	Species or species habitat may occur within area
Long-finned Pilot Whale		
<i>Grampus griseus</i>	Cetacean	Species or species habitat may occur within area
Risso's Dolphin, Grampus		
<i>Kogia breviceps</i>	Cetacean	Species or species habitat may occur within area
Pygmy Sperm Whale		
<i>Kogia simus</i>	Cetacean	Species or species habitat may occur within area
Dwarf Sperm Whale		
<i>Lagenorhynchus obscurus</i>	Cetacean	Species or species habitat may occur within area
Dusky Dolphin		
<i>Lissodelphis peronii</i>	Cetacean	Species or species habitat may occur within area
Southern Right Whale Dolphin		
<i>Megaptera novaeangliae</i> *	Cetacean	Species or species habitat known to occur within area
Humpback Whale		
<i>Mesoplodon densirostris</i>	Cetacean	Species or species habitat may occur within area
Blainville's Beaked Whale, Dense-beaked Whale		
<i>Mesoplodon grayi</i>	Cetacean	Species or species habitat may occur within area
Gray's Beaked Whale, Scamperdown Whale		
<i>Mesoplodon layardii</i>	Cetacean	Species or species habitat may occur within area
Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale		
<i>Orcinus orca</i>	Cetacean	Species or species habitat may occur within area
Killer Whale, Orca		
<i>Peponocephala electra</i>	Cetacean	Species or species habitat may occur within area
Melon-headed Whale		
<i>Physeter macrocephalus</i>	Cetacean	Species or species habitat may occur within area
Sperm Whale		

[*Pseudorca crassidens*](#)

False Killer Whale

Cetacean Species or species habitat may occur within area

[*Stenella attenuata*](#)

Spotted Dolphin, Pantropical Spotted Dolphin

Cetacean Species or species habitat may occur within area

[*Stenella coeruleoalba*](#)

Striped Dolphin, Euphrosyne Dolphin

Cetacean Species or species habitat may occur within area

[*Stenella longirostris*](#)

Long-snouted Spinner Dolphin

Cetacean Species or species habitat may occur within area

[*Steno bredanensis*](#)

Rough-toothed Dolphin

Cetacean Species or species habitat may occur within area

[*Tursiops aduncus*](#)

Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin

Cetacean Species or species habitat likely to occur within area

[*Tursiops truncatus s. str.*](#)

Bottlenose Dolphin

Cetacean Species or species habitat may occur within area

[*Ziphius cavirostris*](#)

Cuvier's Beaked Whale, Goose-beaked Whale

Cetacean Species or species habitat may occur within area

Commonwealth Lands [[Dataset Information](#)]

Communications, Information Technology and the Arts - Australian Postal Corporation

Communications, Information Technology and the Arts - Telstra Corporation Limited

Defence

Unknown

Places on the RNE [[Dataset Information](#)]

Note that not all Indigenous sites may be listed.

Historic[South Solitary Island Lighthouse Group NSW](#)**Indigenous**[Arrawarra Fishtraps NSW](#)**Natural**[Bongil Bongil Area NSW](#)[Coramba Nature Reserve NSW](#)[Kororo Nature Reserve NSW](#)[Moonee Beach Nature Reserve NSW](#)[Mutton Bird Island Nature Reserve NSW](#)[Solitary Islands Marine Area NSW](#)[South West Solitary Island Nature Reserve NSW](#)[Split Solitary Island Nature Reserve NSW](#)Commonwealth Reserves [[Dataset Information](#)]

Solitary Islands (Commonwealth Waters) Marine Reserve, COM

Extra InformationState and Territory Reserves [[Dataset Information](#)]

Bongil Bongil National Park, NSW

Coramba Nature Reserve, NSW

Kororo Nature Reserve, NSW

Moonee Beach Nature Reserve, NSW

Muttonbird Island Nature Reserve, NSW

Sherwood Nature Reserve, NSW

Solitary Islands Marine Park, NSW

South West Solitary Island Nature Reserve, NSW

Split Solitary Island Nature Reserve, NSW

Ulidarra National Park, NSW

Regional Forest Agreements [[Dataset Information](#)]

Note that all RFA areas including those still under consideration have been included.

Upper North East NSW RFA, New South Wales

Caveat

The information presented in this report has been provided by a range of data sources as [acknowledged](#) at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under "type of presence". For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the [migratory](#) and [marine](#) provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as [extinct or considered as vagrants](#)
- some species and ecological communities that have only recently been listed
- [some terrestrial species](#) that overfly the Commonwealth marine area
- migratory species that are very [widespread, vagrant, or only occur in small numbers](#).

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgments

This database has been compiled from a range of data sources. The Department acknowledges the following custodians who have contributed valuable data and advice:

- [New South Wales National Parks and Wildlife Service](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Water and Environment, Tasmania](#)
- [Department of Environment and Heritage, South Australia Planning SA](#)
- [Parks and Wildlife Commission of the Northern Territory](#)
- [Environmental Protection Agency, Queensland](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- Other groups and individuals

[ANUcliM Version 1.8, Centre for Resource and Environmental Studies, Australian National University](#) was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Last updated:

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