

# Level 1 Fauna and Targeted Black Cockatoo Assessment

Lot 9766 Sunningdale Road, Yanchep

Project No: EP19-021(01)

**Prepared for Department of Finance  
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## Executive Summary

The Department of Finance - Building Management and Works (BMW) intends to develop Lot 9766 Sunningdale Road in Yanchep as a primary school. This lot (referred to herein as 'the site') is located approximately 58 kilometres (km) north-east of the Perth Central Business District within the City of Wanneroo.

An ecologist from Emerge Associates visited the site on 19 February 2019 and undertook a 'level 1' fauna survey and a targeted black cockatoo survey. During the survey targeted searches for fauna species were conducted with a particular reference for 'threatened' and 'priority' fauna species and an assessment was made on the type and conservation significance of fauna habitat across the site.

Outcomes of the survey include the following:

- A total of 11 native and one non-native fauna species were recorded within the site, including threatened (endangered) Carnaby's cockatoo.
- Three (3) additional species of conservation significance are considered to have potential to occur within the site, including forest red-tailed black cockatoo (vulnerable), black-stripe snake (P3), quenda (P4) and grey wagtail (migratory). But the likelihood that these species would occur or that the site would provide important habitat is low as the site contains limited suitable habitat.
- The site contains three (3) potential black cockatoo habitat trees without hollows.
- No evidence of black cockatoo roosting was observed within the site.
- Plant species within areas of **banksia woodland**, as well as, scattered native and non-native trees within the site are considered to provide a limited extent of good quality foraging habitat for Carnaby's cockatoo and low quality foraging habitat for forest-red tailed black cockatoo.
- With the exception of the aforementioned species of black cockatoo, the site is likely to be primarily utilised by common and widespread native species without specific habitat requirements.

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## Abbreviation Tables

*Table A1: Abbreviations – Organisations*

Organisations	
EPA	Environmental Protection Authority
DBCA	Department of Biodiversity, Conservation and Attractions
DPaW	Department of Parks and Wildlife (now DBCA)
DoEE	Department of Environment and Energy

*Table A2: Abbreviations – General terms*

General terms	
ESA	Environmentally sensitive area
VU	Vulnerable
EN	Endangered
S	Specially protected fauna
CD	Conservation depended
CE	Critically endangered
IA	International agreement
MI	Migratory fauna
P1	Priority 1
P2	Priority 2
P3	Priority 3
P4	Priority 4
P5	Priority 5
DBH	Diameter at breast height

*Table A3: Abbreviations – Legislation*

Legislation	
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
BC Act	<i>Biodiversity Conservation Act 2016</i>

*Table A4: Abbreviations – planning*

Planning terms	
DPS	District Planning Scheme
MRS	Metropolitan region scheme

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*Table A5: Abbreviations – units of measurement*

Units of measurement	
ha	Hectare
km	Kilometre
m	Metre
cm	Centimetre

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## 1 Introduction

### 1.1 Project background

The Department of Finance - Building Management and Works (BMW) intends to develop Lot 9766 Sunningdale Road in Yanchep as a primary school. This lot (referred to herein as 'the site') is located approximately 58 kilometres (km) north-east of the Perth Central Business District within the City of Wanneroo and is zoned 'urban' under the *Metropolitan Region Scheme* and 'public use' under the *City of Wanneroo District Planning Scheme (DPS) No. 2*.

The site is approximately 4.04 hectares (ha) in size and is bound by Sunningdale Road to the east, Moorpark Avenue to the west and north, and an oval and public open space to the south (St Andrews Park). The location and extent of the site is shown in **Figure 1**.

### 1.2 Purpose and scope of work

Emerge Associates (Emerge) were engaged by BMW to provide environmental consultancy services to support the planning process for the site. The purpose of this survey is to provide sufficient information on the fauna values within the site to inform this process.

The scope of work was specifically to conduct a fauna assessment to the standard required of a 'level 1' fauna survey and a targeted black cockatoo survey in accordance with the Environmental Protection Authority's (EPA's) *Technical Guidance – Terrestrial fauna Surveys* (EPA 2016).

As part of this scope of work the following tasks were undertaken:

- Desktop review of background information regarding fauna species relevant to the site and surrounds.
- Compilation of a list of fauna species opportunistically recorded as part of the field survey.
- Identification of potential habitat for conservation significant fauna species and likelihood of occurrence.
- A targeted black cockatoo survey.
- Documentation of the desktop assessment, survey methodology and results into a report.

### 1.3 Environmental features

A range of legislation, regulations and policies are relevant to the evaluation of vegetation and for fauna habitat in Western Australia. Key considerations applicable to the site are described below and also shown in **Figure 2**.

#### 1.3.1 Ecological linkages

Ecological linkages are linear landscape elements that allow the movement of fauna, flora and genetic material between areas of remnant habitat. The movement of fauna and the exchange of genetic material between vegetation remnants improve the viability of those remnants by allowing greater access to breeding partners and food sources, refuge from disturbances such as fire and maintenance of genetic diversity of plant communities and populations. Ecological linkages are

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ideally continuous or near-continuous as the more fractured a linkage is, the less ease flora and fauna have in moving within the corridor (Alan Tingay and Associates 1998).

The Perth Biodiversity Project, supported by the Western Australia Local Government Association (WALGA), have identified and mapped regional ecological linkages within the Perth Metropolitan Region (WALGA and PBP 2004). This study was extended beyond the Perth Metropolitan Region through the South West Biodiversity Project, resulting in the identification and mapping of the South West regional ecological linkages (Molloy *et al.* 2009).

There are no mapped ecological linkages within the site. One regional ecological linkage (No. 1) occurs approximately two km west of the site and extends beyond the site to the north and south along the coast. A second regional ecological linkage (No. 6) occurs approximately two km east of the site and extends beyond the site to the north and south. This linkage also connects to regional ecological linkage No.7 which extends north-east of the site. The linkages in the wider local area act to link native vegetation and habitat in the Yanchep National Park to vegetation to the east and north within the Gngangara-Moore River State Forest. The location of these linkages is shown in **Figure 2**.

### 1.3.2 Bush Forever

The Government of Western Australia's *Bush Forever* policy is a strategic plan for conserving regionally significant bushland within the Swan Coastal Plain portion of the Perth Metropolitan Region. The objective of *Bush Forever* is to protect comprehensive representations of all original ecological communities by targeting a minimum of 10% of each vegetation complex for protection (Government of WA 2000). *Bush Forever* sites are representative of regional ecosystems and habitat and have a key role in the conservation of Perth's biodiversity.

No *Bush Forever* sites occur within the site. Bush Forever Site No. 288 – *Yanchep National Park and Adjacent Bushland* is located 1.7 km east, Bush Forever Site No. 289 – *Ningana Bushland, Yanchep/Eglington* 1.5 km south and Bush Forever Site No. 397 2.3 km west of the site. The location of the Bush Forever Sites is shown in **Figure 2**.

### 1.3.3 Environmentally sensitive areas

'Environmentally sensitive areas' (ESAs) are prescribed under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* and have been identified to protect native vegetation values of areas surrounding significant, threatened or scheduled flora, vegetation communities or ecosystems. Within an ESA none of the exemptions under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* apply. However, exemptions under Schedule 6 of the EP Act still apply, including any clearing in accordance with a subdivision approval under the *Planning and Development Act 2005* (a recognised exemption under the Schedule 6 of the EP Act).

One ESA is mapped over the entirety of the site. This ESA is very large and extends to the north, south-west and east of the site over approximately 37515 hectare (ha). This ESA is likely to be associated with Bush Forever sites and the buffer zones of known TECs. The location of this ESA is shown in **Figure 2**.

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## 2 Methods

### 2.1 Level 1 fauna survey

#### 2.1.1 Desktop assessment

A variety of databases were accessed to source information on fauna species with potential to occur within the site.

Sources of information included:

- DPaW's *NatureMap* Database Search (combined data from DPaW, Western Australian Museum, Birds Australia and consultants' reports) (DPaW 2017a)
- *Protected Matters Search Tool* (DoEE 2017a)
- DBCA's threatened and priority fauna database
- Previous fauna surveys conducted over the site or within the wider area

Database searches were conducted within a 10 km radius of the site.

The search results were reviewed and fauna species with no potential to occur within the site due to lack of habitat were removed (e.g. marine mammal species).

A total number of species with potential to occur within the site was calculated by adding the total count of non-conservation significant species provided by *NatureMap* to the combined number of conservation significant species provided by *NatureMap* and *Protected Matters Search Tool*.

#### 2.1.2 Reconnaissance survey

An ecologist from Emerge visited the site on the 19 February 2019 to undertake a reconnaissance survey in conjunction with a targeted black cockatoo survey. During the survey the following tasks were undertaken:

- Transects were traversed across the site, during the day, and fauna species presence was recorded.
- Microhabitats such as logs, rocks and leaf litter were investigated and secondary evidence of species presence such as tracks, scats, skeletal remains, foraging evidence or calls was also noted.
- A vertebrate fauna list was compiled and fauna habitat values were described, with particular reference to 'threatened' and 'priority' fauna species with potential to occur within the site<sup>1</sup>.

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<sup>1</sup> Invertebrate taxa were not assessed and no evaluation of the potential for invertebrate taxa to occur within the site is provided.

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### 2.2 Fauna habitat assessment

Fauna habitats were allocated based on plant communities identified in '*Reconnaissance Flora and Vegetation Assessment*' (Emerge Associates 2019), and supplemented with observations made during the reconnaissance survey.

In addition, information on specific habitat requirements for conservation significant vertebrate fauna species with potential to occur within the site were compiled as part of the desktop assessment. This information was used to determine whether any conservation significant fauna species are likely to utilise the site.

### 2.3 Targeted black cockatoo survey

Due to the location of the site on the Swan Coastal Plain the potential for black cockatoo habitat to occur was predicted. A targeted black cockatoo survey was therefore conducted in conjunction with the level 1 fauna survey.

An ecologist from Emerge visited the site on the 19 February 2019 to complete the field component of the level 1 fauna survey and targeted black cockatoo survey. During the targeted black cockatoo survey, the following tasks were undertaken:

- A black cockatoo habitat assessment, identifying potential breeding, roosting and foraging habitat.
- Potential breeding habitat trees (native *Eucalyptus* and *Corymbia* species with diameter at breast height (DBH)  $\geq 50$  cm) were identified, marked and individually assessed. Tree hollows and signs of use of these hollows were recorded.
- Identification of secondary evidence of roosting and foraging activity such as branch clippings, droppings, moulted feathers and chewed nuts.
- A foraging habitat quality assessment based on presence of black cockatoo foraging plant species, vegetation extent and regional context of the site and information provided in the Department of the Environment and Energy's (DoEE) *Revised Draft - Referral Guideline for Three Threatened Species of Black Cockatoo* (DoEE 2017).

### 2.4 Taxonomy and nomenclature

Taxonomy and nomenclature for vertebrate fauna species was taken from the *WA Museum Checklist of the Terrestrial Vertebrate Fauna of Western Australia* (Western Australian Museum 2018).

### 2.5 Survey limitations

It is important to note the specific constraints imposed on surveys and the degree to which these may have limited survey outcomes. An evaluation of the survey methodology against standard constraints outlined in the EPA document *Technical Guidance – Terrestrial Fauna Surveys* (EPA 2016) is provided in **Table 1**.

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*Table 1: Evaluation of survey methodology against standard constraints outlined in EPA Technical Guidance – Terrestrial fauna Surveys.*

Constraint	Degree of limitation	Details
Level of survey	No limitation	A level 1 survey (desktop study and reconnaissance survey) in combination with level 2 (targeted) black cockatoo survey was considered adequate given the relatively low habitat values within the site and the generally good availability of fauna information for the region.
Scope	No limitation	The survey focused on vertebrate fauna and habitat values, with particular focus on conservation significant taxa with potential to occur within the site.
Proportion of fauna identified, recorded and/or collected.	No limitation	All observed vertebrate fauna were identified.
Sources of information e.g. previously available information (whether historic or recent) as distinct from new data.	No limitation	Adequate information was available from database searches and previous surveys in the region.
The proportion of the task achieved and further work which might be needed.	No limitation	The task was achieved in its entirety.
Experience level of personnel	Minor limitation	This fauna assessment was undertaken by a qualified, early career ecologist. The ecologist is experienced in conducting fauna surveys but is relatively new to Western Australia. Technical review was undertaken by a senior environmental consultant with 15 years' experience in environmental science in Western Australia.
Suitability of timing	Slight limitation	Survey timing is not considered to be of great importance for Level 1 assessments. The survey was conducted from 10:30 AM until 4 PM. The survey time falls into the hottest time of the day, which is a time of low activity for many fauna species (especially birds), resulting in a lowered chance of detection.
Completeness	No limitation	The desktop assessment, reconnaissance survey and targeted black cockatoo components of the survey were completed.
Spatial coverage and access	No limitation	Site coverage was comprehensive (track logged).
	No limitation	All parts of the site could be accessed as required.
Survey intensity	No limitation	The intensity of the survey was adequate given the size of the site and the relatively low habitat value present.
Influence of disturbance	No limitation	The site is highly modified due to historical disturbance. However, no recent disturbance was noted that may have affected outcomes of the survey.
Adequacy of resources	No limitation	All resources required to perform the survey were available.

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### 3 Results

#### 3.1.1 Desktop Assessment

##### 3.1.1.1 Database searches

A search was conducted for fauna species within a 10 km radius of the site using *the Protected Matters Search Tool* (DoEE 2017a), *Nature Map* (DPaW 2017a) and DBCA's threatened and priority fauna database (reference no. 5952). A total number of 400 fauna species (native and non-native) were identified as having potential to occur within the site or the wider local area. This includes 34 threatened, 19 other specially protected and 12 priority fauna species as shown in **Table 2**. A full list of fauna species is provided in **Appendix C**.

*Table 2: Summary of conservation significant fauna species known or likely to occur within 10 km of the site. Species that are likely to occur within the site are shaded in green.*

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Anous stolidus</i>	Common noddy	IA	MI	Tropical and subtropical seas, cayes, reefs, buoys and piles (Pizzey and Knight 2012).	Unlikely
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	EN	VU	Very common in blue-water seas around the Abrolhos (endemic to this area, accidental occurrences on lower west coast of Australia) (Johnstone and Storr 1998a).	Unlikely
<i>Apus pacificus</i>	Pacific swift	IA	MI	In australia the species mostly occurs over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. (DoEE 2019a).	Unlikely
<i>Ardenna carneipes</i>	Flesh-footed shearwater	VU (IA)	MI	Marine species that breeds on islands off south coast from near Cape Leeuwin (Johnstone and Storr 1998a).	Unlikely
<i>Arenaria interpres</i>	Ruddy turnstone	IA	MI	Tidal mud and reef flats, sheltered rocky coasts, stony and seaweedy beaches and sandpits, dry coral ridges (Abrolhos) and pebbly shores of near-coastal saltlakes (including saltwork ponds) (Johnstone and Storr 1998a).	Unlikely

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Botaurus poiciloptilus</i>	Australasian bittern	EN	EN	Beds of tall dense Typha spp., Baumea spp. and sedges in freshwater swamps (Johnstone and Storr 1998a).	Unlikely
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	IA	MI	Mainly shallows of estuaries and near-coastal saltlakes (including saltwork ponds) and drying near-coastal freshwater lakes and swamps. Also beaches and near-coastal sewage ponds (Johnstone and Storr 1998a).	Unlikely
<i>Calidris alba</i>	Sanderling	IA	MI	Mainly steeply shelving sandy beaches exposed to ocean swell. Also sandy inlets, estuarine sandbanks and near-coastal saltlakes (including saltwork ponds) (Johnstone & Storr 1998a).	Unlikely
<i>Calidris canutus</i>	Red knot	VU (IA)	CR (MI)	Mud and sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Johnstone and Storr 1998a).	Unlikely
<i>Calidris ferruginea</i>	Curlew sandpiper	VU (IA)	CR (MI)	Mainly shallows of estuaries and near-coastal saltlakes (including saltwork ponds) and drying near-coastal freshwater lakes and swamps. Also beaches and near-coastal sewage ponds (Johnstone and Storr 1998a).	Unlikely
<i>Calidris melanotos</i>	Pectoral sandpiper	IA	MI	Mainly fresh waters (swamps, lagoons, river pools, irrigation channels and sewage ponds); also samphire flats around estuaries and saltlakes (Johnstone and Storr 1998a).	Unlikely
<i>Calidris ruficollis</i>	Red-necked stint	IA	MI	Tidal mudflats, saltmarshes, sandy or shelly beaches, saline and freshwater wetlands (coastal and inland), saltfields, sewage ponds (Pizzey and Knight 2012).	Unlikely
<i>Calidris subminuta</i>	Long-toed stint	IA	MI	Mainly freshwater swamps (especially when drying and where vegetation is short), river pools, lagoons and claypans; also brackish pools, sewage ponds and samphire flats around estuaries and saltlakes (Johnstone and Storr 1998a).	Unlikely

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Calidris tenuirostris</i>	Great knot	VU (IA)	CR (MI)	Mud or sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Johnstone and Storr 1998a).	Unlikely
<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cockatoo	VU	VU	Eucalypt forests. Attracted to seeding <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> , <i>E. patens</i> , <i>E. staeri</i> , <i>E. diversicolor</i> , <i>Allocasuarina fraseriana</i> and <i>Persoonia longifolia</i> (Johnstone and Storr 1998a).	Possible
<i>Calyptorhynchus latirostris</i>	Carnaby's cockatoo	EN	EN	Mainly proteaceous scrubs and heaths and adjacent eucalypt woodlands and forests; also plantations of <i>Pinus</i> spp. Attracted to seeding <i>Banksia</i> , <i>Dryandra</i> , <i>Hakea</i> , <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Grevillea</i> , <i>Pinus</i> and <i>Allocasuarina</i> spp. Roosting in flat-topped yates <i>Eucalyptus occidentalis</i> (Johnstone and Storr 1998a).	Known to occur
<i>Diomedea sanfordi</i>	Northern royal albatross	EN	EN	Species is marine, pelagic and aerial. Habitat includes subantarctic, subtropical, and occasionally Antarctic waters (Marchant & Higgins 1990). Rare visitors to south Western Australian waters.	Unlikely
<i>Diomedea amsterdamensis</i>	Amsterdam albatross	CR (IA)	EN (MI)	The Amsterdam Albatross is a marine, pelagic seabird. It nests in open patchy vegetation (among tussocks, ferns or shrubs) near exposed ridges or hillocks (Weimerskirch et al. 1985). It sleeps and rests on ocean waters when not breeding (Marchant and Higgins 1990)	Unlikely
<i>Diomedea epomophora</i>	Southern royal albatross	VU (IA)	VU (MI)	Rare visitor to Western Australian seas; it breeds on subantarctic islands south of New Zealand (Johnstone and Storr 1998a).	Unlikely
<i>Diomedea exulans</i>	Wandering albatross	VU (IA)	VU (MI)	Marine, pelagic and aerial species. It breeds on Macquarie Island and feeds in Australian portions of the Southern Ocean (DoEE 2019b).	Unlikely
<i>Falco peregrinus</i>	Peregrine falcon	S	-	Mainly found around cliffs along coasts, rivers, ranges and around wooded watercourses and lakes (Johnstone and Storr 1998a).	Unlikely (flyover possible)

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Halobaena caerulea</i>	Blue petrel	IA	VU (MI)	Marine species that breeds on southern subantarctic and northern arctic islands. Only an accidental or uncommon visitor to Western Australian waters (Johnstone and Storr 1998a).	Unlikely
<i>Leipoa ocellata</i>	Mallefowl	VU	VU	Scrubs and thickets of <i>Eucalyptus</i> spp., <i>Melaleuca lanceolata</i> and <i>Acacia linophylla</i> ; also other dense litter-forming shrublands. Attracted to fallen wheat in stubbles and along roads (Johnstone and Storr 1998a).	Unlikely (locally extinct)
<i>Limosa lapponica</i>	Bar-tailed godwit	VU (IA)	MI	Mainly found in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. Also coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. Rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips (Marchant & Higgins 1993).	Unlikely
<i>Limosa lapponica baueri</i>	Bar-tailed godwit	VU	VU	Estuarine sand and mudflats and sandy beaches with loads of seaweed; also reef flats and near-coastal saltlakes (including saltwork ponds) (Johnstone and Storr 1998).	Unlikely
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit	CR	CR	Mainly coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (Higgins and Davies 1996).	Unlikely
<i>Macronectes giganteus</i>	Southern giant-petrel	IA	EN (MI)	Breeds on southern subantarctic and antarctic islands. May visit Western Australian waters from February to December (mostly June to September) (Johnstone and Storr 1998a).	Unlikely

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Macronectes halli</i>	Northern giant petrel	IA	VU (MI)	Breeds on subantarctic islands. May visit Western Australian water from February to September (Johnstone and Storr 1998a).	Unlikely
<i>Motacilla cinerea</i>	Grey wagtail	IA	MI	Mainly banks and rocks in fast-running fresh water habitats: rivers, creeks, streams and around waterfalls, both in forest and open country; but occurs almost anywhere during migration (Johnstone and Storr 1998b; Pizzey and Knight 2012).	Possible
<i>Numenius madagascariensis</i>	Eastern curlew	VU (IA)	CR (MI)	Mainly tidal mudflats; also reef flats, sandy beaches and rarely near-coastal lakes (including saltwork ponds) (Johnstone and Storr 1998a).	Unlikely
<i>Onychoprion anaethetus</i>	Bridled tern	IA	MI	Tropical and subtropical seas, offshore islands, rarely coasts (Pizzey & Knight 2012).	Unlikely
<i>Oxyura australis</i>	Blue-billed duck	P4	-	Mainly deeper freshwater swamps and lakes; occasionally saltlakes and estuaries freshened by flood waters (Johnstone and Storr 1998a).	Unlikely
<i>Pachyptila turtur subantartica</i>	Fairy prion	-	VU	Breeds on subantarctic islands and is presumed to frequent subtropical waters during non-breeding period (TSSC 2015).	Unlikely
<i>Pandion heliaetus</i>	Osprey	IA	MI	Moderately to very common in sheltered seas around north and west-coast islands south to 31°S; uncommon to common on mainland coasts, estuaries and larger rivers north of tropic; rare to uncommon elsewhere (Johnstone and Storr 1998a).	Unlikely
<i>Phoebetria fusca</i>	Sooty albatross	EN (IA)	VU (MI)	Marine, pelagic species that tolerates a wide range of sea surface temperatures and salinities. Breeds on subtropical and subantarctic islands in the Indian and Atlantic Oceans, on vegetated cliffs and steep slopes that are sheltered from prevailing winds, often amongst tussock grass (Johnstone and Storr 1998a).	Unlikely

# Level 1 Fauna and Targeted Black Cockatoo Assessment

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Pluvialis squatarola</i>	Grey Plover	IA	MI	Mudflats, saltmarsh, tidal reefs and estuaries, rarely inland (Pizzey and Knight 2012).	Unlikely
<i>Pterodroma mollis</i>	Soft-plumaged petrel	IA	VU (MI)	Marine species that breeds on temperate and subantarctic islands in south Atlantic and south Indian Ocean. Visitor to West Australian waters from March to September. Rarely observed inshore (Johnstone and Storr 1998a).	Unlikely
<i>Rostratula australis</i>	Australian painted snipe	EN	EN	Mainly shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (Marchant and Higgins 1993).	Unlikely
<i>Sterna bergii</i>	Crested tern	IA	MI	Coastal offshore waters, beaches, bays, inlets, tidal rivers, salt swamps, lakes, larger rivers (Pizzey and Knight 2012).	Unlikely
<i>Sterna caspia</i>	Caspian tern	IA	MI	Mainly sheltered areas, estuaries (when not laden with silt) and tidal creeks; occasionally near-coastal saltlakes (including saltwork ponds) and brackish pools in lower courses of rivers; rarely fresh waters (Johnstone and Storr 1998a).	Unlikely
<i>Sterna dougallii</i>	Roseate tern	IA	MI	Offshore waters, islands, coral reefs, sand cays, beaches, tidal inlets (Pizzey and Knight 2012).	Unlikely
<i>Sterna dougallii gracilis</i>	Roseate Tern	IA	MI	Offshore waters, islands, coral reefs, sand cays, beaches, tidal inlets (Pizzey & Knight 2012).	Unlikely
<i>Sternula nereis nereis</i>	Australian fairy tern	VU	VU	Sheltered blue-water seas close to land, estuaries (when free of silt) and near-coastal lakes (Johnstone and Storr 1998).	Unlikely
<i>Thalassarche melanophrys impavida</i>	Campbell albatross	VU (IA)	VU (MI)	Scarce visitor to south western and western seas. Breeds on Campbell island (Johnstone and Storr 1998a).	Unlikely
<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	EN (IA)	VU (MI)	Marine species that inhabits seas of south and west coast of Western Australia and breeds on islands in the south Indian Ocean and in the south Atlantic (johnstone & Storr 1998a).	Unlikely

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Birds					
<i>Thalassarche cauta cauta</i>	Shy albatross	VU (IA)	VU (MI)	Scarce visitor (late May to mid-October) to southwestern and western seas. Breeds on islands off Tasmania and south New Zealand (Johnstone and Storr 1998a).	Unlikely
<i>Thalassarche cauta steadi</i>	White-capped albatross	VU (IA)	VU (MI)	Scarce visitor (late May to mid-October) to southwestern and western seas. Breeds on islands off Tasmania and south New Zealand (Johnstone and Storr 1998a).	Unlikely
<i>Thalassarche melanophris</i>	Black-browed albatross	EN (IA)	VU (MI)	Seas of south and west coasts. Visitor to Western Australian mainland from January to early November (mostly May to September). Breeds on southern subantarctic and antarctic islands (Johnstone and Storr 1998a).	Unlikely
<i>Tringa brevipes</i>	Grey-tailed tattler	P4	-	Tidal mud and reef flats, sheltered rocky coasts, stony and seaweedy beaches and sandpits, dry coral ridges (Abrolhos) and pebbly shores of near-coastal saltlakes (including saltwork ponds) (Johnstone and Storr 1998a).	Unlikely
<i>Tringa hypoleucos</i>	Common sandpiper	IA	MI	Edge of sheltered waters salt or fresh, e.g. estuaries, mangrove creeks, rocky coasts, near-coastal saltlakes (including saltwork ponds), river pools, lagoons, claypans, drying swamps, flood waters, dams and sewage ponds. Preferring situations where low perches are available (Johnstone & Storr 1998a).	Unlikely
<i>Tringa nebularia</i>	Common greenshank	IA	MI	Shallow fresh waters (claypans, lagoons, swamps, river pools, dams and sewage ponds) and salt waters (estuaries, mangrove creeks, lakes, samphire flats, reef flats and saltwork ponds) (Johnstone & Storr 1998a).	Unlikely
<i>Tyto novaehollandiae novaehollandiae</i>	Australian masked owl	P3	-	Forests, woodlands, timbered waterways and open country on the fringe of these areas (BirdLife Australia 2019).	Unlikely

# Level 1 Fauna and Targeted Black Cockatoo Assessment

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Mammals					
<i>Bettongia penicillata ogilbyi</i>	Woylie	CR	EN	Woodlands and adjacent heaths with a dense understorey of shrubs, particularly <i>Gastrolobium</i> spp. (TSSC 2018).	Unlikely (locally extinct)
<i>Dasyurus geoffroii</i>	Chuditch	VU	VU	Wide range of habitats from woodlands, dry sclerophyll forests, riparian vegetation, beaches and deserts. Appears to utilise native vegetation along road sides in the wheatbelt (DEC 2012a).	Unlikely
<i>Hydromys chrysogaster</i>	Rakali	P4	-	Areas with permanent water, fresh, brackish or marine. Likely to occur in all major rivers and most of the larger streams as well as bodies of permanent water in the lower south west (Christensen and Strahan 1984).	Unlikely
<i>Isoodon fusciventer</i>	Quenda	P4	-	Dense scrubby, often swampy, vegetation with dense cover up to one metre high (DEC 2012b).	Possible
<i>Notamacropus irma</i>	Western brush wallaby	P4	-	Dry sclerophyll forest, <i>Banksia</i> spp. woodlands and shrublands, typically favouring dense low vegetation that provides dense cover (Christensen and Strahan 1984).	Unlikely
Reptiles					
<i>Delma concinna major</i>	Javelin legless lizard (shark bay)	P1	-	Coastal heath and woodland (Cogger 2018).	Unlikely
<i>Neelaps calonotos</i>	Black-striped snake	P3	-	Coastal and near-coastal dunes, sandplains supporting heathlands and <i>Banksia</i> spp. woodlands (Bush <i>et al.</i> 2002).	Possible
Invertebrates					
<i>Austroconops mcmillani</i>	McMillan's biting midge	P2	-	Unknown.	Not assessed
<i>Glossurocolletes bilobatus</i>	a short-tongued bee	P2	-	Unknown.	Not assessed
<i>Idiosoma sigillatum</i>	Swan Coastal Plain shield-backed trapdoor spider	P3	-	Unknown.	Not assessed

# Level 1 Fauna and Targeted Black Cockatoo Assessment

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Table 2 (cont): Summary of conservation significant fauna species known or likely to occur within 10 km of the site.

Species	Common name	Level of significance		Habitat	Likelihood of occurrence within the site
		BC Act	EPBC Act		
Invertebrate					
<i>Synemon gratiosa</i>	Graceful sunmoth	P4	-	Coastal heathland on Quindalup dunes where it is restricted to secondary sand dunes due to the abundance of the preferred host plant <i>Lomandra maritima</i> . Banksia woodland on Spearwood and Bassendean dunes, where the second known host plant <i>L. hermaphrodita</i> is widespread (DEC 2011b).	Not assessed
<i>Hurleya</i> sp. (WAM C23193 )	-	CE	-	Only known from 'Yanchep Aquatic Root Mat Community' which occurs in caves underneath <i>Eucalyptus gomphocephala</i> trees.	Not assessed
<i>Westralunio carteri</i>	Carter's freshwater mussel	VU	VU	Occurs in greatest abundance in slower flowing streams with stable sediments that are soft enough for burrowing amongst woody debris and exposed tree roots. Salinity tolerance quite low (Morgan <i>et al.</i> 2011).	Not assessed

Detailed information about conservation significant species in **Appendix A**.

### 3.1.1.2 Previous surveys

No previous fauna assessments are known to have been undertaken within the site.

### 3.1.2 Reconnaissance survey

#### 3.1.2.1 General site condition

The northern half of the site comprised remnant native vegetation, as well as some planted trees and shrubs.

The southern half of the site contained managed vegetation, consisting of a turfed oval, with the western and eastern peripheral areas containing steep banks with planted trees, landscaped garden beds and/or mulch.

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### 3.1.2.2 Species inventory

A total of 11 native and 1 non-native fauna species, including 1 fauna species of conservation significance, were recorded during the reconnaissance survey as shown in **Table 3**. Fauna species were identified from sightings, calls, foraging evidence, scats, tracks or skeletal remains.

Table 3: Vertebrate fauna species recorded within the site.

Species	Common name	Level of significance		Record type
		State	EPBC	
Birds				
<i>Anthochaera carunculata</i>	Red wattle bird	-	-	Call, sight
<i>Cacatua roseicapilla</i>	Galah	-	-	Call, sight
<i>Calyptorhynchus latirostris</i>	Carnaby's black cockatoo	-	-	Call, sight
<i>Corvus coronoides</i>	Australian raven	-	-	Call, sight
<i>Cracticus tibicen</i>	Australian magpie	-	-	Call, sight
<i>Dacelo novaeguineae</i>	Laughing kookaburra	-	-	Call, sight
<i>Gavicalis virescens</i>	Singing honeyeater	-	-	Call, sight
<i>Ocyphaps lophotes</i>	Crested pigeon	-	-	Sight
<i>Petrochelidon nigricans</i>	Tree martin	-	-	Sight
<i>Platycercus zonarius semitorquatus</i>	Twenty-eight parrot	-	-	Call, sight
<i>Rhipidura leucophrys</i>	Willie wagtail	-	-	Sight
Mammals				
<i>Macropus fuliginosus melanops</i>	Western grey kangaroo	-	-	Scats

## 3.2 Fauna habitat assessment

Historical disturbance and current land use has significantly compromised habitat values within the site. The majority of the native vegetation has been removed and vegetation now predominantly comprises cleared area, dominated by non-native and weed species with scattered or patches of native and non-native trees and shrubs.

A total of four (4) fauna habitats were identified within the site, including '**banksia woodland**', '**Leptospermum laevigatum woodland with scattered native species**', '**non-native trees and scattered native trees**' and '**cleared area**'.

A description and the area of each habitat is provided in **Table 4** and representative photographs of each are provided in **Plate 1** to **Plate 4**. The location of each habitat is shown on **Figure 3**.

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The highest natural habitat values are associated with **banksia woodland** in 'good'<sup>2</sup> or better condition. Where this vegetation remains in good or better condition, it provides a cover of native trees and shrubs, and a few microhabitats such as logs, rocks and leaf litter. Although ***Leptospermum laevigatum* woodland with scattered native species** consists primarily of non-native species it may provide cover and protection for native fauna species such as birds and small mammals.

Table 4: Fauna habitats identified within the site.

Fauna habitat classification	Description	Area (ha)
<b>Banksia woodland</b>	<i>Banksia</i> spp. open woodland over native and non-native shrubs and grasses that provide a good ground cover in some areas. Few microhabitats such as logs, rocks and leaf litter present but primarily comprise isolated dead branches and leaf litter ( <b>Plate 1</b> ).	0.84
<b><i>Leptospermum laevigatum</i> woodland with scattered native species</b>	Dense woodland of <i>Leptospermum laevigatum</i> over native and non-native shrubs and grasses ( <b>Plate 2</b> ).	0.38
<b>Native and non-native trees and shrubs</b>	* <i>Agonis flexuosa</i> , * <i>Eucalyptus gomphocephala</i> and <i>Eucalyptus</i> spp. trees over non-native grasses, mulch or bare ground ( <b>Plate 3</b> ).	0.16
<b>Cleared area</b>	Lawn, bare ground and recreational structures ( <b>Plate 4</b> ).	2.28



Plate 1: ***Banksia* woodland.**

<sup>2</sup> Keighery, B. 1994, *Bushland Plant Survey: A guide to plant community survey for the community*, Wildflower Society of WA (Inc), Nedlands.

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Plate 2: Dense *Leptospermum laevigatum* woodland with scattered native species.



Plate 3: **Non-native trees and scattered native trees** over understorey of non-native grasses, mulch or bare ground (in foreground).

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Plate 4: **Cleared area**, including lawn, bare ground and recreational structures.

### 3.3 Targeted black cockatoo survey

A total of three (3) potential black cockatoo habitat trees<sup>3</sup> were observed within the site as shown in **Figure 4**. None of these potential habitat trees currently contain hollows.

A number of native and non-native trees along the north- and south-eastern edges of the site have the potential to provide roosting habitat for black cockatoos. Potential secondary evidence of roosting activity, such as branch clippings, droppings and moulted feathers were not observed.

The site contains approximately 1.43 ha of potential black cockatoo foraging habitat, comprising *Banksia* spp., *Eucalyptus gomphocephala*, *Agonis flexuosa*, *Allocasuarina* spp. and non-native eucalypt trees. Carnaby's cockatoos were observed foraging on *Allocasuarina* spp. trees within the site during the reconnaissance survey.

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<sup>3</sup> Native eucalypt tree with a diameter at breast height (DBH)  $\geq 50$  cm.

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## 4 Discussion

### 4.1 Fauna assessment

A total of 400 native and non-native fauna species were identified to potentially occur within the site or the wider area. Four (4) conservation significant species were considered to have potential to occur within the site due to the presence of limited suitable habitat, including Carnaby's cockatoo (endangered), forest red-tailed black cockatoo (vulnerable), black-stripe snake (P3), quenda (P4) and grey wagtail (migratory).

During the reconnaissance survey 11 native and one (1) non-native fauna species were positively identified as occurring within the site. With the exception of Carnaby's cockatoo (endangered), the species recorded within the site are generally common and widespread.

Fauna habitat values within the site are generally limited. Habitat value is greatest with respect to **banksia woodland**, as well as, scattered native trees within the site that likely provide value to a range of native species including some that are conservation significant, such as species of black cockatoo (further discussed in **Section 4.2** below). However, the extent of **banksia woodland** vegetation within the site is relatively small (0.84 ha, 20% of the site). For the majority of the site, habitat values are compromised by the removal of native vegetation and historical degradation. The site now primarily provides habitat that is suitable for common and widespread species with non-specific habitat requirements.

### 4.2 Black cockatoo habitat assessment

Carnaby's cockatoos were positively identified within and near the site. A record of Carnaby's cockatoo at the site was anticipated as the areas surrounding the site are known to contain habitat used by this species. The site is outside of the expected distribution range of Baudin's cockatoo and the species is therefore considered unlikely to occur within the site although some potentially suitable foraging and roosting habitat is present. Forest red-tailed black cockatoo are considered to have the potential to occur within or to fly over the site, as the site lies within the species known distribution range and limited foraging and roosting habitat is present.

Of the three potential black cockatoo habitat trees identified within the site, none were observed to contain hollows. Hence the site does not currently provide suitable breeding habitat for black cockatoo species. While trees within the site have the potential to form hollows in the future, it will likely take many years for hollows to form that are suitable for use by black cockatoos. The site lies within the 12 km buffer of a confirmed Carnaby's cockatoo breeding site which is likely associated with Yanchep National Park (DEC 2011a).

No evidence of roosting or historical roosting activity was observed within the site. The closest known roosting locations are located approximately 2 km and 4 km east of the site within Yanchep National Park, as well as, 2.7 km south-west of the site, within Blenny Park as shown in **Figure 2**.

A number of plant species within remnant patches of **banksia woodland**, including *Banksia* spp., *Hakea* spp. and *Acacia* spp. are recognised as important foraging habitat for Carnaby's and Baudin's cockatoos. Scattered remnant and planted native trees within the site, in particular *Eucalyptus*

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*gomphocephala* (tuart) *Allocasuarina* spp. and *Agonis flexuosa* (peppermint), as well as, non-native eucalypts and other planted trees also provide potential foraging habitat for all three species of black cockatoo. However, many of the trees within the site are non-native trees which are not a primary foraging option for black cockatoos.

The DoEE *Revised Draft - Referral Guideline for Three Threatened Species of Black Cockatoo* (DoEE 2017) indicate that non-native eucalypts can represent quality foraging habitat when located in relevant parts of the Swan Coastal Plain. The non-native eucalypts within the site may be foraged upon opportunistically by species of black cockatoo, but are unlikely to provide important foraging habitat given that extensive areas of higher quality foraging habitat are located within close proximity of the site.

The site is considered to contain some high quality foraging habitat for Carnaby's cockatoo, given that preferred foraging plant species are present within **banksia woodland**. However, the extent of this vegetation is very limited (0.84 ha). For forest red-tailed black cockatoos the importance of foraging habitat within the site is considered low, considering that foraging resources are predominantly comprised of non-preferred, non-native eucalypts and the small extent of potential foraging habitat. The site is located outside of Baudin's cockatoos expected distribution range and is therefore not considered to represent important foraging habitat for this species.

Extensive areas of high quality breeding, roosting and foraging habitat for black cockatoos are located in close proximity to the north, south and east of the site (for example within Yanchep National Park and Gnangara-Moore River State Forest).

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### 5 Conclusions

A total of 11 native and one non-native fauna species were positively identified to occur within the site, including threatened (endangered) Carnaby's cockatoo. Three (3) additional species of conservation significance are considered to have potential to occur within the site, including forest red-tailed black cockatoo (vulnerable), black-stripe snake (P3), quenda (P4) and grey wagtail (migratory). But the likelihood that these species would occur or that the site would provide important habitat is low as the site contains limited suitable habitat.

The site contains three potential black cockatoo habitat trees without hollows. No evidence of roosting was observed within the site. Plant species within areas of **Banksia woodland**, as well as, scattered native and non-native trees within the site are considered to provide a limited extent of good quality foraging habitat for Carnaby's cockatoo and low quality foraging habitat for forest-red tailed black cockatoo.

With the exception of the aforementioned species of black cockatoo, the site is likely to be primarily utilised by common and widespread native species without specific habitat requirements.

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# Figures



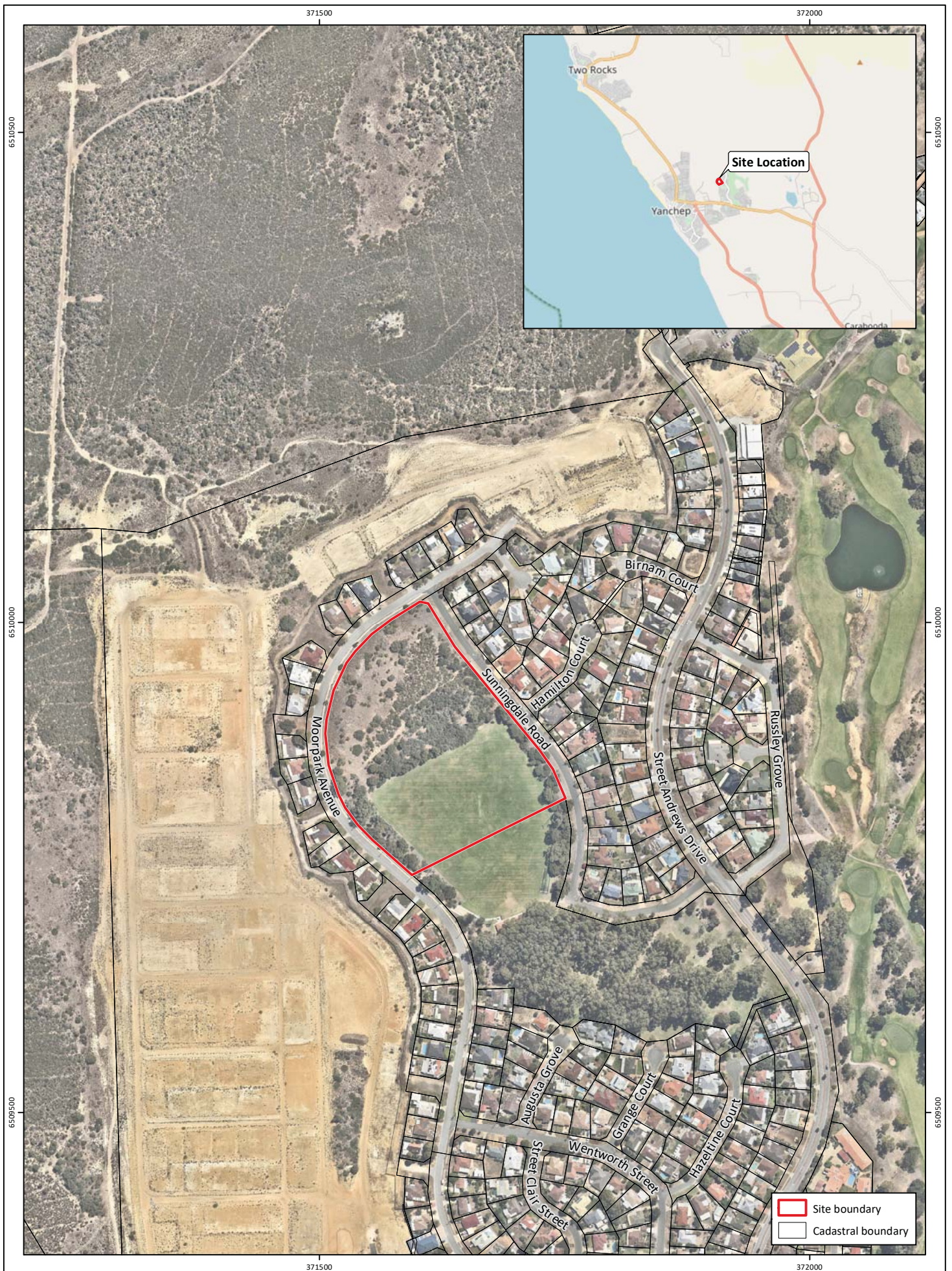
*Figure 1: Site Location*

*Figure 2: Environmental Features*

*Figure 3: Fauna Habitat*

*Figure 4: Black Cockatoo Habitat*





**Figure 1: Site Location**

**Project:** Level 1 Fauna and Targeted Black Cockatoo Assessment  
 Lot 9766 Sunningdale Road, Yanchep  
**Client:** Department of Finance

**Plan Number:**  
 EP19-021(01)--F06  
**Drawn:** SCM  
**Date:** 21/03/2019  
**Checked:** MS  
**Approved:** TAA  
**Date:** 03/04/2019



0 50 100  
 Metres  
 Scale: 1:5,000@A4  
 GDA 1994 MGA Zone 50







**Figure 2: Environmental Features**

**Project:** Level 1 Fauna and Targeted Black Cockatoo Assessment  
 Lot 9766 Sunningdale Road, Yanchep

**Client:** Department of Finance

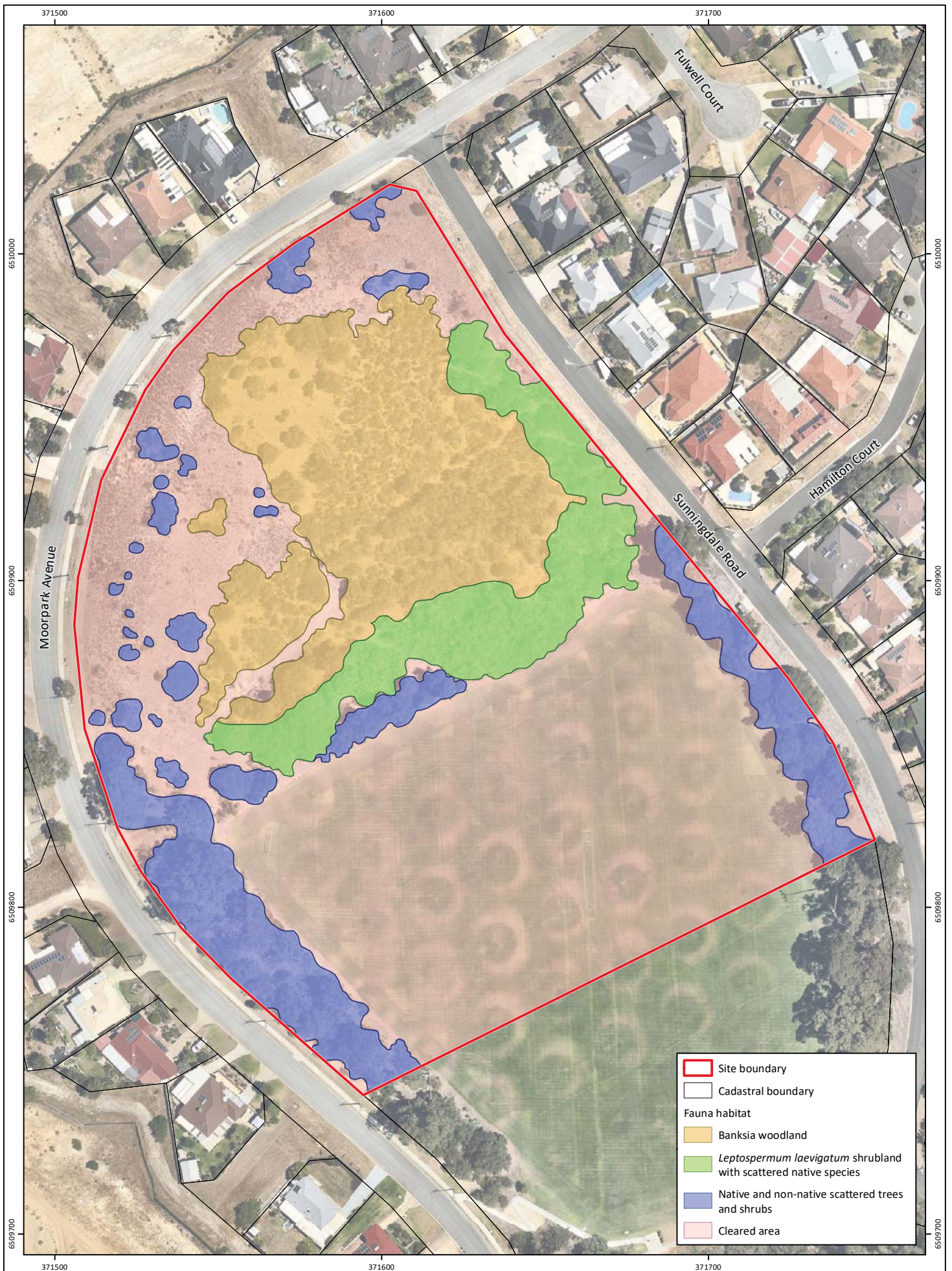
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**Drawn:** SCM  
**Date:** 21/03/2019  
**Checked:** MS  
**Approved:** TAA  
**Date:** 03/04/2019



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 Metres  
 Scale: 1:40,000@A4  
 GDA 1994 MGA Zone 50







**Figure 3: Fauna Habitat**

**Project:** Level 1 Fauna and Targeted Black Cockatoo Assessment  
Lot 9766 Sunningdale Road, Yanchep

**Client:** Department of Finance

**Plan Number:** EP19-021(01)--F08  
**Drawn:** SCM  
**Date:** 21/03/2019  
**Checked:** MS  
**Approved:** TAA  
**Date:** 03/04/2019



0 20 40  
Metres  
Scale: 1:1,500@A4  
GDA 1994 MGA Zone 50







**Figure 4: Black Cockatoo Habitat**

**Project:** Level 1 Fauna and Targeted Black Cockatoo Assessment  
 Lot 9766 Sunningdale Road, Yanchep  
**Client:** Department of Finance

**Plan Number:** EP19-021(01)--F09  
**Drawn:** SCM  
**Date:** 21/03/2019  
**Checked:** MS  
**Approved:** TAA  
**Date:** 03/04/2019



0 20 40  
 Metres  
 Scale: 1:1,500@A4  
 GDA 1994 MGA Zone 50





# Appendix A

Conservation categories



## Additional Background Information



### Conservation Significant Fauna

Fauna species considered rare or under threat warrant special protection under Commonwealth and/or State legislation. At the Commonwealth level, fauna species can be listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Migratory birds may be recognised under international treaties including:

- *Japan Australia Migratory Bird Agreement 1981* (JAMBA)
- *China Australia Migratory Bird Agreement 1998* (CAMBA)
- *Republic of Korea-Australia Migratory Bird Agreement 2007* (ROKAMBA)
- *Bonn Convention 1979* (The Convention on the Conservation of Migratory Species of Wild Animals).

All migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as ‘matters of national environmental significance’ (MNES) under the EPBC Act. Fauna species considered ‘threatened’ pursuant to Schedule 1 of the EPBC Act are assigned categories as outlined in **Table 1**.

*Table 1: Definitions of conservation significant fauna species pursuant to the EPBC Act*

Conservation Code	Category
X	Threatened Fauna –Extinct There is no reasonable doubt that the last member of the species has died.
EW <sup>#</sup>	Threatened Fauna –Extinct in the Wild Taxa which are known only to survive in cultivation, captivity or as a naturalised population outside its past range, or taxa which have not been recorded in its known and/or expected habitat despite appropriate exhaustive surveys.
CR <sup>#</sup>	Threatened Fauna – Critically Endangered Taxa which are considered to be facing an extremely high risk of extinction in the wild.
EN <sup>#</sup>	Threatened Fauna – Endangered Taxa which are considered to be facing a very high risk of extinction in the wild.
VU <sup>#</sup>	Threatened Fauna – Vulnerable Taxa which are considered to be facing a high risk of extinction in the wild.
Migratory <sup>#</sup>	Migratory Fauna All migratory species that are: (i) native species; and (ii) from time to time included in the appendices to the Bonn Convention; and (b) all migratory species from time to time included in annexes established under JAMBA, CAMBA and ROKAMBA; and All native species from time to time identified in a list established under, or an instrument made under, an international agreement approved by the Minister.
Ma	Marine Fauna Species in the list established under s248 of the EPBC Act

<sup>#</sup>matters of national environmental significance (MNES) under the EPBC Act

## Additional Background Information



In Western Australia, fauna taxa may be classed as ‘specially protected’ under the *Biodiversity Conservation Act 2016* (BC Act) which is enforced by Department of Biodiversity Conservation and Attractions (DBCA). Specially protected fauna species are listed under Schedules 1 to 7 according to their conservation status. The definitions of these Schedules are provided in **Table 2**.

*Table 2: Definitions of specially protected fauna schedules under the BC Act.*

Conservation Code	Definition
CR	Schedule 1 – Critically Endangered Threatened species considered to be facing an extremely high risk of extinction in the wild.
EN	Schedule 2 – Endangered Threatened species considered to be facing a very high risk of extinction in the wild.
VU	Schedule 3 – Vulnerable Threatened species considered to be facing a high risk of extinction in the wild.
EX	Schedule 4 – Presumed extinct Species which have been adequately searched for and there is no reasonable doubt that the last individual has died.
IA	Schedule 5 – Migratory birds protected under an international agreement Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds.
CD	Schedule 6 – Fauna of special conservation need as conservation dependent fauna Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened.
OS	Schedule 7 – Other specially protected fauna. Fauna otherwise in need of special protection to ensure their conservation.

## Additional Background Information



Fauna species that may be threatened or near threatened but lack sufficient information to be legislatively listed may be added to the DBCA's *Priority Fauna List* (DBCA 2018). Priority fauna species are considered during State approval processes. Priority fauna categories and definitions are listed in **Table 3**.

*Table 3: Definitions of priority fauna categories on DBCA's Priority Fauna List*

Conservation Code	Category
P1	<p>Priority 1 – Poorly known</p> <p>Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.</p>
P2	<p>Priority 2 – Poorly known</p> <p>Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.</p>
P3	<p>Priority 2 – Poorly known</p> <p>Species that are known from several locations and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.</p>
P4	<p>(a) Priority 4 – Rare species</p> <p>Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Priority 4 – Near Threatened</p> <p>Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>(c) Priority 4 – Other</p> <p>Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

## References

### General references

Department of Biodiversity, Conservation and Attractions (DBCA) 2018, *Threatened and Priority Fauna List 15 February 2018*, Perth.



# Appendix B

Literature used for identifying fauna species





## Additional Background Information



## Literature used for identification of fauna species

Table 1: Standard literature for identifying fauna species.

Conservation Code	Category
Birds	Johnstone and Storr (1998b), Johnstone and Storr (1998a), Pizzey and Knight (2012), Slater <i>et al.</i> (2003)
Mammals	Menkhorst and Knight (2011), Triggs (2003)
Amphibia	Tyler and Doughty (2009), Bush <i>et al.</i> (2002)
Reptiles	Bush <i>et al.</i> (2002)

## References

Bush, B., Maryan, B., Browne-Cooper, R. and Robinson, D. 2002, *Reptiles and Frogs of the Perth Region*, UWA Press, Crawley.

Johnstone, R. E. and Storr, G. M. 1998a, *Handbook of Western Australian Birds. Volume 2 - Passerines (Blue-Winged Pitta to Goldfinch)*, Western Australian Museum, Perth.

Johnstone, R. E. and Storr, T. 1998b, *Handbook of Western Australian Birds: Volume 1 - Non-passerines (Emu to Dollarbird)*, Western Australian Museum, Perth.

Menkhorst, P. and Knight, F. 2011, *Field guide to the mammals of Australia (Third edition)*, Oxford University Press Australia & New Zealand, Melbourne, VIC, Australia.

Pizzey, G. and Knight, F. 2012, *The Fieldguide to the Birds of Australia*, Harper Collins Publishers, Sydney, Australia.

Slater, P., Slater, P. and Slater, R. 2003, *The Slater Field Guide to Australian Birds*, Reed New Holland, Australia.

Triggs, B. 2003, *Tracks, Scats and Other Traces A Field Guide to Australian Mammals*, Oxford University Press Australia, Melbourne, Victoria.

Tyler, M. J. and Doughty, P. 2009, *Field Guide to Frogs of Western Australia*, Western Australian Museum, Perth, Western Australia.



# Appendix C

*NatureMap and Protected Matters Search Tool results*



# NatureMap Species Report

Created By Guest user on 01/04/2019

**Kingdom** Animalia  
**Current Names Only** Yes  
**Core Datasets Only** Yes  
**Method** 'By Circle'  
**Centre** 115° 38' 51" E, 31° 32' 20" S  
**Buffer** 10km

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
1.	<i>Acanthistius pardalotus</i>			
2.	<i>Acanthistius serratus</i>			
3.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
4.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
5.	24262 <i>Acanthiza inornata</i> (Western Thornbill)			
6.	24560 <i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
7.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
8.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
9.	<i>Acercella falcipes</i>			
10.	42368 <i>Acritoscincus trilineatus</i> (Western Three-lined Skink)			
11.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
12.	24831 <i>Acrocephalus australis</i> subsp. <i>gouldi</i> (Australian Reed Warbler)			
13.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
14.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
15.	<i>Aetapcus maculatus</i>			
16.	<i>Aganippe raphiduca</i>			
17.	<i>Akamptogonus novarae</i>			
18.	<i>Amblyomma triguttatum</i>			
19.	<i>Aname mainae</i>			
20.	<i>Aname tepperi</i>			
21.	24310 <i>Anas castanea</i> (Chestnut Teal)			
22.	24312 <i>Anas gracilis</i> (Grey Teal)			
23.	24313 <i>Anas platyrhynchos</i> (Mallard)			
24.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
25.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
26.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
27.	<i>Anoplocapros robustus</i>			
28.	24506 <i>Anous tenuirostris</i> subsp. <i>melanops</i> (Australian Lesser Noddy)		T	
29.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
30.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
31.	24599 <i>Anthus australis</i> subsp. <i>australis</i> (Australian Pipit)			
32.	24991 <i>Aprasia repens</i> (Sand-plain Worm-lizard)			
33.	25554 <i>Apus pacificus</i> (Fork-tailed Swift, Pacific Swift)		IA	
34.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
35.	<i>Aracana aurita</i>			
36.	<i>Araneus cyphoxis</i>			
37.	24208 <i>Arctocephalus forsteri</i> (New Zealand Fur Seal, long-nosed fur-seal)		S	
38.	41324 <i>Ardea modesta</i> (great egret, white egret)			
39.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
40.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
41.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
42.	<i>Arkys alticephala</i>			
43.	<i>Arkys walckenaeri</i>			
44.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
45.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
46.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
47.	<i>Aulohaelurus labiosus</i>			
48.	<i>Austracantha minax</i>			
49.	<i>Australomimetes djuka</i>			
50.	<i>Austrochthonius australis</i>			
51.	33971 <i>Austroconops mcmillani</i> (McMillan's biting midge (Swan Coastal Plain), biting midge (southwest))		P2	

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
52.	24318 <i>Aythya australis</i> (Hardhead)			
53.	<i>Baiami teganarioides</i>			
54.	<i>Baiami volucripes</i>			
55.	<i>Barnardius zonarius</i>			
56.	<i>Batrachomoeus rubricephalus</i>			
57.	24162 <i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)		T	
58.	24319 <i>Biziura lobata</i> (Musk Duck)			
59.	<i>Bodianus vulpinus</i>			
60.	<i>Bostockia porosa</i>			
61.	42381 <i>Brachyuropis semifasciatus</i> (Southern Shovel-nosed Snake)			
62.	24721 <i>Cacatua galerita</i> subsp. <i>galerita</i> (Sulphur-crested Cockatoo)	Y		
63.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
64.	25715 <i>Cacatua roseicapilla</i> (Galah)			
65.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
66.	24727 <i>Cacatua sanguinea</i> subsp. <i>westralensis</i> (Little Corella)			
67.	24729 <i>Cacatua tenuirostris</i> (Eastern Long-billed Corella)	Y		
68.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
69.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
70.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
71.	24780 <i>Calidris alba</i> (Sanderling)		IA	
72.	25738 <i>Calidris canutus</i> (Red Knot, knot)		IA	
73.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
74.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
75.	24789 <i>Calidris subminuta</i> (Long-toed Stint)		IA	
76.	24790 <i>Calidris tenuirostris</i> (Great Knot)		T	
77.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
78.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
79.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
80.	48920 <i>Canis familiaris</i> (Dog, Dingo)	Y		
81.	25335 <i>Caretta caretta</i> (Loggerhead Turtle)		T	
82.	<i>Centroberyx australis</i>			
83.	<i>Centroberyx lineatus</i>			
84.	<i>Centrolophus niger</i>			
85.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
86.	<i>Cercophonius granulosus</i>			
87.	<i>Cercophonius sulcatus</i>			
88.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
89.	24187 <i>Chalinolobus morio</i> (Chocolate Wattled Bat)			
90.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
91.	<i>Chelidonichthys kumu</i>			
92.	25336 <i>Chelonia mydas</i> (Green Turtle)		T	
93.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
94.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
95.	<i>Cherax quinquecarinatus</i>			
96.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
97.	<i>Chroicocephalus novaehollandiae</i>			
98.	24288 <i>Circus approximans</i> (Swamp Harrier)			
99.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
100.	<i>Cirrhimuraena calamus</i>			
101.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
102.	<i>Cleidopus gloriamaris</i>			
103.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
104.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
105.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
106.	<i>Cormocephalus aurantiipes</i>			
107.	<i>Cormocephalus novaehollandiae</i>			
108.	25592 <i>Corvus coronoides</i> (Australian Raven)			
109.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
110.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
111.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
112.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
113.	24918 <i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i> (Clawless Gecko)			
114.	25399 <i>Crinia glauerti</i> (Clicking Frog)			
115.	30893 <i>Cryptoblepharus buechananii</i>			
116.	25020 <i>Cryptoblepharus plagiocephalus</i>			
117.	30899 <i>Ctenophorus adelaidensis</i> (Southern Heath Dragon, Western Heath Dragon)			
118.	25027 <i>Ctenotus australis</i>			
119.	25039 <i>Ctenotus fallens</i>			
120.	<i>Cybiosarda elegans</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
121.	25087 <i>Cyclodomorphus celatus</i> (Western Slender Blue-tongue)			
122.	<i>Cyclosa trilobata</i>			
123.	24322 <i>Cygnus atratus</i> (Black Swan)			
124.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
125.	<i>Daphnia carinata</i>			
126.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
127.	24092 <i>Dasyurus geoffroii</i> (Chuditch, Western Quoll)		T	
128.	30906 <i>Delma concinna</i> (Javelin Legless Lizard)			
129.	30905 <i>Delma concinna</i> subsp. <i>concinna</i> (Javelin Legless Lizard)			
130.	25766 <i>Delma fraseri</i> (Fraser's Legless Lizard)			
131.	24999 <i>Delma grayii</i>			
132.	25296 <i>Demansia psammophis</i> subsp. <i>reticulata</i> (Yellow-faced Whipsnake)			
133.	25346 <i>Dermochelys coriacea</i> (Leatherback Turtle)		T	
134.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
135.	<i>Dingosa serrata</i>			
136.	24939 <i>Diplodactylus polyophthalmus</i>			
137.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
138.	25251 <i>Echiopsis curta</i> (Bardick)			
139.	<i>Edelia vittata</i>			
140.	25096 <i>Egernia kingii</i> (King's Skink)			
141.	25100 <i>Egernia napoleonis</i>			
142.	<i>Egretta garzetta</i>			
143.	<i>Egretta novaehollandiae</i>			
144.	<i>Elanus axillaris</i>			
145.	24290 <i>Elanus caeruleus</i> subsp. <i>axillaris</i> (Australian Black-shouldered Kite)			
146.	47937 <i>Euseyornis melanops</i> (Black-fronted Dotterel)			
147.	<i>Eolophus roseicapillus</i>			
148.	24652 <i>Eopsaltria georgiana</i> (White-breasted Robin)			
149.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
150.	<i>Eriophora biapicata</i>			
151.	24379 <i>Erythronys cinctus</i> (Red-kneed Dotterel)			
152.	<i>Ethmostigmus rubripes</i>			
153.	24043 <i>Eubalaena australis</i> (Southern Right Whale)		T	
154.	25621 <i>Falco berigora</i> (Brown Falcon)			
155.	24471 <i>Falco berigora</i> subsp. <i>berigora</i> (Brown Falcon)			
156.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
157.	25623 <i>Falco longipennis</i> (Australian Hobby)			
158.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
159.	24041 <i>Felis catus</i> (Cat)	Y		
160.	<i>Fistularia petimba</i>			
161.	25727 <i>Fulica atra</i> (Eurasian Coot)			
162.	24761 <i>Fulica atra</i> subsp. <i>australis</i> (Eurasian Coot)			
163.	34028 <i>Galaxias occidentalis</i> (Western Minnow)			
164.	25729 <i>Gallinula tenebrosa</i> (Dusky Moorhen)			
165.	24763 <i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i> (Dusky Moorhen)			
166.	<i>Gambusia affinis</i>			
167.	42314 <i>Gavialis virens</i> (Singing Honeyeater)			
168.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
169.	24271 <i>Gerygone fusca</i> subsp. <i>fusca</i> (Western Gerygone)			
170.	<i>Girella tephraeops</i>			
171.	48581 <i>Glossurocolletes bilobatus</i> (a short-tongued bee (southwest), short-tongued bee)		P2	
172.	47962 <i>Glyciphila melanops</i> (Tawny-crowned Honeyeater)			
173.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
174.	<i>Gymnocranius grandoculis</i>			
175.	<i>Gymnothorax</i> sp.			
176.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
177.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
178.	24689 <i>Halobaena caerulea</i> (Blue Petrel)			
179.	<i>Helcogramma decurrens</i>			
180.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
181.	25412 <i>Heleioporus psammophilus</i> (Sand Frog)			
182.	25119 <i>Hemiergis quadrilineata</i>			
183.	<i>Heteroclinus heptaeolus</i>			
184.	<i>Heterodontus portusjacksoni</i>			
185.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
186.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
187.	<i>Hippocampus</i> sp.			
188.	<i>Hippocampus tuberculatus</i>			
189.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
190.	48582 <i>Hurleya</i> sp. (WAM C23193) (Crystal Cave Crangonyctoid, cave shrimp)		T	Y

	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
191.	24215	<i>Hydromys chrysogaster</i> (Water-rat, Rakali)		P4	
192.	43384	<i>Hydrophis platurus</i> (Yellow-bellied Seasnake)			
193.	48587	<i>Hydroprogne caspia</i> (Caspian Tern)		IA	
194.	48935	<i>Idiosoma sigillatum</i> (Swan Coastal Plain shield-backed trapdoor spider)		P3	
195.	48588	<i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
196.		<i>Isopeda leishmanni</i>			
197.		<i>Lactoria concatenatus</i>			
198.		<i>Lactoria gibbosus</i>			
199.		<i>Lagocephalus sceleratus</i>			
200.	24367	<i>Lalage tricolor</i> (White-winged Triller)			
201.		<i>Lampona cylindrata</i>			
202.		<i>Lampona yanchep</i>			
203.	24511	<i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
204.	25638	<i>Larus pacificus</i> (Pacific Gull)			
205.	25128	<i>Lerista christinae</i>			
206.	25131	<i>Lerista distinguenda</i>			
207.	25133	<i>Lerista elegans</i>			
208.	25148	<i>Lerista lineopunctulata</i>			
209.	25165	<i>Lerista praepedita</i>			
210.		<i>Lethrinus genivittatus</i>			
211.	25005	<i>Lialis burtonis</i>			
212.	25661	<i>Lichmera indistincta</i> (Brown Honeyeater)			
213.	24582	<i>Lichmera indistincta</i> subsp. <i>indistincta</i> (Brown Honeyeater)			
214.	25415	<i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
215.	30932	<i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
216.	25378	<i>Litoria adelaidensis</i> (Slender Tree Frog)			
217.	25388	<i>Litoria moorei</i> (Motorbike Frog)			
218.		<i>Lycosa godeffroyi</i>			
219.	24690	<i>Macronectes giganteus</i> (Southern Giant Petrel)		IA	
220.	24132	<i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
221.	24326	<i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
222.	25651	<i>Malurus lamberti</i> (Variegated Fairy-wren)			
223.	24544	<i>Malurus lamberti</i> subsp. <i>assimilis</i> (Variegated Fairy-wren)			
224.	25652	<i>Malurus leucopterus</i> (White-winged Fairy-wren)			
225.	24549	<i>Malurus leucopterus</i> subsp. <i>leuconotus</i> (White-winged Fairy-wren)			
226.	25654	<i>Malurus splendens</i> (Splendid Fairy-wren)			
227.	24583	<i>Manorina flavigula</i> (Yellow-throated Miner)			
228.	25758	<i>Megalurus gramineus</i> (Little Grassbird)			
229.	24838	<i>Megalurus gramineus</i> subsp. <i>gramineus</i> (Little Grassbird)			
230.	24051	<i>Megaptera novaeangliae</i> (Humpback Whale)		S	
231.	25184	<i>Menetia greyii</i>			
232.	24598	<i>Merops ornatus</i> (Rainbow Bee-eater)			
233.	24076	<i>Mesoplodon bowdoini</i> (Andrew's Beaked Whale)			
234.		<i>Meuschenia freycineti</i>			
235.		<i>Microcarbo melanoleucos</i>			
236.		<i>Missulena granulosa</i>			
237.		<i>Missulena occatoria</i>			
238.	25494	<i>Morelia spilota</i> (Carpet Python)			
239.	25240	<i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
240.	25191	<i>Morethia lineocellata</i>			
241.	25192	<i>Morethia obscura</i>			
242.	48008	<i>Morus serrator</i> (Australasian Gannet)			
243.	24223	<i>Mus musculus</i> (House Mouse)	Y		
244.	24042	<i>Mustela putorius</i> (European Polecat, Ferret)	Y		
245.		<i>Mustelus antarcticus</i>			
246.	25420	<i>Myobatrachus gouldii</i> (Turtle Frog)			
247.		<i>Neatypus obliquus</i>			
248.	25249	<i>Neelaps calonotos</i> (Black-striped Snake, black-striped burrowing snake)		P3	
249.		<i>Nelusetta ayraudi</i>			
250.		<i>Neopataecus waterhousii</i>			
251.	24738	<i>Neophema elegans</i> (Elegant Parrot)			
252.	24210	<i>Neophoca cinerea</i> (Australian Sea-lion)		T	
253.		<i>Neosebastes bougainvillii</i>			
254.		<i>Neosebastes nigropunctatus</i>			
255.		<i>Neosebastes pandus</i>			
256.	48022	<i>Notamacropus irma</i> (Western Brush Wallaby)		P4	
257.	25252	<i>Notechis scutatus</i> (Tiger Snake)			
258.	25564	<i>Nycticorax caledonicus</i> (Rufous Night Heron)			
259.		<i>Occiperipatoides gilesii</i>			
260.	24407	<i>Ocyphaps lophotes</i> (Crested Pigeon)			

	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
261.	41347	<i>Onychoprion anaethetus</i> (Bridled Tern)		IA	
262.		<i>Orectolobus ornatus</i>			
263.	24085	<i>Oryctolagus cuniculus</i> (Rabbit)	Y		
264.		<i>Oxidis gracilis</i>			
265.	24328	<i>Oxyura australis</i> (Blue-billed Duck)		P4	
266.	25680	<i>Pachycephala rufiventris</i> (Rufous Whistler)			
267.	24692	<i>Pachyptila belcheri</i> (Slender-billed Prion)			
268.	24693	<i>Pachyptila desolata</i> (Antarctic Prion)			
269.	24696	<i>Pachyptila turtur</i> (Fairy Prion)			
270.	48591	<i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
271.		<i>Parablennius postocolumaculatus</i>			
272.		<i>Paraplesiops meleagris</i>			
273.		<i>Parascyllium variolatum</i>			
274.	25253	<i>Parasuta gouldii</i>			
275.	25681	<i>Pardalotus punctatus</i> (Spotted Pardalote)			
276.	25682	<i>Pardalotus striatus</i> (Striated Pardalote)			
277.	24630	<i>Pardalotus striatus</i> subsp. <i>westraliensis</i> (Striated Pardalote)			
278.		<i>Parupeneus spilurus</i>			
279.	24642	<i>Passer montanus</i> (Eurasian Tree Sparrow)	Y		
280.	24648	<i>Pelecanus conspicillatus</i> (Australian Pelican)			
281.		<i>Pempheris klunzingeri</i>			
282.		<i>Pentapodus vitta</i>			
283.	48060	<i>Petrochelidon ariel</i> (Fairy Martin)			
284.	48061	<i>Petrochelidon nigricans</i> (Tree Martin)			
285.	48066	<i>Petroica boodang</i> (Scarlet Robin)			
286.	25697	<i>Phalacrocorax carbo</i> (Great Cormorant)			
287.	25698	<i>Phalacrocorax melanoleucos</i> (Little Pied Cormorant)			
288.	24666	<i>Phalacrocorax melanoleucos</i> subsp. <i>melanoleucos</i> (Little Pied Cormorant)			
289.	24667	<i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
290.	25699	<i>Phalacrocorax varius</i> (Pied Cormorant)			
291.	24409	<i>Phaps chalcoptera</i> (Common Bronzewing)			
292.	25587	<i>Phaps elegans</i> (Brush Bronzewing)			
293.		<i>Pholcus phalangioides</i>			
294.	34039	<i>Phycodurus eques</i> (Leafy Sea Dragon)		P2	
295.	48071	<i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
296.	24596	<i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
297.		<i>Phyllopteryx taeniolatus</i>			
298.		<i>Pinkfloydia harveii</i>			
299.		<i>Piona murleyi</i>			
300.	24841	<i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
301.		<i>Platycephalus longispinis</i>			
302.	25721	<i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
303.		<i>Plectorhinchus flavomaculatus</i>			
304.	25007	<i>Pletholax gracilis</i> subsp. <i>gracilis</i> (Keeled Legless Lizard)			
305.	24383	<i>Pluvialis squatarola</i> (Grey Plover)		IA	
306.	25703	<i>Podargus strigoides</i> (Tawny Frogmouth)			
307.	24679	<i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
308.	25704	<i>Podiceps cristatus</i> (Great Crested Grebe)			
309.	25510	<i>Pogona minor</i> (Dwarf Bearded Dragon)			
310.	24907	<i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
311.	24681	<i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
312.		<i>Pomatomus saltatrix</i>			
313.	25731	<i>Porphyrio porphyrio</i> (Purple Swamphen)			
314.	24767	<i>Porphyrio porphyrio</i> subsp. <i>bellus</i> (Purple Swamphen)			
315.	24771	<i>Porzana tabuensis</i> (Spotless Crane)			
316.		<i>Prionosternum scutatum</i>			
317.		<i>Protochelifer cavernarum</i>			
318.		<i>Pseudocaranx dentex</i>			
319.		<i>Pseudogobius olorum</i>			
320.	25511	<i>Pseudonaja affinis</i> (Dugite)			
321.	25259	<i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
322.	24702	<i>Pterodroma brevirostris</i> (Kerguelen Petrel)			
323.		<i>Purpureicephalus spurius</i>			
324.	24243	<i>Rattus fuscipes</i> (Western Bush Rat)			
325.	24245	<i>Rattus rattus</i> (Black Rat)	Y		
326.	24776	<i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
327.	48096	<i>Rhipidura albiscapa</i> (Grey Fantail)			
328.	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
329.	24454	<i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i> (Willie Wagtail)			
330.		<i>Schuettea woodwardi</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
331.	<i>Scolopendra laeta</i>			
332.	<i>Scorpaena sumptuosa</i>			
333.	25534 <i>Sericornis frontalis</i> (White-browed Scrubwren)			
334.	24279 <i>Sericornis frontalis</i> subsp. <i>maculatus</i> (White-browed Scrubwren)			
335.	<i>Seriola hippos</i>			
336.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
337.	30948 <i>Smicromis brevirostris</i> (Weebill)			
338.	24108 <i>Sminthopsis crassicaudata</i> (Fat-tailed Dunnart)			
339.	24111 <i>Sminthopsis gilberti</i> (Gilbert's Dunnart)			
340.	24522 <i>Sterna bergii</i> (Crested Tern)			
341.	24524 <i>Sterna dougallii</i> subsp. <i>gracilis</i> (Roseate Tern)		IA	
342.	25589 <i>Streptopelia chinensis</i> (Spotted Turtle-Dove)	Y		
343.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
344.	25518 <i>Strophurus spinigerus</i>			
345.	24942 <i>Strophurus spinigerus</i> subsp. <i>spinigerus</i>			
346.	<i>Stylopallene tubirostris</i>			
347.	33992 <i>Synemon gratiosa</i> (Graceful Sunmoth)		P4	
348.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
349.	24682 <i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
350.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
351.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
352.	<i>Tamopsis perthensis</i>			
353.	<i>Taphiassa robertsi</i>			
354.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
355.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
356.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
357.	25203 <i>Tiliqua occipitalis</i> (Western Bluetongue)			
358.	25519 <i>Tiliqua rugosa</i>			
359.	25204 <i>Tiliqua rugosa</i> subsp. <i>aspera</i>			
360.	25207 <i>Tiliqua rugosa</i> subsp. <i>rugosa</i>			
361.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
362.	<i>Torquigener vicinus</i>			
363.	<i>Trachinotus coppingeri</i>			
364.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
365.	25723 <i>Trichoglossus haematodus</i> (Rainbow Lorikeet)			
366.	24803 <i>Tringa brevipes</i> (Grey-tailed Tattler)		P4	
367.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
368.	24851 <i>Turnix velox</i> (Little Button-quail)			
369.	24069 <i>Tursiops truncatus</i> (Bottlenose Dolphin)			
370.	24855 <i>Tyto novaehollandiae</i> subsp. <i>novaehollandiae</i> (Masked Owl (southwest))		P3	
371.	<i>Upeneichthys lineatus</i>			
372.	<i>Urodacus novaehollandiae</i>			
373.	25577 <i>Vanellus miles</i> (Masked Lapwing)			
374.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
375.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
376.	<i>Venator immansueta</i>			
377.	<i>Venator koyuga</i>			
378.	24206 <i>Vespadelus regulus</i> (Southern Forest Bat)			
379.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
380.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	
381.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

#### Conservation Codes

T - Rare or likely to become extinct  
X - Presumed extinct  
IA - Protected under international agreement  
S - Other specially protected fauna  
1 - Priority 1  
2 - Priority 2  
3 - Priority 3  
4 - Priority 4  
5 - Priority 5

<sup>1</sup> For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



# 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.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/03/19 16:38:52

[Summary](#)

[Details](#)

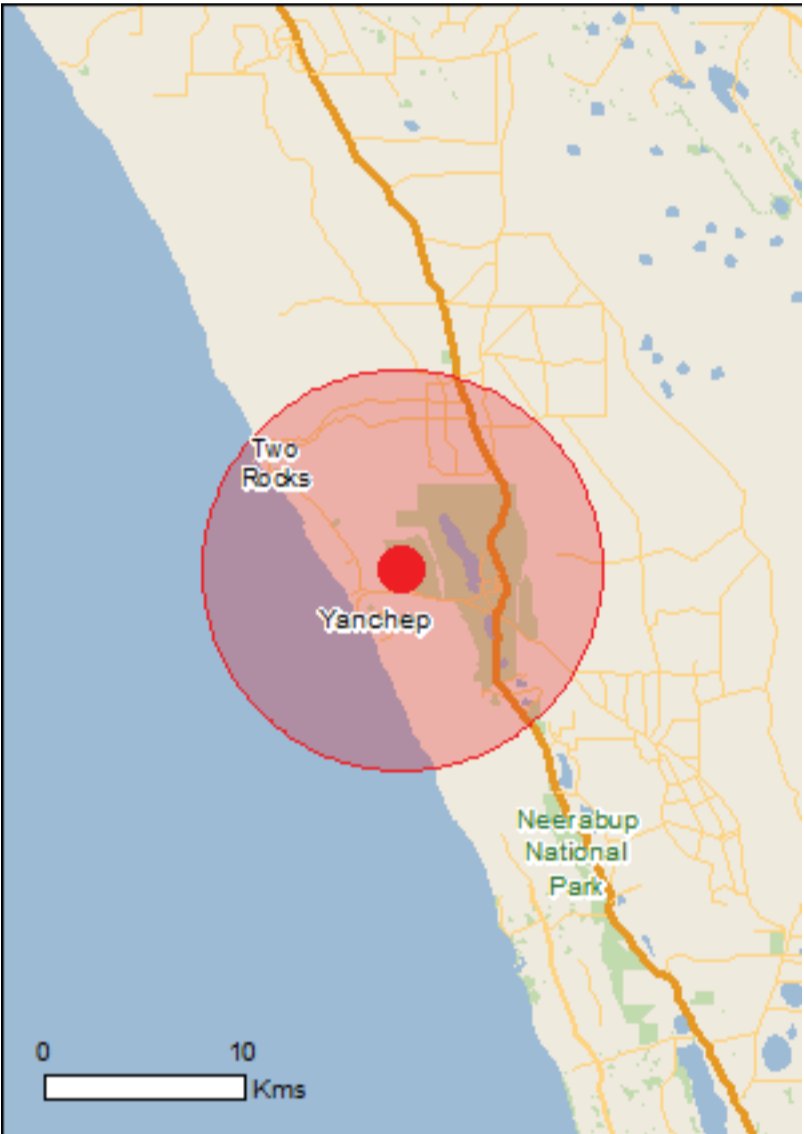
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 10.0Km](#)



# 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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	1
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	47
<a href="#">Listed Migratory Species:</a>	43

## 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. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

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.

<a href="#">Commonwealth Land:</a>	1
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	71
<a href="#">Whales and Other Cetaceans:</a>	12
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	1

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	1
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	34
<a href="#">Nationally Important Wetlands:</a>	1
<a href="#">Key Ecological Features (Marine)</a>	2

# Details

## Matters of National Environmental Significance

Commonwealth Marine Area

[ Resource Information ]

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

Name

EEZ and Territorial Sea

Marine Regions

[ Resource Information ]

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name

[South-west](#)

Listed Threatened Ecological Communities

[ Resource Information ]

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.

Name	Status	Type of Presence
<a href="#">Aquatic Root Mat Community in Caves of the Swan Coastal Plain</a>	Endangered	Community known to occur within area
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Sedgeland in Holocene dune swales of the southern Swan Coastal Plain</a>	Endangered	Community known to occur within area

Listed Threatened Species

[ Resource Information ]

Name	Status	Type of Presence
Birds		
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Calyptorhynchus latirostris</a> Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica baueri</a> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Phoebastria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#">Thalassarche cauta cauta</a> Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Thalassarche cauta steadi</a> White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Mammals		
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat known to occur within area
Plants		
<a href="#">Andersonia gracilis</a> Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
<a href="#">Anigozanthos viridis subsp. terraspectans</a> Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diuris micrantha</a> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diuris purdiei</a> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
<a href="#">Drakaea elastica</a> Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eleocharis keigheryi</a> Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat may occur within area
<a href="#">Eucalyptus argutifolia</a> Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Lepidosperma rostratum</a> Beaked Lepidosperma [14152]	Endangered	Species or species habitat likely to occur within area
Reptiles		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known

Name	Status	Type of Presence
to occur within area		
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
<a href="#">Carcharias taurus (west coast population)</a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		
[ <a href="#">Resource Information</a> ]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardenna carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]		Breeding known to occur within area
<a href="#">Phoebetria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species

Name	Threatened	Type of Presence
<a href="#">Sterna dougallii</a> Roseate Tern [817]		habitat may occur within area  Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
<a href="#">Balaena glacialis australis</a> Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Caperea marginata</a> Pygmy Right Whale [39]		Species or species habitat may occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<a href="#">Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
<a href="#">Manta birostris</a> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat likely to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[ <a href="#">Resource Information</a> ]
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The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -

Listed Marine Species	[ <a href="#">Resource Information</a> ]
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\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
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Name	Threatened	Type of Presence
Birds		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat likely to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Breeding known to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Catharacta skua</a> Great Skua [59472]		Species or species habitat may occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Larus novaehollandiae</a> Silver Gull [810]		Breeding known to occur within area
<a href="#">Larus pacificus</a> Pacific Gull [811]		Foraging, feeding or

Name	Threatened	Type of Presence
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		related behaviour may occur within area  Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area
<a href="#">Phoebetria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#">Puffinus assimilis</a> Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Puffinus carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
<a href="#">Sterna anaethetus</a> Bridled Tern [814]		Breeding known to occur within area
<a href="#">Sterna caspia</a> Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#">Thalassarche cauta</a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thinornis rubricollis</a> Hooded Plover [59510]		Species or species habitat may occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
<a href="#">Acentronura australe</a> Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
<a href="#">Campichthys galei</a> Gale's Pipefish [66191]		Species or species habitat may occur within area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus breviceps</a> Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
<a href="#">Hippocampus subelongatus</a> West Australian Seahorse [66722]		Species or species habitat may occur within area
<a href="#">Lissocampus fatiloquus</a> Prophet's Pipefish [66250]		Species or species habitat may occur within area
<a href="#">Maroubra perserrata</a> Sawtooth Pipefish [66252]		Species or species habitat may occur within area
<a href="#">Mitotichthys meraculus</a> Western Crested Pipefish [66259]		Species or species habitat may occur within area
<a href="#">Nannocampus subosseus</a> Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
<a href="#">Phycodurus eques</a> Leafy Seadragon [66267]		Species or species habitat may occur within area
<a href="#">Phyllopteryx taeniolatus</a> Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Pugnaso curtirostris</a> Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
<a href="#">Solegnathus lettiensis</a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#">Stigmatopora argus</a> Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
<a href="#">Stigmatopora nigra</a> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Urocampus carinirostris</a> Hairy Pipefish [66282]		Species or species habitat may occur within area
<a href="#">Vanacampus margaritifer</a> Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area

Mammals

<a href="#">Arctocephalus forsteri</a> Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat known to occur within area

Reptiles

<a href="#">Aipysurus pooleorum</a> Shark Bay Seasnake [66061]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Disteira kingii</a> Spectacled Seasnake [1123]		Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Pelamis platurus</a> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[ Resource Information ]
Name	Status	Type of Presence
Mammals		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within

Name	Status	Type of Presence
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]	Endangered	area  Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]		Species or species habitat likely to occur within area
<a href="#">Caperea marginata</a> Pygmy Right Whale [39]		Species or species habitat may occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]	Endangered	Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]		Breeding known to occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks		[ Resource Information ]
Name	Label	
Two Rocks	Multiple Use Zone (IUCN VI)	

Extra Information

State and Territory Reserves		[ Resource Information ]
Name	State	
Yanchep	WA	

Invasive Species		[ Resource Information ]
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.		

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Plants		
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Nationally Important Wetlands		[ Resource Information ]
Name		State
<a href="#">Loch McNess System</a>		WA

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
<a href="#">Commonwealth marine environment within and</a>	South-west
<a href="#">Western rock lobster</a>	South-west

# 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 and National Heritage properties, Wetlands of International and National 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.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

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.

## Coordinates

-31.53897 115.64751

# Acknowledgements

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

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [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, Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

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