

# Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning  
Vale

Project No: EP23-053(02)

**Prepared for Department of Finance  
October 2024**



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## Document Control

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# Basic Fauna and Targeted Black Cockatoo Assessment

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## Executive Summary

The Department of Finance engaged Emerge Associates to conduct a basic fauna and a targeted black cockatoo assessment within lot 500 and part lot 501 Warton Road in Canning Vale (referred to herein as the 'site').

As part of the assessment a desktop review of relevant background information was completed and field surveys were undertaken on 12 July 2023, 6 August and 15 August 2024. During the field survey opportunistic sightings of fauna were recorded and fauna habitat was assessed with particular focus on its suitability for threatened, specially protected and priority fauna. A targeted assessment was also undertaken of habitat for threatened black cockatoo species.

Outcomes of the basic fauna assessment include the following:

- The site consists of six broad habitat types:
  - **Banksia woodland:** open woodland of *Banksia* spp. over native shrubland over native forbland on sandy soils (42.02 ha)
  - **Eucalypt forest:** open forest of *Corymbia calophylla* and *Eucalyptus gomphocephala* over *Adenanthos cygnorum* over low native shrubland on sandy soils (1.67 ha)
  - **Tall shrubland:** Scattered *Melaleuca preissiana* over tall shrubland of *Adenanthos cygnorum*, *Calytrix fraseri* or *Kunzea glabrescens* over native low shrubs, forbs and herbs (5.76 ha)
  - **Lake:** Artificial lake adjacent to detention centre carpark (0.21 ha)
  - **Scattered trees:** Scattered native and non-native trees over cleared ground (1.89 ha)
  - **Bare ground and grassland:** Highly disturbed cleared areas (14.94 ha).
- A total of 32 native fauna species were recorded within the site.
- Two threatened and one priority species were recorded during the survey:
  - *Zanda latirostris* (Carnaby's black cockatoo) listed as endangered (EN) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Biodiversity Conservations Act 2016* (BC Act)
  - *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) listed as vulnerable (VU) under the EPBC Act and BC Act
  - *Isoodon fusciventer* (quenda) listed as priority four(P4) in Western Australia (WA).
- Despite not being recording during the survey, the following species were considered to have a high or moderate likelihood of occurring within the site:
  - *Zanda baudinii* (Baudin's black cockatoo) listed as EN under the EPBC Act and BC Act.
  - *Apus pacificus* (pacific swift) listed as migratory (MI) under the EPBC Act and BC Act.
  - *Falco peregrinus* (peregrine falcon) listed as other specially protected (OS) under the BC Act.
  - *Neelaps calanotus* (black-striped snake) listed as priority three (P3) in WA.
  - *Lerista lineata* (Perth slider) listed as P3 in WA.
  - *Idiosoma sigillatum* (Swan Coastal Plain shield-backed trapdoor spider) listed as P3 in WA.
  - *Macropus irma* (western brush wallaby) listed as P4 in WA.
  - *Synemon gratiosa* (graceful sun-moth) listed as P4 in WA.

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Outcomes of the targeted black cockatoo survey include the following:

- Carnaby's black cockatoo and forest red-tailed black cockatoo were both recorded in the site during the field survey and Baudin's black cockatoo has a moderate likelihood of occurrence.
- The site occurs within the modelled distribution of Carnaby's black cockatoo, forest red-tailed black cockatoo and northwest most extent of Baudin's black cockatoo.
- Carnaby's and Baudin's black cockatoo would not be expected to breed in the site as it is occurs outside of their modelled breeding area. However, as FRTBC do not have defined breeding areas the site has potential to support breeding of this species.
- The site contains black cockatoo breeding habitat, with 21 habitat trees (potential nesting trees) present. None contain hollows suitable for use by black cockatoos for nesting.
- No roosts or evidence of roosting by any species of black cockatoo was recorded within the site during the field survey.
- A total of 44.92 ha of foraging habitat for Carnaby's black cockatoo was mapped within the site. This comprises 44.43 ha of native foraging plants of which 96.4 % are considered primary and 3.6 % considered secondary. Non-native foraging habitat covers 0.49 ha of which 22.45 % is considered primary and 77.55 % is considered secondary.
- A total of 42.4 ha of foraging habitat for Baudin's black cockatoo was mapped within the site. This comprises 42.23 ha of native foraging plants of which 99.76 % are considered primary and 0.24 % considered secondary. Non-native foraging habitat covers 0.17 ha of which all is considered secondary.
- A total of 2.7 ha of foraging habitat for forest red-tailed black cockatoo was mapped within the site. This comprises 2.2 ha of native foraging plants of which 33.18 % are considered primary and 66.82 % considered secondary. Non-native foraging habitat covers 0.5 ha of which all is considered secondary.



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### Appendix C

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## **Appendix D**

Black cockatoo foraging plants species list

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Species list

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Habitat assessment sample data

## **Appendix H**

Black cockatoo habitat tree data

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## Abbreviation Tables

*Table A1: Abbreviations – Organisations*

Organisations	
EPA	Environmental Protection Authority
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPaW	Department of Parks and Wildlife (now DBCA)
DAWE	Department of Agriculture, Water and the Environment (now DCCEEW)
WA Museum	Western Australian Museum

*Table A2: Abbreviations – Conservation codes*

General terms	
CD	Conservation dependent
CR	Critically endangered
EN	Endangered
MA	Marine
MI	Migratory
P1	Priority 1
P2	Priority 2
P3	Priority 3
P4	Priority 4
OS	Other specially protected
VU	Vulnerable

*Table A3: Abbreviations – Legislation*

Legislation	
BAM Act	<i>Biosecurity and Agriculture Management Act 2007</i>
EBPC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
BC Act	<i>Biodiversity Conservation Act 2016</i>



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Table A4: Abbreviations – Units of measurement

Units of measurement	
DBH	Diameter at breast height
cm	Centimetre
ha	Hectare
km	Kilometre
m	Metre
m AHD	m in relation to the Australian height datum
mm	Millimetre

Table A5: Abbreviations - General

Units of measurement	
IBRA	Interim Biogeographic Regionalisation for Australia
UFI	Unique Feature Identifier

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## 1 Introduction

### 1.1 Purpose

Emerge Associates (Emerge) were engaged by Department of Finance to conduct a basic fauna and targeted black cockatoo assessment within lot 500 and part lot 501 Warton Road in Canning Vale as shown **Figure 1** (referred to herein as the 'site').

Fauna assessments are required to characterise fauna values and, in particular, confirm the presence or absence of values relevant to environmental approvals process, such as, 'fauna habitats', 'threatened', 'specially protected' or 'priority' fauna.

### 1.2 Legislation and policy

Fauna may be listed as threatened or specially protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the State *Biodiversity Conservation Act 2016* (BC Act). Threatened fauna are classified as either 'critically endangered' (CR), 'endangered' (EN) or 'vulnerable' (VU). Extinct species are classified as 'extinct' (EX) or 'extinct in the wild' (EW). Specially protected species are classified as 'migratory species' (MI), 'species of special conservation interest' (CD) or 'other specially protected' (OS). Commonwealth and/or State ministerial approval is required to impact threatened and specially protected fauna<sup>1</sup>.

Native fauna that are not listed as threatened or specially protected, but are otherwise rare, under threat or poorly known, may be added to a Department of Biodiversity Conservation and Attractions (DBCA) priority list. Priority fauna are classified as either 'priority 1' (P1), 'priority 2' (P2), 'priority 3' (P3) or 'priority 4' (P4). Priority listing does not afford direct statutory protection. However, the classification of priority species is taken into account during State and Local government approval processes.

Introduced fauna that are regarded as having negative environmental or economic impacts may be listed as a 'declared pest' pursuant to the *State Biosecurity and Agriculture Management Act 2007* (BAM Act). Management of declared pests may be required during government approval processes.

Further information on legislation and policy relevant to fauna assessments is provided in **Appendix A**.

### 1.3 Scope of work

The scope of work was specifically to undertake a terrestrial vertebrate fauna assessment to the standard required of a 'basic' fauna survey and a 'targeted' black cockatoo survey with reference to the Environmental Protection Authority's (EPA's) technical guidance (EPA 2020) and the *Environment Protection and Biodiversity Conservation Act* black cockatoo referral guidelines (DAWE 2022).

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

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<sup>1</sup> Currently there are no threatened species listed as extinct in the wild in Western Australia.

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- Desktop study to provide contextual information and determine the likelihood of occurrence of threatened, specially protected and priority fauna.
- Field survey(s) to record fauna and fauna habitats, with a particular focus on habitat for threatened species of black cockatoo.
- Analysis and mapping of contextual information, fauna habitat and black cockatoo breeding, roosting and foraging (if present).
- Documentation of the desktop study, methods, results, discussion and conclusions.

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## 2 Desktop Study

### 2.1 Site context

#### 2.1.1 Location and extent

The site is located in the City of Gosnells in the Perth metropolitan area of Western Australia and extends over 80.93 hectares (ha) as shown in **Figure 1**. The boundary of the site comprises portions of Nicholson Road and Warton Road, residential housing, and the Hakea Prison and Melaleuca Women's Prison facilities.

#### 2.1.2 Climate

The South West region of Western Australia experiences a Mediterranean climate of hot dry summers and cool wet winters (BoM 2024). Recent rainfall at the closest weather station to the site has been generally consistent with long term averages, aside from slightly below average rainfall in May, as indicated by **Plate 1** (BoM 2024). Targeted surveys should be undertaken during the season that is most suitable for detection and identification of the targeted species (EPA 2020).

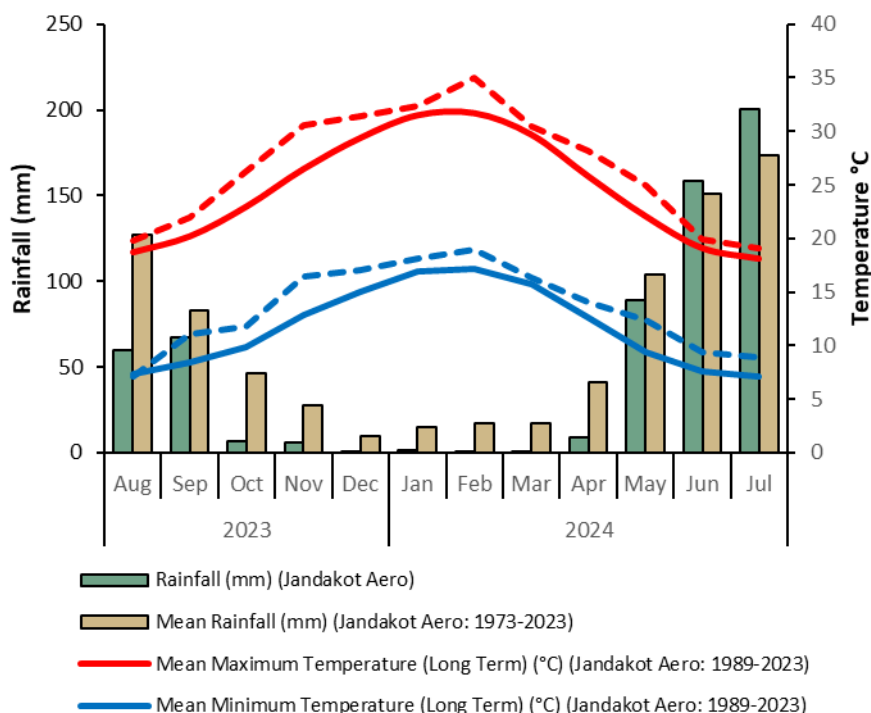


Plate 1: Recent rainfall and long-term mean temperature and rainfall at Jandakot Aero weather station

#### 2.1.3 Geomorphology and soils

Landform and soils influence fauna habitat and species at regional and local scales. The site occurs on the Swan Coastal Plain, which is the geomorphic unit that characterises much of the Perth metropolitan area. The Swan Coastal Plain is approximately 500 km long and 20 to 30 km wide and is roughly bound by the Indian Ocean to the west and the Darling Scarp to the east. Broadly the Swan

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Coastal Plain consists of two sedimentary belts of different origin. Its eastern side comprises the Pinjarra Plain which formed from the deposition of alluvial material washed down from the Darling Scarp, while its western side comprises three dune systems that run roughly parallel to the Indian Ocean coastline (Seddon 2004). These dune systems, referred to as Quindalup, Spearwood and Bassendean associations, represent a succession of coastal deposition that has occurred since the late Quaternary period (approximately two million years ago) (Kendrick *et al.* 1991) and, as a result, they contain soils at different stages of leaching and formation.

Examination of physiographic region mapping by (Gozzard 2011) places the site in the Bassendean Dunes which was later confirmed during the field survey. The Bassendean Dunes typically comprise sand plains with low dunes and occasional swamps, iron or humus podzols and areas of complex steep dunes (Churchward and McArthur 1980). The physiographic regions mapped within the site are shown in **Figure 2**.

The site is not known to contain any restricted landforms or unique geological features.

### 2.1.4 Topography

The elevation of the site ranges from 26 m in relation to the Australian height datum (mAHD) near the southeastern border to 45 mAHD in the northwest (DoW 2008) (**Figure 2**).

### 2.1.5 Hydrology and wetlands

Wetlands are areas of seasonally, intermittently or permanently waterlogged land such as poorly drained soils, ponds, billabongs, lakes, swamps, tidal flats, estuaries, rivers and their tributaries (Wetlands Advisory Committee 1977). Many wetlands provide important fauna habitat and support high levels of fauna biodiversity and endemism.

Wetlands of national or international significance may be afforded special protection under Commonwealth or international agreements. Review of the *Ramsar List of Wetlands of International Importance* (DBCA 2017) and *A Directory of Important Wetlands in Australia – Western Australia* (DBCA 2018) indicates that no Ramsar or listed 'important wetlands' are located within or near the site.

Examination of the Department of Water and Environmental Regulation (DWER) hydrography linear dataset (DWER 2018) shows one 'area subject to inundation' occurs within the site.

The *Geomorphic Wetlands of the Swan Coastal Plain* dataset maps geomorphic wetland features and classifies them based on their landform shape and water permanence (DBCA 2023). Each wetland feature is assigned to one of three management categories: 'conservation', 'resource enhancement' and 'multiple use'. A review of the *Geomorphic Wetlands, Swan Coastal Plain* dataset indicated that two basins (UFI 7069 and UFI 7079) occur within the site (DBCA 2023).

An artificial lake not recorded in either dataset is located adjacent to the detention center car park in the southern portion of the site.



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### 2.1.6 Regional vegetation

Vegetation types and resulting fauna habitats strongly influence the diversity and composition of fauna taxa present within an area. Native vegetation is described and mapped at different scales in order to illustrate patterns in its distribution. At a continental scale the *Interim Biogeographic Regionalisation of Australia* (IBRA) divides the Swan Coastal Plain into two floristic subregions (Environment Australia 2000).

The site is contained within the 'SWA02' or Perth subregion, which is characterised as mainly containing *Banksia* low woodland on leached sands with *Melaleuca* swamps where ill-drained; and woodland of *Eucalyptus gomphocephala* (tuart), *E. marginata* (jarrah) and *Corymbia calophylla* (marri) on less leached soils (Beard 1990). This subregion is recognised as a biodiversity hotspot and contains a wide variety of endemic fauna species.

Variations in native vegetation can be further classified based on regional vegetation mapping. Heddle *et al.* (1980) mapping shows the site as comprising the 'Southern river complex', which is described as vegetation ranging from woodland of marri – jarrah and *Banksia* spp. with fringing woodlands of *Eucalyptus rudis* (flooded gum) – *Melaleuca rhaphiophylla* along creek beds.

### 2.1.7 Historic land use

Review of historical images available from 1953 onwards shows that the majority of the site has supported native vegetation since that time (WALIA 2023). A large patch of vegetation was cleared for Hakea Prison and Melaleuca Women's Prison between 1970-1974. A small area of clearing occurred in the eastern portion between 1987 and 1989 and has mostly remained unvegetated. A fire occurred across the site and adjacent vegetation between 1994 and 1995.

Another large patch of vegetation was cleared for the Banksia Hill Juvenile Detention Centre between 1995 and 2000. An informal track within the eastern portion that was previously cleared between 1987 and 1989 was bituminised between 2008 and 2010, whilst minor clearing occurred in the eastern portion for the construction of informal tracks in 2015.

Aerial imagery within the site is obscured between 2003 and 2008. No changes in vegetation within the site are discernible during this period.

### 2.1.8 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.

Almost the entire site is encompassed by *Bush Forever* site 472, except for vegetation surrounding the Banksia Hill Juvenile Detention Centre carpark and a small section northeast of Hakea Prison. The location of the part of *Bush Forever* Site 472 associated with the site is shown in **Figure 3**.

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### 2.1.9 Ecological linkages

Ecological linkages are linear landscape elements that allow the movement of fauna, flora and genetic material between areas of remnant habitat. This exchange of genetic material between vegetation remnants improves 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 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 Australian Local Government Association (WALGA), identified and mapped regional ecological linkages within the Perth Metropolitan Region (WALGA and PBP 2004).

Two ecological linkages (No. 45 and 48) occur through the site, encompassing most of the native vegetation within the site. The vegetation associated with ecological corridor no. 48 runs east to west through the site and connects to ecological linkage no. 45 100 m in the west of the site connecting north. Review of aerial imagery indicates that much of the vegetation within the site is connected to extensive areas of native vegetation within the local area.

### 2.1.10 Threatened, specially protected and priority fauna

The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) has compiled various datasets relating to 'matters of national environmental significance' (MNES)(DCCEEW 2024b). The *Protected Matters Search Tool* provides general guidance on threatened and specially protected fauna listed under the EPBC Act that may occur within a location based on validated records and less reliable unvalidated habitat distribution modelling (DCCEEW 2024b).

DBCA's *Threatened and Priority fauna database* as well as the spatial portal of the Atlas of Living Australia (ALA) contain records of threatened specially protected and priority fauna in Western Australia (ALA 2024; DBCA 2024b). Searches of these databases provide point data for threatened, specially protected and priority fauna within a location, comprising validated and historical unvalidated records.

A search was conducted for fauna species that have been recorded within a 10 km radius of the site using the *Protected Matters Search Tool* (DCCEEW 2024b), *Dandjoo* (DBCA 2024a), DBCA's conservation significant fauna database (reference no. #7782), Atlas of Living Australia (ALA 2024) and literature references.

A total of 620 fauna species were identified from database searches as occurring or potentially occurring within 10 km of the site<sup>2</sup> as listed in **Appendix B**.

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<sup>2</sup> Includes native and non-native species

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### 2.1.11 Pest fauna

The term 'pest fauna' can refer to any animal that requires some form of action to reduce its effect on the economy, the environment, human health and amenity. Pest fauna species are generally not native but some Australian or Western Australian fauna may also be considered pests.

A particularly invasive or detrimental pest species may be listed as a 'declared pest' pursuant to Western Australia's *Biosecurity and Agriculture Management Act 2007* (BAM Act), indicating that it warrants special management to limit its spread. Current pest status and control categories for Western Australia are provided in the *Western Australian Organism List* (DPIRD 2022). Further information on categories of declared pests is provided in **Appendix A**.

### 2.1.12 Previous surveys

No previous fauna surveys are known to have been undertaken over the site.

## 2.2 Likelihood of occurrence

The distribution and habitat preferences of the threatened and priority fauna species listed in **Appendix D** was reviewed against site context information described in **Section 2.1**. Likelihood of occurrence of threatened, specially protected and priority fauna species within the site was classified as 'high', 'moderate', 'low', 'negligible' or 'nil' as outlined in **Table 1**.

Table 1: Likelihood of occurrence assessment categories and definitions

		Reliable record <sup>1</sup>		Unreliable record <sup>2</sup>
		Access to site not impeded	Access to site impeded	
Habitat	Suitable	High	Low	Nil
	Potentially suitable	Moderate		
	Unsuitable	Negligible		

<sup>1</sup>Reliable record = DBCA or validated ALA record from the last ~20 years.

<sup>2</sup>Unreliable record = >20 years old or based on PMST range prediction.

Three threatened, two specially protected, six priority and one marine species were classified as having a 'high' or 'moderate' likelihood of occurrence. The legislative or policy status and habitat preferences these species is shown in **Table 2**.

The remainder of the conservation significant fauna species identified in the desktop assessment (71 species) were considered as having a 'low', 'negligible' or 'nil' likelihood of occurrence. Refer to **Table 2** and **Appendix C** for detail on individual species likelihood of occurrence.

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Table 2: Summary of conservation significant fauna species with potential to occur in the site

Species name	Common name	Status		Habitat description	Likelihood
		WA	EPBC Act		
Birds					
<i>Apus pacificus</i>	Pacific swift	MI	MI	Aerial, migratory species that is most often seen over inland plains and sometimes above open areas, foothills or in coastal areas. Sometimes occurs over settled areas, including towns, urban areas and cities	Moderate
<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cockatoo	VU	VU	<i>Eucalypt</i> and <i>Corymbia</i> forests, often in hilly interior. More recently also observed in more open agricultural and suburban areas including Perth metropolitan area. Attracted to seeding <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> , introduced <i>Melia azedarach</i> and <i>Eucalyptus</i> spp. trees	High
<i>Falco peregrinus</i>	Peregrine falcon	OS	-	Mainly found around cliffs along coasts, rivers, ranges and around wooded watercourses and lakes	Moderate
<i>Merops ornatus</i>	Rainbow bee-eater	-	MA	Open woodlands with sandy, loamy soil; sandridges, sandpits, riverbanks, road cuttings, beaches, dunes, cliffs, mangroves, rainforest, woodlands and golf courses.	Moderate
<i>Zanda baudinii</i>	Baudin's black cockatoo	EN	EN	Mainly eucalypt forests. Attracted to seeding <i>Corymbia calophylla</i> , <i>Banksia</i> spp., <i>Hakea</i> spp., and to fruiting apples and pears	Moderate
<i>Zanda latirostris</i>	Carnaby's black 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> spp., <i>Dryandra</i> spp., <i>Hakea</i> spp., <i>Eucalyptus</i> spp., <i>Corymbia calophylla</i> , <i>Grevillea</i> spp., and <i>Allocasuarina</i> spp.	High
Invertebrates					
<i>Idiosoma sigillatum</i>	Swan Coastal Plain shield-backed trapdoor spider	P3	-	Widely distributed in sandy areas on the Swan Coastal Plain and on Rottnest Island	High
<i>Synemon gratiosa</i>	Graceful sun-moth	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.	High
Mammals					
<i>Isodon fusciventer</i>	Quenda	P4	-	Dense scrubby, often swampy, vegetation with dense cover up to one metre high	High
<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.	High

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Table 2: Summary of conservation significant fauna species with potential to occur in the site (continued)

Species name	Common name	Status		Habitat description	Likelihood
		WA	EPBC Act		
Reptiles					
<i>Lerista lineata</i>	Perth slider	P3	-	Sandy coastal heath and low scrubland. Banksia spp. woodland, <i>Eucalyptus gomphocephala</i> open woodland over deep sands, and coastal dunes immediately adjacent to the beach	High
<i>Neelaps calonotos</i>	Black-striped snake	P3	-	Coastal and near-coastal dunes, sandplains supporting heathlands and <i>Banksia</i> spp. woodlands	High

Note: Marine species listed species under the EPBC Act have been included due to the site's location on government land. Marine species under the EPBC Act are not conservation significant unless otherwise stated.

## 2.3 Black cockatoos

Three threatened species of black cockatoo occur in the south-west of WA (referred to herein collectively as 'black cockatoos'):

- *Zanda<sup>3</sup> latirostris* (Carnaby's black cockatoo) which is listed as 'endangered' under the EPBC Act and the BC Act.
- *Zanda<sup>3</sup> baudinii* (Baudin's black cockatoo) which is listed as 'endangered' under the EPBC Act and the BC Act.
- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) which is listed as 'vulnerable' under the EPBC Act and the BC Act.

Black cockatoo habitat is conventionally separated into breeding, roosting and foraging categories. '**Breeding habitat**' refers to 'habitat trees' which consist of native tree species that either contain nesting hollows or have a large enough diameter at breast height<sup>4</sup> (DBH) to develop a nesting hollow overtime (DAWE 2022). Black cockatoos typically utilise breeding habitat within their defined breeding season. Baudin's black cockatoo breed from August to March, Carnaby's black cockatoo breed from July to December and forest red-tailed black cockatoo breed throughout the year, with peaks in April – June and August – October (DAWE 2022). '**Roosting habitat**' consists of a stand of tall trees (>8 m) within 6 km of water and food resources and 12 km of additional foraging resources where black cockatoos rest overnight (Shah 2006; Glossop *et al.* 2011; Le Roux 2017; DAWE 2022). '**Foraging habitat**' is vegetation that black cockatoos are known to feed on, which varies between black cockatoo species (Groom 2011; Johnstone *et al.* 2011; DAWE 2022). A full range of foraging plants and their foraging category assigned by Emerge Associates is available in **Appendix D**.

<sup>3</sup> Previously *Calyptorhynchus*

<sup>4</sup> ≥50 cm or ≥30 cm for wandoo or salmon gum



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A review of BC datasets was undertaken as outlined in **Table 3** and shown in **Figure 5**. Further information on black cockatoo habitat is available in **Appendix A**. Counts for all known black cockatoo roosts within 12 km are available in **Appendix E**.

Table 3: Summary of black cockatoo background review

Category	Black cockatoo site context			Source
	Carnaby's	Baudin's	Forest red-tailed	
Site located within species distribution	Yes	Yes	Yes	(DAWE 2022)
Site in known breeding distribution	No	N/A	N/A	(DAWE 2022)
Confirmed or possible breeding hollows within 12 km <sup>~</sup>	20		0	(Glossop <i>et al.</i> 2011; DBCA 2024b)
Site located in important bird area	No	N/A	N/A	(DPaW 2013; BirdLife International 2022)
Known roosts occur within site <sup>^</sup>	0		0	(Birdlife Australia 2024)
Known roosts occur within 12 km of site <sup>^</sup>	42		36	
Potential foraging habitat within site	Yes	Yes	Yes	(Forest Products Commission 2020; Emerge Associates 2021)
Potential foraging habitat in local area (including pine plantations)	Yes	Yes	Yes	

<sup>~</sup>Results from DBCA database search

<sup>^</sup>White-tailed black cockatoo<sup>^</sup> roosts can be Carnaby's black cockatoo and/or Baudin's black cockatoo.

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### 3 Methods

#### 3.1 Field survey

Field surveys were conducted on 12 July 2023, and 6 and 15 August 2024. During the field surveys ecologists from Emerge traversed the site during the day to evaluate the fauna habitat and record the presence of fauna species. Fauna habitat was assessed based on vegetation condition, the overall disturbances to the area and the microhabitat characteristics such as soil type and leaf litter density as well as the presence of logs, rocks, leaf litter and water. An opportunistic fauna list was compiled which included evidence of species presence such as tracks, scats, skeletal remains, foraging evidence and calls.

##### 3.1.1 Targeted black cockatoo

Transects were traversed and the presence of potential black cockatoo breeding, night roosting and foraging habitat was recorded. If observed, the presence of black cockatoos within or near the site was noted. Active searches for evidence of breeding, roosting and foraging activity such as chew marks, branch clippings, droppings, moulted feathers and chewed marri or banksia fruit were conducted.

##### 3.1.1.1 Breeding habitat

All native eucalypts that met the required DBH were recorded. Occasionally, native eucalypts were encountered that met DBH requirements but did not contain a trunk/branch of a sufficient size to support a hollow suitable for use by black cockatoos. For example, the tree may have been less than 3 m tall or had a trunk that forked between 1.3 m and 3 m in height and after the fork no limbs had a diameter of  $\geq 50$  cm or  $\geq 30$  cm for wandoo or salmon gum. These trees were not recorded as habitat trees as the likelihood they would form a suitable hollow was low.

Habitat trees were individually identified and the attributes outlined in **Table 4** were recorded for each tree.

Table 4: Attributes recorded for each habitat tree in the site

Attribute	Description
Image	Trees were individually photographed
GPS location	The location was recorded using a handheld GPS unit
Tree species	Species and common name were identified
Diameter at breast height (DBH) (cm)	DBH was measured at breast height (1.3 m) using a diameter tape
Hollows potentially suitable for breeding by a black cockatoo	Number of hollows potentially suitable for breeding by a black cockatoo recorded (assessed from ground level only)

Each habitat tree was assigned to a category listed in **Table 5** based on current black cockatoo guidelines (DAWE 2022).

Table 5: Habitat tree categories (DAWE 2022)

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Category	Specifications
Known nesting tree	Trees (live or dead but still standing) which contains a hollow where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers).
Suitable nesting tree	Trees with suitable nesting hollows present <sup>^</sup> , although no evidence of use. Note that any species of tree may develop suitable hollows for breeding.
Potential nesting tree	Trees that have a suitable DBH to develop a nest hollow, but do not currently have suitable nesting hollows. Trees suitable to develop a nest hollow in the future are 300-500 mm DBH. Note that many species of eucalypt may develop suitable hollows for breeding.

<sup>^</sup>Hollow determined to be suitable for use as breeding habitat by black cockatoos as listed above in **Section 3.1.1.1**

### 3.1.1.2 Roosting habitat

If present, groups of tall native and non-native trees were assumed to provide roosting habitat. The presence of active or historical roosts in these trees was determined through evidence of roosting activity, such as branch clippings, droppings or moulted feathers.

Tall groups of native and non-native trees in the site within 1000 m of an existing large roost (>150 individuals) or 500 m of an existing small roost (<150 individuals) were assumed to be associated with that roost (Glossop *et al.* 2011).

### 3.1.1.3 Foraging habitat

Foraging habitat was identified by assessing vegetation in the site for plant species known to provide food for black cockatoos (Davies 1966; Saunders 1980; Johnstone and Storr 1998; Johnstone and Kirkby 1999; Groom 2011; Johnstone *et al.* 2011; DAWE 2022).

Foraging habitat was classified as either 'native' or 'non-native' based on the predominant vegetation's naturalised status. It was also classified as either 'primary' or 'secondary' based on black cockatoo foraging preferences. Primary food plants were defined as those with historical and contemporary records of regular consumption by a black cockatoo species. Secondary food plants were defined as plants that black cockatoo species have been recorded consuming occasionally or that, based on their limited extent or agricultural origin, should not be considered a sustaining resource. A list of plant species classified as primary or secondary food plants is provided as **Appendix D**.

Each patch of foraging habitat was assigned a foraging value for each species of black cockatoo likely to occur within the site. As it is not always possible to separate out food plants from non-food plants, mapped foraging habitat may also include vegetation comprising non-food plants. The proportion of non-food plants in mapped foraging habitat was minimised as far as practicable.

Evidence of black cockatoo foraging, such as chewed fruits, was searched for within the site and allocated to a black cockatoo species where possible.

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### 3.2 Data analysis

#### 3.2.1 Fauna identification

The identification of fauna was generally completed in the field. Where this was not possible, photographs and/or notes were recorded and identification was later confirmed through the use of taxonomic keys and field guides.

##### 3.2.1.1 Nomenclature and sources of information

Taxonomy and nomenclature of scientific and common names for mammals, reptiles and amphibians follow the *Western Australian Museum (WAM) Checklist of the Terrestrial Vertebrate Fauna of Western Australia* (WAM 2022). For birds taxonomy and nomenclature of scientific and common names follows the Australian Faunal Directory (AFD) (DCCEEW 2024a). Where common names were not provided by the WAM or the AFD, these have been derived from other sources as noted.

Literature listed in **Appendix A** represent the main publications used to identify fauna species and habitats within the site.

#### 3.2.2 Fauna habitat

Fauna habitats were described according to the dominant flora species and vegetation type present, as determined from observations made during the field survey and information provided in the '*Reconnaissance Flora and Vegetation Assessment*' (Emerge Associates 2024). Significant microhabitat features present in each habitat were also described.

The identified fauna habitats were mapped on aerial photography with the boundaries interpreted from aerial photography, (Emerge Associates 2024) plant communities and notes taken in the field.

#### 3.2.3 Black cockatoo habitat

##### 3.2.3.1 Habitat trees

Habitat trees were classified according to the scheme outlined in **Table 5** and mapped on aerial imagery. A complete summary of the recorded attributes of habitat trees was compiled in a tabular format.

##### 3.2.3.2 Foraging habitat value

Foraging habitat was described according to the dominant flora species or vegetation type present and mapped using boundaries interpreted from aerial photography and notes taken in the field. The foraging value of each patch of foraging habitat was attributed separately for each species of black cockatoo likely to occur in the site. Foraging value was assigned as outlined in **Section 3.1.1.3**.

### 3.3 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

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constraints outlined in the EPA's document *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020) is provided in **Table 6**.

*Table 6: Evaluation of survey methodology against standard constraints outlined in the EPA's Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020)*

Constraint	Degree of limitation	Details
Level of survey	No limitation	A basic survey (desktop study and field survey) in combination with a targeted black cockatoo survey was undertaken. The level of survey and survey effort are considered adequate to assess the fauna and black cockatoo habitat values within the site.
Scope	No limitation	The survey focused on vertebrate fauna and habitat values, with particular focus on black cockatoos and other 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, previous surveys and literature references.
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	No limitation	This fauna and black cockatoo assessment was undertaken by two qualified zoologists with over 3 and 5 years of zoological experience and an ecologist with 1 year of environmental experience in Western Australia. Technical review was undertaken by a senior environmental consultant with over 13 years' experience in environmental science in Western Australia.
Suitability of timing, weather and season	No limitation	Survey timing is not considered to be of great importance for basic fauna assessments but the weather conditions during the survey were ideal for detecting fauna species. The survey was undertaken during the black cockatoo breeding season. During this time many black cockatoo individuals leave the Swan Coastal Plain (SCP) and migrate to breeding areas. As such, the detectability of black cockatoos may have been reduced.
Completeness	No limitation	The desktop assessment, field survey and targeted black cockatoo components of the survey were completed comprehensively.
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.
Influence of disturbance	No limitation	No disturbance was noted that may have affected outcomes of the survey.

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*Table 6: Evaluation of survey methodology against standard constraints outlined in the EPA's Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020)(continued)*

Constraint	Degree of limitation	Details
Adequacy of resources	No limitation	All resources required to perform the survey were available. The guidance currently available from Commonwealth and State agencies on the assessment of black cockatoo habitat is limited and relies heavily on technical experts preparing their own methodology. This assessment applies an internally developed methodology that is considered to provide a systematic and balanced characterisation of black cockatoo habitat.
Compliance with EPA (2020) guidance	Minor limitation	The EPA guidance requires that a full list of all fauna species with potential to occur within the site is compiled. As part of this assessment a comprehensive list of fauna species of conservation significance was compiled. Non-conservation taxa with potential to occur within the site were not compiled into a list but are provided as raw data in <b>Appendix B</b> . Given that all species with potential to occur within the site are still identified within the relevant appendices this is not considered to affect the outcomes of this assessment.

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## 4 Results

### 4.1 Fauna

#### 4.1.1 Species inventory

A total of 32 native and four introduced fauna species, were directly or indirectly (from foraging evidence) recorded during the field survey.

A complete species list is provided in **Appendix F**.

#### 4.1.2 Threatened, specially protected and priority fauna

Two threatened and one priority fauna species were recorded within the site during the field survey: Carnaby's black cockatoo (EN), forest red-tailed black cockatoo (VU) and *Isoodon fusciventer* (quenda) (P4).

Carnaby's black cockatoo was recorded indirectly from the observation of foraging evidence. Several examples of chewed banksia fruits were observed throughout the site.

Forest red tailed black cockatoo was also recorded indirectly from the observation of foraging evidence, in the form of a chewed marri fruit in the **eucalypt forest** habitat (refer **Section 4.2**). Several forest red-tailed black cockatoos were observed foraging in vegetation across Warton Road but didn't enter the site.

Numerous diggings attributable to quenda were observed within the site.

#### 4.1.3 Declared pests

Two species listed as a declared pest (C3) pursuant to the BAM Act, *\*Oryctolagus cuniculus* (rabbit) and *\*Trichoglossus haematodus* (rainbow lorikeet), were recorded in the site. Rabbits were identified indirectly from diggings and burrows while rainbow lorikeets were observed flying into the site and perching in trees.

### 4.2 Fauna habitat

12 habitat assessments were undertaken within the site, as detailed in **Appendix G**.

Six broad fauna habitats were identified within the site, as listed in **Table 7**.

A description, the size of the area and a representative photograph of each habitat is provided in **Table 7**. The location of each habitat is shown on **Figure 4**.



14.44 ha (17.84 % of the site) was not surveyed due to access restrictions.



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Table 7: Fauna habitats identified within the site



Fauna habitat	Description	Total area (ha)	Proportion of site (%)	Representative photograph
Banksia woodland	<p>Open woodland of <i>Banksia</i> spp. over native shrubland over native forbland on sandy soils.</p> <ul style="list-style-type: none"> <li>• High microhabitat complexity</li> <li>• Suitable for avian and ground dwelling fauna</li> <li>• Observations of Carnaby's black cockatoo (EN) foraging evidence and quenda (P4) diggings</li> <li>• Potentially suitable habitat for other conservation significant species.</li> </ul>	42.02	51.92	
Bare ground and grassland	<p>Highly disturbed cleared areas.</p> <ul style="list-style-type: none"> <li>• Low habitat value</li> <li>• Any fauna occurrences in these areas would likely be temporary while traversing to other areas.</li> </ul>	14.94	18.46	



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Table 7: Fauna habitats identified within the site (continued)

Fauna habitat	Description	Total area (ha)	Proportion of site (%)	Representative photograph
Eucalypt forest	<p>Open forest of <i>Corymbia calophylla</i> and <i>Eucalyptus gomphocephala</i> over <i>Adenanthos cygnorum</i> over low native shrubland on sandy soils.</p> <ul style="list-style-type: none"> <li>• Moderate habitat complexity</li> <li>• Suitable for avian and ground dwelling fauna</li> <li>• Observation of forest red-tailed black cockatoo (VU) foraging evidence.</li> </ul>	1.67	2.06	
Lake	<p>Artificial lake adjacent to detention centre carpark.</p> <ul style="list-style-type: none"> <li>• Low habitat complexity</li> <li>• Potentially suitable for freshwater fish, invertebrates, frogs, turtles and wetland birds.</li> <li>• Water source for local fauna</li> </ul>	0.21	0.26	

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Table 7: Fauna habitats identified within the site (continued)

Fauna habitat	Description	Total area (ha)	Proportion of site (%)	Representative photograph
Scattered trees	<p>Scattered native and non-native trees over cleared ground.</p> <ul style="list-style-type: none"> <li>• Low habitat complexity</li> <li>• Predominantly used by common avian species.</li> </ul>	1.89	2.34	
Tall shrubland	<p>Scattered <i>Melaleuca preissiana</i> over tall shrubland of <i>Adenanthos cygnorum</i>, <i>Calytrix fraseri</i> or <i>Kunzea glabrescens</i> over native low shrubs, forbs and herbs.</p> <ul style="list-style-type: none"> <li>• Moderate habitat complexity</li> <li>• Suitable for avian and ground dwelling fauna.</li> <li>• Observation of quenda (P4) diggings</li> </ul>	5.76	7.12	

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### 4.3 Black cockatoo habitat

#### 4.3.1 Breeding

21 black cockatoo habitat trees were recorded within the site as shown in **Figure 6**.

The habitat trees comprised 10 tuart, five *Eucalyptus totdtiana* (pricklybark), three flooded gum and one marri. No trees contained hollows suitable for use by black cockatoos for nesting and so they were classified as 'potential nesting trees'.

A summary of the habitat trees recorded within the site is provided in **Table 8** and an inventory in **Appendix H**.

Table 8: Habitat trees recorded within the site

Category	No. trees
Known nesting trees	0
Suitable nesting trees	0
Potential nesting trees	21
Total nesting trees	21

#### 4.3.2 Roosting

No roosts or evidence of roosting were observed within the site during the survey.

Tall trees within the site have the potential to be used for roosting.

#### 4.3.3 Foraging

A total of 44.92 ha of foraging habitat for Carnaby's black cockatoo, 42.40 ha for Baudin's black cockatoo and 2.70 ha for forest red-tailed black cockatoo were recorded in the site as shown in **Figure 7** to **Figure 9**.

The extent of foraging habitat by value category is detailed in **Table 9**.

Table 9: Foraging habitat recorded within the site

Foraging habitat	Black cockatoo species and area of foraging habitat (ha)		
	Carnaby's	Baudin's	Forest red-tailed
Native primary	42.83	0.10	0.73
Native secondary	1.60	42.13	1.47
Non-native primary	0.11	0	0
Non-native secondary	0.38	0.17	0.50
Total	44.92	42.40	2.70

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## 5 Discussion

### 5.1 Fauna and fauna habitat

The 32 native fauna species recorded within the site are all generally common and widespread across the Swan Coastal Plain. It is likely that the site supports additional reptiles and amphibians in particular, which would require greater time on site or methods such as cameras or traps to detect which not a component of basic survey.

The majority of the habitat within the site is remnant native **banksia woodland**. This habitat provides a contiguous cover of predominantly native trees and shrubs surrounding a large portion of Banksia Hill Juvenile Detention Centre and Hakea Prison. This habitat forms part of an ecological linkage that includes Harrisdale Swamp and Jandakot Regional Park. Nicholson Road and Warton Road border the site but are unlikely to provide a major barrier to fauna movement between these areas.

The **eucalypt forest** and **tall shrubland** habitats in the southern portion of the site comprise mid and understorey vegetation suitable for ground dwelling fauna, particularly quenda. The taller trees in these habitats also provide roosting habitat for birds.

The **lake** habitat provides a permanent water source for local fauna. There is a distinct lack of vegetation around the fringes of the lake and it is uncertain if it is inhabited by any aquatic fauna. Nevertheless, water birds were observed utilising this habitat during the field survey.

Remaining habitats are of low habitat value but may be used occasionally by common and widespread native and non-native fauna with non-specific habitat requirements, which enable them to persist in highly modified environments.

### 5.2 Threatened, specially protected and priority species

Carnaby's black cockatoo and forest red-tailed black cockatoo were recorded within the site and Baudin's black cockatoo has a moderate likelihood of occurrence. These species are discussed further in **Section 5.3**.

Quenda (P4) was recorded indirectly from observation of conical diggings attributable to the species. Quenda are abundant across the Swan Coastal Plain where sufficient vegetation cover is present. **Banksia woodland** within the site is considered suitable habitat as it provides sufficient ground cover. Quenda would also likely utilise the **eucalypt forest** and **tall shrubland** habitats located in the south portion of the site.

Species not recorded during the survey but identified as having a high likelihood of occurrence would require more extensive survey to confirm whether they occur within the site.

Black-striped snake (P3), Perth slider (P3) and Swan Coastal Plain shield-backed trap door spider (P3) are locally occurring species that inhabit sandy soils with banksia woodland vegetation. The banksia woodland fauna habitat would provide suitable habitat for all three species.

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Multiple records of western brush wallaby (P4) occur locally in remnant vegetation in Jandakot and Harrisdale. Deceased specimens have been recorded on Warton and Nicholson Roads close to site suggesting they inhabit the vegetated corridor between these suburbs.

Graceful sun-moth (P4) often occurs in association with *Lomandra hermaphrodita* in banksia woodland vegetation. This plant was recorded in the detailed flora and vegetation survey (Emerge Associates 2024). Therefore, there is a high likelihood that the graceful sun-moth occurs within the banksia woodland habitat.

Pacific swift (MI) and peregrine falcon (OS) have a moderate likelihood of occurring. These species are highly mobile and may opportunistically fly over or forage in the site for short periods of time as part of a much larger home range. Neither of these species would breed within the site. Any occurrence of pacific swift or peregrine falcon in the site would likely be in the air space and largely independent from terrestrial habitat.

Rainbow bee-eater listed as marine under the EPBC Act nests in hilly or undulating sandy soils during the summer months on the Swan Coastal Plain. Some bare ground areas throughout the site may provide suitable habitat. This species is no longer specially protected.

*Leioproctus douglasiellus* (CR/EN) and *Neopasiphae simplicior* (CR/EN) are two short-tongued native bees associated with Goodeniaceae host plants in banksia woodland vegetation. They were considered a possibility to occur by Emerge in the 2023 basic fauna assessment (Emerge Associates 2023). However, following the detailed flora and vegetation assessment undertaken in 2023 and 2024 (Emerge Associates 2024), the threatened bees are no longer expected to be present as their host plants were not found within the site.

### 5.3 Black cockatoo habitat values

Evidence of foraging attributable to Carnaby's black cockatoo was recorded within the site in the form of chewed banksia fruit. Carnaby's black cockatoo are likely to visit while they are on the Swan Coastal Plain as the site lies within the species modelled distribution range, contains a high cover of primary foraging habitat and many records of this species are known from the local area, particularly Harrisdale (DBCA 2021).

Forest red-tailed black cockatoo was observed and evidence of foraging was recorded within the **eucalypt forest** habitat in the form of a chewed marri fruit. The site provides only a relatively small extent of suitable for this species and they are unlikely to utilise the recorded foraging habitat as often as local areas comprising primarily marri and jarrah.

As the site is located inside the northwest most extent of the modelled distribution range of Baudin's black cockatoo, it is considered unlikely that the species would frequently occur as they are more prevalent towards the east in the Perth Hills (DoEE 2016).

#### 5.3.1 Breeding

The site contains several eucalyptus trees large enough to be considered potential nesting trees. As none of these trees contain hollows suitable for use by black cockatoos for breeding, the site does not currently provide nesting habitat for any of the three species of black cockatoo. These habitat

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trees have the potential to form suitable hollows in the future. However, it will likely take decades for hollows to form that are large enough to be suitable for use by black cockatoos for breeding.

### 5.3.2 Roosting

No secondary evidence of roosting such as branch clippings, droppings or feathers were observed within the site. Therefore, there is no reason to suspect that roosting by black cockatoos has recently occurred in the site. Nevertheless, the site contains tall trees that have the potential to be used for roosting by black cockatoos, particularly in the **eucalypt forest** habitat.

A small roost (COCBAN001) is located outside the site within 400m of the southwestern boundary and as such some scattered trees within the site could be considered associated by Glossop's definition (see **Section 3.1.1.2**). However, the core trees of that roost do not occur within the site.

### 5.3.3 Foraging

The site contains native foraging habitat for all species of black cockatoo but is of highest value to Carnaby's black cockatoo. The majority of the foraging habitat occurs as a contiguous area of mixed woodland vegetation and comprises a combination of primary, secondary and non-food plants.

A large extent of vegetation comprises native foraging plants particularly the **banksia woodland** habitat featured throughout most of the site. The *Banksia* species in this habitat are considered primary foraging habitat for Carnaby's black cockatoo and a secondary foraging source for Baudin's black cockatoo. Fresh evidence of foraging was observed in several parts of the banksia woodland suggesting Carnaby's have recently foraged. The **eucalypt forest** habitat also comprises native marri trees which are considered primary foraging habitat and tuart, considered secondary, for Carnaby's black cockatoo.

Non-native foraging habitat consists of planted pine trees in the northeast and a solitary pine tree near Driscoll Drive which are primary foraging habitat for Carnaby's black cockatoo. Planted *Casuarina* trees bordering the entrance road to the Detention Centre are considered secondary foraging habitat for Carnaby's black cockatoo and supplement the large extent of primary foraging habitat. Scattered non-native eucalypts and peppermint trees near Driscoll Drive also provide secondary foraging habitat.



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## 6 Conclusions

Outcomes of the basic fauna assessment include the following:

- The site consists of six broad habitat types:
  - **Banksia woodland:** open woodland of *Banksia* spp. over native shrubland over native forbland on sandy soils. (42.02 ha).
  - **Eucalypt forest:** open forest of *Corymbia calophylla* and *Eucalyptus gomphocephala* over *Adenanthos cygnorum* over low native shrubland on sandy soils. (1.67 ha).
  - **Tall shrubland:** Scattered *Melaleuca preissiana* over tall shrubland of *Adenanthos cygnorum*, *Calytrix fraseri* or *Kunzea glabrescens* over native low shrubs, forbs and herbs (5.76 ha)
  - **Lake:** Artificial lake adjacent to detention centre carpark (0.21 ha)
  - **Scattered trees:** Scattered native and non-native trees over cleared ground (1.89 ha)
  - **Bare ground and grassland:** Highly disturbed cleared areas (14.94 ha).
- A total of 32 native fauna species were recorded within the site.
- Two threatened and one priority species were recorded during the survey:
  - Carnaby's black cockatoo (EN),
  - forest red-tailed black cockatoo (VU)
  - quenda (P4).
- Despite not being recording during the survey, the following species were considered to have a high or moderate likelihood of occurring within the site:
  - Baudin's black cockatoo (EN)
  - pacific swift (MI)
  - peregrine falcon (OS)
  - black-striped snake (P3)
  - Perth slider (P3)
  - Swan Coastal Plain shield-backed trapdoor spider (P3)
  - western brush wallaby (P4)
  - graceful sun-moth (P4).

Outcomes of the targeted black cockatoo survey include the following:

- Carnaby's black cockatoo and forest red-tailed black cockatoo were both recorded in the site during the field survey and Baudin's black cockatoo may occur.
- The site occurs within the modelled distribution of Carnaby's black cockatoo, forest red-tailed black cockatoo and northwest most extent of Baudin's black cockatoo.
- Carnaby's and Baudin's black cockatoo would not be expected to breed in the site as it occurs outside of their modelled breeding area. However, as FRTBC do not have defined breeding areas the site has potential to support breeding of this species.
- The site contains black cockatoo breeding habitat, with 21 habitat trees (potential nesting trees) present. None contain hollows suitable for use by black cockatoos for nesting.
- No roosts or evidence of roosting by any species of black cockatoo was recorded within the site during the field survey.
- A total of 44.92 ha of foraging habitat for Carnaby's black cockatoo was mapped within the site. This comprises 44.43 ha of native foraging plants of which 96.4 % are considered primary

## Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning Vale



and 3.6 % considered secondary. Non-native foraging habitat covers 0.49 ha of which 22.45 % is considered primary and 77.55 % is considered secondary.

- A total of 42.4 ha of foraging habitat for Baudin's black cockatoo was mapped within the site. This comprises 42.23 ha of native foraging plants of which 99.76 % are considered primary and 0.24 % considered secondary. Non-native foraging habitat covers 0.17 ha of which all is considered secondary.
- A total of 2.7 ha of foraging habitat for forest red-tailed black cockatoo was mapped within the site. This comprises 2.2 ha of native foraging plants of which 33.18 % are considered primary and 66.82 % considered secondary. Non-native foraging habitat covers 0.5 ha of which all is considered secondary.



# Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning Vale



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## Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning Vale



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## Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning Vale



### 7.2 Online references

The online resources that have been utilised in the preparation of this report are referenced in **Section 7.1**, with access date information provided in **Table R 1**.

*Table R 1 Access dates for online references*

Reference	Date accessed	Website or dataset name
Atlas of Living Australia	10 July 2023	Atlas of Living Australia – Spatial Portal
BirdLife International (2023)	10 July 2023	Important Bird Areas
BoM (2023)	10 July 2023	Climate Data Online
DAWE (2023)	6 July 2023	Protected Matters Search Tool
DBCA (2023)	6 July 2023	NatureMap
DCCEEW (2023)	10 July 2023	Australian Faunal Directory
WALIA (2023)	10 July 2023	Landgate Map Viewer

## Basic Fauna and Targeted Black Cockatoo Assessment

Lot 500 and Part Lot 501 Warton Road, Canning Vale



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# Figures



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*Figure 2: Soils and Topography*

*Figure 3: Hydrography and Environmental Features*

*Figure 4: Fauna Habitat*

*Figure 5: Black Cockatoo Habitat Context*

*Figure 6: Black Cockatoo Habitat Trees*

*Figure 7: Carnaby's Black Cockatoo Foraging Habitat*

*Figure 8: Baudin's Black Cockatoo Foraging Habitat*

*Figure 9: Forest Red-tailed Black Cockatoo Foraging Habitat*







**Figure 1: Site Location**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
 Lot 500 and Part Lot 501 Warton Road, Canning Vale  
**Client:** Department of Finance

**Plan Number:** EP23-053(08)--F97  
**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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 Scale: 1:10,000@A4  
 GDA2020 MGA Zone 50



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used.  
 ©Landgate (2024). Nearmap Imagery date: 30/04/2023





**Figure 2: Soils and Topography**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

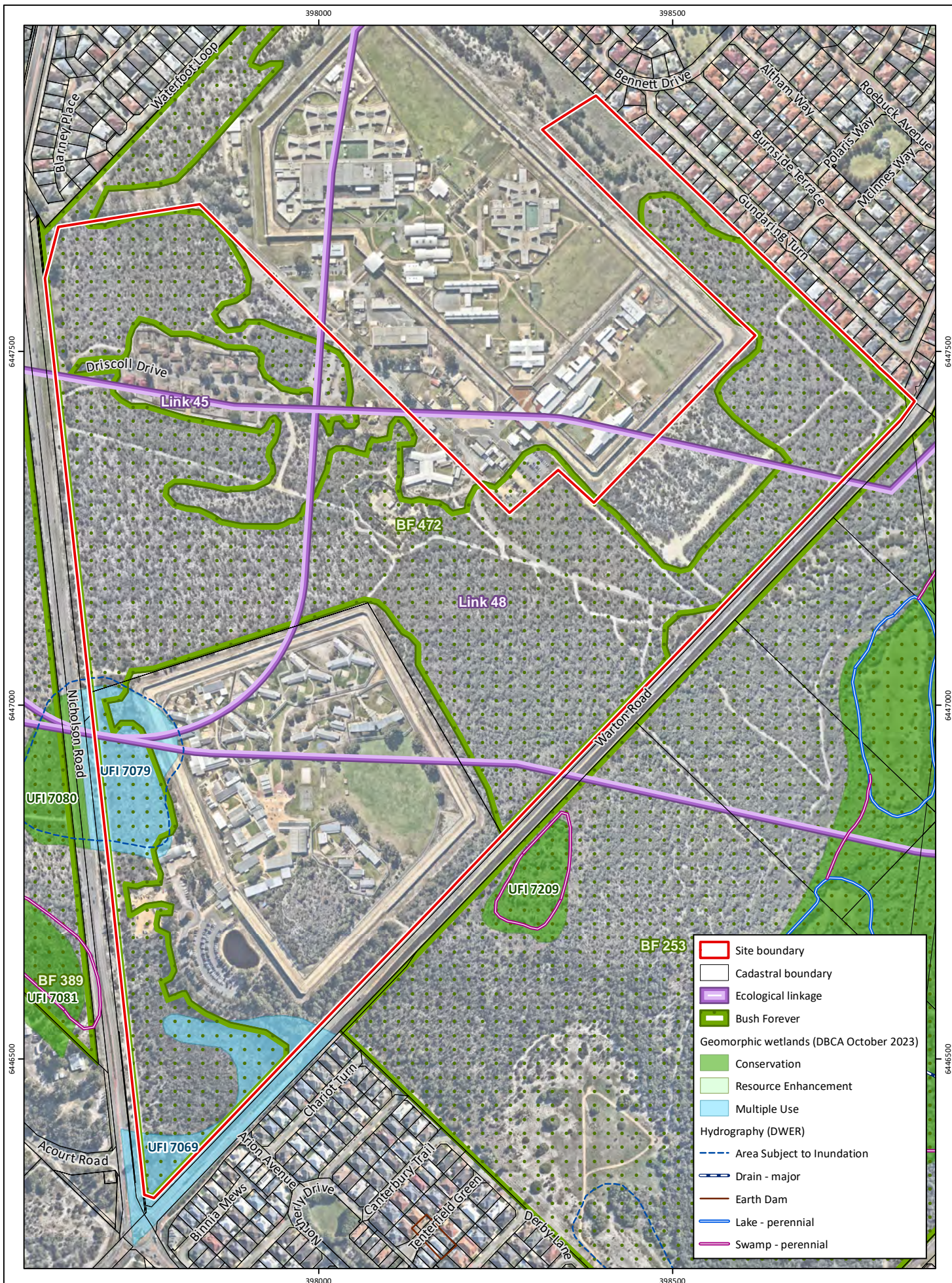
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**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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Scale: 1:7,000@A4  
GDA 2020 MGA Zone 50

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**Figure 3: Hydrography and Environmental Features**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

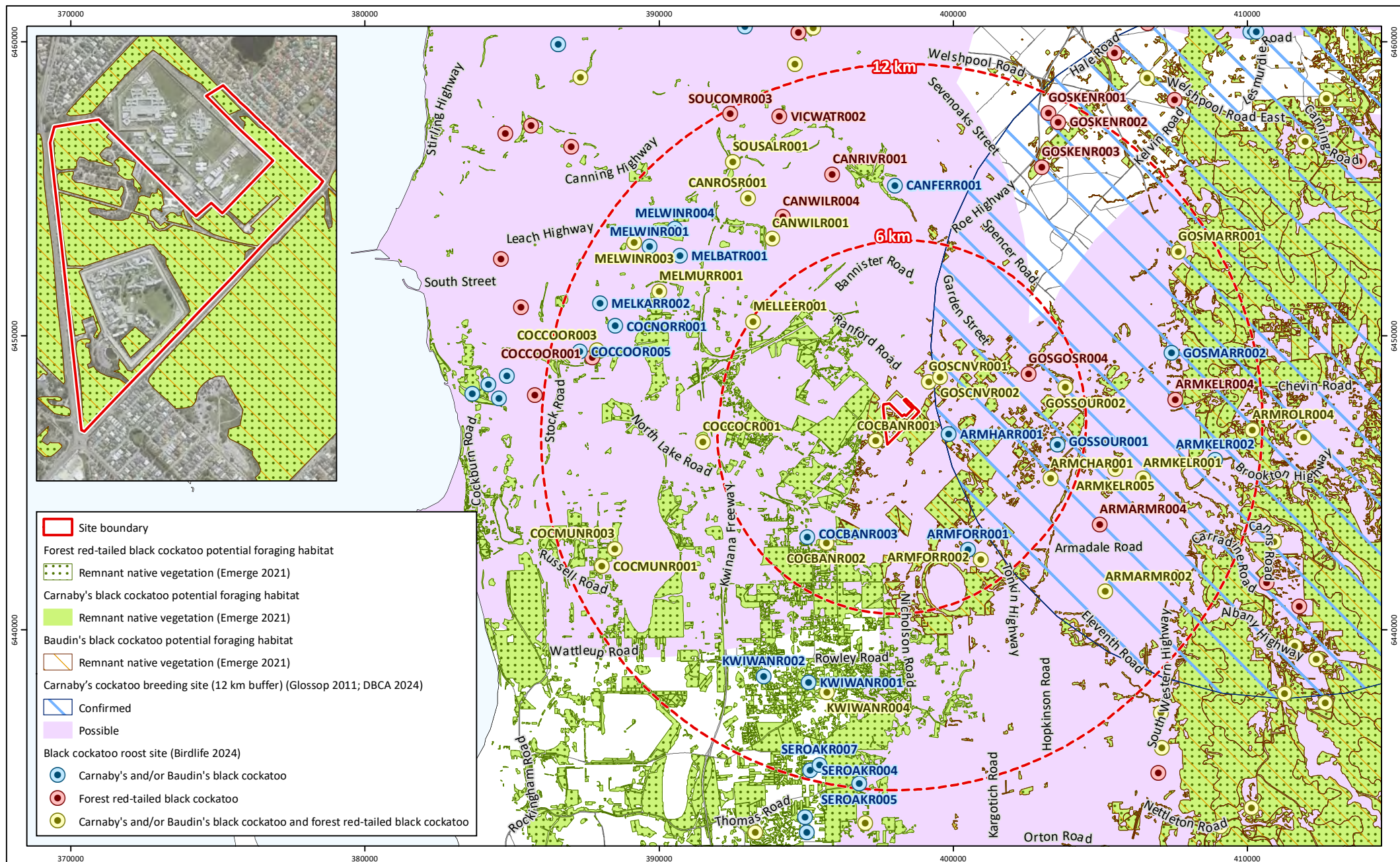
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**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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Scale: 1:7,000@A4  
GDA 2020 MGA Zone 50

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**Figure 4: Black Cockatoo Habitat Context**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

**Plan Number:**  
EP23-053(08)--F100

**Drawn:** GAR

**Date:** 02/09/2024

**Checked:** NAW

**Approved:** TAA

**Date:** 11/10/2024



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GDA 2020 MGA Zone 50

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**Figure 5: Fauna Habitat**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

**Plan Number:** EP23-053(08)--F101  
**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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Metres  
Scale: 1:7,000@A4  
GDA 2020 MGA Zone 50

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**Figure 6: Black Cockatoo Habitat Trees**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

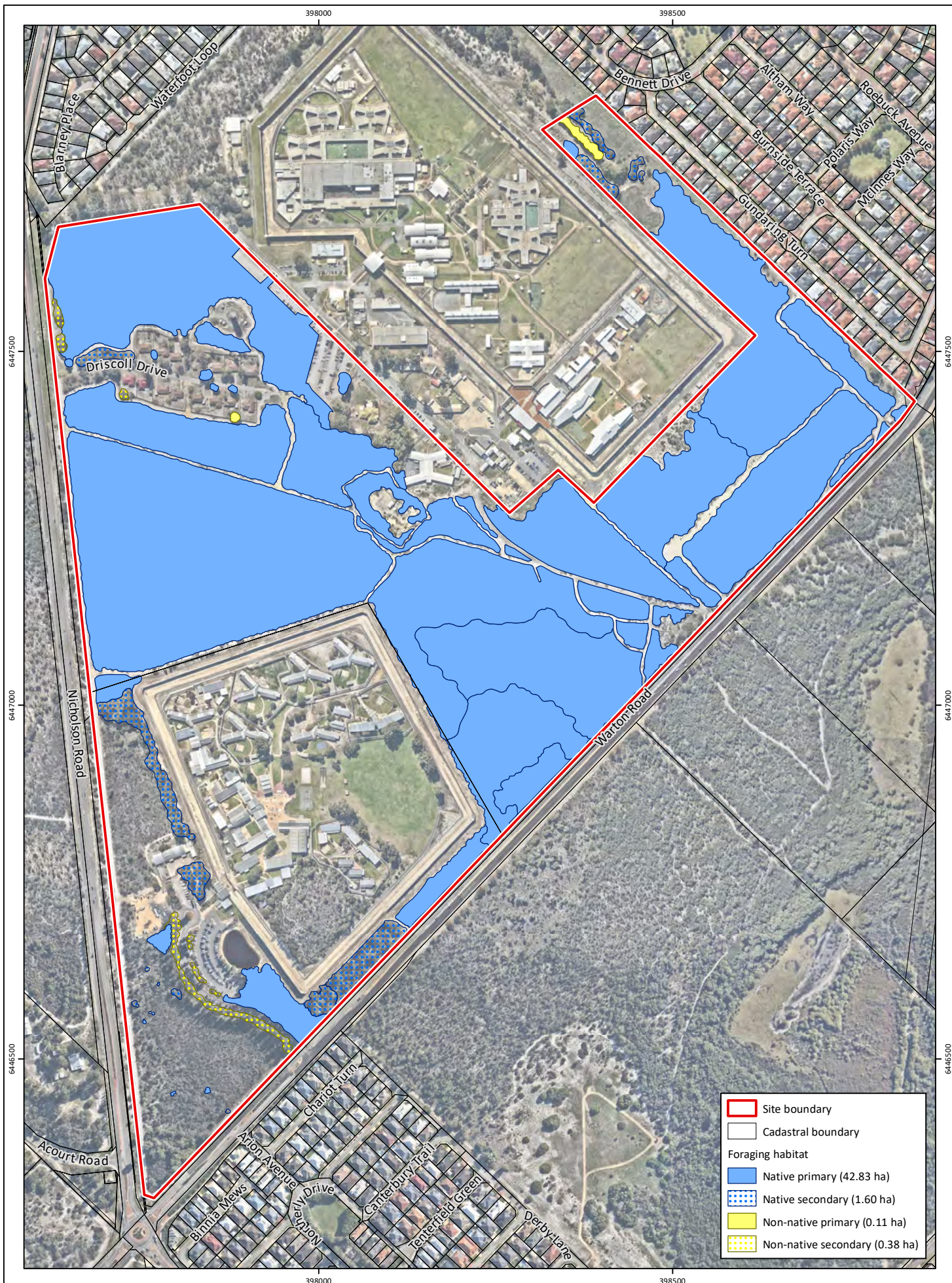
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**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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Scale: 1:7,000@A4  
GDA 2020 MGA Zone 50

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**Figure 7: Carnaby's Black Cockatoo Foraging Habitat**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

**Plan Number:** EP23-053(08)--F103  
**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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Scale: 1:7,000@A4  
GDA 2020 MGA Zone 50

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**Figure 8: Baudin's Black Cockatoo Foraging Habitat**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
 Lot 500 and Part Lot 501 Warton Road, Canning Vale  
**Client:** Department of Finance

**Plan Number:** EP23-053(08)--F104  
**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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 Scale: 1:7,000@A4  
 GDA 2020 MGA Zone 50







**Figure 9: Forest Red-tailed Black Cockatoo Foraging Habitat**

**Project:** Basic Fauna and Targeted Black Cockatoo Assessment  
Lot 500 and Part Lot 501 Warton Road, Canning Vale

**Client:** Department of Finance

**Plan Number:** EP23-053(08)--F105  
**Drawn:** GAR  
**Date:** 02/09/2024  
**Checked:** NAW  
**Approved:** TAA  
**Date:** 11/10/2024



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GDA 2020 MGA Zone 50

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# Appendix A

Additional Information





## Additional Background Information



### Conservation Significant Fauna

#### Threatened and priority 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) as 'threatened', 'migratory' or 'marine' as described in **Table 1**.

Migratory species comprise birds 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).

Fauna species listed as threatened and migratory are protected in Australia as 'matters of national environmental significance' (MNES) under the EPBC Act.

*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 ‘threatened’, ‘extinct’, or ‘specially protected’ under the *Biodiversity Conservation Act 2016* (BC Act), which is enforced by Department of Biodiversity Conservation and Attractions (DBCA) (DBCA 2019a). The definitions of these categories are provided in **Table 2**.

*Table 2: Definitions of specially protected fauna schedules under the BC Act (DBCA 2019a)*

Category	Conservation Code	Definition
Threatened	CR	Critically endangered Threatened species considered to be facing an extremely high risk of extinction in the wild in the immediate future.
	EN	Endangered Threatened species considered to be facing a very high risk of extinction in the wild in the near future.
	VU	Vulnerable Threatened species considered to be facing a high risk of extinction in the wild in the medium-term future.
Extinct	EX	Extinct Species where there is no reasonable doubt that the last member of the species has died.
	EW	Extinct in the wild Species that is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form. Note that no species are currently listed as EW.
Specially protected	MI	Migratory species Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth  Includes birds that 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	Species of special conservation interest (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	Other specially protected species 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 2018b). Species listed under priorities 1-3 comprise possible threatened species that do not meet survey criteria or are otherwise data deficient. Species listed under priority 4 are those that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons (DBCA 2019a).

Priority fauna species are considered during State approval processes. Priority fauna categories and definitions are listed in **Table 3** (DBCA 2019a).

*Table 3: Definitions of priority fauna categories on DBCA's Priority Fauna List (DBCA 2019a)*

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 3 – 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>

## Additional Background Information



### Black cockatoos

Three threatened species of black cockatoo occur on the Swan Coastal Plain (referred to herein collectively as 'black cockatoos'):

- *Zanda*<sup>1</sup> *latirostris* (Carnaby's black cockatoo) which is listed as 'endangered' under the EPBC Act and the BC Act.
- *Zanda*<sup>1</sup> *baudinii* (Baudin's black cockatoo) which is listed as 'endangered' under the EPBC Act and the BC Act.
- *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo) which is listed as 'vulnerable' under the EPBC Act and the BC Act.

There are a range of regional studies and spatial datasets available which provide information on black cockatoo records and potential habitat mapping. These are detailed below.

### Species distribution and breeding range

Broad-scale maps are available for the modelled distribution of Baudin's black cockatoo, Carnaby's black cockatoo and forest red-tailed black cockatoo (DSEWPaC 2011; DoEE 2016a, b).

The modelled distribution maps also include 'known breeding areas' and 'predicted breeding range' for Baudin's black cockatoo and 'breeding range' and 'non-breeding range' for Carnaby's black cockatoo.

No breeding range modelling is available for forest red-tailed black cockatoo but the species is known to breed mainly in the jarrah forest region (DBCA 2017a) and in small populations on the Swan Coastal Plain within the Baldivis, Stake Hill, Lake McLarty and Capel area and increasingly in the Perth metropolitan area (DAWE 2022).

### Breeding habitat

Department of Environment and Conservation (DEC, now Department of Biodiversity, Conservation and Attractions (DBCA)) and fauna experts, have identified and mapped Carnaby's black cockatoo habitat on the Swan Coastal Plain and Jarrah Forest regions (Glossop *et al.* 2011). This dataset includes mapping of Carnaby's black cockatoo breeding sites based on point records of breeding from a range of sources. Breeding sites were classified as 'confirmed' where eggs or chicks were recorded and 'possible' where observations relating to Carnaby's black cockatoo breeding that did not include actual records of eggs or chicks (e.g. chewed hollows or records of breeding or nesting behaviour by an expert observer).

A 12 km buffer applies to each site to 'reflect the flexible use of these areas by cockatoos and to indicate the important zone for access to potential feeding habitat' (Glossop *et al.* 2011). Glossop *et al.* (2011) state that the areas mapped in the dataset are not a comprehensive record of Carnaby's black cockatoo breeding and that many nesting sites are not known.

While this dataset only applies to Carnaby's black cockatoo, the information it contains is also applicable for Baudin's black cockatoo and forest red-tailed black cockatoo as they have similar

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<sup>1</sup> Previously *Calyptorhynchus*

## Additional Background Information



breeding habitat requirements. That is, breeding sites that are suitable for Carnaby's black cockatoo may also be suitable for Baudin's black cockatoo and forest red-tailed black cockatoo, if located within their distribution/breeding ranges.

BirdLife Australia also maintain a database of confirmed black cockatoo breeding sites which is accessible via a paid search system. BirdLife Australia have advised that their database is comprised of data collected during surveys by staff and volunteers of which most (>99%) surveys are of Carnaby's black cockatoo. They have also advised that the dataset is not comprehensive and that an absence of known nests does not necessarily indicate a lack of breeding activity.

The Carnaby's black cockatoo recovery plan also identifies 13 'important bird areas' for Carnaby's black cockatoo, which are identified as 'sites of global bird conservation importance' (DPaW 2013). These 'important bird areas' comprise sites supporting at least 20 breeding pairs or 1% of the population regularly utilising an area in the non-breeding part of the range.

### Confirmed roost sites

BirdLife Australia undertakes annual monitoring of black cockatoo overnight roost sites as part of the annual 'Great Cocky Count' community-based survey. Information gathered from these monitoring events provides roost locations and recorded black cockatoo number (Birdlife Australia 2023).

### Native foraging habitat

Glossop *et al.* (2011) also mapped 'areas requiring investigation as Carnaby's black cockatoo feeding habitat' for the Swan Coastal Plain and Jarrah Forest regions, based on regional vegetation mapping that may contain plant species known to be foraged upon by Carnaby's black cockatoo. Note that this dataset does not include observations or point records of Carnaby's black cockatoo feeding. This dataset represents areas of vegetation that may potentially provide foraging habitat for Carnaby's black cockatoo.

In order to account for clearing of native vegetation that has occurred since the Glossop *et al.* (2011) dataset was created and to incorporate updated vegetation mapping and information on foraging behaviour of Carnaby's black cockatoo, Emerge have revised this dataset to represent the most up to date information available. Furthermore, Emerge have used a similar methodology to Glossop *et al.* (2011) to define potential foraging habitat for Baudin's black cockatoo and forest-red tailed cockatoos.

Specifically, DBCA (2021), DBCA (2019b) and DPIRD (2018) regional vegetation complex mapping was used to determine which areas of remnant vegetation support plant species known to be foraged upon by Carnaby's black cockatoo, Baudin's black cockatoo or forest red-tailed cockatoos. Where these vegetation complexes intersect remnant vegetation mapped by DPIRD (2020) they were considered to represent potential foraging habitat for Carnaby's black cockatoo, Baudin's black cockatoo and/or forest red-tailed cockatoo.

Pine plantations also provide an important food source for Carnaby's black cockatoo, but were not included in the original Glossop *et al.* (2011) dataset. Mapping of pine plantations is available from the Forest Products Commission (Forest Products Commission 2020) and was considered in the assessment of Carnaby's black cockatoo foraging habitat.



## Additional Background Information

### Pest fauna

A number of legislative and policy documents exist in relation to pest fauna management at state and national levels. The *Biosecurity and Agriculture Management Act 2007* (BAM Act) is the principle legislation guiding pest fauna management in Western Australia and lists declared pest species.

#### Declared Pests

Part 2.3.23 of the BAM Act requires a person must not “*a) keep, breed or cultivate the declared pest; b) keep, breed or cultivate an animal, plant or other thing that is infected or infested with the declared pest; c) release into the environment the declared pest, or an animal, plant or other thing that is infected or infested with the declared pest; or d) intentionally infect or infest, or expose to infection or infestation, a plant, animal or other thing with a declared pest*”.

Under the BAM Act, all declared pests are assigned a legal status, as described in **Table 4**. Species assigned to the ‘declared pest, prohibited - s12’ category are placed in one of three control categories, as described in **Table 5**.

The *Biosecurity and Agriculture Management Regulations 2013* specify keeping categories for species assigned to the ‘declared pest - s22(2)’ category, which relate to the purposes of which species can be kept, as well as the entities that can keep them. The categories are described in **Table 6**.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act (DAFWA 2016).

Table 4: Legal status of declared pest species listed under the BAM Act (DAFWA 2016)

Category	Description
Declared Pest Prohibited - s12	May only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.
Declared Pest s22(2)	Must satisfy any applicable import requirements when imported and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia

Table 5: Control categories of declared pest species listed under the BAM Act (DAFWA 2016)

Category	Description
C1	Exclusion Not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2	Eradication Present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3	Management Established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

## Additional Background Information

*Table 6: Keeping categories of declared pest species listed under the BAM Act (DAFWA 2016)*

Category	Description
Prohibited	Can only be kept under a permit for public display and education purposes, and/or genuine scientific research, by entities approved by the state authority.
Exempt	No permit or conditions are required for keeping.
Restricted	Organisms which, relative to other species, have a low risk of becoming a problem for the environment, primary industry or public safety and can be kept under a permit by private individuals.

## Additional Background Information



## Wetland Habitat

## Geomorphic wetland types

On the Swan Coastal Plain DBCA (2017b) have used the geomorphic wetland classification system developed by Semeniuk (1987) and Semeniuk and Semeniuk (1995) to classify wetlands based on the landform shape and water permanence (hydro-period) as outlined in **Table 7**. DBCA maintains a dataset of the *Geomorphic Wetlands of the Swan Coastal Plain* (DBCA 2018a).

Table 7: *Geomorphic Wetlands of the Swan Coastal Plain classification categories (DBCA 2017b)*

Level of inundation	Geomorphology			
	Basin	Flat	Channel	Slope
Permanently inundated	Lake	-	River	-
Seasonally inundated	Sumpland	Floodplain	Creek	-
Seasonally waterlogged	Dampland	Palusplain	-	Paluslope

## Additional Background Information



## Literature

The main literature used for identifying fauna and fauna habitats is listed in **Table 8** below.

*Table 8: Standard literature used for identifying fauna species and habitats.*

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), Wilson and Swan (2021)

## Additional Background Information



## References

### General references

Birdlife Australia 2023, *Great Cocky Count Roost Dataset*,

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

Department of Agriculture, Water and the Environment (DAWE) 2022, *Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo*, Canberra.

department of biodiversity Conservation and Attractions (DBCA) 2017a, *Fauna Profile - Forest red-tailed black cockatoo *Calyptorhynchus banksii naso**, Perth, Western Australia.

Department of Biodiversity, Conservation and Attractions (DBCA) 2017b, *A methodology for the evaluation of wetlands on the Swan Coastal Plain*, draft prepared by the Wetlands Section of the Department of Biodiversity, Conservation and Attractions and the Urban Water Branch of the Department of Water and Environmental Regulation, Perth.

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Department of Biodiversity Conservation and Attractions (DBCA) 2019a, *Conservation Codes for Western Australian Flora and Fauna - last updated 3 January 2019*.

Department of Biodiversity Conservation and Attractions (DBCA) 2019b, *Vegetation Complexes - South West forest region of Western Australia (DBCA-047)*, Kensington.

Department of Biodiversity Conservation and Attractions (DBCA) 2021, *Vegetation Complexes - Swan Coastal Plain (DBCA\_046)*, Perth, Western Australia.

Department of Environment and Energy (DoEE) 2016a, *Modelled distribution for Baudin's Cockatoo (*Calyptorhynchus baudinii*)*, Canberra.

Department of Environment and Energy (DoEE) 2016b, *Modelled distribution for Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*)*, Canberra.

Department of Parks and Wildlife (DPaW) 2013, *Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan*.

Department of Primary Industries and Regional Development (DPIRD) 2018, *Pre-European Vegetation – Western Australia (DPIRD-006)*, South Perth.

Department of Primary Industries and Regional Development (DPIRD) 2020, *Current Extent of Native vegetation - Western Australia dataset (DPIRD-005)*, Perth, Western Australia.

## Additional Background Information



Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) 2011, *Modelled distribution of Carnaby's black cockatoo (Calyptorhynchus latirostris)*, Commonwealth of Australia, Canberra, Australian Capital Territory.

Forest Products Commission 2020, *Forest Products Commission Plantations (FPC-001)*.

Glossop, B., Clarke, K., Mitchell, D. and Barrett, G. 2011, *Methods for mapping Carnaby's cockatoo habitat*, Department of Environment and Conservation, Perth.

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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.

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Semeniuk, C. A. and Semeniuk, V. 1995, *A Geomorphic Approach to Global Classification for Inland Wetlands*, Vegetatio, 118(1/2): 103-124.

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

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

Wilson, S. and Swan, G. 2021, *A Complete Guide to Reptiles of Australia*, New Holland Publishers, Sydney, Australia.



# Appendix B

Database search results









Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# 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. Please see the caveat for interpretation of information provided here.

Report created: 29-Jul-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment 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 (Ramsar</a>	2
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	7
<a href="#">Listed Threatened Species:</a>	70
<a href="#">Listed Migratory Species:</a>	39

## 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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:</a>	92
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	44
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	18
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Nationally Important Wetlands:</a>	6
<a href="#">EPBC Act Referrals:</a>	103
<a href="#">Key Ecological Features (Marine):</a>	None
<a href="#">Biologically Important Areas:</a>	None
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

## Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[ Resource Information ]
Ramsar Site Name	Proximity	Buffer Status
<a href="#">Forrestdale and thomsons lakes</a>	Within Ramsar site	In feature area
<a href="#">Peel-yalgorup system</a>	30 - 40km upstream from Ramsar site	In buffer area only

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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area	In feature area
<a href="#">Clay Pans of the Swan Coastal Plain</a>	Critically Endangered	Community likely to occur within area	In buffer area only
<a href="#">Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain</a>	Endangered	Community known to occur within area	In buffer area only
<a href="#">Empodisma peatlands of southwestern Australia</a>	Endangered	Community may occur within area	In buffer area only
<a href="#">Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion</a>	Critically Endangered	Community may occur within area	In buffer area only
<a href="#">Subtropical and Temperate Coastal Saltmarsh</a>	Vulnerable	Community likely to occur within area	In buffer area only
<a href="#">Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community</a>	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[ <u>Resource Information</u> ]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Zanda baudinii listed as Calyptorhynchus baudinii</a> Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Zanda latirostris listed as Calyptorhynchus latirostris</a> Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
INSECT			
<a href="#">Leioproctus douglasiellus</a> a short-tongued bee [66756]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Neopasiphae simplicior</a> A native bee [66821]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
<a href="#">Bettongia penicillata ogilbyi</a> Woylie [66844]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Pseudocheirus occidentalis</a> Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Setonix brachyurus</a> Quokka [229]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
OTHER			
<a href="#">Westralunio carteri</a> Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Acacia aphylla</a> Leafless Rock Wattle [13553]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Andersonia gracilis</a> Slender Andersonia [14470]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Anthocercis gracilis</a> Slender Tailflower [11103]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Austrostipa bronweniae listed as Austrostipa bronwenae</a> [92773]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Austrostipa jacobsoniana</a> [87809]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Banksia mimica</a> Summer Honey-pot [82765]	Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Caladenia huegelii</a> King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calytrix breviseta subsp. breviseta</a> Swamp Starflower [23879]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chamelaucium lullfitzii listed as Chamelaucium sp. Gingin (N.G.Marchant 6)</a> Gingin Wax [92777]	Endangered (listed as Chamelaucium sp. Gingin)	Species or species habitat may occur within area	In buffer area only
<a href="#">Conospermum undulatum</a> Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Darwinia apiculata</a> Scarp Darwinia [8763]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Diplolaena andrewsii</a> [6601]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diuris drummondii</a> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Diuris micrantha</a> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Diuris purdiei</a> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Drakaea elastica</a> Glossy-leafed Hammer Orchid, Glossy-leafed Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Drakaea micrantha</a> Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Eleocharis keigheryi</a> Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Eremophila glabra subsp. chlorella</a> [84927]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Eucalyptus x balanites</a> Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Goodenia arthrotricha</a> [12448]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Grevillea curviloba subsp. incurva</a> Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Grevillea thelemanniana</a> Spider Net Grevillea [32835]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Lepidosperma rostratum</a> Beaked Lepidosperma [14152]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Macarthuria keigheryi</a> Keighery's Macarthuria [64930]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Morelotia australiensis listed as Tetraria australiensis</a> Southern Tetraria [92784]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Ptilotus pyramidatus</a> Pyramid Mulla-mulla [18216]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Synaphea sp. Fairbridge Farm (D.Papenfus 696)</a> Selena's Synaphea [82881]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Synaphea sp. Pinjarra Plain (A.S.George 17182)</a> [86878]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Synaphea sp. Serpentine (G.R.Brand 103)</a> [86879]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Thelymitra stellata</a> Star Sun-orchid [7060]	Endangered	Species or species habitat known to occur within area	In buffer area only
REPTILE			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
SHARK			
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
Listed Migratory Species		[ <a href="#">Resource Information</a> ]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
<a href="#">Calidris pugnax</a> as <a href="#">Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area	In buffer area only
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area	In buffer area only
<a href="#">Charadrius dubius</a> Little Ringed Plover [896]		Roosting known to occur within area	In buffer area only



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In buffer area only
<a href="#">Tringa glareola</a> Wood Sandpiper [829]	Endangered	Roosting known to occur within area	In buffer area only
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only

### Other Matters Protected by the EPBC Act

Commonwealth Lands <a href="#">[ Resource Information ]</a>		
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.		
Commonwealth Land Name	State	Buffer Status
Defence		
Defence - AIRTC CANNINGTON [50229]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Defence - AIRTC CANNINGTON [50233]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50230]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50231]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50232]	WA	In buffer area only
Unknown		
Commonwealth Land - [50786]	WA	In buffer area only
Commonwealth Land - [50837]	WA	In buffer area only
Commonwealth Land - [50836]	WA	In buffer area only
Commonwealth Land - [50835]	WA	In buffer area only
Commonwealth Land - [50782]	WA	In buffer area only
Commonwealth Land - [51142]	WA	In buffer area only
Commonwealth Land - [50789]	WA	In buffer area only
Commonwealth Land - [50838]	WA	In buffer area only
Commonwealth Land - [51146]	WA	In buffer area only
Commonwealth Land - [50788]	WA	In buffer area only
Commonwealth Land - [50731]	WA	In buffer area only
Commonwealth Land - [50734]	WA	In buffer area only
Commonwealth Land - [50735]	WA	In buffer area only
Commonwealth Land - [50732]	WA	In buffer area only
Commonwealth Land - [50733]	WA	In buffer area only
Commonwealth Land - [50784]	WA	In buffer area only
Commonwealth Land - [50785]	WA	In buffer area only
Commonwealth Land - [50736]	WA	In buffer area only
Commonwealth Land - [50787]	WA	In buffer area only
Commonwealth Land - [50792]	WA	In buffer area only
Commonwealth Land - [50793]	WA	In buffer area only
Commonwealth Land - [50790]	WA	In buffer area only



Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51899]	WA	In buffer area only
Commonwealth Land - [50799]	WA	In buffer area only
Commonwealth Land - [50798]	WA	In buffer area only
Commonwealth Land - [50797]	WA	In buffer area only
Commonwealth Land - [50796]	WA	In buffer area only
Commonwealth Land - [50795]	WA	In buffer area only
Commonwealth Land - [50794]	WA	In buffer area only
Commonwealth Land - [51148]	WA	In buffer area only
Commonwealth Land - [50832]	WA	In buffer area only
Commonwealth Land - [50781]	WA	In buffer area only
Commonwealth Land - [51382]	WA	In buffer area only
Commonwealth Land - [51143]	WA	In buffer area only
Commonwealth Land - [50791]	WA	In buffer area only
Commonwealth Land - [50780]	WA	In buffer area only
Commonwealth Land - [50761]	WA	In buffer area only
Commonwealth Land - [50762]	WA	In buffer area only
Commonwealth Land - [50763]	WA	In buffer area only
Commonwealth Land - [50833]	WA	In buffer area only
Commonwealth Land - [51518]	WA	In buffer area only
Commonwealth Land - [50870]	WA	In buffer area only
Commonwealth Land - [50872]	WA	In buffer area only
Commonwealth Land - [50741]	WA	In buffer area only
Commonwealth Land - [50749]	WA	In buffer area only
Commonwealth Land - [50745]	WA	In buffer area only
Commonwealth Land - [50740]	WA	In buffer area only
Commonwealth Land - [51514]	WA	In feature area
Commonwealth Land - [50867]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51426]	WA	In buffer area only
Commonwealth Land - [51427]	WA	In buffer area only
Commonwealth Land - [51287]	WA	In buffer area only
Commonwealth Land - [51901]	WA	In buffer area only
Commonwealth Land - [50865]	WA	In buffer area only
Commonwealth Land - [50864]	WA	In buffer area only
Commonwealth Land - [51421]	WA	In buffer area only
Commonwealth Land - [51425]	WA	In buffer area only
Commonwealth Land - [51900]	WA	In buffer area only
Commonwealth Land - [50866]	WA	In buffer area only
Commonwealth Land - [50756]	WA	In buffer area only
Commonwealth Land - [51155]	WA	In buffer area only
Commonwealth Land - [50755]	WA	In buffer area only
Commonwealth Land - [50754]	WA	In buffer area only
Commonwealth Land - [51152]	WA	In buffer area only
Commonwealth Land - [51153]	WA	In buffer area only
Commonwealth Land - [51150]	WA	In buffer area only
Commonwealth Land - [51151]	WA	In buffer area only
Commonwealth Land - [50751]	WA	In buffer area only
Commonwealth Land - [51144]	WA	In buffer area only
Commonwealth Land - [50848]	WA	In buffer area only
Commonwealth Land - [50729]	WA	In buffer area only
Commonwealth Land - [50725]	WA	In buffer area only
Commonwealth Land - [51147]	WA	In buffer area only
Commonwealth Land - [50843]	WA	In buffer area only
Commonwealth Land - [50844]	WA	In buffer area only
Commonwealth Land - [51163]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51160]	WA	In buffer area only
Commonwealth Land - [51376]	WA	In buffer area only
Commonwealth Land - [50272]	WA	In buffer area only
Commonwealth Land - [51975]	WA	In feature area
Commonwealth Land - [51149]	WA	In buffer area only
Commonwealth Land - [50882]	WA	In buffer area only
Commonwealth Land - [50779]	WA	In buffer area only
Commonwealth Land - [50883]	WA	In buffer area only
Commonwealth Land - [50881]	WA	In buffer area only
Commonwealth Land - [50809]	WA	In buffer area only
Commonwealth Land - [50774]	WA	In buffer area only

Listed Marine Species			[ Resource Information ]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
<a href="#">Actitis hypoleucos</a>			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Anous stolidus</a>			
Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
<a href="#">Apus pacificus</a>			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Bubulcus ibis as Ardea ibis</a>			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Calidris acuminata</a>			
Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris pugnax as Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Charadrius dubius</a> Little Ringed Plover [896]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In buffer area only
<a href="#">Recurvirostra novaehollandiae</a> Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thinornis cucullatus as Thinornis rubricollis</a> Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area overfly marine area	In buffer area only



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Reptile			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Extra Information

State and Territory Reserves			[ <a href="#">Resource Information</a> ]
Protected Area Name	Reserve Type	State	Buffer Status
Balannup Lake	Nature Reserve	WA	In buffer area only
Canning River	Management Area	WA	In buffer area only
Forrestdale Lake	Nature Reserve	WA	In buffer area only
Gibbs Road	Nature Reserve	WA	In buffer area only
Harry Waring Marsupial Reserve	Nature Reserve	WA	In buffer area only
Kenwick Wetlands	Nature Reserve	WA	In buffer area only
Modong	Nature Reserve	WA	In buffer area only
Piara	Nature Reserve	WA	In buffer area only
Thomsons Lake	Nature Reserve	WA	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Unnamed WA42044	Nature Reserve	WA	In buffer area only
Unnamed WA48291	Conservation Park	WA	In buffer area only
Unnamed WA49299	Nature Reserve	WA	In buffer area only
Unnamed WA49362	Nature Reserve	WA	In buffer area only
Unnamed WA49363	Conservation Park	WA	In buffer area only
Unnamed WA49561	Conservation Park	WA	In buffer area only
Unnamed WA53313	Conservation Park	WA	In buffer area only
Unnamed WA53649	Nature Reserve	WA	In buffer area only
Wandi	Nature Reserve	WA	In buffer area only

Regional Forest Agreements
[ Resource Information ]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
<a href="#">South West WA RFA</a>	Western Australia	In buffer area only

Nationally Important Wetlands
[ Resource Information ]

Wetland Name	State	Buffer Status
<a href="#">Booragoon Swamp</a>	WA	In buffer area only
<a href="#">Brixton Street Swamps</a>	WA	In buffer area only
<a href="#">Forrestdale Lake</a>	WA	In buffer area only
<a href="#">Gibbs Road Swamp System</a>	WA	In buffer area only
<a href="#">Swan-Canning Estuary</a>	WA	In buffer area only
<a href="#">Thomsons Lake</a>	WA	In buffer area only

EPBC Act Referrals
[ Resource Information ]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<a href="#">119 Hammond Road Residential Development</a>	2023/09541		Completed	In buffer area only
<a href="#">Anketell Road Upgrade (Leith Road to Kwinana Freeway)</a>	2024/09841		Referral Decision	In buffer area only
<a href="#">Cockburn Surf Park</a>	2022/09267		Completed	In buffer area only



Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<a href="#">Hammond Park Mixed Use Development</a>	2024/09820		Assessment	In buffer area only
<a href="#">Industrial Development MKSEA Precinct 1</a>	2023/09760		Completed	In buffer area only
<a href="#">Jandakot Airport Expansion, Commercial Development and Clearing of Vegetation</a>	2009/4796		Approval	In buffer area only
<a href="#">JANDAKOT EASTERN LINK ROAD</a>	2022/09401		Completed	In buffer area only
<a href="#">Jandakot Horse Agistment</a>	2022/09280		Assessment	In buffer area only
<a href="#">Kargotich Road Widening Project</a>	2023/09716		Completed	In buffer area only
<a href="#">Lot 16 Barfield Road: Residential Development</a>	2023/09450		Approval	In buffer area only
<a href="#">Residential Development, Wattleup Road, Hammond Park, WA</a>	2021/8933		Post-Approval	In buffer area only
<a href="#">Southern Link Road Stage 3 City of Canning</a>	2020/8809		Assessment	In buffer area only
<a href="#">Tree removal for road widening - Eighth Road, Armadale, WA</a>	2023/09563		Completed	In buffer area only
<a href="#">Vegetation clearing (Cwlth land), Jandakot Airport, Cockburn, WA</a>	2013/7032		Post-Approval	In buffer area only
Controlled action				
<a href="#">Byford Rail Extension, Byford, WA</a>	2020/8764	Controlled Action	Post-Approval	In buffer area only
<a href="#">Clearing of Lots 2 and 10 Rowley Road, Mandogalup WA</a>	2018/8182	Controlled Action	Assessment Approach	In buffer area only
<a href="#">Construction of Fiona Stanley Hospital</a>	2008/3970	Controlled Action	Post-Approval	In buffer area only
<a href="#">Development of Kwinana Quay port facility</a>	2008/4387	Controlled Action	Completed	In buffer area only
<a href="#">Garden Street road extension, Huntingdale, city of Gosnells, WA</a>	2016/7735	Controlled Action	Post-Approval	In buffer area only
<a href="#">Hammond Park Secondary School development, WA</a>	2016/7741	Controlled Action	Post-Approval	In buffer area only
<a href="#">Honeywood Estate Development</a>	2010/5476	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
<a href="#">Keane Road Strategic Link, proposed construction central portion of Keane Road</a>	2009/5035	Controlled Action	Completed	In buffer area only
<a href="#">Lots 13, 14 &amp; 18 Barfield Rd &amp; Lots 48-51 Rowley Rd, Hammond Park</a>	2012/6524	Controlled Action	Post-Approval	In buffer area only
<a href="#">Mandogalup Urban Development, Mandogalup, WA</a>	2014/7308	Controlled Action	Post-Approval	In buffer area only
<a href="#">Natural Gas Pipeline Expansion</a>	2006/2813	Controlled Action	Post-Approval	In buffer area only
<a href="#">Ranford Road Residential Development</a>	2002/549	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential development and bushfire protection within part Lot 9006 Reilly Road, Harrisdale, WA</a>	2016/7846	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential Development Lot 131 Jandakot Road, Treeby WA</a>	2018/8205	Controlled Action	Further Information Request	In buffer area only
<a href="#">Residential developmnt, Lots 11 and 74 Beenyup Road, Banjup, WA</a>	2017/7923	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential Estate at Lot 1580 Warton Road, Southern River</a>	2004/1471	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential Estate Development, Lot 682 Rowley Road, Mandogalup, Western Australia</a>	2014/7126	Controlled Action	Post-Approval	In buffer area only
<a href="#">Roe Highway extension, Kwinana Freeway to Stock Road, WA</a>	2009/5031	Controlled Action	Post-Approval	In buffer area only
<a href="#">Roe Hwy Extension</a>	2003/972	Controlled Action	Post-Approval	In buffer area only
<a href="#">Shenton Park Subdivision</a>	2004/1479	Controlled Action	Completed	In buffer area only
<a href="#">Thornlie-Cockburn Link Project, WA</a>	2018/8188	Controlled Action	Post-Approval	In buffer area only
<a href="#">Tonkin Highway Extension ??? Thomas Road to South Western Highway</a>	2019/8608	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
<a href="#">'Looping 10' gas transmission pipeline from Kwinana to Hopelands</a>	2005/2212	Not Controlled Action	Completed	In buffer area only
<a href="#">Armadale Road Duplication - Tapper to Anstey Road</a>	2017/7972	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Armadale Road to North Lake Road Bridge development, Jandakot, WA</a>	2018/8284	Not Controlled Action	Completed	In buffer area only
<a href="#">Bibra Lake Aboriginal Cultural Centre Development</a>	2020/8642	Not Controlled Action	Completed	In buffer area only
<a href="#">Burslem Drive Bridge Duplication Over Canning River, Maddington, WA</a>	2014/7115	Not Controlled Action	Completed	In buffer area only
<a href="#">Bushfire hazard reduction, Lot 37 Barfield Road, Hammond Park, WA</a>	2018/8204	Not Controlled Action	Completed	In buffer area only
<a href="#">Calleya Residential Development, Banjup, WA</a>	2016/7708	Not Controlled Action	Completed	In buffer area only
<a href="#">Clearing of Native Vegetation, Hammond Park, WA</a>	2011/6041	Not Controlled Action	Completed	In buffer area only
<a href="#">Commercial development of Lot 106 Wright Road, Forrestdale WA</a>	2003/1255	Not Controlled Action	Completed	In feature area
<a href="#">Construction of Hammond Road Primary School, Hammond Park, WA</a>	2012/6619	Not Controlled Action	Completed	In buffer area only
<a href="#">Construction of international rowing course and commercial/residential areas</a>	2003/1034	Not Controlled Action	Completed	In feature area
<a href="#">Curtin Main Street Project - Transformation of Bentley Campus to a major urban centre WA</a>	2013/7044	Not Controlled Action	Completed	In buffer area only
<a href="#">Denny Avenue Level Crossing Removal, Kelmscott WA</a>	2018/8377	Not Controlled Action	Completed	In buffer area only
<a href="#">Eighth Road and Forrest Road Upgrade, Armadale, WA</a>	2019/8538	Not Controlled Action	Completed	In buffer area only
<a href="#">Eradication of the European House Borer, Perth metropolitan area, WA</a>	2009/5027	Not Controlled Action	Completed	In feature area
<a href="#">extensions to minerals laboratory</a>	2005/2285	Not Controlled Action	Completed	In buffer area only
<a href="#">Frankland Parks Oval project, Hammond Park, WA</a>	2018/8369	Not Controlled Action	Completed	In buffer area only
<a href="#">Gas-fired Power Station</a>	2005/2213	Not Controlled Action	Completed	In buffer area only
<a href="#">Grazing of stock and associated works on Lot 1790 Passmore Street, Southern River Western Australia</a>	2018/8176	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Hammond West Urban Development, Hammond Park, WA</a>	2017/7917	Not Controlled Action	Completed	In buffer area only
<a href="#">Hazard reduction and site access, Lot 682 Rowley Road, Mandogalup, WA</a>	2018/8186	Not Controlled Action	Completed	In buffer area only
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Controlled Action	Completed	In feature area
<a href="#">INDIGO Central Submarine Telecommunications Cable</a>	2017/8127	Not Controlled Action	Completed	In feature area
<a href="#">Industrial Development (multiple lots) Edward Street, Kenwick, WA</a>	2018/8231	Not Controlled Action	Completed	In buffer area only
<a href="#">Jandakot Road Widening, Solomon Road to Berrigan Drive, Jandakot, WA</a>	2020/8728	Not Controlled Action	Completed	In buffer area only
<a href="#">Kwinana Fwy southbound widening Roe Hwy to Armadale Rd and construction of farrington Rd off-ramp</a>	2013/7062	Not Controlled Action	Completed	In buffer area only
<a href="#">Kwinana Gas-Fired Power Station</a>	2005/2101	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 28 157 Barfield Road, Hammond Park - Proposed Residential Development</a>	2021/9063	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 29 Barfield Road, Hammond Park</a>	2017/7948	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 2 Nicholson Road, Forrestdale</a>	2012/6561	Not Controlled Action	Completed	In buffer area only
<a href="#">Lots 12, 13 and 18 Hammond Road, Lot 80 Beeliar Drive and Lot 500 Hird Road</a>	2012/6576	Not Controlled Action	Completed	In buffer area only
<a href="#">Murdoch University Sports Precinct, Melville, WA</a>	2016/7823	Not Controlled Action	Completed	In buffer area only
<a href="#">Oakford Village development, Shire of Serpentine-Jarrahdale, WA</a>	2018/8157	Not Controlled Action	Completed	In buffer area only
<a href="#">Perth Seawater Desalination Project: Thomsons Lake to Kogolup Pipeline</a>	2005/1971	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential Development, Hilbert</a>	2020/8675	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential Development, Lot 12 Lyon Road, Aubin Grove, WA</a>	2013/6852	Not Controlled Action	Completed	In buffer area only



Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Residential development, Lot 13 Lyon Road, Aubin Grove, WA</a>	2014/7151	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lot 33 Barfield Road, Hammond Park, WA</a>	2015/7548	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lot 74 Wattleup Road, Hammond Park, WA</a>	2018/8273	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lots 124 and 125, Wattleup Road, Hammond Park, WA</a>	2015/7519	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lots 1 and 7-11 Lyon Rd and Lot 88 De Haer Rd, Wandi, WA</a>	2017/7908	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development of Lot 7 Anketell Rd, Anketell, WA</a>	2018/8281	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential Development of Lots 76 and 107 Wattleup Road, Hamond Park</a>	2020/8865	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential estate, multiple lots, Mandogalup, WA</a>	2018/8264	Not Controlled Action	Completed	In buffer area only
<a href="#">Road widening - Eighth Road Armadale between Gribble Avenue and Armadale Road</a>	2021/8964	Not Controlled Action	Completed	In buffer area only
<a href="#">Roe Highway - Karel Avenue to Hope Road Bridge Project</a>	2005/2061	Not Controlled Action	Completed	In buffer area only
<a href="#">Sand extraction operation, Lot 1 Thomas Road, Oakford, WA</a>	2017/8136	Not Controlled Action	Completed	In buffer area only
<a href="#">Southern River Mixed Business Precinct F, City of Gosnells, WA</a>	2013/6813	Not Controlled Action	Completed	In buffer area only
<a href="#">Southern River Precinct 3E</a>	2017/7900	Not Controlled Action	Completed	In buffer area only
<a href="#">South Metropolitan Crop Research Hub, Murdoch WA</a>	2018/8201	Not Controlled Action	Completed	In buffer area only
<a href="#">Stages 2-5 of primary school and assoc facilities development, Hammond Park, WA</a>	2015/7407	Not Controlled Action	Completed	In buffer area only
<a href="#">Tonkin Highway Extension</a>	2001/470	Not Controlled Action	Completed	In buffer area only
<a href="#">Translocation of orchids (Caladenia huegelii) from Roe Hway Reserve</a>	2002/781	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Urban development, Lot 109 Wattleup Road, Hammond Park, WA</a>	2015/7425	Not Controlled Action	Completed	In buffer area only
<a href="#">Urban development of Lot 107 Wattleup Road, Hammond Park, WA</a>	2017/7890	Not Controlled Action	Completed	In buffer area only
<a href="#">Urban developmnet &amp; associated infrastructure, Lot 4 Armadale Road, Banjup WA</a>	2013/7049	Not Controlled Action	Completed	In buffer area only
<a href="#">Wandi South residential development Kenby Close &amp; Lyon Rd, Wandi, WA</a>	2014/7198	Not Controlled Action	Completed	In buffer area only
<a href="#">Wentworth West residential development, Bartram Road, Success, WA</a>	2014/7245	Not Controlled Action	Completed	In buffer area only
<a href="#">Wungong Transfer Mains Project</a>	2007/3532	Not Controlled Action	Completed	In buffer area only
<a href="#">Yule Brook Main Drain Flood Mitigation Works</a>	2019/8572	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
<a href="#">City of Cockburn Sporting Facilities</a>	2005/2139	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
<a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
<a href="#">South West Metropolitan Railway Project</a>	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
<a href="#">State Football Centre</a>	2020/8824	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
<a href="#">AIC Forrestdale Campus, Educational Establishment</a>	2021/9134	Referral Decision	Referral Publication	In buffer area only
<a href="#">Commercial development of Lot 414 Grove Road, Kenwick</a>	2021/9022	Referral Decision	Referral Publication	In buffer area only
<a href="#">Rezoning of Crown Reserve 39181 to facilitate future residential development</a>	2005/2096	Referral Decision	Completed	In buffer area only





# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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

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

Where little information is available for a 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 detailed distribution mapping methods are used to update these distributions

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

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

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

# 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](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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Category	Status	Taxon
AMPHIBIAN		<i>Crinia georgiana</i>
		<i>Crinia glauerti</i>
		<i>Crinia insignifera</i>
		<i>Crinia pseudinsignifera</i>
		<i>Crinia</i> sp.
		<i>Geocrinia leai</i>
		<i>Heleioporus eyrei</i>
		<i>Heleioporus psammophilus</i>
		<i>Heleioporus</i> sp.
		<i>Limnodynastes dorsalis</i>
		<i>Litoria adelaidensis</i>
		<i>Litoria adelaidensis</i> (Slender Tree Frog)
		<i>Litoria moorei</i>
		<i>Litoria moorei</i> (Motorbike Frog)
		<i>Litoria</i> sp.
		<i>Myobatrachus gouldii</i>
		<i>Pseudophryne guentheri</i>
BIRD		<i>Acanthagenys rufogularis</i>
		<i>Acanthiza apicalis</i>
		<i>Acanthiza chrysorrhoa</i>
		<i>Acanthiza inornata</i>
		<i>Acanthorhynchus superciliosus</i>
		<i>Accipiter cirrocephalus</i>
		<i>Accipiter cirrocephalus</i> subsp. <i>cirrocephalus</i>
		<i>Accipiter fasciatus</i>
		<i>Accipiter fasciatus</i> subsp. <i>didimus</i>
		<i>Accipiter fasciatus</i> subsp. <i>fasciatus</i>
		<i>Acrocephalus australis</i>
		<i>Acrocephalus australis</i> subsp. <i>gouldi</i>
	MI	<i>Actitis hypoleucos</i>
		<i>Aegotheles cristatus</i>
		<i>Aegotheles cristatus</i> subsp. <i>cristatus</i>
		<i>Anas castanea</i>
		<i>Anas gracilis</i>
		<i>Anas platyrhynchos</i>
		<i>Anas platyrhynchos</i> subsp. <i>domesticus</i>
		<i>Anas rhynchotis</i>
		<i>Anas superciliosa</i>
		<i>Anhinga melanogaster</i>
		<i>Anhinga melanogaster</i> subsp. <i>novaehollandiae</i>
		<i>Anhinga novaehollandiae</i>
		<i>Anser anser</i>
		<i>Anthochaera carunculata</i>
		<i>Anthochaera lunulata</i>
	MI	<i>Apus pacificus</i>
		<i>Aquila audax</i>
		<i>Aquila morphnoides</i>
		<i>Ardea alba</i>

Category	Status	Taxon
		Ardea alba subsp. modesta
		Ardea garzetta subsp. nigripes
		Ardea ibis
		Ardea intermedia
		Ardea modesta
		Ardea novaehollandiae
		Ardea pacifica
		Ardea sacra
	MI	Arenaria interpres
		Artamus cinereus
		Artamus cinereus subsp. melanops
		Artamus cyanopterus
		Artamus personatus
		Artamus sordidus
		Aythya australis
		Barnardius zonarius
		Biziura lobata
	EN	Botaurus poiciloptilus
		Burhinus grallarius
		Cacatua galerita
		Cacatua pastinator
		Cacatua roseicapilla
		Cacatua sanguinea
		Cacatua tenuirostris
		Cacomantis flabelliformis
		Cacomantis flabelliformis subsp. flabelliformis
		Cacomantis pallidus
	MI	Calidris acuminata
	CR	Calidris ferruginea
	MI	Calidris melanotos
		Calidris minuta
	MI	Calidris ruficollis
	MI	Calidris subminuta
	CR	Calidris tenuirostris
		Calyptorhynchus banksii
		Calyptorhynchus banksii naso
	VU	Calyptorhynchus banksii subsp. naso
	EN	Calyptorhynchus baudinii
	EN	Calyptorhynchus latirostris
		Calyptorhynchus sp.
		Calyptorhynchus sp. 'white-tailed black cockatoo'
	MI	Charadrius dubius
	VU	Charadrius leschenaultii
		Charadrius melanops
		Charadrius ruficapillus
		Chenonetta jubata
		Cheramoeca leucosterna
	MI	Chlidonias leucopterus

Category	Status	Taxon
		<i>Chroicocephalus novaehollandiae</i>
		<i>Chrysococcyx basalis</i>
		<i>Chrysococcyx lucidus</i>
		<i>Chrysococcyx lucidus subsp. plagosus</i>
		<i>Cincloramphus cruralis</i>
		<i>Cincloramphus mathewsi</i>
		<i>Circus approximans</i>
		<i>Circus assimilis</i>
		<i>Cladorhynchus leucocephalus</i>
		<i>Climacteris rufa</i>
		<i>Colluricincla harmonica</i>
		<i>Columba livia</i>
		<i>Coracina novaehollandiae</i>
		<i>Coracina novaehollandiae subsp. novaehollandiae</i>
		<i>Corvus bennetti</i>
		<i>Corvus coronoides</i>
		<i>Corvus coronoides subsp. perplexus</i>
		<i>Coturnix pectoralis</i>
		<i>Coturnix ypsilophora</i>
		<i>Coturnix ypsilophora subsp. australis</i>
		<i>Cracticus nigrogularis</i>
		<i>Cracticus tibicen</i>
		<i>Cracticus tibicen subsp. dorsalis</i>
		<i>Cracticus tibicen subsp. tibicen</i>
		<i>Cracticus torquatus</i>
		<i>Cracticus torquatus subsp. torquatus</i>
		<i>Cygnus atratus</i>
		<i>Cygnus olor</i>
		<i>Dacelo novaeguinea</i>
		<i>Dacelo novaeguineae</i>
		<i>Daphoenositta chrysoptera</i>
		<i>Dendrocygna arcuata</i>
		<i>Dicaeum hirundinaceum</i>
		<i>Diomedea chrysostoma</i>
		<i>Egretta garzetta</i>
		<i>Egretta novaehollandiae</i>
		<i>Egretta sacra</i>
		<i>Elanus axillaris</i>
		<i>Elanus caeruleus</i>
		<i>Elanus caeruleus subsp. axillaris</i>
		<i>Elseya melanops</i>
		<i>Eolophus roseicapillus</i>
		<i>Eopsaltria georgiana</i>
		<i>Epthianura albifrons</i>
		<i>Erythronyx cinctus</i>
		<i>Eurostopodus argus</i>
		<i>Falco berigora</i>
		<i>Falco berigora subsp. berigora</i>

Category	Status	Taxon
		Falco cenchroides
		Falco cenchroides subsp. cenchroides
		Falco longipennis
		Falco longipennis subsp. longipennis
	OS	Falco peregrinus
		Falco peregrinus subsp. macropus
		Fulica atra
		Fulica atra subsp. australis
	MI	Gallinago hardwickii
		Gallinula tenebrosa
		Gallinula tenebrosa subsp. tenebrosa
		Gallinula ventralis
		Gallirallus philippensis
		Gallirallus philippensis subsp. mellori
		Gallus gallus
		Gavicalis virescens
	MI	Gelochelidon nilotica
		Gerygone fusca
		Gerygone fusca subsp. fusca
		Glossopsitta porphyrocephala
		Glyciphila melanops
		Grallina cyanoleuca
		Haematopus longirostris
		Haliaeetus leucogaster
		Haliastur sphenurus
		Hieraaetus morphnoides
		Himantopus himantopus
		Himantopus himantopus subsp. leucocephalus
		Hirundo neoxena
		Hirundo nigricans
	MI	Hydroprogne caspia
	P4	Ixobrychus dubius
		Lalage tricolor
		Larus novaehollandiae
		Larus novaehollandiae subsp. novaehollandiae
		Lichenostomus ornatus
		Lichenostomus virescens
		Lichmera indistincta
		Lichmera indistincta subsp. indistincta
	MI	Limosa limosa
		Lonchura castaneothorax
		Lophoictinia isura
		Malacorhynchus membranaceus
		Malurus elegans
		Malurus lamberti
		Malurus leucopterus
		Malurus sp.
		Malurus splendens



Category	Status	Taxon
		Manorina flavigula
		Megalurus gramineus
		Melanodryas cucullata
		Melithreptus brevirostris
		Melithreptus chloropsis
		Melithreptus lunatus
		Melopsittacus undulatus
		Merops ornatus
		Microcarbo melanoleucos
		Microeca fascians
		Milvus migrans
		Myiagra inquieta
		Neochmia temporalis
		Neophema elegans
		Ninox connivens
		Ninox novaeseelandiae
		Ninox novaeseelandiae subsp. boobook
		Nycticorax caledonicus
		Nycticorax caledonicus subsp. hilli
		Nymphicus hollandicus
		Ocyphaps lophotes
P4		Oxyura australis
		Pachycephala pectoralis
		Pachycephala pectoralis subsp. fuliginosa
		Pachycephala rufiventris
		Pachycephala rufiventris subsp. rufiventris
MI		Pandion haliaetus
		Pandion haliaetus subsp. cristatus
		Pardalotus punctatus
		Pardalotus punctatus subsp. punctatus
		Pardalotus striatus
		Pardalotus striatus subsp. westraliensis
		Pelecanus conspicillatus
		Petrochelidon ariel
		Petrochelidon nigricans
		Petroica boodang
		Petroica goodenovii
		Petroica multicolor subsp. campbelli
MI & P4		Phaethon rubricauda
		Phalacrocorax carbo
		Phalacrocorax fuscescens
		Phalacrocorax melanoleucos
		Phalacrocorax sulcirostris
		Phalacrocorax varius
		Phaps chalcoptera
		Phaps elegans
MI		Philomachus pugnax
		Phylidonyris melanops

Category	Status	Taxon
		Phylidonyris niger
		Phylidonyris nigra
		Phylidonyris nigra subsp. gouldii
		Phylidonyris novaehollandiae
		Phylidonyris novaehollandiae
		Platalea flavipes
		Platalea regia
		Platycercus icterotis
		Platycercus icterotis subsp. icterotis
		Platycercus spurius
		Platycercus zonarius
		Platycercus zonarius subsp. semitorquatus
		Platycercus zonarius subsp. zonarius
MI		Plegadis falcinellus
MI		Pluvialis fulva
MI		Pluvialis squatarola
		Podargus strigoides
		Podargus strigoides subsp. brachypterus
		Podiceps cristatus
		Poliocephalus poliocephalus
		Polytelis anthopeplus
		Porphyrio porphyrio
		Porphyrio porphyrio subsp. bellus
		Porzana fluminea
		Porzana pusilla
		Porzana pusilla subsp. palustris
		Porzana tabuensis
		Psittacula krameri
		Pterodroma brevirostris
		Pterodroma lessonii
		Pterodroma macroptera
		Puffinus assimilis subsp. assimilis
		Purpureicephalus spurius
		Recurvirostra novaehollandiae
		Rhipidura albiscapa
		Rhipidura fuliginosa
		Rhipidura fuliginosa subsp. alisteri
		Rhipidura fuliginosa subsp. preissi
		Rhipidura leucophrys
		Rhipidura leucophrys subsp. leucophrys
EN		Rostratula australis
		Sericornis frontalis
		Sericornis frontalis subsp. maculatus
		Smicrornis brevirostris
		Stagonopleura oculata
MI		Stercorarius longicaudus
		Sterna hybrida subsp. javanica
		Sternula nereis

Category	Status	Taxon
		Stictonetta naevosa
		Strepera versicolor
		Streptopelia chinensis
		Streptopelia chinensis subsp. tigrina
		Streptopelia senegalensis
		Streptopelia senegalensis subsp. senegalensis
		Sugomel niger
		Tachybaptus novaehollandiae
		Tachybaptus novaehollandiae subsp. novaehollandiae
		Tadorna radjah
		Tadorna tadornoides
	MI	Thalasseus bergii
	P4	Thinornis rubricollis
		Threskiornis molucca
		Threskiornis moluccus
		Threskiornis spinicollis
		Todiramphus sanctus
		Todiramphus sanctus subsp. sanctus
		Tribonyx ventralis
		Trichoglossus haematodus
		Trichoglossus haematodus subsp. moluccanus
		Trichoglossus moluccanus
	MI	Tringa glareola
		Tringa hypoleucos
	MI	Tringa nebularia
	MI	Tringa stagnatilis
		Turnix varia
		Turnix varia subsp. varia
		Turnix varius
		Tyto alba subsp. delicatula
		Vanellus miles
		Vanellus tricolor
		Zosterops lateralis
		Zosterops lateralis subsp. gouldi
INVERTEBRATE		Acariformes sp.
		Aganippe raphiduca
		Akamptogonus novarae
		Allothereua maculata
		Aname mainae
		Aname tepperi
		Ancylidae sp.
		Antichiropus variabilis
		Arachnura higginsii
		Araneus cyphoxis
		Araneus eburneiventris
		Araneus senicaudatus
		Argiope protensa
		Argiope trifasciata

Category	Status	Taxon
		Artoria flavimana
		Artoria linnaei
		Artoria taeniifera
		Asadipus kunderang
		Austracantha minax
P2		Austroconops mcmillani
		Backobourkia heroine
		Badumna insignis
		Baetidae sp.
		Ballarra longipalpus
		Caenidae sp.
		Celaenia excavata
		Ceratopogonidae sp.
		Cercophonius sulcatus
		Ceryerda cursitans
		Cherax cainii
		Cherax destructor
		Cherax preissii
		Cherax quinquecarinatus
		Cherax sp.
		Chironominae sp.
		Clynotis severus
		Coenagrionidae sp.
		Corixidae sp.
		Cormocephalus aurantiipes
		Cormocephalus novaehollandiae
		Cormocephalus rubriceps
		Cryptoerithus quobba
		Cyclosa trilobata
		Cyrtophora parnasia
		Daphnia carinata
		Dingosa serrata
		Dinocambala ingens
		Dytiscidae sp.
		earthworm sp.
		Eodelena convexa
		Eodelena lapidicola
		Eriophora biapicata
		Erythracarus decoris
		Gea theridioides
		Glossiphoniidae sp.
		Gomphidae sp.
		Gripopterygidae sp.
		Gyrinidae sp.
		Henicops dentatus
		Hogna crispipes
		Hydrometridae sp.
		Hydrophilidae sp.

Category	Status	Taxon
		Hydropsychidae sp.
		Hydroptilidae sp.
		Hyriidae sp.
		Idiommatia blackwalli
	P3	Idiosoma sigillatum
		Isometroides vesus
		Isopoda leishmanni
		Ixodes australiensis
		Kangarosa ludwigi
		Kangarosa properipes
		Karaops ellenae
		Lampona brevipes
		Lampona cylindrata
		Latrodectus hasseltii
	P3	Leioproctus contrarius
	EN	Leioproctus douglasiellus
		Leptoceridae sp.
		Leptophlebiidae sp.
		Leucauge dromedaria
		Libellulidae sp.
		Longepi woodman
		Longrita insidiosa
		Lychas sp.
		Lycosa ariadnae
		Lycosa gilberta
		Maratus mungaich
		Maratus pavonis
		Marsupipus antechinus
		Missulena granulosa
		Missulena hoggi
		Missulena occatoria
		Mituliodon tarantulinus
		Mitzoruga insularis
	EN	Neopasiphae simplicior
		Nephila edulis
		Nicodamus mainae
		Notiasemus glauerti
		Notonectidae sp.
		Ocrisiona leucocomis
		Oligochaeta sp.
		Ommatoiulus moreleti
		Ommatoiulus moreletii
		Orthocladinae sp.
		Oxidus gracilis
		Oxyopes gracilipes
		Oxyopes punctatus
		Palaemonidae sp.
		Paralamyctes cammoensis

Category	Status	Taxon
		Parastacidae sp.
		Pediana occidentalis
		Phenasteron longiconductor
		Phryganoporus candidus
		Physidae sp.
		Pinkfloydia harveii
		Planorbidae sp.
		Podykipus collinus
		Poltyl laciniosus
		Polygonarea repanda
		Prionosternum scutatum
		Raveniella cirrata
		Raveniella peckorum
		Richardsonianidae sp.
		Scolopendra laeta
		Scolopendra morsitans
		Servaea melaina
		Simaetha tenuior
		Simuliidae sp.
		Smeringopus natalensis
		Solaenodolichopus pruvoti
		Steatoda capensis
		Steatoda grossa
		Supunna funerea
		Supunna picta
	P4	Synemon gratiosa
		Synothele rastelloides
		Tabanidae sp.
		Tamopsis perthensis
		Tanypodinae sp.
		Tasmanicosa leuckartii
		Tetragnatha demissa
	P1	Throscodectes xiphos
		Tinytrema yarra
		Tipulidae sp.
		Urodacus novaehollandiae
		Urodacus planimanus
		Venator immansueta
		Venatrix pullastra
	VU	Westralunio carteri
		Withius piger
MAMMAL		Antechinus flavipes subsp. leucogaster
		Austronomus australis
		Canis lupus subsp. familiaris
		Cercartetus concinnus
		Chalinolobus gouldii
		Chalinolobus morio
	VU	Dasyurus geoffroii

Category	Status	Taxon
		Felis cattus
		Felis catus
		Funambulus pennanti
	P4	Hydromys chrysogaster
	P4	Isoodon fusciventer
		Isoodon obesulus
		Isoodon obesulus fusciventer
		Isoodon obesulus subsp. fusciventer
		Macropus fuliginosus
		Macropus irma
		Mormopterus sp. 4
		Mus musculus
	EN	Myrmecobius fasciatus
	P4	Notamacropus irma
		Nyctophilus geoffroyi
		Nyctophilus major
		Nyctophilus major major
		Nyctophilus timoriensis subsp. timoriensis
		Oryctolagus cuniculus
		Ozimops kitcheneri
		Phascogale tapoatafa subsp. tapoatafa
	CD	Phascogale tapoatafa subsp. wambenger
		Pteropus scapulatus
		Rattus fuscipes
		Rattus norvegicus
		Rattus rattus
	VU	Setonix brachyurus
		Sminthopsis gilberti
		Sminthopsis murina
		Tachyglossus aculeatus
		Tadarida australis
		Tarsipes rostratus
		Trichosurus vulpecula
		Trichosurus vulpecula subsp. vulpecula
		Vespadelus regulus
		Vulpes vulpes
REPTILE	P3	Acanthophs antarcticus
		Acritoscincus trilineata
		Acritoscincus trilineatum
		Acritoscincus trilineatus
		Anilius australis
		Aprasia pulchella
		Aprasia repens
		Brachyuropsis semifasciatus
		Chelodina colliei
		Chelodina oblonga
		Christinus marmoratus
		Cryptoblepharus buechananii



Category	Status	Taxon
		Cryptoblepharus plagiocephalus
		Cryptoblepharus sp.
		Ctenophorus adelaidensis
		Ctenotus australis
	P4	Ctenotus delli
		Ctenotus fallens
		Ctenotus gemmula
		Ctenotus impar
		Ctenotus labillardieri
	P3	Ctenotus ora
		Delma fraseri
		Delma grayii
		Delma sp.
		Demansia psammophis
		Demansia psammophis subsp. reticulata
		Diplodactylus granariensis subsp. granariensis
		Diplodactylus lateroides
		Diplodactylus polyophthalmus
		Diplodactylus sp.
		Echiopsis curta
		Egernia kingii
		Egernia kingii (King's Skink)
		Egernia napoleonis
		Elapognathus coronatus
		Gehyra variegata
		Hemiergis initialis subsp. initialis
		Hemiergis quadrilineata
		Lerista distinguenda
		Lerista elegans
	P3	Lerista lineata
		Lialis burtonis
		Menetia greyii
		Menetia sp.
		Morelia spilota subsp. imbricata
		Morethia lineoocellata
		Morethia obscura
		Neelaps bimaculatus
	P3	Neelaps calonotos
		Notechis scutatus
		Parasuta gouldii
		Parasuta nigriceps
		Pletholax gracilis
		Pletholax gracilis subsp. gracilis
		Pogona minima
		Pogona minor
	VU	Pogona minor subsp. minima
		Pogona minor subsp. minor
		Pseudechis australis

Category	Status	Taxon
		Pseudonaja affinis
		Pseudonaja affinis subsp. affinis
	P4	Pseudonaja affinis subsp. exilis
		Pseudonaja mengdeni
		Pygopus lepidopodus
		Ramphotyphlops australis
		Ramphotyphlops pinguis
		Ramphotyphlops waitii
		Simoselaps bertholdi
		Tiliqua occipitalis
		Tiliqua rugosa
		Tiliqua rugosa rugosa
		Tiliqua rugosa subsp. aspera
		Tiliqua rugosa subsp. rugosa
		Underwoodisaurus milii
		Varanus gouldii
		Varanus rosenbergi
		Varanus rosenbergii
		Varanus tristis

# Appendix C

Conservation significant species and likelihood of occurrence  
assessment





Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
Birds					
<i>Actitis hypoleucos</i>	Common sandpiper	MI	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 1998).	Negligible
<i>Anous stolidus</i>	Common noddy	MI	MI	Tropical and subtropical seas, cayes, reefs, buoys and piles (Pizzey & Knight 2012).	Nil
<i>Apus pacificus</i>	Pacific swift	MI	MI	Aerial, migratory species that is most often seen over inland plains and sometimes above open areas, foothills or in coastal areas. Sometimes occurs over settled areas, including towns, urban areas and cities (Pizzey & Knight 2012).	Moderate
<i>Botaurus poiciloptilus</i>	Australasian bittern	EN	EN	In or over water, in tall reedbeds, sedges, rushes, cumbungi, lignum. Also occurs in ricefields, drains in tussocky paddocks and occasionally in saltmarshes and brackish wetlands (TSSC 2019).	Negligible
<i>Bubulcus ibis</i>	Cattle egret	-	MA	Stock paddocks, pastures, croplands, garbage tips, wetlands, tidal mudflats, drains (Pizzey & Knight 2012).	Nil



Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	MI	MI	Occurs in tidal mudflats, saltmarshes and mangroves, as well as, shallow fresh, brackish or saline inland wetlands. It is also known from floodwaters, irrigated pastures and crops, sewage ponds, saltfields (Pizzey & Knight 2012).	Negligible
<i>Calidris alba</i>	Sanderling	MI	MI	Mainly steeply shelving sandy beaches exposed to ocean swell. Also sandy inlets, estuarine sandbanks and near-coastal saltlakes (including saltwork ponds) (Johnstone & Storr 1998).	Negligible
<i>Calidris canutus</i>	Red knot	EN	EN (MI)	Mud and sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Pizzey & Knight 2012).	Negligible
<i>Calidris ferruginea</i>	Curlew sandpiper	CR	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 & Storr 1988).	Negligible
<i>Calidris melanotos</i>	Pectoral sandpiper	MI	MI	Mainly fresh waters (swamps, lagoons, river pools, irrigation channels and sewage ponds); also samphire flats around estuaries and saltlakes (Johnstone & Storr 1998).	Negligible
<i>Calidris ruficollis</i>	Red-necked stint	MI	MI	Tidal mudflats, saltmarshes, sandy or shelly beaches, saline and freshwater wetlands (coastal and inland), saltfields, sewage ponds (Pizzey and Knight 2012).	Negligible

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Calidris subminuta</i>	Long-toed stint	MI	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 & Storr 1988).	Negligible
<i>Calidris tenuirostris</i>	Great knot	CR	CR (MI)	Mud or sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Johnstone & Storr 1988).	Negligible
<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cock	VU	VU	Eucalypt and Corymbia forests, often in hilly interior. More recently also observed in more open agricultural and suburban areas including Perth metropolitan area. Attracted to seeding Corymbia calophylla, Eucalyptus marginata, introduced Melia azedarach and Eucalyptus spp. trees (Johnstone et al. 2013).	Recorded
<i>Charadrius dubius</i>	Little ringed plover	MI	MI	Open, muddy or sandy shores of lakes, swamps, tidal areas, sewage ponds or farm dams. Rare but regular summer migrant to Australia (Pizzey & Knight 2012).	Nil
<i>Charadrius leschenaultii</i>	Great sand plover	VU	VU (MI)	Wide sandy or shelly beaches, sandpits, tidal mudflats, reefs, sand cays, mangroves, saltmarsh, dune wilderness, bare paddocks, seldom far inland (Pizzey & Knight 2012).	Negligible

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Charadrius ruficapillus</i>	Red-capped plover	-	MA	Broad, sandy and shelly beaches; bare margins of saline wetlands and lakes, inland and coastal; saltmarsh; tidal mudflats and sandflats; adjacent dunes; occasionally shallow freshwater wetlands, inland and coastal (Pizzey & Knight 2012).	Nil
<i>Chlidonias leucopterus</i>	White-winged black tern	MI	MI	Vegetated and open wetlands, brackish and saline lakes, saltfields, irrigated lands, sewage ponds and occasionally offshore (Pizzey & Knight 2012).	Negligible
<i>Diomedea amsterdamensis</i>	Amsterdam Island albatross	CR	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)	Nil
<i>Diomedea epomophora</i>	Southern royal albatross	VU	VU (MI)	Rare visitor to Western Australian seas; it breeds on subantarctic islands south of New Zealand (Johnstone and Storr 1998).	Nil
<i>Diomedea exulans</i>	Wandering albatross	VU	VU (MI)	Marine, pelagic and aerial species. It breeds on Macquarie Island and feeds in Australian portions of the Southern Ocean (DoE 2018).	Nil
<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.	Nil

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Elanus scriptus</i>	Letter-winged kite	P4	-	Open to sparsely wooded country and grassland near tree-lined streams or watercourses (Johnstone and Storr 1998).	Nil
<i>Falco peregrinus</i>	Peregrine falcon	OS	-	Mainly found around cliffs along coasts, rivers, ranges and around wooded watercourses and lakes (Johnstone and Storr 1998).	Moderate
<i>Gallinago megala</i>	Swinhoe's snipe	MI	MI	Wet, grassy ground; edges of reedy swamps (Pizzey & Knight 2012).	Nil
<i>Gallinago stenura</i>	Pin-tailed snipe	MI	MI	Boggy edges of vegetated wetlands; sewage and other ponds; stubbles, grasslands with shrubs, pastures (Pizzey & Knight 2012).	Nil
<i>Gelochelidon nilotica</i>	Gull-billed tern	MI	MI	Beaches, mudflats; fresh, brackish wetlands, including far inland; grasslands, crops, ploughed fields, airfields (Pizzey & Knight 2012).	Negligible
<i>Glareola maldivarum</i>	Oriental pratincole	MI	MI	Plains, shallow wet and dry edges of open bare wetlands, tidal mudflats and beaches (Pizzey & Knight 2012).	Nil
<i>Haliaeetus leucogaster</i>	White-bellied sea-eagle	-	MA	Coasts, islands, estuaries, inlets, large rivers, inland lakes and reservoirs (Pizzey & Knight 2012).	Nil
<i>Himantopus himantopus</i>	Black-winged stilt	-	MA	Freshwater and saltwater marshes, mudflats, and the shallow edges of lakes and rivers (Birdlife Australia 2019).	Nil

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Hydroprogne caspia</i>	Caspian tern	MI	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 (DCCEEW 2023).	Negligible
<i>Ixobrychus dubius</i>	Australian little bittern	P4	-	Dense vegetation surrounding/within freshwater pools, swamps and lagoons, well screened with trees. Shelters in dense beds of <i>Typha</i> spp., <i>Baumea</i> spp. and tall rushes in freshwater swamps around lakes and along rivers (Johnstone and Storr 1998).	Negligible
<i>Leipoa ocellata</i>	Malleefowl	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 1998).	Nil
<i>Limosa lapponica</i>	Bar-tailed godwit	MI (& VU or CR at subsp. level)	MI	Estuarine sand and mudflats and sandy beaches with loads of seaweed; also reef flats and near-coastal saltlakes (including saltwork and sewage ponds) (Johnstone and Storr 1998).	Negligible



Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<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).	Nil
<i>Limosa limosa</i>	Black-tailed godwit	MI	MI	Tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures, airfields (Pizzey & Knight 2012).	Negligible
<i>Macronectes giganteus</i>	Southern giant-petrel	MI	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 1998).	Nil
<i>Macronectes halli</i>	Northern giant petrel	MI	VU (MI)	Breeds on subantarctic islands. May visit Western Australian water from February to September (Johnstone and Storr 1998).	Nil
<i>Merops ornatus</i>	Rainbow bee-eater	-	MA	Open woodlands with sandy, loamy soil; sandridges, sandpits, riverbanks, road cuttings, beaches, dunes, cliffs, mangroves, rainforest, woodlands and golf courses (Pizzey & Knight 2012).	Moderate
<i>Motacilla cinerea</i>	Grey wagtail	MI	MI	In Australia mostly near running water in disused quarries, sandy and rocky streams in escarpments and rainforests, sewage ponds, ploughed fields and airfields (Pizzey & Knight 2012).	Nil

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Ninox connivens connivens</i>	Barking owl (southwest sub)	P3	-	Open forests, woodlands, dense scrubs, foothills, river red gums, and other large trees near watercourses penetrating otherwise open country. Also Melaleuca woodlands, mangroves, rainforests and deciduous vine scrubs (Johnstone and Storr 1998; Pizzey & Knight 2012).	Negligible
<i>Numenius madagascariensis</i>	Eastern curlew	CR	CR (MI)	Mainly tidal mudflats; also reef flats, sandy beaches and rarely near-coastal lakes (including saltwork ponds) (Johnstone and Storr 1998).	Nil
<i>Numenius minutus</i>	Little curlew	MI	MI	Dry grasslands, floodplains, margins of drying swamps; tidal mudflats, airfields, playing fields, crops, commercial saltfields, sewage ponds (Pizzey & Knight 2012).	Nil
<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 1998).	Negligible
<i>Pachyptila turtur subantarctica</i>	Fairy prion	-	VU	Breeds on subantarctic islands and is presumed to frequent subtropical waters during non-breeding period (TSSC 2015).	Nil
<i>Pandion haliaetus</i>	Osprey	MI	MI	Coasts, estuaries, bays, inlets, islands, and surrounding waters; coral atolls, reefs, lagoons, rock cliffs, stacks (Pizzey & Knight 2012).	Negligible

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Phaethon rubricauda</i>	Red-tailed tropicbird	P4 (MI)	MI	Spend most of their lives at sea and rarely venture near land. This bird is normally found in tropical and subtropical seas around northern Australia. Though rarely seen in colder areas, a few pairs breed on Sugarloaf Rock, south of Cape Naturaliste (DPAW 2017b).	Negligible
<i>Philomachus pugnax</i>	Ruff	MI	MI	Fresh, brackish and saline wetlands; tidal mudflats, saltfields, sewage ponds (Pizzey & Knight 2012).	Nil
<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI	Well-vegetated wetlands, wet pasture, ricefields, floodwaters, floodplains, brackish or occasionally saline wetlands, mangroves, mudflats and occasionally dry grassland (Pizzey & Knight 2012).	Negligible
<i>Pluvialis fulva</i>	Pacific golden plover	MI	MI	Estuaries, mudflats, saltmarshes, mangroves; rocky reefs and stranded seaweed on ocean shores; margins of shallow open inland swamps; sewage ponds, short-grass paddocks, sportsgrounds, airfields, ploughed land (Pizzey & Knight 2012).	Negligible
<i>Pluvialis squatarola</i>	Grey Plover	MI	MI	Mudflats, saltmarsh, tidal reefs and estuaries, rarely inland (Pizzey and Knight 2012).	Negligible
<i>Recurvirostra novaehollandiae</i>	Red-necked avocet	-	MA	Estuaries, tidal mudflats; fresh, brackish and salt swamps and lakes; claypans, commercial saltfields and sewage ponds (Pizzey & Knight 2012).	Nil

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<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).	Nil
<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).	Nil
<i>Thalassarche impavida</i>	Campbell albatross	VU	VU (MI)	Scarce visitor to south-western and western Australian seas. Breeds on Campbell Island (Pizzey & Knight 2012).	Nil
<i>Thalassarche melanophris</i>	Black-browed albatross	EN	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 1998).	Nil
<i>Thalassarche steadi</i>	White-capped albatross	VU	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 1998).	Nil
<i>Thalasseus bergii</i>	Crested tern	MI	MI	Mainly blue-water seas (especially within 3 km of land), including southern estuaries in summer and autumn (when free of silt); also tidal creeks in north, but not penetrating far into larger estuaries (DCCEEW 2023).	Negligible
<i>Thinornis cucullatus</i>	Hooded plover	P4	VU	Margins and shallows of saltlakes, sandy and seaweedy beaches and estuaries; also dams (Johnstone and Storr 1998).	Negligible

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Tringa glareola</i>	Wood sandpiper	MI	MI	Mainly shallow fresh waters (lagoons, swamps, claypans, river pools, dams, bore overflows and sewage ponds); occasionally brackish swamps, rarely saltlakes and estuaries (Pizzey & Knight 2012).	Negligible
<i>Tringa nebularia</i>	Common greenshank	MI	MI	Mudflats, estuaries, saltmarshes, margins of lakes, wetlands, claypans (fresh and saline), commercial saltfields, sewage ponds (Pizzey & Knight 2012).	Negligible
<i>Tringa stagnatilis</i>	Marsh sandpiper	MI	MI	Mainly shallow fresh or brackish waters: swamps, lakes, river pools, soaks, sewage ponds and bore overflows. Occasionally estuaries and salt ponds, and rarely coasts (DCCEEW 2023).	Negligible
<i>Xenus cinereus</i>	Terek sandpiper	MI	MI	Tidal mudflats, estuaries; shores and reefs of islands; coastal swamps, commercial saltfields (Pizzey & Knight 2012).	Nil
<i>Zanda baudinii</i>	Baudin's black cockatoo	EN	EN	Mainly eucalypt forests. Attracted to seeding <i>Corymbia calophylla</i> , <i>Banksia</i> spp., <i>Hakea</i> spp., and to fruiting apples and pears (Johnstone and Storr 1998).	Moderate
<i>Zanda latirostris</i>	Carnaby's black 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> spp., <i>Hakea</i> spp., <i>Eucalyptus</i> spp., <i>Corymbia calophylla</i> , <i>Grevillea</i> spp., and <i>Allocasuarina</i> spp. (Johnstone and Storr 1998).	Recorded



Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
Invertebrates					
<i>Idiosoma sigillatum</i>	Swan Coastal Plain shield-backed trapdoor spider	P3	-	Widely distributed in sandy areas on the Swan Coastal Plain and on Rottnest Island (Prince 2003). Species predominantly recorded from remnant banksia woodland vegetation and heath on sandy soils (Rix et. al 2018).	High
<i>Leioproctus contrarius</i>	a short-tongued bee	P3	-	Life history and habits are poorly documented/ unknown. It has been recorded only on flowers of Goodeniaceae and possibly Lechenaultia stenosepala (Bamford 2003).	Nil
<i>Leioproctus douglasiellus</i>	a short-tongued bee	EN	CR	Life history and habits are poorly documented/ unknown. It has been recorded only on the flowers of Goodenia filiformis and Anthotium junciforme (Houston 2000).	Negligible
<i>Neopasiphae simplicior</i>	a short-tongued bee	EN	CR	This species of native bee has been collected on flowers of Goodenia filiformis, Lobelia tenuior, Angianthus preissianus and Velleia sp. (Houston 2000).	Negligible
<i>Synemon gratiosa</i>	Graceful sun-moth	P4	-	Coastal heathland on Quindalup dunes where it is restricted to secondary sand dunes due to the abundance of the preferred host plant Lomandra maritima. Banksia woodland on Spearwood and Bassendean dunes, where the second known host plant L. hermaphrodita is widespread (DEC 2011).	High

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Throscodectes xiphos</i>	Styler bush cricket	P1	-	Species poorly understood and documented. Known from Jandakot area, where it was originally collected in the axial leaf bases of grass trees ( <i>Xanthorrhoea preissii</i> ) (Invertebrate Solutions 2019).	Nil
<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. Also occupies lentic systems including large water supply dams and even on-stream farm dams. Salinity tolerance quite low (Morgan et al. 2011).	Negligible
<b>Mammals</b>					
<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).	Nil
<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 roadsides in the wheatbelt (DEC 2012).	Nil
<i>Isodon fusciventer</i>	Quenda	P4	-	Dense scrubby, often swampy, vegetation with dense cover up to one metre high (DEC 2012)	Recorded
<i>Myrmecobius fasciatus</i>	Numbat	EN	EN	Generally dominated by <i>Eucalyptus</i> spp. that provide hollow logs and branches for shelter and termites for food (van Dyck & Strahan 2008).	Nil

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Notamacropus irma</i>	Western brush wallaby	P4	-	Dry sclerophyll forest, Banksia spp. woodlands and shrublands, typically favouring dense low vegetation that provides dense cover (Christensen and Strahan 1983).	High
<i>Phascogale tapoatafa wambeng</i>	South-western brush-tailed	CD	-	Dry sclerophyll forests and open woodlands that contain hollow-bearing trees but a sparse ground cover (Triggs 2003).	Nil
<i>Pseudocheirus occidentalis</i>	Western ringtail possum	CR	CR	On the Swan Coastal Plain in Agonis flexuosa woodlands and Agonis flexuosa/ Eucalyptus gomphocephala forests. Also Eucalyptus marginata forests (DBCA 2017).	Nil
<i>Setonix brachyurus</i>	Quokka	VU	VU	On the mainland mostly dense streamside vegetation or shrubland and heath areas, particularly around swamps (Cronin 2007).	Nil
<b>Reptiles</b>					
<i>Acanthopis antarcticus</i>	Southern death adder	P3	-	Mostly in woodlands, grasslands and heaths. In the Darling Range this species is typically found within Eucalyptus marginata woodlands adjacent to granite outcrops and along densely vegetated creeks (Bush et al. 2010).	Nil
<i>Lerista lineata</i>	Perth slider	P3	-	Sandy coastal heath and low scrubland. Banksia spp. woodland, Eucalyptus gomphocephala open woodland over deep sands, and coastal dunes immediately adjacent to the beach (Wilson and Swan 2021).	High
<i>Neelaps calonotos</i>	Black-striped snake	P3	-	Coastal and near-coastal dunes, sandplains supporting heathlands and Banksia spp. woodlands (Bush et al. 2010).	High

Species name	Common name	Level of significance		Habitat	Likelihood of occurrence
		WA	EPBC Act		
<i>Note: CR=critically endangered, EN=endangered, VU=vulnerable, CD=conservation dependent, MI=migratory, OS=other specially protected, P1=Priority 1, P2=Priority 2, P3=Priority 3, P4=Priority 4. Species with a high or moderate likelihood to occur within the site are shaded green.</i>					
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# Appendix D

Black cockatoo foraging plants species list







Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Acacia baileyana</i>	Cootamundra wattle	Secondary	-	-	Groom 2011
<i>Acacia pentadenia</i>	Karri wattle	Secondary	-	-	Groom 2011
<i>Acacia saligna</i>	Orange wattle	Secondary	-	-	Groom 2011
<i>Agonis flexuosa</i>	Peppermint tree	Secondary	-	-	Groom 2011
<i>Allocasuarina fraseriana</i>	Sheoak	Secondary	Secondary	Secondary	Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; Johnstone 2017; DoEE 2017
<i>Allocasuarina spp.</i>		Secondary	-	Secondary	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017
<i>Anigozanthos flavidus</i>	Tall kangaroo paw	-	Secondary	-	Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017
<i>Araucaria heterophylla</i>	Norfolk island pine	Secondary	-	-	Groom 2011; DoEE 2017
<i>Banksia ashbyi</i>	Ashby's banksia	Primary	Secondary	-	Saunders 1980; Groom 2011; DoEE 2017
<i>Banksia attenuata</i>	Slender banksia	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia baxteri</i>	Baxter's banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia carlinoides</i>	Pink dryandra	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia coccinea</i>	Scarlet banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia dallanneyi</i>	Couch honeypot dryandra	Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia ericifolia</i>	Heath-leaved banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia fraseri</i>		Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia gardneri</i>	Prostrate banksia	Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia grandis</i>	Bull banksia	Primary	Secondary	-	Saunders 1980; Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia hookeriana</i>	Hooker's banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia ilicifolia</i>	Holly banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; Johnstone & Storr 1998; DoEE 2017
<i>Banksia kippistiana</i>		Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia leptophylla</i>		Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia lindleyana</i>	Porcupine banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; DoEE 2017

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Banksia littoralis</i>	Swamp banksia	Primary	Secondary	-	Saunders 1980; Groom 2011; Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; DoEE 2017
<i>Banksia menziesii</i>	Firewood banksia	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia mucronulata</i>	Swordfish dryandra	Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia nivea</i>	Honeypot dryandra	Primary	Secondary	-	Saunders 1980; Groom 2011; DoEE 2017
<i>Banksia nobilis</i>	Golden dryandra	Primary	Secondary	-	Saunders 1980; Groom 2011; DoEE 2017
<i>Banksia praemorsa</i>	Cut-leaf banksia	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia prionotes</i>	Acorn banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia prolata</i>		Primary	Secondary	-	Johnstone <i>et al.</i> 2010; DoEE 2017
<i>Banksia quercifolia</i>	Oak-leaved banksia	Primary	Secondary	-	Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia sessilis</i>	Parrot bush	Primary	Secondary	-	Saunders 1980; Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia speciosa</i>	Showy banksia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia spp.</i>		Primary	Secondary	-	Saunders 1979; DSEWPaC 2012; DoEE 2017
<i>Banksia squarrosa</i>	Pingle	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Banksia tricuspis</i>	Pine banksia	Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia undata</i>	Urchin dryandra	Primary	Secondary	-	Groom 2011; DoEE 2017
<i>Banksia verticillata</i>	Granite banksia	Primary	Secondary	-	Saunders 1980; Groom 2011; DoEE 2017
<i>Brassica campestris</i>	Canola	Secondary	-	-	Groom 2011; DoEE 2017
<i>Callistemon spp.</i>		Secondary	Secondary	-	Johnstone <i>et al.</i> 2010; DoEE 2017
<i>Callistemon viminalis</i>	Captain cook bottlebrush	Secondary	-	-	Groom 2011
<i>Callitris sp.</i>		Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Carya illinoensis</i>	Pecan	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; Groom 2014; DoEE 2017
<i>Casuarina cunninghamiana</i>	River sheoak	Secondary	-	-	Groom 2011
<i>Citrullus lanatus</i>	Pie or afghan melon	Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Corymbia calophylla</i>	Marri	Primary	Primary	Primary	Johnstone & Storr 1998; Johnstone & Kirkby 1999; Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017; Johnstone 2017; Saunders 1979; Johnstone & Kirkby 2008
<i>Corymbia citriodora</i>	Lemon scented gum	Secondary	Secondary	Secondary	Johnstone <i>et al.</i> 2010; DSEWPaC 2012; Groom 2011; Johnstone 2017
<i>Corymbia ficifolia</i>	Red flowering gum	Secondary	-	-	Groom 2011
<i>Corymbia haematoxylon</i>	Mountain marri	Secondary	-	Secondary	Groom 2011; DoEE 2012; DoEE 2017
<i>Corymbia maculata</i>	Spotted gum	-	-	-	-
<i>Darwinia citriodora</i>	Lemon-scented darwinia	Secondary	Secondary	-	Groom 2011; Johnstone <i>et al.</i> 2010
<i>Diospyros sp.</i>	Sweet persimmon	Secondary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017
<i>Eremophila glabra</i>	Tarbush	Secondary	-	-	Groom 2011
<i>Erodium aureum</i>		Secondary	-	-	Groom 2011
<i>Erodium botrys</i>	Long storksbill	Secondary	Secondary	-	Groom 2011; Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010
<i>Erodium spp.</i>		Secondary	Secondary	-	Johnstone <i>et al.</i> 2010; DoEE 2017
<i>Eucalyptus caesia</i>	Silver princess	Secondary	-	Secondary	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017; Johnstone 2017
<i>Eucalyptus camaldulensis</i>	River red gum	-	-	Secondary	DoEE 2012; DoEE 2017
<i>Eucalyptus decipiens</i>	Red heart/moit	-	-	Secondary	Johnstone 2017
<i>Eucalyptus diversicolor</i>	Karri	-	-	Primary	Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017; Johnstone & Storr 1998
<i>Eucalyptus erythrocorys</i>	Illyarrie	Secondary	-	Secondary	DSEWPaC 2012; DoEE 2017; Johnstone 2017, Johnstone <i>et al.</i> 2010
<i>Eucalyptus gomphocephala</i>	Tuart	Secondary	-	Secondary	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017
<i>Eucalyptus grandis</i>	Flooded gum, rose gum	-	-	Secondary	DoEE 2012; DoEE 2017
<i>Eucalyptus lehmannii</i>	Bushy yate	-	-	Secondary	Johnstone 2017
<i>Eucalyptus leucoxylon</i>	Yellow gum	Secondary	-	-	Groom 2014

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Eucalyptus loxophleba</i>	York gum	Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017
<i>Eucalyptus marginata</i>	Jarrah	Primary	Secondary	Primary	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017; Johnstone & Storr 1998; Johnstone & Kirkby 1999; Johnstone 2017
<i>Eucalyptus patens</i>	Blackbutt	Primary	-	Primary	Johnstone & Storr 1998; Johnstone & Kirkby 1999; Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017; Johnstone 2017; Groom 2011
<i>Eucalyptus pleurocarpa</i>	Tallerack	Secondary	-	-	Groom 2011
<i>Eucalyptus preissiana</i>	Bell-fruited mallee	Secondary	-	-	Groom 2011
<i>Eucalyptus robusta</i>	Swamp mahogany	Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Eucalyptus salmonophloia</i>	Salmon gum	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DSEWPaC 2012; DoEE 2017
<i>Eucalyptus staeri</i>	Albany blackbutt	-	-	Secondary	Johnstone & Storr 1998
<i>Eucalyptus todtiana</i>	Coastal blackbutt	Secondary	-	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; Johnstone & Kirkby 2008
<i>Eucalyptus wandoo</i>	Wandoo	Primary	Secondary	Primary	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011; DSEWPaC 2012; DoEE 2017
<i>Ficus sp.</i>	Fig	Secondary	-	-	Groom 2011
<i>Grevillea armigera</i>	Prickly toothbrushes	Primary	-	-	Groom 2011
<i>Grevillea bipinnatifida</i>	Fuschia grevillea	Primary	-	-	Groom 2011
<i>Grevillea hookeriana</i>	Red toothbrushes	Primary	-	-	Groom 2011
<i>Grevillea hookeriana subsp. apiculata</i>	Black toothbrushes	Primary	-	-	Groom 2011
<i>Grevillea paniculata</i>	Kerosene bush	Primary	-	-	Groom 2011
<i>Grevillea paradoxa</i>	Bottlebrush grevillea	Primary	-	-	Groom 2011
<i>Grevillea petrophiloides</i>	Pink poker	Primary	-	-	Groom 2011
<i>Grevillea robusta</i>	Silky oak	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011



Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Grevillea spp.</i>		Primary	-	-	Saunders 1979; Johnstone <i>et al.</i> 2010; DSEWPac 2012; DoEE 2017
<i>Grevillea wilsonii</i>	Native fuchsia	-	Secondary	-	Johnstone <i>et al.</i> 2010
<i>Hakea auriculata</i>		Primary	-	-	Saunders 1980; Groom 2011
<i>Hakea candolleana</i>		Primary	-	-	Groom 2011
<i>Hakea circumalata</i>	Coastal hakea	Primary	-	-	Groom 2011
<i>Hakea commutata</i>		Primary	-	-	Groom 2011
<i>Hakea conchifolia</i>	Shell-leaved hakea	Primary	-	-	Groom 2011
<i>Hakea costata</i>	Ribbed hakea	Primary	-	-	Groom 2011
<i>Hakea cristata</i>	Snail hakea	Primary	Secondary	-	Groom 2011; Johnstone <i>et al.</i> 2010
<i>Hakea cucullata</i>	Snail hakea	Primary	-	-	Groom 2011
<i>Hakea cyclocarpa</i>	Ramshorn	Primary	-	-	Saunders 1980; Groom 2011
<i>Hakea eneabba</i>		Primary	-	-	Groom 2011
<i>Hakea erinacea</i>	Hedgehog hakea	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea falcata</i>	Sickle hakea	Primary	-	-	Groom 2011
<i>Hakea flabellifolia</i>	Fan-leaved hakea	Primary	-	-	Groom 2011
<i>Hakea gilbertii</i>		Primary	-	-	Saunders 1980; Groom 2011
<i>Hakea incrassata</i>	Golfball or marble hakea	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea lasiantha</i>	Woolly flowered hakea	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea lasianthoides</i>		Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea laurina</i>	Pin-cushion hakea	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea lissocarpa</i>	Honeybush	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea marginata</i>		-	Secondary	-	Johnstone <i>et al.</i> 2010
<i>Hakea megalosperma</i>	Lesueur hakea	Primary	-	-	Groom 2011
<i>Hakea multilineata</i>	Grass leaf hakea	Primary	-	-	Groom 2011
<i>Hakea neospathulata</i>		Primary	-	-	Groom 2011
<i>Hakea obliqua</i>	Needles and corks	Primary	-	-	Saunders 1980; Groom 2011
<i>Hakea oleifolia</i>	Dungyn	Primary	-	-	Groom 2011

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Hakea pandanica</i> subsp. <i>crassifolia</i>	Thick-leaved hakea	Primary	-	-	Groom 2011
<i>Hakea petiolaris</i>	Sea urchin hakea	Primary	-	-	Groom 2011
<i>Hakea polyanthema</i>		Primary	-	-	Groom 2011
<i>Hakea preissii</i>	Needle tree	Primary	-	-	Groom 2011
<i>Hakea prostrata</i>	Harsh hakea	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea psilorrhyncha</i>		Primary	-	-	Groom 2011
<i>Hakea ruscifolia</i>	Candle hakea	Primary	Secondary	-	Saunders 1980; Groom 2011; Johnstone <i>et al.</i> 2010
<i>Hakea scoparia</i>	Kangaroo bush	Primary	-	-	Groom 2011
<i>Hakea smilacifolia</i>		Primary	-	-	Groom 2011
<i>Hakea spp.</i>		Primary	Secondary	-	Saunders 1979; DSEWPac 2012; DoEE 2017
<i>Hakea stenocarpa</i>	Narrow-fruited hakea	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea sulcata</i>	Furrowed hakea	Primary	-	-	Groom 2011
<i>Hakea trifurcata</i>	Two-leaved hakea	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea undulata</i>	Wavy-leaved hakea	Primary	Secondary	-	Saunders 1980; Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hakea varia</i>	Variable-leaved hakea	Primary	Secondary	-	Saunders 1980; Groom 2011
<i>Harpephyllum caffrum</i>	Kaffir plum	-	-	Secondary	Johnstone 2017
<i>Helianthus annuus</i>	Sunflower	Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Hibiscus sp.</i>	Hibiscus	Secondary	-	-	Groom 2011
<i>Isopogon scabriusculus</i>		Secondary	-	-	Groom 2011
<i>Jacaranda mimosifolia</i>	Jacaranda	Secondary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Jacksonia furcellata</i>	Grey stinkwood	Secondary	-	-	Groom 2011
<i>Kingia australis</i>	Kingia	-	Secondary	-	Johnstone <i>et al.</i> 2010
<i>Lambertia inermis</i>	Chittick	Secondary	-	-	Johnstone & Storr 1998; Groom 2011
<i>Lambertia multiflora</i>	Many-flowered honeysuckle	Secondary	-	-	Saunders 1980; Groom 2011

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Liquidamber styraciflua</i>	Liquid amber	Primary	-	Secondary	Johnstone <i>et al.</i> 2010; Groom 2011; Groom 2014; Personal observation
<i>Lupinus sp.</i>	Lupin	Secondary	-	-	Saunders 1980; Groom 2011
<i>Macadamia integrifolia</i>	Macadamia	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Grooms 2011; Groom 2014
<i>Malus domestica</i>	Apple	Secondary	Secondary	-	Johnstone <i>et al.</i> 2010; Johnstone & Storr 1998; DSEWPaC 2012; DoEE 2017; Groom 2011
<i>Melaleuca leuropoma</i>		Secondary	-	-	Saunders 1980; Groom 2011
<i>Melia azedarach</i>	Cape lilac or white cedar	Secondary	-	Primary	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Mesomeleana spp.</i>		Secondary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Olea europea</i>	Olive	-	-	Secondary	Johnstone 2017
<i>Persoonia longifolia</i>	Snottygobble	-	-	Secondary	Johnstone & Storr 1998; Johnstone & Kirkby 1999; Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017
<i>Pinus canariensis</i>	Canary island pine	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Pinus caribea</i>	Caribbean pine	Primary	-	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Pinus pinaster</i>	Pinaster or maritime pine	Primary	-	-	Groom 2011
<i>Pinus radiata</i>	Radiata pine	Primary	Secondary	-	Johnstone <i>et al.</i> 2010; Groom 2011
<i>Pinus spp.</i>		Primary	Secondary	-	Johnstone & Storr 1998; Saunders 1979; Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017
<i>Protea 'Pink Ice'</i>		Secondary	-	-	Groom 2011
<i>Protea repens</i>		Secondary	-	-	Groom 2011
<i>Protea spp.</i>		Secondary	-	-	Johnstone <i>et al.</i> 2010
<i>Prunus amygdalus</i>	Almond tree	Secondary	-	-	Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; Groom 2011; DoEE 2017
<i>Pyrus communis</i>	European pear	-	Secondary	-	Johnstone & Storr 1998; Johnstone <i>et al.</i> 2010; DSEWPaC 2012; DoEE 2017
<i>Quercus spp.</i>	Oak	-	Secondary	-	Johnstone <i>et al.</i> 2010

Species name	Common name	Foraging category as assigned by Emerge			Literature references
		CBC	BBC	FRTBC	
<i>Raphanus raphanistrum</i>	Wild radish	Secondary	-	-	Groom 2011; DoEE 2017
<i>Reedia spathacea</i>		-	Secondary	-	Johnstone <i>et al.</i> 2010
<i>Rumex hypogaeus</i>	Doublegee	Secondary	-	-	Saunders 1980
<i>Stenocarpus sinuatus</i>		Secondary	-	-	Johnstone <i>et al.</i> 2010
<i>Syzygium smithii</i>	Lilly pilly	Secondary	-	-	Groom 2014
<i>Tipuana tipu</i>	Tipu or rosewood tree	Primary	-	-	Groom 2011, Groom 2014
<i>Xanthorrhoea preissii</i>	Grass tree	Secondary	Secondary	-	Groom 2011; Johnstone <i>et al.</i> 2010
<i>Xylomelum occidentale</i>	Woody pear	Secondary	-	-	Groom 2014

CBC=Carnaby's black cockatoo, BBC=Baudin's black cockatoo and FRTBC=Forest red-tailed black cockatoo

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# Appendix E

Black cockatoo roost counts







Table 1: White-tailed black cockatoo recorded in known roosts within 12 km of the site since 2015.

Roost ID	Year and number of individuals									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ARMARMR002	NS	0	NS	0	0	NS	0	NS	0	2
ARMCHAR001	NS	NS	0	3	0	NS	0	0	0	0
ARMFORR001	18	0	0	NS	0	NS	0	NS	NS	0
ARMFORR002	NS	NS	NS	NS	NS	NS	NS	NS	NS	20
ARMHARR001	1	3	0	0	0	NS	0	NS	9	0
ARMKELR001	NS	NS	NS	0	0	NS	0	0	0	NS
ARMKELR002	0	0	0	0	NS	NS	0	NS	NS	NS
ARMKELR005	NS	NS	NS	NS	NS	NS	4	0	0	0
ARMROLR004	NS	28	0	0	0	NS	0	0	0	0
CANFERR001	0	0	0	0	NS	NS	0	NS	NS	NS
CANROSR001	NS	0	0	0	0	NS	0	0	0	5
CANWILR001	0	0	0	0	0	NS	0	0	0	2
COCBANR001	45	NS	0	20	0	NS	0	27	25	53
COCBANR002	NS	0	0	0	0	NS	0	0	0	0
COCBANR003	NS	NS	6	16	0	NS	0	0	0	NS
COCCOCR001	NS	NS	NS	0	0	NS	7	0	23	0
COCCOOR003	NS	0	0	0	0	NS	0	0	0	15
COCCOOR005	NS	NS	38	0	0	NS	0	NS	0	0
COCMUNR001	NS	0	0	0	0	NS	0	0	0	6
COCMUNR003	NS	0	0	0	3	NS	0	0	0	72
COCNORR001	NS	NS	NS	NS	NS	NS	NS	NS	125	0
GOSCNVR001	0	0	0	NS	80	NS	0	0	275	0
GOSCNVR002	0	151	0	0	0	NS	0	0	NS	NS
GOSMARR001	NS	NS	0	120	36	NS	110	61	46	40
GOSMARR002	NS	NS	NS	NS	NS	NS	NS	NS	NS	50
GOSSOUR001	NS	0	NS	NS	0	NS	9	NS	NS	NS
GOSSOUR002	NS	50	0	0	0	NS	2	0	0	0
KWIWANR001	0	0	0	0	NS	NS	NS	NS	NS	NS
KWIWANR002	0	0	5	0	0	NS	NS	NS	NS	NS
KWIWANR004	NS	NS	73	0	0	NS	90	88	125	42
MELBATR001	0	0	0	0	0	NS	NS	NS	NS	-9999

Table 1: White-tailed black cockatoo recorded in known roosts within 12 km of the site since 2015.  
(continued)

Roost ID	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
MELKARR002	55	0	0	0	0	NS	NS	NS	NS	NS
MELLEER001	0	0	0	15	2	NS	0	0	0	0
MELMURR001	24	78	0	227	249	NS	245	222	55	131
MELWINR001	0	21	0	0	12	NS	9	12	90	177
MELWINR003	0	7	54	64	108	NS	155	127	31	0
MELWINR004	0	0	0	0	NS	NS	0	NS	NS	NS
SEROAKR004	0	26	2	33	NS	NS	0	51	0	0
SEROAKR005	0	0	0	0	NS	NS	NS	NS	NS	0
SEROAKR007	NS	NS	2	0	NS	NS	0	NS	NS	NS
SOUCOMR001	460	242	289	470	563	NS	353	333	605	295
SOUSALR001	0	20	0	2	0	NS	10	50	19	16

NS = not surveyed

Table 2: Forest red-tailed black cockatoo recorded in known roosts within 12 km of the site since 2015

Roost ID	Year and number of individuals									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ARMARMR002	NS	17	NS	15	0	NS	NS	0	0	NS
ARMARMR004	NS	NS	0	6	4	NS	0	2	NS	0
ARMCHAR001	NS	NS	11	16	0	NS	0	8	1	0
ARMFORR002	NS	NS	NS	NS	NS	NS	NS	NS	23	NS
ARMKELR001	NS	NS	NS	0	0	NS	0	0	NS	0
ARMKELR004	NS	NS	NS	NS	6	NS	0	0	0	0
ARMKELR005	NS	NS	NS	NS	NS	NS	0	0	0	0
ARMROLR004	NS	35	0	0	50	NS	6	38	41	6
CANRIVR001	NS	6	11	7	16	NS	4	38	14	4
CANROSR001	NS	0	0	14	2	NS	0	3	0	0
CANWILR001	7	7	5	16	82	NS	0	23	12	0
CANWILR004	NS	NS	NS	NS	NS	NS	14	33	0	14
COCBANR001	0	NS	6	17	0	NS	0	0	9	0
COCBANR002	NS	32	24	109	15	NS	4	50	2	4
COCCOCR001	NS	NS	NS	15	102	NS	0	37	9	0

Table 2: Forest red-tailed black cockatoo recorded in known roosts within 12 km of the site since 2015  
(continued)

Roost ID	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
COCCOOR001	13	0	0	8	0	NS	0	0	0	NS
COCCOOR003	NS	57	6	71	33	NS	75	2	105	36
COCMUNR001	NS	73	0	365	259	NS	149	54	257	60
COCMUNR003	NS	38	0	108	0	NS	0	0	0	0
COCSPER003	NS	NS	35	12	0	NS	46	0	27	0
GOSCNVR001	0	0	0	NS	0	NS	0	0	9	0
GOSCNVR002	4	0	0	0	0	NS	0	0	NS	NS
GOSGOSR004	NS	31	32	79	0	NS	53	0	21	13
GOSKENR001	NS	NS	51	334	35	NS	6	0	22	0
GOSKENR002	NS	NS	NS	72	0	NS	10	0	42	0
GOSKENR003	NS	NS	NS	NS	NS	NS	3	0	0	NS
GOSMARR001	NS	NS	75	37	18	NS	11	5	51	2
GOSSOUR002	NS	0	36	208	15	NS	21	0	0	0
KWIWANR004	NS	NS	0	0	0	NS	0	0	10	0
MELLEER001	0	11	25	5	0	NS	0	0	29	0
MELMURR001	33	125	209	441	214	NS	382	36	57	56
MELWINR003	0	0	0	1	0	NS	0	0	0	0
SOUCOMR001	0	0	0	0	1	NS	2	0	4	1
SOUCOMR003	NS	NS	NS	NS	NS	NS	NS	5	NS	NS
SOUSALR001	0	0	0	8	0	NS	2	6	2	8
VICWATR002	NS	0	45	85	51	NS	50	NS	4	0

NS = not surveyed





# Appendix F

Species list





Category	Status	Species name	Common name	Record type
<b>Birds</b>				
		<i>Anas superciliosa</i>	Pacific black duck	Sight
		<i>Anthochaera carunculata</i>	Red wattlebird	Sight
		<i>Anthochaera lunulata</i>	Western wattlebird	Sight
		<i>Barnardius zonarius</i>	Australian ringneck	Sight
		<i>Cacomantis flabelliformis</i>	Fan-tailed cuckoo	Sight
	VU	<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cockatoo	Sight
		<i>Chenonetta jubata</i>	Australian wood duck	Sight
		<i>Coracina novaehollandiae</i>	Black-faced cuckoo-shrike	Sight
		<i>Corvus coronoides</i>	Australian raven	Sight
		<i>Cracticus tibicen dorsalis</i>	Australian magpie	Sight
		<i>Eolophus roseicapilla</i>	Galah	Sight
		<i>Gavicalis virescens</i>	Singing honeyeater	Call
		<i>Gerygone fusca</i>	Western gerygone	Call
		<i>Grallina cyanoleuca</i>	Magpie-lark	Sight
		<i>Lichmera indistincta</i>	Brown honeyeater	Sight
		<i>Malurus splendens</i>	Splendid fairy-wren	Call
		<i>Microcarbo melanoleucos</i>	Little pied cormorant	Sight
		<i>Ocyphaps lophotes</i>	Crested pigeon	Sight
		<i>Petrochelidon nigricans</i>	Tree martin	Sight
		<i>Phaps chaloptera</i>	Common bronzewing	Sight
		<i>Phylidonyris novaehollandiae</i>	New Holland honeyeater	Sight
		<i>Rhipidura albiscapa</i>	Grey fantail	Call
		<i>Rhipidura leucophrys</i>	Willy wagtail	Sight
		<i>Smicrornis brevirostris</i>	Weebil	Sight
	*	<i>Spilopelia chinensis</i>	Spotted dove	Sight
		<i>Threskiornis moluccus</i>	White ibis	Sight
	*DP(C3)	<i>Trichoglossus haematodus</i>	Rainbow lorikeet	Sight
		<i>Tyto alba</i>	Barn owl	Sight
	EN	<i>Zanda latirostris</i>	Carnaby's black cockatoo	Foraging evidence
		<i>Zosterops lateralis</i>	Silvereye	Sight

Category	Status	Species name	Common name	Record type
<b>Mammals</b>				
	*	<i>Canis familiaris</i>	Dog	Tracks
	P4	<i>Isodon fusciventer</i>	Quenda	Sight
		<i>Macropus fuliginosus</i>	Western grey kangaroo	Tracks, scats
	*DP(C3)	<i>Oryctolagus cuniculus</i>	Rabbit	Diggings, burrows
<b>Reptiles</b>				
		<i>Cryptoblepharus buchani</i>	Fence skink	Sight
		<i>Tiliqua rugosa</i>	Bobtail	Sight

Note: \* denotes introduced fauna species, DP=declared pest under the BAM Act, EN=Endangered under the BC and EPBC Acts, P4=Priority 4 in WA, VU=Vulnerable under the BC and EPBC Acts

Category	Species name	Habitat ID						
		Banksia woodland	Bareground and grassland	Eucalypt forest	Lake	Scattered trees	Tall shrubland	Flyover
Birds								
	Anas superciliosa				x			
	Anthochaera carunculata	x						
	Anthochaera lunulata	x						
	Barnardius zonarius	x						
	Cacomantis flabelliformis	x						
	Calyptrorhynchus banksii naso			x				x
	Chenonetta jubata				x			
	Coracina novaehollandiae	x						
	Corvus coronoides					x		
	Cracticus tibicen dorsalis	x						
	Eolophus roseicapilla	x						
	Gavicalis virescens	x						
	Gerygone fusca	x						
	Grallina cyanoleuca	x						
	Lichmera indistincta	x		x				
	Malurus splendens						x	
	Microcarbo melanoleucos				x			
	Ocyphaps lophotes	x						
	Petrochelidon nigricans							x
	Phaps chaloptera	x						
	Phylidonyris novaehollandiae	x					x	
	Rhipidura albiscapa	x						
	Rhipidura leucophrys					x		
	Smicrornis brevirostris	x						
	Spilopelia chinensis	x						
	Threskiornis moluccus							x
	Trichoglossus haematodus	x		x				



**Species Matrix**  
**Lot 500 and Part Lot 501 Warton Road, Canning Vale**

Category	Species name	Habitat ID					
		Banksia woodland	Bareground and grassland	Eucalypt forest	Lake	Scattered trees	Tall shrubland Flyover
	<i>Tyto alba</i>	x					
	<i>Zanda latirostris</i>	x					
	<i>Zosterops lateralis</i>	x					
<b>Mammals</b>							
	<i>Canis familiaris</i>		x				
	<i>Isodon fusciventer</i>	x		x			x
	<i>Macropus fuliginosus</i>	x	x				
	<i>Oryctolagus cuniculus</i>	x					x
<b>Reptiles</b>							
	<i>Cryptoblepharus buchani</i>	x					
	<i>Tiliqua rugosa</i>	x					

# Appendix G

Habitat assessment sample data





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 1

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397819.18

**Northing** 6446509.36

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Melaleuca spp., Adenanthos sp.

Habitat Type Shrubland

Soil Type Sand

Tree Layer Not present

Ground layer Present

Litter Cover Present

Microhabitats N/A

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr



# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 2

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397929.29

**Northing** 6446575.18

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Tuart, Marri

Habitat Type Forest

Soil Type Sand,Loam

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats Woody debris, dense leaf litter

Water features None

Disturbances None

**Notes** Not remnant

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 3

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397724.14

**Northing** 6446956.89

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Melaleuca sp., Adenanthos sp., Kunzea sp.

Habitat Type Shrubland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats N/A

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 4

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397803.74

**Northing** 6447385.02

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats N/A

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr



# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 5

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397679.94

**Northing** 6447552.26

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats N/A

Water features None

Disturbances None

**Notes** Banksia sparse

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 6

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397907.63

**Northing** 6447182.25

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats N/A

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr



# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 7

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 398260.82

**Northing** 6447082.41

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats Dense leaf litter

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 8

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 398641.54

**Northing** 6447281.99

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats Dense leaf litter

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 9

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 398746.86

**Northing** 6447482.02

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats Woody debris, dense leaf litter

Water features None

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr



# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 10

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 398566.38

**Northing** 6447622.25

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Banksia spp.

Habitat Type Woodland

Soil Type Sand

Tree Layer Present

Ground layer Present

Litter Cover Present

Microhabitats Woody debris, dense leaf litter

Water features None

Disturbances None

**Notes** Leaf litter variable

Rock Features None

Shrub Layer Present

Bare ground Cover Present

Fire age >5 yr





# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:** 11

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** NAW,SAC

**Easting** 397872.78

**Northing** 6446637.23

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation N/A

Habitat Type Lake

Soil Type Sand

Tree Layer Not present

Ground layer Not present

Litter Cover Not present

Microhabitats N/A

Water features Lake

Disturbances None

**Notes** N/A

Rock Features None

Shrub Layer Not present

Bare ground Cover Present

Fire age >5 yr



# Habitat Assessment

## Lot 500 and Part Lot 501

### Warton Road, Canning Vale

**Sample Name:**

**12**

**Project no.:** EP24-053(08)

**Date:** 6/08/2024

**Author:** AJU,

**Easting** 398396.01

**Northing** 6447788.31

**Datum/zone:** GDA94/Zone 50

#### Sample details

Dominant Vegetation Pinus sp., Eucalyptus spp.

Habitat Type Scattered trees

Soil Type

Sand

Rock Features None

Tree Layer

Present

Shrub Layer Not present

Ground layer

Present

Bare ground Cover Not present

Litter Cover

Not present

Fire age >5 yr

Microhabitats N/A

Water features None

Disturbances Historical vegetation clearance

**Notes** N/A



# Appendix H

Black cockatoo habitat tree data







Tag No.	Easting	Northing	DBH (cm)	Species	Category	Notes
0	397879.679	6447444.073	>50	<i>Corymbia calopylla</i>	Potential nesting tree	Estimated DBH.
149	397629.243	6447627.907	>50	<i>Eucalyptus rudis</i>	Potential nesting tree	Estimated DBH.
165	397843.48	6446392.461	54	<i>Eucalyptus rudis</i>	Potential nesting tree	
166	397664.975	6447483.421	68	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
169	397728.996	6447491.28	60	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
316	397796.955	6446841.96	51	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
339	397836.371	6446762.485	60	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
339	397754.878	6446957.6	63	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
350	397973.16	6446567.698	51	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
440	397782.173	6446879.662	51	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
492	397924.662	6446575.215	50	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
495	397780.309	6446901.223	56	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
726	397798.643	6446342.07	55	<i>Eucalyptus rudis</i>	Potential nesting tree	
727	397767.757	6447057.904	53	<i>Eucalyptus todtiana</i>	Potential nesting tree	
728	397993.745	6447142.46	69	<i>Eucalyptus todtiana</i>	Potential nesting tree	
729	397747.631	6447207.449	82	<i>Eucalyptus todtiana</i>	Potential nesting tree	
800	397720.036	6447204.347	70	<i>Eucalyptus todtiana</i>	Potential nesting tree	
884	397982.067	6446535.699	72	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
932	397993.237	6446584.288	51	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	
933	398158.72	6446746.256	54	<i>Eucalyptus todtiana</i>	Potential nesting tree	
3392	397983.386	6446543.946	65	<i>Eucalyptus gomphocephala</i>	Potential nesting tree	