# **Fauna Habitat Assessment**



# Denny Avenue Level Crossing Removal Project

# **Kelmscott**

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### On behalf of:

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### SUMMARY

This report details the results of a fauna habitat assessment of a 21.4 hectare (ha) area of land associated with the Public Transport Authority's (PTA) proposed Denny Avenue Level Crossing Removal Project (the subject site). The assessment was primarily undertaken for the purposes of identifying the presence of conservation significant fauna species and/or their habitat and includes a literature review and field reconnaissance survey.

A list of potential conservation significant fauna species considered likely to occur in the general vicinity of the subject site has been compiled from information obtained during the literature review. Their likelihood of occurrence was assessed based on the results of the field reconnaissance survey and habitat assessment.

The subject site is situated in an established residential and commercial area on the eastern fringe of the central Swan Coastal Plain. The vast majority of the area has been cleared of native vegetation and is now mainly comprised of roads, rail lines, carparks, retail, residential and other associated infrastructure.

Vegetation within the subject site is largely confined to road verges and residential gardens. Vegetation along road verges is comprised of grassland or planted exotic, non-endemic and native endemic trees and shrubs of variable composition and density.

Overall fauna values of the subject site are rated as very low given the highly degraded nature of the majority of the area. Fauna biodiversity within the subject site would be depauperate, however given the presence of some vegetation, and in particular native woodland vegetation (e.g. Marri trees), the area still has value for some fauna species able to persist in degraded habitats of this type.

Most of the fauna species likely to be present would be common, widespread species (mainly birds), with a few exceptions (e.g. Black Cockatoos). The vast majority of conservation significant species identified as having been previously recorded in the wider area would not persist in the subject site primarily due to a complete lack of suitable habitat (i.e. quality and/or extent).

Twelve fauna species, all birds, were observed during the field survey (see Appendix C). The limited number of fauna species observed can be attributed to the small size of the subject site, the limited extent of vegetation and its generally highly degraded state.

Three species of conservation significance were positively identified as utilising the subject site for some purpose during the course of the field survey (Forest Red-tailed Black-Cockatoo, Carnaby's Black Cockatoo and Baudin's Black Cockatoo).

Based on habitats present, one additional species of conservation significance, the Peregrine Falcon may possibly occur within the subject site, but its current status on-site and/or in the general area is difficult to assess because it was not sighted during the survey and no evidence of use of the survey area was found. This species is generally uncommon and only likely to occur very occasionally and then only for brief periods.

The Black Cockatoo habitat tree assessment identified a total of 104 trees with a Diameter at Breast Height (DBH) of ≥50cms within the subject site. The vast majority of trees (100) appeared to not contain hollows of any size. Four trees contained apparent or obvious hollows, all of which were assessed as being unlikely to be big enough for Black Cockatoos to currently use for nesting purposes, due to the hollows' apparent small size, unsuitable orientation and/or height above ground level. Two of these trees contained hollows in use by feral bees and therefore could not currently be used by Black Cockatoos. No evidence of breeding use was noted.

Evidence of Black Cockatoos foraging was observed during the field survey in the form of chewed Marri and Jarrah fruits and Banksia cones. This evidence was attributed to the Forest Red-tailed Black-Cockatoo, Carnaby's Black Cockatoo and/or Baudin's Black Cockatoo depending on the nature of the evidence observed. Evidence left by the Forest Red-tailed Black Cockatoo was most prevalent.

It is difficult to estimate the extent of quality natural foraging habitat within the subject site given it is largely comprised of patchy, fragmented vegetation, but it is unlikely to total more than 2.5 ha (i.e. mainly areas containing Marri, Jarrah and/or Banksia).

No evidence of Black Cockatoos roosting within trees located inside the subject site was observed during the survey period.

The impact on the significant species listed as present or potentially being present will vary depending on their current degree of utilisation/population densities and preferred habitat requirements (e.g. quantity and quality of potential foraging habitat that will be affected when clearing of the site is undertaken). The potential impacts on these fauna species and/or their habitat should be taken into consideration during ongoing planning.

### 1. INTRODUCTION

This report details the results of a fauna habitat assessment of a 21.4 ha area of land associated with the Public Transport Authority's (PTA) proposed Denny Avenue Level Crossing Removal Project (subject site) (Figure 1).

The information contained within this report will be incorporated into an overall environmental impact assessment and environmental approvals advice report being prepared by Aurora Environmental.

### 2. SCOPE OF WORKS

### <u>Desktop Assessment:</u>

The scope of works (with respect to fauna) defined by the PTA was to conduct a desktop review of publicly available information and reports to assess the potential presence of conservation significant fauna and their habitat within the subject site.

### Reconnaissance Fauna Survey:

The scope of works (with respect to fauna) defined by the PTA was to conduct a reconnaissance fauna survey, in accordance with *Technical Guidance - Terrestrial Fauna Surveys* (EPA 2016a) and *Technical Guidance - Sampling Methods for Terrestrial Vertebrate Fauna* (EPA 2016b) to identify:

- The presence or potential presence of conservation significant fauna species (e.g. Threatened or Priority Fauna) within the environmental survey boundary (including mapping).
- Assess habitats suitable for conservation significant fauna species.
- Fauna habitat types within the environmental survey boundary (including mapping).

The scope of works defined by the PTA was to conduct a targeted Black Cockatoo¹ habitat survey to:

 Identify Black Cockatoo habitat (foraging, breeding, roosting habitat) within the environmental survey boundary, including GPS locations of breeding habitat trees.

<sup>&</sup>lt;sup>1</sup> Note: For the purposes of this report the term Black Cockatoo is in reference to all three species i.e. Baudin's Black Cockatoo (*Calyptorhynchus baudinii*,) Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*), unless stated otherwise.

- Identify breeding trees suitable for Black Cockatoo nesting, as outlined in the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* referral guidelines (DSEWPaC 2012)
- Search trees for evidence of Black Cockatoo use (e.g. wear around hollows, feathers, chewing, scarring and scratch marks on trunks and branches).

### 3. METHOD

### 3.1 LITERATURE REVIEW

A list of fauna recorded or likely to occur within the subject site has been compiled by a review of available databases and literature including, but not limited to the following data sources:

- Department of Biodiversity, Conservation and Attractions (DBCA) Threatened
  Fauna Database (NatureMap) (DBCA 2018). A 10-kilometre (km) buffer around
  a central point was applied to capture previous fauna records within the
  immediate vicinity;
- EPBC Act Protected Matters database for fauna of national environmental significance (DotEE 2018). The minimum buffer (1 km) was applied to this search as the databases contains distribution data (areas) and not actual fauna records; and
- Literature search and review of other fauna surveys in the vicinity.

The conservation status of each species has been based on current lists produced under Federal and State Acts (*EPBC Act* and the *Wildlife Conservation Act 1950 (WC Act*)), those species recognised under international treaties (CAMBA, JAMBA and the Bonn Convention) and Priority Fauna (as listed by DBCA).

### 3.2 FIELD SURVEYS

The field component of the fauna assessment was carried out on 18 September 2018 by Greg Harewood (Zoologist) and consisted of a reconnaissance survey, described in the sections below.

### 3.2.1 FAUNA HABITAT ASSESSMENT

The objective of the habitat assessment was to assess if it was likely that species of conservation significance would utilise the habitats identified within the subject site.

During the field survey, fauna habitats within the survey area were assessed and specific elements identified, which informed the likelihood of listed conservation significant species utilising the area and fauna habitat of significance.

Vegetation units, landforms and soils observed during the site reconnaissance survey have been used to define broad fauna habitat types across the subject site.

### 3.2.2 FAUNA OBSERVATIONS

The aim of this part of the assessment was to obtain enough information to assess the likely significance of the subject site to fauna species of conservation significance.

Based on the results of the literature review, evidence of the presence or likely presence of fauna species of conservation significance known to or likely to frequent the general area was searched for and recorded during the field survey.

This included but was not limited to:

- Undertaking a series of transects across the subject site.
- Searching for evidence (i.e. individuals, tracks, scats, calls) of potential conservation significant species under logs, rocks and leaf litter.
- Observing bird species with binoculars.

### 3.2.3 BLACK COCKATOO HABITAT ASSESSMENT

The following methods were employed to comply with the defined scope of works and are based on DSEWPaC (2012) guidelines which states that surveys for Carnaby's, Baudin's and Forest Red-tailed Black Cockatoo habitat should:

- be done by a suitably qualified person with experience in vegetation or cockatoo surveys, depending on the type of survey being undertaken;
- maximise the chance of detecting the species' habitat and/or signs of use;
- determine the context of the site within the broader landscape—for example, the amount and quality of habitat nearby and in the local region (for example, within 10 km);
- account for uncertainty and error (false presence and absences); and
- include collation of existing data on known locations of breeding and feeding birds and night roost locations.

DSEWPaC (2012) places habitats used by Black Cockatoos into the following three categories:

- Breeding Habitat;
- Foraging Habitat; and
- Night Roosting Habitat.

### 3.2.3.1 Breeding Habitat Assessment

The Black Cockatoo breeding habitat assessment identified all suitable breeding tree species within the subject site that have a Diameter at Breast Height (DBH) equal to or greater than 50cm. The DBH of each tree was estimated using a pre-made 50 cm "caliper".

Target tree species included Marri, Jarrah, Tuart and Flooded Gum and any other *Corymbia/Eucalyptus* species of a suitable size that was present. Peppermints, *Banksia*, Sheoak and Melaleuca tree species (for example) were not assessed as they typically do not develop hollows used by Black Cockatoos.

The location of each tree identified over the threshold DBH was recorded with a GPS and details of tree species, number and size of hollows (if any) noted. Trees observed to contain hollows (of any size/type) were marked with "H" using spray paint.

Potential hollows were placed into one of four categories, based on the size of the apparent hollow entrance, these being:

- Small = ~<5cm diameter (i.e. entrance too small for a Black Cockatoo);</li>
- Medium = ~5cm-10cm diameter (i.e. entrance too small for a Black Cockatoo);
- Large = ~>10cm diameter (entrance large enough for a Black Cockatoo but hollow appears unsuitable for nesting i.e. wrong orientation, appears too small, too low or too shallow); or
- Large (cockatoo) = ~>10cm diameter (entrance appears big enough for a Black Cockatoo to use for nesting).

Based on this assessment, trees present within the subject site were placed into one of four categories:

- Tree <50cm DBH or an unsuitable species (these were not assessed/recorded);</li>
- Tree >50cm DBH, no hollows seen;
- Tree <u>></u>50cm DBH, one or more hollows seen, none of which were considered suitable for Black Cockatoos to use for nesting; or
- Tree **>**50cm DBH, one or more hollows seen, with at least one considered suitable for Black Cockatoos to use for nesting.

For the purposes of this assessment, a tree containing a potential Black Cockatoo nest hollow was defined as:

Generally, any tree which is alive or dead that contains one or more possible hollows (cavities within the trunk or branches) suitable for occupation by Black Cockatoo for the purpose of nesting/breeding. Apparent hollows that had an entrance greater than about

10cm in diameter and would allow the entry of a Black Cockatoo into a suitably orientated and sized branch/trunk, was recorded as a "potential nest hollow".

Identified hollows were examined using binoculars for evidence of actual use by Black Cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches).

A review of available literature was also carried out to determine the location/extent of any known/likely Black Cockatoo breeding habitat in the vicinity.

### 3.2.3.2 Foraging Habitat Assessment

The location and nature of Black Cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present was also documented irrespective of the presence of any actual foraging evidence. Foraging habitat is represented by plant species that are known to provide a food source for Black Cockatoos. This can be in the form of seeds, flowers and also boring grubs that are extracted from some plant species.

A review of available literature was carried out to determine the location/extent of any known/likely Black Cockatoo foraging habitat areas in the vicinity.

### 3.2.3.3 Night Roosting Habitat Assessment

Direct and indirect evidence of Black Cockatoos roosting within trees on site was noted where observed (e.g. branch clippings, droppings or moulted feathers).

A review of available literature was carried out to determine the location/extent of any known/likely Black Cockatoo roosting habitat areas in the vicinity.

### 4. SURVEY LIMITATIONS

No seasonal sampling was carried out as part of this fauna assessment. The conclusions presented are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should be recognised that site conditions can change with time.

Lack of observational data on some species should also not necessarily be taken as an indication that a species is absent from the site or does not utilise it for some purpose at times.

During the survey, habitat trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally, the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level.

The location of observations was recorded using a handheld GPS. The accuracy of the GPS cannot be guaranteed above a level of about 5 to 10 metres, though it should be noted that in some circumstance the accuracy can increase or decrease beyond this range.

### 5. RESULTS

### 5.1 LITERATURE REVIEW

The literature review identified a number of fauna species of conservation significance as potentially occurring in the general area. Table 1 lists the species in question. The NatureMap (DBCA 2018) and Protected Matter Search Tool (DotEE 2018) results, used as a primary source for compiling this listing, are held within Appendix B.

Table 1: Conservation significant fauna previously recorded or potentially occurring within the general vicinity of subject site.

	Conservation Status <sup>2</sup>			
Species	WC Act/ DBCA Priority	EPBC Act		
Carter's Freshwater Mussel Westralunio carteri	S3	VU		
McMillan's Biting Midge Austroconops mcmillani	P2	-		
Inornate Trapdoor Spider Euoplos inornatus	P1	-		
Grey Vernal Katydid Kawaniphila pachomai	P1	-		
Unnamed bee Leioproctus contrarius	P3	-		
Unnamed bee Leioproctus douglasiellus	S2	CR		
Short-tongued Bee Neopasiphae simplicior	S2	CR		
Southern Death Adder Acanthophis antarcticus	P3	-		
Dell's Skink Ctenotus delli	P4	-		
Coastal Plains Skink Ctenotus ora	P3	-		
Perth Slider Lerista lineata	P3	-		
Malleefowl Leipoa ocellata	S3	VU		
Australasian Bittern Botaurus poiciloptilus	S2	EN		
Australian Little Bittern Ixobrychus dubius	P4	-		

<sup>&</sup>lt;sup>2</sup> See Appendix A for conservation status codes

	Conservat	Conservation Status <sup>2</sup>			
Species	WC Act/ DBCA Priority	EPBC Act			
Migratory Shorebirds/Wetland Species	Various	Various			
Blue-billed Duck Oxyura australis	P4	-			
Glossy Ibis Plegadis falcinellus	S5	Mig, Ma			
Eastern Osprey Pandion haliaetus	S5	Mig, Ma			
Peregrine Falcon Falco peregrinus	S7	-			
Carnaby`s Black Cockatoo Calyptorhynchus latirostris	S2	EN			
Baudin`s Black Cockatoo Calyptorhynchus baudinii	S2	EN			
Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso	S3	VU			
Fork-tailed Swift Apus pacificus	S5	Mig			
Grey Wagtail Motacilla cinerea	S5	Mig			
Chuditch Dasyurus geoffroii	S3	VU			
South-western Brush-tailed Phascogale Phascogale tapoatafa wambenger	S6	-			
Numbat Myrmecobius fasciatus	S3	VU			
Quenda Isoodon fusciventer	P4	-			
Western Ringtail Possum Pseudocheirus occidentalis	S1	CR			
Woylie Bettongia penicillata ogilbyi	S1	EN			
Quokka Setonix brachyurus	S3	VU			
Western Brush Wallaby Notamacropus irma	P4	-			
Western False Pipistrelle Falsistrellus mackenziei	P4	-			
Water Rat Hydromys chrysogaster	P4	-			

### 5.2 FIELD SURVEYS

### 5.2.1 FAUNA HABITAT ASSESSMENT

The subject site is situated in an established residential and commercial area on the eastern fringe of the central Swan Coastal Plain. The vast majority of the area has been cleared of native vegetation and is now mainly comprised of roads, rail lines, carparks, retail, residential and other associated infrastructure.

Vegetation within the subject site is largely confined to road verges and residential gardens. Vegetation along road verges is comprised of grassland or planted exotic, non-endemic and native endemic trees and shrubs of variable composition and density. A nature reserve (Camillo Reserve - ~0.27 hectares) is situated on the western side of the subject site and contains a small area of Jarrah-Banksia open woodland.

The individual remnant native trees and groves of trees, while limited in extent, support the primary fauna habitat value. These areas vary in quality, with most areas being totally degraded and lacking significant native groundcover/shrubs and microhabitats such as hollow logs.

Example images of the fauna habitats present within the subject site (based on vegetation types mapped by PGV Environmental 2018) are provided below. The extent of each identified unit is shown in Figure 2.

Table 2: Example Images of the Fauna Habitats within the Subject Site

# Totally cleared – roads, railway reserve, footpaths, vacant blocks, road verges with bare ground or grassland. Includes scattered trees and small areas/gardens. Approximate Area – 17.51 ha

# **Fauna Habitat Description Example Image** Planted non-endemic/exotic trees and shrubs along road verges and in gardens of various composition and density. Includes the occasional endemic tree species. Approximate Area – 1.18 ha Jarrah/Marri Woodland over Woody Pear Low Open Woodland Approximate Area - 0.47 ha Marri open woodland (and occasional non-endemic/exotic trees) Approximate Area - 1.8 ha

Fauna Habitat Description	Example Image
Flooded Gum open woodland.  Approximate Area – 0.17 ha	
Jarrah/Banksia/Woody Pear Low Open Woodland over Balga Bush/Acacia//Sheoak Shrubland in Camillo Reserve Approximate Area – 0.27 ha	

Overall fauna values of the subject site are rated as very low given the highly degraded nature the majority of the area. Fauna biodiversity within the subject site is depauperate, however, given the presence of some vegetation and in particular native woodland vegetation (e.g. Marri trees), the area still has value for some fauna species able to persist in degraded habitats of this type.

Most of the fauna species likely to be present would be common, widespread species (mainly birds), with a few exceptions (e.g. Black Cockatoos). The vast majority of conservation significant species previously recorded in the wider area would not persist in the subject site primarily due to a complete lack of suitable habitat (i.e. quality and/or extent).

### 5.2.2 FAUNA OBSERVATIONS

Twelve fauna species, all birds, were observed during the field survey (see Appendix C). The limited number of fauna species observed can be attributed to the small size of the subject site, the limited extent of vegetation and its generally highly degraded state.

With the exception of foraging debris attributed to the Forest Red-tailed Black Cockatoo, Baudin's Black Cockatoo and Carnaby's Black Cockatoos (see section 5.2.3.2) observed

at several locations, no evidence of any of the conservation significant fauna species identified during the literature review was observed. However, this does not eliminate the potential for some species to still occur, if only infrequently.

### 5.2.3 BLACK COCKATOO HABITAT ASSESSMENT

### 5.2.3.1 Breeding Habitat Assessment

Trees considered potentially suitable for Black Cockatoos to use as nesting habitat (subject to a suitable hollow being present and other factors) found within the subject site comprised the following species:

- Marri Corymbia calophylla;
- Jarrah Eucalyptus marginata;
- Flooded Gum Eucalyptus rudis;
- Planted non-endemic eucalypts (various unidentified species); and
- Dead unidentified species.

A summary of the habitat trees observed is provided in Table 3. The location of habitat trees is shown in Figure 3.

Table 3: Summary of Habitat Trees (DBH ≥50cm) within the Subject Site

	Number of		Number of	Tree Species				
Total Number of Habitat Trees (DBH <u>&gt;</u> 50cm)	Habitat Troos		Habitat Trees with Possible Hollows considered Possibly Suitable for Black Cockatoos	Marri	Jarrah	Flooded Gum	Non-Endemic Eucalyptus	Dead Unknown
104	100	4	0	57	9	9	28	1

The assessment identified 104 trees within the subject site with a DBH of ≥50cm. The vast majority of trees (100) appeared to not contain hollows of any size.

Four trees contained apparent or obvious hollows, all of which were assessed as being unlikely to be suitable for Black Cockatoos to currently use for nesting purposes, due to the hollows apparent small size, unsuitable orientation and/or height above ground level. Two of these trees contained hollows in use by feral bees. No evidence of breeding activity was noted.

The distribution of the various habitat tree species is shown in Figure 4. Additional details on each habitat tree observed can be found in Appendix D.

Based on available mapping, there is approximately 13,200 ha of remnant native vegetation within 10 kilometres of the subject site. Much of this this is likely to contain "potential" breeding habitat as defined by DotEE (i.e. suitable tree species with a DBH ≥50cm).

### **5.2.3.2 Foraging Habitat Assessment**

The following flora species known to be or are potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of Black Cockatoo were recorded within the subject site:

- Marri Corymbia calophylla;
- Jarrah Eucalyptus marginata;
- Flooded Gum Eucalyptus rudis;
- Sheoak Allocasuarina spp.
- Banksia B. attenuata & B. menziesii; and
- Grass tree Xanthorrhoea preissii.

It should be noted that some of the above-mentioned species (e.g. Flooded Gum, Grass Trees) while foraged upon on occasions are only likely to make up a small proportion of any one bird's diet relative to more favoured plant species such as Marri. Some tree species are also only represented by a small number of specimens (e.g. Sheoak, Banksia *and* Grass Trees) and therefore do not contribute to the overall foraging resource to a significant degree.

Evidence of Black Cockatoos foraging was observed during the field survey in the form of chewed Marri and Jarrah fruits and Banksia cones. This evidence was attributed to the Forest Red-tailed Black Cockatoo, Carnaby's Black Cockatoo and/or Baudin's Black Cockatoo depending on the nature of the evidence observed, examples of which are provided in Table 4.

**Table 4: Foraging Evidence Examples** 

Foraging Evidence Description	Example Image
Marri fruits – foraging activity attributed to the Forest Redtailed Black Cockatoo.	
Marri fruits – foraging activity attributed to the Carnaby's Black Cockatoo.	
Marri fruits – foraging activity attributed to the Baudin's Black Cockatoo.	
Jarrah fruits – foraging activity attributed to the Forest Redtailed or Carnaby's Black Cockatoo.	

Foraging Evidence Description	Example Image
Banksia cone – foraging activity attributed to the Carnaby's Black Cockatoo.	

Foraging debris was relatively common in areas containing Marri with most being attributed to the Forest Red-tailed Black Cockatoo. The distribution of the larger Marri trees (DBH  $\geq$ 50cm) can be seen in Figure 4.

It is difficult to provide an accurate estimate of the extent of Black Cockatoo foraging habitat within the subject site, given some trees are represented by scattered/isolated specimens, some of which are located amongst non-favoured tree species. Vegetation mapping by PGV Environmental (2018) does however indicate that the main areas of Black Cockatoo foraging habitat within the subject site cover approximately 2.54 ha (i.e. areas mapped as containing Marri, Jarrah and/or Banksia).

Based on available mapping there is about 13,200 ha hectares of remnant native vegetation within 10 km of the subject site. Much of this this is likely to represent Black Cockatoo foraging habitat of some type.

### **5.2.3.3 Night Roosting Habitat Assessment**

No evidence of Black Cockatoos roosting within trees located within the subject site was observed during the survey period. It is difficult to determine if trees or groves of trees within the subject site represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees (included non-endemics/exotics) may be suitable but as indicated no actual evidence of use was seen.

A review of the 2018 Great Cocky Count database shows no documented roost sites within the subject site. The 2018 Great Cocky Count recorded the closest active roost, approximately 3.7 km north west, used by 16 Forest Red-tailed Black Cockatoos and three White-tailed Black Cockatoos (Peck *et al.* 2018). Another 35 documented roost sites (but not necessarily in current use) occur within 10 km of the subject site.

### 6. CONSERVATION SIGNIFICANT FAUNA SPECIES

Based on the information gathered during the site reconnaissance survey and the documented distribution and habitat preferences of the species of conservation significance identified as potentially being present in the general area, their likelihood of occurrence has been assessed. A summary of this assessment is presented in Table 5.

Table 5: Likelihood of Occurrence – Fauna Species of Conservation Significance (continues on following pages).

Outside	Conservation Status <sup>3</sup>		Habitat	Libelih and of Oncommon	
Species	WC Act/ DBCA Priorit	EPBC Act	Present	Likelihood of Occurrence	
Carter's Freshwater Mussel Westralunio carteri	<b>S</b> 3	VU	No	Would Not Occur	
McMillan's Biting Midge Austroconops mcmillani	P2	-	No	Would Not Occur	
Inornate Trapdoor Spider Euoplos inornatus	P1	-	No	Would Not Occur	
Grey Vernal Katydid Kawaniphila pachomai	P1	-	No	Would Not Occur	
Unnamed bee Leioproctus contrarius	P3	-	No	Would Not Occur	
Unnamed bee Leioproctus douglasiellus	S2	CR	No	Would Not Occur	
Short-tongued Bee Neopasiphae simplicior	S2	CR	No	Would Not Occur	
Southern Death Adder Acanthophis antarcticus	P3	-	No	Would Not Occur	
Dell's Skink Ctenotus delli	P4	-	No	Would Not Occur	
Coastal Plains Skink Ctenotus ora	P3	-	No/Very Marginal	Unlikely to Occur	
Perth Slider Lerista lineata	P3	-	No/Very Marginal	Unlikely to Occur	
Malleefowl Leipoa ocellata	S3	VU	No	Would Not Occur/Regionally Extinct	
Australasian Bittern Botaurus poiciloptilus	S2	EN	No	Would Not Occur	
Australian Little Bittern Ixobrychus dubius	P4	-	No	Would Not Occur	
Migratory Shorebirds/Wetland Species	Various	Various	No	Would Not Occur	
Blue-billed Duck Oxyura australis	P4	-	No	Would Not Occur	

<sup>&</sup>lt;sup>3</sup> See Appendix A for conservation status codes

0	Conservation Status <sup>3</sup>		Habitat	Likelihood of Occurrence	
Species	WC Act/ DBCA Priorit	EPBC Act	Present	Likelinood of Occurrence	
Glossy Ibis Plegadis falcinellus	S5	Mig, Ma	No	Would Not Occur	
Eastern Osprey Pandion haliaetus	S5	Mig, Ma	No	Would Not Occur	
Peregrine Falcon Falco peregrinus	S7	-	Yes	Possibly Occurs (on rare occasions)	
Carnaby`s Black Cockatoo Calyptorhynchus latirostris	S2	EN	Yes	Known to Occur	
Baudin`s Black Cockatoo Calyptorhynchus baudinii	S2	EN	Yes	Known to Occur	
Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso	S3	VU	Yes	Known to Occur	
Fork-tailed Swift Apus pacificus	S5	Mig	Yes	Unlikely to Occur except very rarely	
Grey Wagtail Motacilla cinerea	S5	Mig	No	Would Not Occur	
Chuditch Dasyurus geoffroii	S3	VU	No	Would Not Occur	
South-western Brush-tailed Phascogale Phascogale tapoatafa wambenger	S6	-	No	Would Not Occur	
Numbat Myrmecobius fasciatus	S3	VU	No	Would Not Occur/Regionally Extinct	
Quenda Isoodon fusciventer	P4	-	No	Would Not Occur	
Western Ringtail Possum Pseudocheirus occidentalis	S1	CR	No	Would Not Occur/Regionally Extinct	
Woylie Bettongia penicillata ogilbyi	S1	EN	No	Would Not Occur/Regionally Extinct	
Quokka Setonix brachyurus	S3	VU	No	Would Not Occur	
Western Brush Wallaby Notamacropus irma	P4	-	No	Would Not Occur	
Western False Pipistrelle Falsistrellus mackenziei	P4	-	Yes/Marginal	Unlikely to Occur	

Three vertebrate fauna species of conservation significance (listed as State or Federal threatened/migratory species or as DBCA priority species) were positively identified as utilising the subject site for some purpose during the survey period:

Calyptorhynchus banksii naso Forest Red-tailed Black Cockatoo – S3 (WC Act),
 Vulnerable (EPBC Act)

Foraging evidence attributed to this species was observed. Areas of vegetation within the subject site represent foraging habitat for this species. Larger trees ( $\geq$ 50cm DBH) can be considered potential breeding habitat, though no actual breeding activity was evident. No evidence of roosting observed.

- Calyptorhynchus latirostris Carnaby`s Black Cockatoo S2 (WC Act), Endangered (EPBC Act)
  - Foraging evidence attributed to this species was observed. Areas of vegetation within the subject site represent foraging habitat for this species. Larger trees (>50cm DBH) can be considered potential breeding habitat, though no actual breeding activity was evident. No evidence of roosting observed.
- Calyptorhynchus baudinii Baudin's Black Cockatoo S2 (WC Act), Endangered (EPBC Act)

Foraging evidence attributed to this species was observed. Areas of vegetation within the subject site represent foraging habitat for this species. Larger trees (>50cm DBH) can be considered potential breeding habitat, though no actual breeding activity was evident. No evidence of roosting observed.

One additional species of conservation significance may possibly utilise the survey area for some purpose at times, but its status on-site and/or in the general area is difficult to determine because none were not sighted during the field survey, or evidence of use was not observed.

Falco peregrinus Peregrine Falcon – S7 (WC Act)
 Uncommon so unlikely to be resident in the area but subject site may form part of larger home range. Only likely to occur very infrequently when foraging in air space over the subject site and then only for brief periods. Unlikely to breed in the area.

A number of other species of conservation significance (as listed in Table 5), while possibly present in the wider area (e.g. Darling Range forest areas) are not listed as potentially occurring within the subject site primarily due to a complete lack of suitable habitat (quality and extent) and/or known local/regional extinction.

### 7. CONCLUSION

The fauna assessment of the proposed Denny Avenue Level Crossing Removal Project area was primarily undertaken for the purposes of identifying the presence of conservation significant fauna species and/or their habitat.

Three species of conservation significance were positively identified as utilising the subject site for some purpose during the course of the field survey (Forest Red-tailed Black Cockatoo, Carnaby's Black Cockatoo and Baudin's Black Cockatoo).

Based on habitats present, it has been determined that one additional species of conservation significance may possibly occur at times (Peregrine Falcon) but its current status on-site and/or in the general area is difficult to determine because it was not sighted during the survey period and no evidence of use of the subject site was found. This species is generally uncommon and only likely to occur in the subject site very occasionally and then only for brief periods.

The potential impact to conservation significant species from the proposed development will vary depending on their current degree of utilisation/population densities and preferred habitat requirements (e.g. quantity and quality of potential foraging habitat that will be affected when clearing of the site is undertaken).

The potential impacts on these species and/or their habitat should be taken into consideration during ongoing planning.

### 8. REFERENCES

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Department of the Environment and Energy (DotEE) (2018). *EPBC Act* Protected Matters Report: "By Point" - -32.11823 116.01426 (1km Buffer). Available from: http://www.environment.gov.au. Accessed 29/09/2018.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) (2012). *EPBC Act* Referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest Red-tailed Black Cockatoo (vulnerable) *Calyptorhynchus banksii naso*.

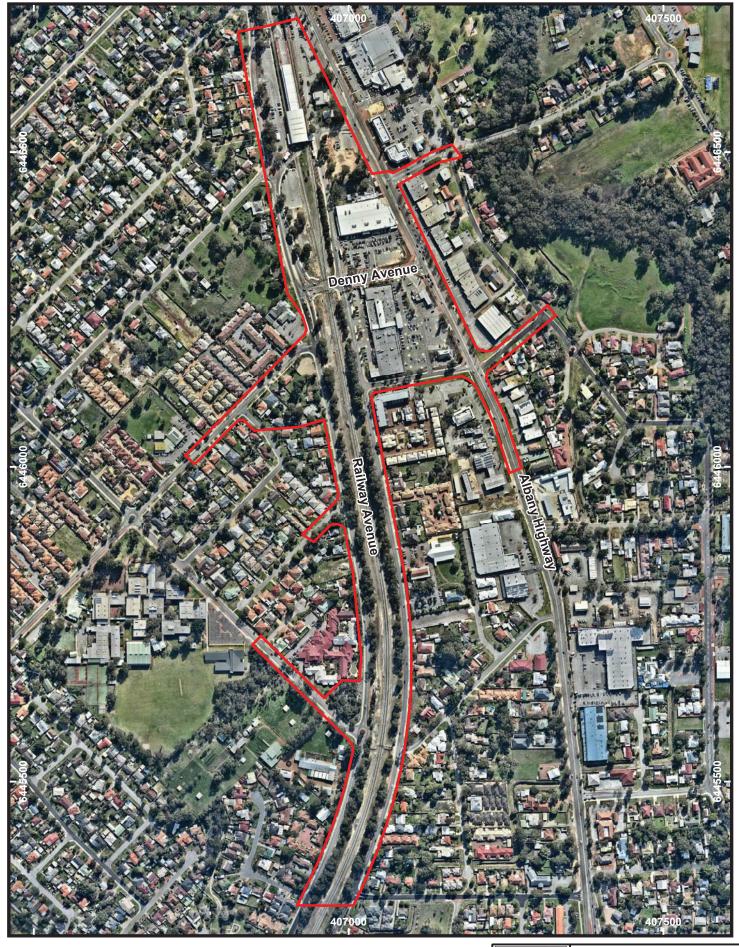
Environmental Protection Authority (EPA) (2016a). *Technical Guidance - Terrestrial Fauna Surveys*.

Environmental Protection Authority (EPA) (2016b). *Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna.* 

Peck, A., Barrett, G. & Williams, M. (2018). The 2018 Great Cocky Count: a community-based survey for Carnaby's Black-Cockatoo (Calyptorhynchus latirostris), Baudin's Black-Cockatoo (Calyptorhynchus baudinii) and Forest Red-tailed Black-Cockatoo (Calyptorhynchus banksii naso). BirdLife Australia, Floreat, Western Australia.

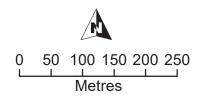
PGV Environmental (2018). Flora and Vegetation Survey – Metronet Denny Avenue Level Crossing.

# **FIGURES**







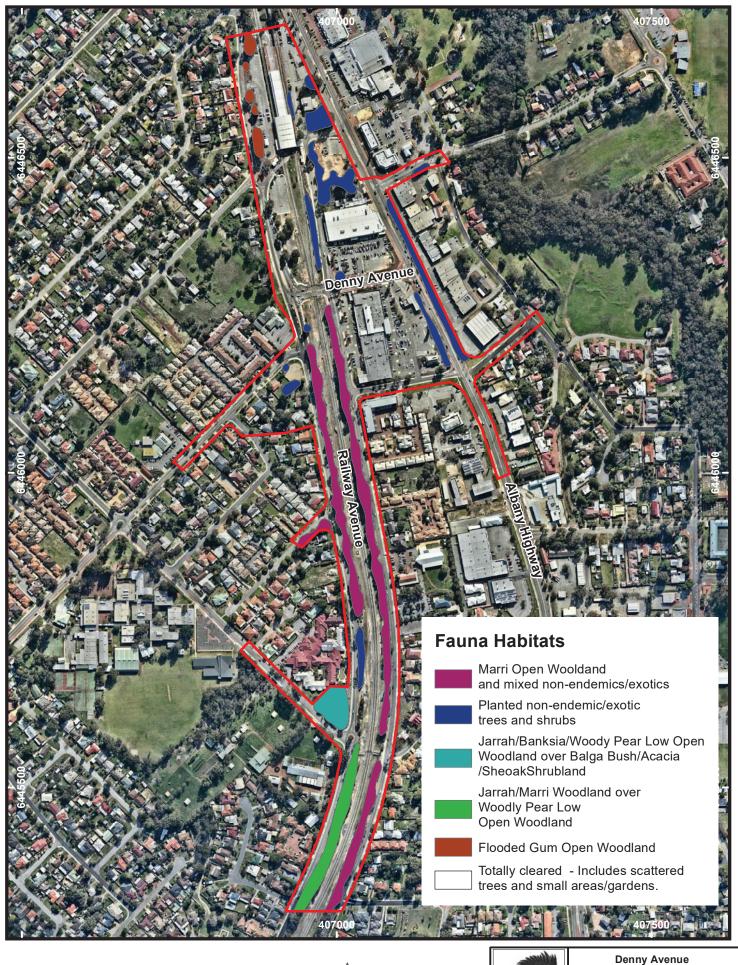




Denny Avenue Level Crossing Removal Project Public Transport Authority

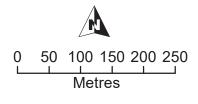
**A**erial **Photograph** 

Projection/Coordinate System: UTM/MGA Zone 50 Figure: 1











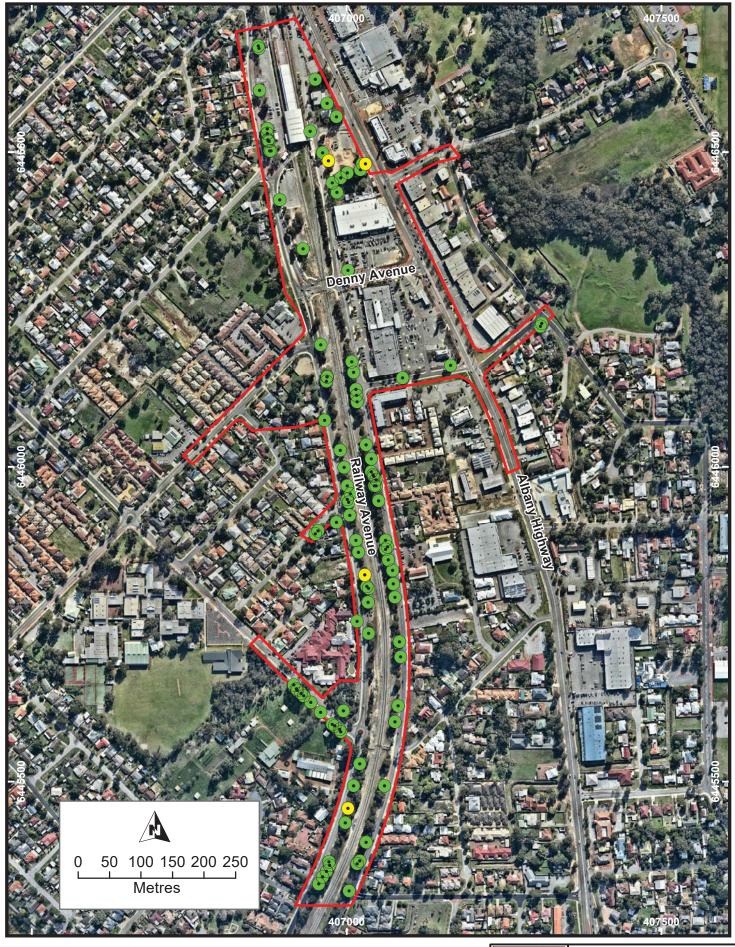
Level Crossing Removal Project
Public Transport Authority

### **Fauna Habitats**

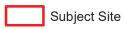
(Based on Vegetaion Types PGV 2018)

Projection/Coordinate System: UTM/MGA Zone 50

Figure: 2



## Legend



Habitat Tree - One or more possible small/medium hollows

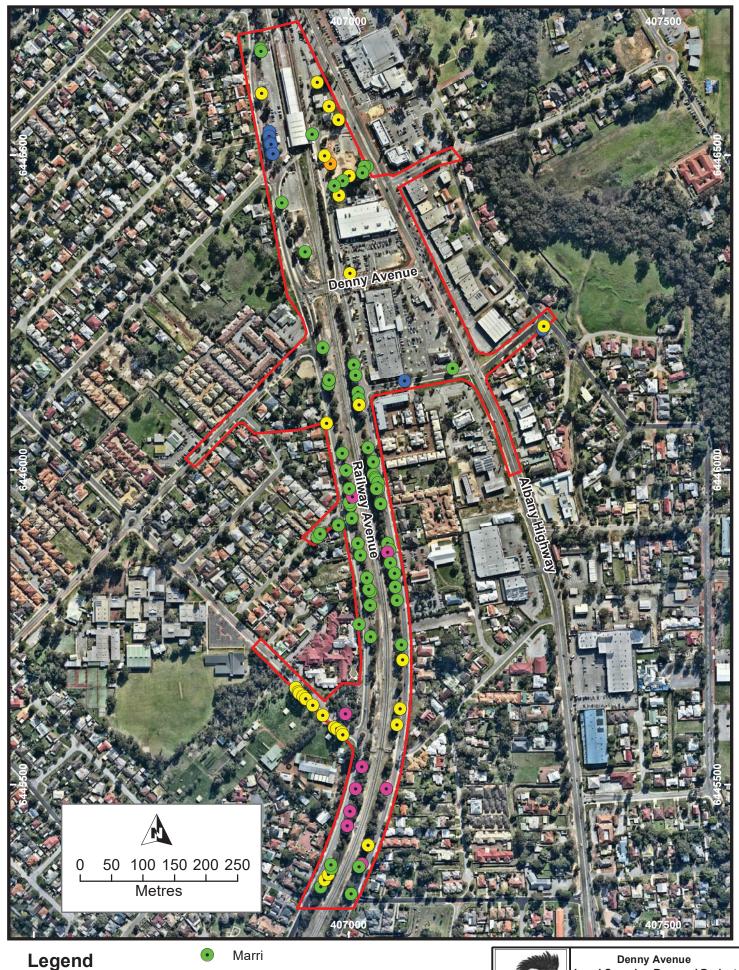
Habitat Tree - No hollows seen



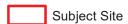
Denny Avenue Level Crossing Removal Project Public Transport Authority

**Habitat Trees** (DBH >50cm)

Projection/Coordinate System: UTM/MGA Zone 50 Figure: 3







Dead Unknown

Flooded Gum

Jarrah

Unknown Non-Endemic Eucalypt



Denny Avenue Level Crossing Removal Project Public Transport Authority

### **Habitat Tree Species**

Projection/Coordinate System: UTM/MGA Zone 50 Figure: 4

# **APPENDIX A**

**CONSERVATION CATEGORIES** 

### EPBC Act (1999) Threatened Fauna Categories

Threatened fauna may be listed under Section 178 of the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* in any one of the following categories:

Category	Code	Description
Extinct	E	There is no reasonable doubt that the last member of the species has died.
*Extinct in the wild	EW	A species  (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or  (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
*Critically Endangered	CE	A species is facing an extremely high risk of extinction in the wild in the immediate future.
*Endangered	EN	A species:  (a) is not critically endangered; and  (b) is facing a very high risk of extinction in the wild in the near future.
*Vulnerable	VU	A species (a) is not critically endangered or endangered; and (b) is facing a high risk of extinction in the wild in the medium-term future.
Conservation Dependent	CD	A species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered
*Migratory	Migratory	(a) 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 (c) 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.
Marine	Ma	Species in the list established under s248 of the EPBC Act

Note: Only species in those categories marked with an asterix are matters of national environmental significance (NES) under the *EPBC Act*.

### Wildlife Conservation (Specially Protected Fauna) Notice 2017 Categories

Published as Specially Protected under the *Wildlife Conservation Act 1950*, and listed under Schedules 1 to 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

Category	Code	Description
Schedule 1 (S1) Critically Endangered species	CR	Threatened species considered to be facing an extremely high risk of extinction in the wild.
Schedule 2 (S2) Endangered species	EN	Threatened species considered to be facing a very high risk of extinction in the wild.
Schedule 3 (S3) Vulnerable species	VU	Threatened species considered to be facing a high risk of extinction in the wild.
Schedule 4 (S4) Presumed extinct species	EX	Species which have been adequately searched for and there is no reasonable doubt that the last individual has died.
Schedule 5 (S5) Migratory birds protected under an international agreement	IA	Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds.
Schedule 6 (S6) Fauna that is of special conservation need as conservation dependent fauna	CD	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened.
Schedule 7 (S7) Other specially protected fauna.	os	Fauna otherwise in need of special protection to ensure their conservation.

### Western Australian DBCA Priority Fauna Categories

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species 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, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

Category	Code	Description
Priority 1 (P1) Poorly Known Species.	P1	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.
Priority 2 (P2) Poorly Known Species.	P2	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.
Priority 3 (P3) Poorly Known Species.	P3	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.
Priority 4 (P4) Rare, Near Threatened and other species in need of monitoring.	P4	<ul> <li>(a) Rare: 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.</li> <li>(b) Near Threatened: Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.</li> </ul>
		(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

<sup>\*</sup>Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

### IUCN Red List Threatened Species Categories

The *IUCN Red List of Threatened Species* $^{\text{TM}}$  is a checklist of taxa that have undergone an extinction risk assessment using the *IUCN Red List Categories and Criteria*.

Categories are summarized below.

Category	Code	Description	
Extinct	EX	Taxa for which there is no reasonable doubt that the last individual has died.	
Extinct in the Wild	EW	Taxa which is known only to survive in cultivation, in captivity or and as a naturalised population well outside its past range and it has not been recorded in known or expected habitat despite exhaustive survey over a time frame appropriate to its life cycle and form.	
Critically Endangered	CR	Taxa facing an extremely high risk of extinction in the wild.	
Endangered	EN	Taxa facing a very high risk of extinction in the wild.	
Vulnerable	VU	Taxa facing a high risk of extinction in the wild.	
Near Threatened	NT	Taxa which has been evaluated but does not qualify for CR, EN or VU now but is close to qualifying or likely to qualify in the near future.	
Least Concern	LC	Taxa which has been evaluated but does not qualify for CR, EN, VU, or NT but is likely to qualify for NT in the near future.	
Data Deficient	DD	Taxa for which there is inadequate information to make a direct or indirect assessment of its risk of extinction based on its distribution and/or population status.	
Not Evaluated	NE	Taxa which has not been evaluated.	

A full list of categories and their meanings are available at:

http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria

# **APPENDIX B**

**DBCA & EPBC DATABASE SEARCH RESULTS** 



# NatureMap - Denny Ave

# Created By Greg Harewood on 29/09/2018

Kingdom Animalia

**Current Names Only** Yes

Core Datasets Only Yes

Method 'By Circle'

Centre 116° 00' 51" E,32° 07' 06" S

Buffer 10km

Group By Species Group

Species Group	Species	Records
Amphibian Bird Fish Invertebrate Mammal Reptile	13 242 5 210 34 59	396 53700 67 1009 641 520
TOTAL	563	56333

Name ID Species Name

Naturalised Conservation Code <sup>1</sup>Endemic To Query Area

Amphibian			
1.	25398 Crinia georgiana (Quacking Frog)		
2.	25399 Crinia glauerti (Clicking Frog)		
3.	25400 Crinia insignifera (Squelching Froglet)		
4.	25401 Crinia pseudinsignifera (Bleating Froglet)		
5.	25404 Geocrinia leai (Ticking Frog)		
6.	25409 Heleioporus barycragus (Hooting Frog)		
7.	25410 Heleioporus eyrei (Moaning Frog)		
8.	25412 Heleioporus psammophilus (Sand Frog)		
9.	25415 Limnodynastes dorsalis (Western Banjo Frog)		
10.	25378 Litoria adelaidensis (Slender Tree Frog)		
11.	25388 Litoria moorei (Motorbike Frog)		
12.	25420 Myobatrachus gouldii (Turtle Frog)		
13.	25433 Pseudophryne guentheri (Crawling Toadlet)		
Bird			
14.	24559 Acanthagenys rufogularis (Spiny-cheeked Honeyeater)		
15.	24260 Acanthiza apicalis (Broad-tailed Thornbill, Inland Thornbill)		
16.	24261 Acanthiza chrysorrhoa (Yellow-rumped Thornbill)		
17.	24262 Acanthiza inornata (Western Thornbill)		
18.	24560 Acanthorhynchus superciliosus (Western Spinebill)		
19.	25535 Accipiter cirrocephalus (Collared Sparrowhawk)		
20.	24281 Accipiter cirrocephalus subsp. cirrocephalus (Collared Sparrowhawk)		
21.	25536 Accipiter fasciatus (Brown Goshawk)		
22.	24283 Accipiter fasciatus subsp. didimus (Brown Goshawk)		
23.	24282 Accipiter fasciatus subsp. fasciatus (Brown Goshawk)		
24.	25755 Acrocephalus australis (Australian Reed Warbler)		
25.	24831 Acrocephalus australis subsp. gouldi (Australian Reed Warbler)		
26.	41323 Actitis hypoleucos (Common Sandpiper)	IA	
27.	25544 Aegotheles cristatus (Australian Owlet-nightjar)		
28.	24301 Aegotheles cristatus subsp. cristatus (Australian Owlet-nightjar)		
29.	24310 Anas castanea (Chestnut Teal)		
30.	24312 Anas gracilis (Grey Teal)		
31.	Anas platyrhynchos subsp. domesticus		
32.	24315 Anas rhynchotis (Australasian Shoveler)		
33.	24316 Anas superciliosa (Pacific Black Duck)		
34.	47414 Anhinga novaehollandiae (Australasian Darter)		
35.	Anser anser		
36.	24561 Anthochaera carunculata (Red Wattlebird)		
37.	24562 Anthochaera lunulata (Western Little Wattlebird)		
38.	25554 Apus pacificus (Fork-tailed Swift, Pacific Swift)	IA	
39.	24285 Aquila audax (Wedge-tailed Eagle)		
		A STATE OF THE PARTY OF THE PAR	****** ANST

NatureMap is a collaborative project of the Department of Parks and Wildlife and the Western Australian Museum.







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
40. 41.		Ardea garzetta subsp. nigripes (Little Egret) Ardea ibis (Cattle Egret)			
42.		Ardea modesta (great egret, white egret)			
43.		Ardea novaehollandiae (White-faced Heron)			
44.		Ardea pacifica (White-necked Heron)			
45.		Arenaria interpres (Ruddy Turnstone)		IA	
46. 47.		Artamus cinereus (Black-faced Woodswallow)  Artamus cinereus subsp. melanops (Black-faced Woodswallow)			
48.		Artamus cyanopterus (Dusky Woodswallow)			
49.	24356	Artamus personatus (Masked Woodswallow)			
50.		Artamus sordidus			
51. 52.	24318	Aythya australis (Hardhead) Barnardius zonarius			
53.	24319	Biziura lobata (Musk Duck)			
54.		Botaurus poiciloptilus (Australasian Bittern)		Т	
55.	24359	Burhinus grallarius (Bush Stone-curlew)			
56.		Cacatua galerita (Sulphur-crested Cockatoo)			
57.		Cacatua pastinator (Western Long-billed Corella)			
58. 59.		Cacatua roseicapilla (Galah) Cacatua sanguinea (Little Corella)			
60.		Cacatua tenuirostris (Eastern Long-billed Corella)	Y		
61.		Cacomantis flabelliformis (Fan-tailed Cuckoo)			
62.	24427	Cacomantis flabelliformis subsp. flabelliformis (Fan-tailed Cuckoo)			
63.		Cacomantis pallidus (Pallid Cuckoo)			
64. 65.		Calidris acuminata (Sharp-tailed Sandpiper)		IA T	
66.		Calidris ferruginea (Curlew Sandpiper)  Calidris melanotos (Pectoral Sandpiper)		IA	
67.		Calidris ruficollis (Red-necked Stint)		IA	
68.	24789	Calidris subminuta (Long-toed Stint)		IA	
69.	25717	Calyptorhynchus banksii (Red-tailed Black-Cockatoo)			
70.		Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black Cockatoo)		Т	
71.	24733	Calyptorhynchus baudinii (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)		Т	
72.	24734	Calyptorhynchus latirostris (Carnaby's Cockatoo, White-tailed Short-billed Black			
		Cockatoo)		Т	
73.		Calyptorhynchus sp. (white-tailed black cockatoo)		T	
74.		Charadrius leschenaultii (Greater Sand Plover)		IA	
75. 76.		Charadrius ruficapillus (Red-capped Plover) Chenonetta jubata (Australian Wood Duck, Wood Duck)			
77.		Cheramoeca leucosterna (White-backed Swallow)			
78.		Chroicocephalus novaehollandiae			
79.	24432	Chrysococcyx lucidus subsp. plagosus (Shining Bronze Cuckoo)			
80.		Circus approximans (Swamp Harrier)			
81. 82.		Circus assimilis (Spotted Harrier)  Cladorhynchus leucocephalus (Banded Stilt)			
83.		Colluricincla harmonica (Grey Shrike-thrush)			
84.		Columba livia (Domestic Pigeon)	Υ		
85.	25568	Coracina novaehollandiae (Black-faced Cuckoo-shrike)			
86.		Coracina novaehollandiae subsp. novaehollandiae (Black-faced Cuckoo-shrike)			
87.		Corvus bennetti (Little Crow)			
88. 89.		Corvus coronoides (Australian Raven)  Corvus coronoides subsp. perplexus (Australian Raven)			
90.		Coturnix pectoralis (Stubble Quail)			
91.		Coturnix ypsilophora (Brown Quail)			
92.		Coturnix ypsilophora subsp. australis (Brown Quail)			
93.		Cracticus nigrogularis (Pied Butcherbird)			
94. 95.		Cracticus tibicen (Australian Magpie) Cracticus tibicen subsp. tibicen (Black-backed Magpie)			
96.		Cracticus torquatus (Grey Butcherbird)			
97.		Cracticus torquatus subsp. torquatus (Grey Butcherbird)			
98.		Cygnus atratus (Black Swan)			
99.		Cygnus olor (Mute Swan)	Y		
100. 101.		Dacelo novaeguineae (Laughing Kookaburra)  Danhoenositta chrysoptera (Varied Sittella)	Y		
101.		Daphoenositta chrysoptera (Varied Sittella) Dicaeum hirundinaceum (Mistletoebird)			
103.		Dromaius novaehollandiae (Emu)			
104.		Egretta garzetta			
105.		Egretta novaehollandiae			
106. 107.	24200	Elanus axillaris			
107.	24290	Elanus caeruleus subsp. axillaris (Australian Black-shouldered Kite)		A110	
				Market Co.	







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
108.	47937	Elseyornis melanops (Black-fronted Dotterel)			
109.		Eolophus roseicapillus			
110.	25692	Eopsaltria australis (Yellow Robin)			
111.	24651	Eopsaltria australis subsp. griseogularis (Western Yellow Robin)			
112.	24652	Eopsaltria georgiana (White-breasted Robin)			
113.	24567	Epthianura albifrons (White-fronted Chat)			
114.		Erythrogonys cinctus (Red-kneed Dotterel)			
115.		Eurostopodus argus (Spotted Nightjar)			
116.		Falco berigora (Brown Falcon)			
117.		Falco cenchroides (Australian Kestrel, Nankeen Kestrel)			
118.		Falco cenchroides subsp. cenchroides (Australian Kestrel, Nankeen Kestrel)			
119.		Falco longipennis (Australian Hobby)			
120.		Falco longipennis subsp. longipennis (Australian Hobby)		0	
121. 122.		Falco peregrinus (Peregrine Falcon) Falco peregrinus subsp. macropus (Australian Peregrine Falcon)		s s	
123.		Fulica atra (Eurasian Coot)		3	
124.		Fulica atra subsp. australis (Eurasian Coot)			
125.		Gallinula tenebrosa (Dusky Moorhen)			
126.		Gallinula tenebrosa subsp. tenebrosa (Dusky Moorhen)			
127.		Gallirallus philippensis (Buff-banded Rail)			
128.		Gallirallus philippensis subsp. mellori (Buff-banded Rail)			
129.		Gallus gallus			
130.	47954	Gelochelidon nilotica (Gull-billed Tern)		IA	
131.	25530	Gerygone fusca (Western Gerygone)			
132.	24271	Gerygone fusca subsp. fusca (Western Gerygone)			
133.	47962	Glyciphila melanops (Tawny-crowned Honeyeater)			
134.	24443	Grallina cyanoleuca (Magpie-lark)			
135.	24487	Haematopus longirostris (Pied Oystercatcher)			
136.	24293	Haliaeetus leucogaster (White-bellied Sea-Eagle)			
137.	24295	Haliastur sphenurus (Whistling Kite)			
138.	47965	Hieraaetus morphnoides (Little Eagle)			
139.		Himantopus himantopus (Black-winged Stilt)			
140.		Hirundo neoxena (Welcome Swallow)			
141.		Ixobrychus dubius (Australian Little Bittern)		P4	
142.		Larus novaehollandiae subsp. novaehollandiae (Silver Gull)			
143.		Lichmera indistincta (Brown Honeyeater)			
144.		Limosa limosa (Black-tailed Godwit)		IA	
145. 146.	20000	Lonchura castaneothorax (Chestnut-breasted Mannikin) Lophoictinia isura			
147.	2/326	Malacorhynchus membranaceus (Pink-eared Duck)			
148.		Malurus elegans (Red-winged Fairy-wren)			
149.		Malurus lamberti (Variegated Fairy-wren)			
150.		Malurus leucopterus (White-winged Fairy-wren)			
151.		Malurus pulcherrimus (Blue-breasted Fairy-wren)			
152.		Malurus splendens (Splendid Fairy-wren)			
153.	24552	Malurus splendens subsp. splendens (Splendid Fairy-wren)			
154.	24583	Manorina flavigula (Yellow-throated Miner)			
155.	25758	Megalurus gramineus (Little Grassbird)			
156.	47997	Melanodryas cucullata (Hooded Robin)			
157.	25663	Melithreptus brevirostris (Brown-headed Honeyeater)			
158.	24586	Melithreptus brevirostris subsp. leucogenys (Brown-headed Honeyeater)			
159.	24587				
160.		Melopsittacus undulatus (Budgerigar)			
161.	24598	Merops ornatus (Rainbow Bee-eater)			
162.	05000	Microcarbo melanoleucos			
163.		Microeca fascinans (Jacky Winter)			
164. 165.		Milyus migrans (Black Kite)			
166.		Myiagra inquieta (Restless Flycatcher)  Neochmia temporalis (Red-browed Finch)	Υ		
167.		Neophema elegans (Elegant Parrot)			
168.		Nycticorax caledonicus (Rufous Night Heron)			
169.		Nymphicus hollandicus (Cockatiel)			
170.		Ocyphaps lophotes (Crested Pigeon)			
171.		Oxyura australis (Blue-billed Duck)		P4	
172.		Pachycephala rufiventris (Rufous Whistler)			
173.		Pachycephala rufiventris subsp. rufiventris (Rufous Whistler)			
174.	48591	Pandion cristatus (Osprey, Eastern Osprey)		IA	
175.		Pardalotus punctatus (Spotted Pardalote)			
176.	24625	Pardalotus punctatus subsp. punctatus (Spotted Pardalote)			
177.	25682	Pardalotus striatus (Striated Pardalote)			
				Departmen	







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
178.		Pardalotus striatus subsp. westraliensis (Striated Pardalote)			
179. 180.		Pavo cristatus (Common Peafowl, Indian Peafowl)	Y		
181.		Pelecanus conspicillatus (Australian Pelican) Petrochelidon ariel (Fairy Martin)			
182.		Petrochelidon nigricans (Tree Martin)			
183.		Petroica boodang (Scarlet Robin)			
184.	24659	Petroica goodenovii (Red-capped Robin)			
185.	25697	Phalacrocorax carbo (Great Cormorant)			
186.		Phalacrocorax melanoleucos (Little Pied Cormorant)			
187.		Phalacrocorax sulcirostris (Little Black Cormorant)			
188.		Phalacrocorax varius (Pied Cormorant)			
189. 190.		Phaps chalcoptera (Common Bronzewing) Phaps elegans (Brush Bronzewing)			
191.		Phylidonyris niger (White-cheeked Honeyeater)			
192.		Phylidonyris novaehollandiae (New Holland Honeyeater)			
193.		Platalea flavipes (Yellow-billed Spoonbill)			
194.	24842	Platalea regia (Royal Spoonbill)			
195.	25720	Platycercus icterotis (Western Rosella)			
196.	24745	Platycercus icterotis subsp. icterotis (Western Rosella)			
197.	24747	Platycercus spurius (Red-capped Parrot)			
198.		Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)			
199.		Platycercus zonarius subsp. semitorquatus (Twenty-eight Parrot)			
200.		Platycercus zonarius subsp. zonarius (Port Lincoln Parrot)		1.0	
201. 202.		Plegadis falcinellus (Glossy Ibis)		IA	
202.		Pluvialis fulva (Pacific Golden Plover)  Pluvialis squatarola (Grey Plover)		IA IA	
204.		Podargus strigoides (Tawny Frogmouth)		IA.	
205.		Podargus strigoides subsp. brachypterus (Tawny Frogmouth)			
206.		Podiceps cristatus (Great Crested Grebe)			
207.		Poliocephalus poliocephalus (Hoary-headed Grebe)			
208.	25722	Polytelis anthopeplus (Regent Parrot)			
209.	24683	Pomatostomus superciliosus (White-browed Babbler)			
210.	25731	Porphyrio porphyrio (Purple Swamphen)			
211.		Porphyrio porphyrio subsp. bellus (Purple Swamphen)			
212.		Porzana fluminea (Australian Spotted Crake)			
213.		Porzana pusilla (Baillon's Crake)			
214. 215.		Porzana pusilla subsp. palustris (Baillon's Crake)			
216.		Porzana tabuensis (Spotless Crake) Psittacula krameri (Indian Ringnecked Parrot, Rose-ringed Parakeet)	Υ		
217.		Pterodroma brevirostris (Kerguelen Petrel)	'		
218.		Pterodroma lessonii (White-headed Petrel)			
219.		Pterodroma macroptera (Great-winged Petrel)			
220.		Purpureicephalus spurius			
221.	24776	Recurvirostra novaehollandiae (Red-necked Avocet)			
222.	48096	Rhipidura albiscapa (Grey Fantail)			
223.		Rhipidura leucophrys (Willie Wagtail)			
224.		Rhipidura leucophrys subsp. leucophrys (Willie Wagtail)			
225.		Sericornis frontalis (White-browed Scrubwren)			
226.	24279	Sericornis frontalis subsp. maculatus (White-browed Scrubwren)			
227. 228.	30948	Smicrornis brevirostris (Weebill) Stagonopleura oculata (Red-eared Firetail)			
229.		Stargonopieura ocuiata (Red-eared Firetaii) Stercorarius longicaudus (long-tailed jaeger, long-tailed skua)		IA	
230.	24310	Stictonetta naevosa (Freckled Duck)		IA.	
231.		Stipiturus malachurus (Southern Emu-wren)			
232.		Strepera versicolor (Grey Currawong)			
233.	25589	Streptopelia chinensis (Spotted Turtle-Dove)	Υ		
234.	30951	Streptopelia chinensis subsp. tigrina (Spotted Turtle-Dove)	Υ		
235.	25590	Streptopelia senegalensis (Laughing Turtle-Dove)	Υ		
236.	30950	Streptopelia senegalensis subsp. senegalensis (Laughing Turtle-Dove)	Υ		
237.		Tachybaptus novaehollandiae (Australasian Grebe, Black-throated Grebe)			
238.	24682	Tachybaptus novaehollandiae subsp. novaehollandiae (Australasian Grebe, Black- throated Grebe)			
239.		Tadorna tadornoides (Australian Shelduck, Mountain Duck)			
240.		Threskiornis spinicollis (Straw-necked Ibis)			
241.	25549	Todiramphus sanctus (Sacred Kingfisher)			
242.	24309	Todiramphus sanctus subsp. sanctus (Sacred Kingfisher)			
243. 244.	48141 25723	Tribonyx ventralis (Black-tailed Native-hen) Trichoglossus haematodus (Rainbow Lorikeet)			
		Trichoglossus haematodus (Rainbow Lorikeet)  Trichoglossus haematodus subsp. moluccanus (Rainbow Lorikeet)	Υ		
	27100	g			
245. 246.	24806	Tringa glareola (Wood Sandpiper)		IA	

NatureMap is a collaborative project of the Department of Parks and Wildlife and the Western Australian Museum.







247		Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
291.   491/T Turn's value (Palmode Distrocy and Vision Country Count	247.	24808	Tringa nebularia (Common Greenshank, greenshank)			
201.   24617   Turns vestory of the Ration-quals	248.	24809	Tringa stagnatilis (Marsh Sandpiper, little greenshank)		IA	
2011	249.	48147	Turnix varius (Painted Button-quail)			
252. 2074 The reconstruction of Medical Papers (1) 253. 2077 Venelian Irrials (College Venezuer Chinery College Venezuer Chinery Chiner	250.	24851	Turnix velox (Little Button-quail)			
25.5.   25.77   Vanchus miles (Machaerd Lapareng)   25.5.   25.98   Zerolar Janobea (Marchaerd Lapareng)   25.5.   25.98   Zerolar Janobea (Marchaerd Lapareng)   26.6.   Sand Goldman Condendrial (Marchaerd Marchaerd)   26.6.   Annoque contendrial (Marchaerd Marchaerd)   26.7.   34.00   Goldman Condendrial (Marchaerd Marchaerd)   26.7.   Annoque contendrial (Marchaerd Marchaerd)   26.7.   Tarobham Condendrial (Marchaerd Marchaerd)   26.7.   Annoque contendrial (Marchaerd Marchaerd)   26.   Annoque contendrial (Marchaerd)   26.   Contendrial	251.	24852	Tyto alba subsp. delicatula (Barn Owl)			
25.00   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.10   20.1	252.	25764	Tyto novaehollandiae (Masked Owl)			
Fish Fish Fish Fish Fish Fish Fish Fish	253.	25577	Vanellus miles (Masked Lapwing)			
Page	254.	24386	Vanellus tricolor (Banded Lapwing)			
25.5.         Signature controlled (Ventum Minorus)           25.5.         Namoque controlled (Ventum Minorus)           25.0.         Increasons controlled (Ventum Minorus)           25.0.         Uncreasque controlled (Ventum Minorus)           25.0.         Autoritation (Ventum Minorus)           25.1.         Autoritation (Ventum Minorus)           25.2.         Autoritation (Ventum Minorus)           26.2.         Autoritation (Ventum Minorus)           26.3.         Autoritation (Ventum Minorus)           26.4.         Autoritation (Ventum Minorus)           26.5.         Autoritation (Ventum Minorus)           26.6.         Autoritation (Ventum Minorus)           26.7.         Autoritation (Ventum Minorus)           27.0.         Autoritation (Ventum Minorus)           27.1.         Autoritation (Ventum Minorus)           27.2.         Autoritation (Ventum Minorus)           27.3.         Autoritation (Ventum Minorus)           27.4.         Autoritation (Ventum Minorus)           27.5.         Autoritation (Ventum Minorus)           27.6.         Autoritation (Ventum Minorus)           28.1.         Autoritation (Ventum Minorus)           28.2.         Autoritation (Ventum Minorus)           28.3.         Autoritati	255.	25765	Zosterops lateralis (Grey-breasted White-eye, Silvereye)			
257.   34005   Galassia accidentalis (Missian Missians)						
286. Memorphera vitalian 299. Ternisarian Oscoloris 299. Unicampiae carannesinis Invertibratos 281. Acasiforanes qu. 281. Acasiforanes qu. 281. Acasiforanes qu. 282. Acasiforanes qu. 283. Acasiforanes qu. 284. Acasiforanes qu. 284. Acasiforanes qu. 285. Acasiforan						
259.   Traidware Jobiolob   Unicompute commontes		34028	Galaxias occidentalis (Western Minnow)			
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296. Cercophonius granulosus 297. Cercophonius sulcatus 298. Ceryerda cursitans 299. 33939 Cherax cainii (Marron) 300. Cherax destructor 301. Cherax preissii 302. Cherax quinquecarinatus 303. Cherax sp. 304. Chironominae sp. 305. Chironomus aff. alternans (V24) (CB) 306. Chironomus tepperi 307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
297.         Cercophonius sulcatus           298.         Ceryerda cursitans           299.         33939         Cherax cainii (Marron)           300.         Cherax destructor           301.         Cherax preissii           302.         Cherax quinquecarinatus           303.         Cherax sp.           304.         Chironominae sp.           305.         Chironomus aff. alternans (V24) (CB)           306.         Chironomus tepperi           307.         Cladocera (unident.)           308.         Cladopelma curtivalva           309.         Clynotis severus           310.         Coenagrionidae sp.           311.         Condocerus aptus           312.         Corixidae sp.	296.		Cercophonius granulosus			
298.       Ceryerda cursitans         299.       33939 Cherax cainii (Marron)         300.       Cherax destructor         301.       Cherax preissii         302.       Cherax quinquecarinatus         303.       Cherax sp.         304.       Chironominae sp.         305.       Chironomus aff. alternans (V24) (CB)         306.       Chironomus tepperi         307.       Cladocera (unident.)         308.       Cladopelma curtivalva         309.       Clynotis severus         310.       Coenagrionidae sp.         311.       Condocerus aptus         312.       Corixidae sp.	297.					
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302. Cherax quinquecarinatus 303. Cherax sp. 304. Chironominae sp. 305. Chironomus aff. alternans (V24) (CB) 306. Chironomus tepperi 307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
303. Cherax sp. 304. Chironominae sp. 305. Chironomus aff. alternans (V24) (CB) 306. Chironomus tepperi 307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
305. Chironomus aff. alternans (V24) (CB) 306. Chironomus tepperi 307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.	303.					
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307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.	305.		Chironomus aff. alternans (V24) (CB)			
307. Cladocera (unident.) 308. Cladopelma curtivalva 309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.	307.		Cladocera (unident.)			
309. Clynotis severus 310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
310. Coenagrionidae sp. 311. Condocerus aptus 312. Corixidae sp.						
311. Condocerus aptus 312. Corixidae sp.	310.					
	311.					
	312.		Corixidae sp.			
						tof market







1311.   Commonophable anotheres		Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
1815	313.		Cormocephalus aurantiipes			
1911			Cormocephalus turneri			
1917.   Comproduce growth						
1918   Demandance actuals   Demandance actual			•			
Decembergies right   (A/AT)   (SAEP)			* * *			
Despectational pages						
District Control State   Part   Par						
2022			-			
1974   Encychorae bilance   Encychorae publishione   Encychorae publishione   Encychorae publishione   Y			-			
	323.		Dytiscidae sp.			
28.8.   Euchannes immebilis   Y	324.		Eriophora biapicata			
27.   Eubocarrolle mitablis   Y	325.		Eriophora pustulosa			
3670   Supplies from mails (increate trappoor spoker (northern Jurnah Foresty)   P.S.	326.		Eucyrtops latior			
Special						Υ
Security		48579			P3	
Salid   Glossphomiste ep.						
332						
Giopoperopipiose sp.  334. Giripoperopipiose sp.  335. Patristius sp. 8 (SAPI)  337. Helipoperopipiose 339. Helipoperopipiose 339. Helipoperopipiose 340. Helipoperopipiose 341. Helipoperopipiose 342. Hydrobiosiotios sp. 343. Hydropibliose sp. 344. Hydropibliose sp. 345. Hydropibliose sp. 346. Hydropibliose sp. 347. Hydropibliose sp. 348. Informatia blanckwalli 349. Rydropibliose sp. 341. Hydropibliose sp. 348. Informatia blanckwalli 349. Rydropibliose sp. 340. Hydropibliose sp. 341. Hydropibliose sp. 342. Hydropibliose sp. 343. Karriania sp. 344. Rydropibliose sp. 345. Informatia blanckwalli 346. Hydropibliose sp. 347. Hydropibliose sp. 348. Informatia blanckwalli 349. Inconsecutiose weezus 350. Incoperio sichtmanni 351. Inconsecutiose weezus 352. Rongapos propopipios 353. Karriania sustenilicania 354. Salos sustenilicania 355. Konfertulus imministus 356. Konfertulus imministus 357. Lampona brevipios 358. Lampona girtrispe 359. Lampona girtrispe 369. Lampona girtrispe 360. Konfertulus imministus 360. Konfertulus imministus 360. Konfertulus imministus 361. Lampona girtrispe 362. Salos Lampona girtrispe 363. Salos Lampona girtrispe 364. Lampona girtrispe 365. Konfertulus imministus 366. Konfertulus imministus 367. Lampona girtrispe 368. Lampona girtrispe 369. Lampona girtrispe 370. Longita interinistus 371. Longita interinistus 372. Mancapopus ameninistus 373. Mancapopus ameninistus 374. Mancapopus ameninistus 375. Mancapopus ameninistus 376. Mogaponas sp. 377. Mogaponas sp. 378. Mancapopus sprinnistus 379. Missualeres giranulosa 380. Missualeres giranulosa						
1934   Cymrutes ap. A (SAP)			• •			
1935.   Harnitus ap. A. (SAP)						
336. Hanshas ap, B (SM) 337. Hallyethra fa thus 338. Hellyethra ap. 339. Hemocratula is as 340. Hemocratula is as 341. Helicoria vestralia 342. Hydrochevirulae ap. 343. Hydromeriniae ap. 344. Hydropsychides ap. 345. Hydropsychides ap. 346. Hydropsychides ap. 347. Hydrides ap. 347. Hydrides ap. 348. Idiomnasia blackwalii 349. Isonoriania blackwalii 349. Isonoriania blackwalii 340. Isonoriania blackwalii 340. Isonoriania blackwalii 341. Bodies australianiasia 352. Karagenea properipas 353. Karagenea properipas 354. 33800 Kavaniphila pachorani (Grey Varnal Kayurld (southwest), crickes) 355. Karagenea properipas 356. Kelefradus tereinicus 357. Lampona syrindrata 358. Lampona syrindrata 369. Lanceles ancoelus 360. Lanceles ancoelus 361. Latrodectus hasselti 362. 3382 Leisprocus contrains (a short-tereguad bee) 363. Lanceles ancoelus 364. Laptophetis australiae 365. Lephophetis australiae 366. Lephophetis australiae 367. Liellulidae ap. 368. Larmowania ap. 369. Larmowania ap. 371. Largona syrindrata 372. Macrogrus arguetatus 373. Macrogrus arguetatus 374. Marapipas arreerihius 375. Marapipas paroma 376. Magaporus ap. 377. Magaporus paroma 377. Magaporus paroma 378. Magaporus arreerihius 379. Magaporus pa. 379. Magaporus pa. 371. Magaporus pa. 372. Macrogrus arguetatus 373. Marapipas arreerihius 374. Magaporus pa. 375. Magaporus pa. 376. Magaporus pa. 377. Magaporus pa. 377. Magaporus pa. 378. Magaporus pa. 379. Magaporus pa. 379. Magaporus pa. 371. Magaporus pa. 372. Macroporus arguetatus 373. Marapipas arreerihius 374. Magaporus pa. 375. Magaporus pa. 376. Magaporus pa. 377. Magaporus pa. 377. Magaporus pa. 378. Magaporus pa. 379. Magaporus pa. 379. Magaporus pa. 379. Magaporus pa. 370. Magaporus pa. 371. Magaporus pa. 372. Macroporus arguetatus 373. Marapipas arteerihus 374. Magaporus pa. 375. Magaporus pa. 376. Magaporus pa. 377. Magaporus pa. 378. Magaporus pa.						
337,   Hellyethira Itaua						
1938						
339.   Hemicordule tau						
141						
Add.			Henicops dentatus			
344.	341.		Holconia westralia			
344.         Hydropspinides sp.           345.         Hydropspinides sp.           347.         Hydrides sp.           348.         Hydroman boekwall           349.         Isometroides vescus           350.         Isopeda leisthmanni           351.         kooles sustraliensis           352.         Kangarosa properpes           353.         Karasya properpes           354.         3390.           355.         Kiefferulus interinctus           366.         Kiefferulus interinctus           367.         Lampona brevipes           357.         Lampona brevipes           358.         Lancetes fanceolatus           360.         Lancetes innecolatus           361.         Larodoutus contrairus (a short-tongued bee)         p3           362.         33982.         Leipotous contrairus (a short-tongued bee)         p3           363.         33983.         Leipotous contrairus (a short-tongued bee)         p3           364.         Leptoperidae sustraliea         66.           4. Leptoceridae sp.         66.         Leptoperidae sustraliea           366.         Leptoperidae sustraliea         67.           367.         Lioelluidae sp.         67. <td>342.</td> <td></td> <td>Hydrobiosidae sp.</td> <td></td> <td></td> <td></td>	342.		Hydrobiosidae sp.			
345.   Hydropsychidae sp.	343.		Hydrometridae sp.			
346. Hydropoliidae sp. 347. Hydridae sp. 348. Idiomnata blackwalii 349. Isonetricides vescus 350. Isopede leishmanni 351. Izoded leishmanni 352. Kangarosa properipas 353. Karappa ellene 354. 33890. Kawanphila pachomai (Grey Vernal Katydid (southwest), cricket) 355. Kieffenulus innetrincus 356. Kieffenulus martini 357. Lampona brevipes 358. Lampone polyindrata 359. Lancetes sp. 360. Lancetes sp. 361. Latrodectus hasseliii 362. 33892. Leigoroctus contrairus (a short-tongued bee) 363. 33982. Leigoroctus contrairus (a short-tongued bee) 364. Leptoperia australica 365. Leptoperia australica 366. Leptopribeliidae sp. 367. Libelliidae sp. 368. Limeseus sp. 369. Limeseus sp. 370. Longrita institose 371. Lyossa andrahe 372. Macrogrus angrustatus 373. Mantus pavoris 374. Marsupiopus antechnius 375. Marsupiopus antechnius 376. Marsupiopus speomili 377. Meagaponus solidus 378. Mengopous sp. 379. Micronecta robusta 380. Micronecta sp. 371. Megaponus solidus 372. Megaponus solidus 373. Mentus pavoris 374. Megaponus solidus 375. Marsupiopus antechnius 376. Megaponus solidus 377. Megaponus solidus 378. Micronecta robusta 380. Micronecta robusta 380. Micronecta robusta 381. Miniargiojostes minimus 382. Missulena granulosa	344.		Hydrophilidae sp.			
347. Hyriidae sp. 348. Idommata blackwalii 349. Isometroilees vescus 350. Isopeda leishmanni 351. Ibrodes australiensis 352. Kangnose properipas 353. Karaops ellenae 354. 33880 Kawanjniha pachmari (Grey Vernal Katydid (southwest), cricket) 355. Kieffarulus intertinctus 356. Kieffarulus intertinctus 357. Lampona Pervipes 358. Lampona cylindrate 359. Lancetes anceolatus 360. Lancetes sp. 361. Latroidectus hassaltii 362. Saya Saya Leioproctus douglasielius (a short-tongued bee) 362. Saya Leioproctus contraitus (a short-tongued bee) 363. 33882 Leioproctus douglasielius (a short-tongued bee) 364. Leptoceridae sp. 365. Leptopelhe australica 366. Leptopelhe australica 366. Leptopelhe australica 367. Libelluidae sp. 368. Limmosenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogryus angistatus 373. Maratus pavoris 374. Maraupiopus antechnius 375. Marapopus sporiili 376. Margupopus seporiili 377. Megaponus solidus 378. Megaponus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miningilostess minimus 381. Miningilostess minimus 382. Missulena granulosa	345.		Hydropsychidae sp.			
348.	346.					
349. Isometroides vescus 350. Isopeda loishmanni 351. Nodes australiensis 352. Kangarsa properipes 353. Karaops allenae 354. 33980 Kavaniphila pachomai (Grey Vernal Katydid (southwest), cricket) 355. Kieffenulus intertinicus 356. Kieffenulus martini 357. Lampona bravipas 358. Lampona cylindrate 359. Lancetes sp. 360. Lancetes sp. 361. Latrodoctus hassaltii 362. 33982 Leioproctus contrarius (a short-tongued bee) 363. 33983 Leioproctus contrarius (a short-tongued bee) 364. Laptocendae sp. 365. Leptoparla australica 366. Leptophebiides sp. 367. Libellicities sp. 368. Limnesiidee sp. 369. Limnoxanus sp. 371. Lycosa ariadrae 372. Macrogyrus argustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Margupiopus leponiti 376. Megaponus solidus 377. Megaponus solidus 378. Megaponus solidus 379. Micronecta robusta 380. Micronecta robusta 380. Micronecta robusta 381. Missiliosas minimus 381. Missiliosas minimus 382. Missulena granulosa						
Isopeda leishmanni   Isopeda						
351. kxodes australiensis 352. Karagrosa properipes 353. Karagos ellenae 354. 33980 Kawaniphila pachomai (Grey Vernal Katydid (southwest), cricket) 355. Kiefferulus intertrinctus 356. Kiefferulus martin 357. Lampona brevipies 358. Lampona brevipies 359. Lancetes lanceolatus 359. Lancetes sunceolatus 350. Lancetes sp. 361. Latrodectus hasselii 362. 33982 Leioproctus contrarius (a short-tongued bee) 363. 33983 Leioproctus douglasiellus (a short-tongued bee) 364. Leptoperia australica 4. Leptoceridae sp. 365. Leptoperia australica 4. Leptoperia in sidiose sp. 367. Libelluidea sp. 368. Limnesiidae sp. 371. Lyoosa ariadnae 371. Lyoosa ariadnae 372. Macrogyus angustatus 373. Maratus pavoris 374. Marsupiopus antechinus 375. Marsupiopus antechinus 376. Megaporus sp. 377. Megaporus spidus 378. Megaporus spidus 379. Micronecta sp. 379. Micronecta robusta 379. Micronecta robusta 3719. Micronecta sp. 372. Micronecta sp. 373. Micronecta sp. 374. Megaporus spidus 375. Megaporus spidus 376. Megaporus spidus 377. Megaporus spidus 378. Megaporus spidus 379. Micronecta sp. 379. Micronecta sp. 379. Micronecta sp. 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
352. Kangarosa properipes 353. Karaops ellenae 354. Sayeb Karaops ellenae 355. Kiefferulus intertinctus 356. Kiefferulus intertinctus 357. Lampona brevipes 358. Lampona cylindrata 359. Lancelas lanceolatus 359. Lancetes Incelas In						
353.         Karaops ellenae           354.         33980         Kawanphila pachomai (Grey Vernal Katydid (southwest), cricket)         P1           355.         Kieffenulus interinctus         S66.           357.         Lampona cyvindrata         S7           358.         Lampona cyvindrata         S7           359.         Lancetes Increolatus         S7           360.         Lancetes sp.         S7           361.         Latrodectus hassatii         S7           362.         33982 Leioproctus contrarius (a short-tongued bee)         P3           363.         33983 Leioproctus douglasiellus (a short-tongued bee)         T           364.         Leptoceridae sp.         T           365.         Leptoperida australica         T           366.         Leptophilabilidae sp.         T           367.         Libellulidae sp.         T           368.         Limnoxenus sp.         T           370.         Longrita institiosa         T           371.         Lycosa ariadnae         T           372.         Macrogyrus angustatus         T           373.         Maraujopus netchinus         T           375.         Maraujopus arechinus         T     <						
354. 33980 Kawaniphila pachomai (Grey Vernal Katydid (southwest), cricket)  355. Kiefferulus intertinctus 356. Kiefferulus martini 357. Lampona brevipes 358. Lampona previpes 359. Lancetes lanceolatus 360. Lancetes sp. 361. Latrodectus hasseltii 362. 33982 Leioproctus contrarius (a short-tongued bee) 363. 33983 Leioproctus douglasiellus (a short-tongued bee) 364. Leptoceridae sp. 365. Leptopheblidea sp. 366. Leptopheblidea sp. 367. Libiellulidae sp. 368. Limnoscius sp. 371. Lycosa ariadnae 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megaporus sp. 377. Megaporus sp. 377. Megaporus sp. 379. Micronecta robusta 379. Micronecta robusta 379. Micronecta sp. 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
355. Kiefferulus intertinctus 356. Kiefferulus martini 357. Lampona brevipes 358. Lampona cylindrata 359. Lancetes Ianceolatus 360. Lancetes Ianceolatus 361. Latrodectus hasseltii 362. 33882 Leiporoctus contrarius (a short-tongued bee) 363. 3389. Leiporoctus contrarius (a short-tongued bee) 364. Leptoceridae sp. 365. Leptoperia australica 366. Leptophilabiridae sp. 367. Libellulidae sp. 368. Limnosiridae sp. 369. Limnoserius sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogrus angustatus 373. Maratus pavonis 374. Marsupiopus antechrius 375. Marsupiopus antechrius 376. Megaporus spidius 3776. Megaporus sp. 3777. Megaporus sp. 378. Megaporus sp. 379. Micronecta robusta 379. Micronecta robusta 379. Micronecta robusta 379. Micronecta sp. 380. Micronecta sp. 381. Miniargiolestes minimus 381. Miniargiolestes minimus		22000			D4	
356. Kiefferulus martini 357. Lampona brevipes 358. Lampona cylindrata 359. Lancetes Ianceolatus 360. Lancetes sp. 361. Latrodectus hasseltii 362. Sayse2 Leioproctus contrarius (a short-tongued bee) 363. 3398 Leioproctus douglasiellus (a short-tongued bee) 364. Leptoceridae sp. 365. Leptoperia australica 366. Leptopheleiidae sp. 367. Libellulidae sp. 368. Limnesiidae sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megaporus spl. 377. Megaporus spl. 378. Megaporus sp. 379. Micronecta pp. 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa		33960			PI	
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359. Lancetes lanceolatus 360. Lancetes sp. 361. Latrodectus hasseltii 362. 33982 Leioproctus contrarius (a short-tongued bee) 363. 33983 Leioproctus douglasiellus (a short-tongued bee) 364. Leptoceridae sp. 365. Leptopela australica 366. Leptophlebiidae sp. 367. Libellulidae sp. 368. Limnosiidae sp. 369. Limnosanus sp. 370. Lorgita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
360. Lancetes sp. 361. Latrodectus hasseltii 362. 33982 Leioproctus contrarius (a short-tongued bee) 363. 33983 Leioproctus douglasiellus (a short-tongued bee) 364. Leptoceridae sp. 365. Leptoperla australica 366. Leptophlebiidae sp. 367. Libellulidae sp. 368. Limnosenus sp. 369. Limnosenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus antechinus 376. Megaporus sp. 377. Megaporus sp. 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
361.       Latrodectus hasseltii         362.       33982 Leioproctus contrarius (a short-tongued bee)       T         363.       33983 Leioproctus douglasiellus (a short-tongued bee)       T         364.       Leptoceridae sp.         365.       Leptophelbiidae sp.         366.       Leptophiebiidae sp.         368.       Limnosiidae sp.         369.       Limnoxenus sp.         370.       Longrita insidiosa         371.       Lycosa ariadnae         372.       Macrogyrus angustatus         373.       Maratus pavonis         374.       Marsupiopus antechinus         375.       Marsupiopus leporilli         376.       Megaporus solidus         377.       Megaporus solidus         379.       Micronecta robusta         380.       Micronecta robusta         381.       Miniargiolestes minimus         382.       Missulena granulosa						
362.       33982       Leioproctus contrarius (a short-tongued bee)       T         363.       33983       Leioproctus douglasiellus (a short-tongued bee)       T         364.       Leptoceridae sp.						
363. 33983 Leioproctus douglasiellus (a short-tongued bee) T 364. Leptoceridae sp. 365. Leptoperla australica 366. Leptophelbiidae sp. 367. Libelluifdae sp. 368. Limnesiidae sp. 369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus spidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta robusta 381. Miniargiolestes minimus 382. Missulena granulosa		33982			P3	
366. Leptoprlea australica 366. Leptophlebiidae sp. 367. Libellulidae sp. 368. Limnesiidae sp. 369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa	363.	33983	Leioproctus douglasiellus (a short-tongued bee)			
366. Leptophlebiidae sp. 367. Libellulidae sp. 368. Limnesiidae sp. 369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus sp. 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa	364.		Leptoceridae sp.			
367. Libellulidae sp. 368. Limnesiidae sp. 369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
368. Limnesiidae sp. 369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
369. Limnoxenus sp. 370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
370. Longrita insidiosa 371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
371. Lycosa ariadnae 372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
372. Macrogyrus angustatus 373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
373. Maratus pavonis 374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
374. Marsupiopus antechinus 375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
375. Marsupiopus leporilli 376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
376. Megapodagrionidae sp. 377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
377. Megaporus solidus 378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
378. Megaporus sp. 379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
379. Micronecta robusta 380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
380. Micronecta sp. 381. Miniargiolestes minimus 382. Missulena granulosa						
381. Miniargiolestes minimus 382. Missulena granulosa						
382. Missulena granulosa						
	382.		Missulena granulosa			
						*******







383. 384. 385. 386.		Missulena hoggi Missulena occatoria	Conservation Code	1.0.0
385. 386.		Missulena occatoria		
386.				
		Mituliodon tarantulinus		
		Mitzoruga insularis		
		Naididae sp.		
388. 389.		Necterosoma darwini Necterosoma sp.		
390.		Nematoda sp.		
391.	33984	Neopasiphae simplicior (a short-tongued bee)	Т	
392.	00001	Nephila edulis	•	
393.		Nicodamus mainae		
394.		Notalina spira		
395.		Notonectidae sp.		
396.		Notoperata sp. AV1 (SFM)		
397.		Nunciella aspera		
398.		Occiperipatoides gilesii		
399.		Ocrisiona leucocomis		
400.		Offadens soror (ex genus 1 WA sp. 1)		
401. 402.		Oligochaeta sp. Ommatoiulus moreleti		
402.		Ommatoiulus moreletii		
403. 404.		Oribatida sp.		
405.		Orthetrum caledonicum		
406.		Orthocladiinae 'woodminer' (SAP)		
407.		Orthocladiinae sp.		
408.		Ostracoda (unident.)		
409.		Oxidae sp.		
410.		Oxidus gracilis		
411.		Oxyethira sp.		
412.		Oxyopes gracilipes		
413.		Oxyopes punctatus		
414.		Palaemonidae sp.		
415. 416.		Parachironomus sp. 1 (VSCL35) (SAP) Paracladopelma M1 [SFM)		
410.		Parakiefferiella sp. S1		
418.		Paralampona marangaroo		
419.		Paralimnophyes pullulus (V42)		
420.		Paramerina levidensis		
421.		Parastacidae sp.		
422.		Pentaneurini genus V20		
423.		Physidae sp.		
424.		Planorbidae sp.		
425.		Platynectes sp.		
426.		Poltys laciniosus		
427.		Polygonarea repanda		Υ
428.		Polypedilum nr. convexum (SAP)		
429. 430.		Procladius paludicola Procladius villosimanus		
430.		Raveniella cirrata		
431.		Rhantus suturalis		
433.		Rheotanytarsus sp. (SFM)		
434.		Richardsonianidae sp.		
435.		Riethia v4		
436.		Scirtidae sp.		
437.		Scolopendra laeta		
438.		Scolopendra morsitans		
439.		Simuliidae sp.		
440.		Sphaerotrichopus ramosus		
441.		Steatoda grossa		
442.		Sternopriscus browni		
443. 444.		Sternopriscus marginatus Sternopriscus sp.		
444.		Sternopriscus sp. Storena formosa		
446.		Storosa tetrica		
447.		Stylopauropoides wungongensis		Υ
448.		Supunna funerea		
449.		Supunna picta		
450.		Synothele durokoppin		
451.		Tabanidae sp.		
452.		Tanypodinae sp.		
			Department	museu







	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Que
453.		Tanytarsus aff manleyensis			
454.		Tanytarsus fuscithorax/semibarbitarsus			
455.		Tanytarsus nr K5			
456.		Tanytarsus palmatus			
457.		Tasmanicosa leuckartii			
458.		Tasmanocoenis tillyardi			
459.		Thienemanniella sp. (V19) (SAP)			
460.		Tipulidae sp.			
461.		Triplectides australis			
462.		Triplectides sp. AV21 (SFM)			
463.		Urodacus novaehollandiae			
464.		Urodacus planimanus			
465.		Urodacus woodwardii			
466.		Veliidae sp.			
467.		Venator immansueta			
468.		Venatrix arenaris		_	
469.	34113	Westralunio carteri (Carter's Freshwater Mussel)		T	
470.		Withius piger			
ammal					
471.	25449	Antechinus flavipes (Yellow-footed Antechinus)			
472.	24088	Antechinus flavipes subsp. leucogaster (Yellow-footed Antechinus, Mardo)			
473.		Bettongia penicillata subsp. ogilbyi (Woylie, Brush-tailed Bettong)		Т	
474.		Canis lupus (Dog, Dingo)	Υ		
475.		Canis lupus subsp. familiaris (Dog)	Υ		
476.		Cercartetus concinnus (Western Pygmy-possum, Mundarda)			
477.	24186	Chalinolobus gouldii (Gould's Wattled Bat)			
478.	24187	Chalinolobus morio (Chocolate Wattled Bat)			
479.	24092	Dasyurus geoffroii (Chuditch, Western Quoll)		Т	
480.	24189	Falsistrellus mackenziei (Western False Pipistrelle, Western Falsistrelle)		P4	
481.	24041	Felis catus (Cat)	Υ		
482.	30916	Funambulus pennanti (Indian Palm Squirrel)	Υ		
483.	24215	Hydromys chrysogaster (Water-rat, Rakali)		P4	
484.	48588	Isoodon fusciventer (Quenda, southwestern brown bandicoot)		P4	
485.	24132	Macropus fuliginosus (Western Grey Kangaroo)			
486.	24223	Mus musculus (House Mouse)	Υ		
487.	24146	Myrmecobius fasciatus (Numbat, Walpurti)		Т	
488.	48022	Notamacropus irma (Western Brush Wallaby)		P4	
489.	24194	Nyctophilus geoffroyi (Lesser Long-eared Bat)			
490.	24195	Nyctophilus gouldi (Gould's Long-eared Bat)			
491.	41424	Nyctophilus major (Greater Long-eared Bat)			
492.	24085	Oryctolagus cuniculus (Rabbit)	Υ		
493.	48070	Phascogale tapoatafa subsp. wambenger (South-western Brush-tailed Phascogale,			
		Wambenger)		S	
494.	24173	Pteropus scapulatus (Little Red Flying-fox)			
495.	24245	Rattus rattus (Black Rat)	Υ		
496.	24145	Setonix brachyurus (Quokka)		Т	
497.	24111	Sminthopsis gilberti (Gilbert's Dunnart)			
498.		Sminthopsis murina			
499.	24207	Tachyglossus aculeatus (Short-beaked Echidna)			
500.	24167	Tarsipes rostratus (Honey Possum, Noolbenger)			
501.	25521	Trichosurus vulpecula (Common Brushtail Possum)			
	24158	Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum)			
502.					
		Vespadelus regulus (Southern Forest Bat)			
502.	24206	Vespadelus regulus (Southern Forest Bat) Vulpes vulpes (Red Fox)	Y		
502. 503. 504.	24206		Υ		
502. 503. 504.	24206 24040	Vulpes vulpes (Red Fox)	Υ	20	
502. 503. 504. eptile 505.	24206 24040 25242	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder)	Y	P3	
502. 503. 504. <b>eptile</b> 505. 506.	24206 24040 25242 42368	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder)  Acritoscincus trilineatus (Western Three-lined Skink)	Y	P3	
502. 503. 504. <b>eptile</b> 505. 506. 507.	24206 24040 25242 42368 25241	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder)  Acritoscincus trilineatus (Western Three-lined Skink)  Antaresia stimsoni subsp. stimsoni (Stimson's Python)	Y	P3	
502. 503. 504. <b>Pptile</b> 505. 506. 507. 508.	24206 24040 25242 42368 25241 24990	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard)	Y	P3	
502. 503. 504. <b>eptile</b> 505. 506. 507. 508. 509.	24206 24040 25242 42368 25241 24990 24991	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard)	Y	P3	
502. 503. 504. <b>Peptile</b> 505. 506. 507. 508. 509. 510.	24206 24040 25242 42368 25241 24990 24991 42381	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard)	Y	P3	
502. 503. 504. <b>Peptile</b> 505. 506. 507. 508. 509. 510.	24206 24040 25242 42368 25241 24990 24991 42381 43380	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle)	Y	P3	
502. 503. 504. <b>Eptile</b> 505. 506. 507. 508. 509. 510. 511.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko)	Y	P3	
502. 503. 504. <b>Eptile</b> 505. 506. 507. 508. 509. 510. 511. 512. 513.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980 24918	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko) Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko)	Y	P3	
502. 503. 504. <b>Eptile</b> 505. 506. 507. 508. 509. 510. 511. 512. 513.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980 24918 30893	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko) Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko) Cryptoblepharus buchananii	Y	P3	
502. 503. 504. <b>Eptile</b> 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980 24918 30893 25020	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko) Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko) Cryptoblepharus buchananii Cryptoblepharus plagiocephalus	Y	P3	
502. 503. 504. <b>Peptile</b> 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980 24918 30893 25020 30899	Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko) Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko) Cryptoblepharus buchananii Cryptoblepharus plagiocephalus Ctenophorus adelaidensis (Southern Heath Dragon, Western Heath Dragon)	Y	P3	
502. 503. 504. <b>Peptile</b> 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515.	24206 24040 25242 42368 25241 24990 24991 42381 43380 24980 24918 30893 25020 30899 24883	Vulpes vulpes (Red Fox)  Acanthophis antarcticus (Southern Death Adder) Acritoscincus trilineatus (Western Three-lined Skink) Antaresia stimsoni subsp. stimsoni (Stimson's Python) Aprasia pulchella (Granite Worm-lizard) Aprasia repens (Sand-plain Worm-lizard) Brachyurophis semifasciatus (Southern Shovel-nosed Snake) Chelodina colliei (South-western Snake-necked Turtle) Christinus marmoratus (Marbled Gecko) Crenadactylus ocellatus subsp. ocellatus (Clawless Gecko) Cryptoblepharus buchananii Cryptoblepharus plagiocephalus	Y	P3	







	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
519.	25035	Ctenotus delli (Dell's skink, Darling Range southwest Ctenotus)		P4	
520.	25039	Ctenotus fallens			
521.	25047	Ctenotus impar			
522.	25049	Ctenotus labillardieri			
523.	41641	Ctenotus ora (Coastal Plains Skink)		P3	
524.	25766	Delma fraseri (Fraser's Legless Lizard)			
525.	24999	Delma grayii			
526.	25296	Demansia psammophis subsp. reticulata (Yellow-faced Whipsnake)			
527.	24929	Diplodactylus granariensis subsp. granariensis			
528.	24939	Diplodactylus polyophthalmus			
529.	24940	Diplodactylus pulcher			
530.	25251	Echiopsis curta (Bardick)			
531.	25096	Egernia kingii (King's Skink)			
532.	25100	Egernia napoleonis			
533.	25250	Elapognathus coronatus (Crowned Snake)			
534.	24959	Gehyra variegata			
535.	25115	Hemiergis initialis subsp. initialis			
536.	25119	Hemiergis quadrilineata			
537.	25131	Lerista distinguenda			
538.	25133	Lerista elegans			
539.	25147	Lerista lineata (Perth Slider, Lined Skink)		P3	
540.	25005	Lialis burtonis			
541.	25184	Menetia greyii			
542.	25240	Morelia spilota subsp. imbricata (Carpet Python)			
543.	25191	Morethia lineoocellata			
544.	25192	Morethia obscura			
545.	25248	Neelaps bimaculatus (Black-naped Snake)			
546.	25252	Notechis scutatus (Tiger Snake)			
547.	25253	Parasuta gouldii			
548.	25255	Parasuta nigriceps			
549.	25007	Pletholax gracilis subsp. gracilis (Keeled Legless Lizard)			
550.	24907	Pogona minor subsp. minor (Dwarf Bearded Dragon)			
551.	25261	Pseudechis australis (Mulga Snake)			
552.	25511	Pseudonaja affinis (Dugite)			
553.	25259	Pseudonaja affinis subsp. affinis (Dugite)			
554.	42416	Pseudonaja mengdeni (Western Brown Snake)			
555.	25008	Pygopus lepidopodus (Common Scaly Foot)			
556.	25266	Simoselaps bertholdi (Jan's Banded Snake)			
557.	24943	Strophurus spinigerus subsp. inornatus			
558.	25203	Tiliqua occipitalis (Western Bluetongue)			
559.	25519	Tiliqua rugosa			
560.	25207	Tiliqua rugosa subsp. rugosa			
561.	24983	Underwoodisaurus milii (Barking Gecko)			
562.	25225	Varanus rosenbergi (Heath Monitor)			
563.	25526	Varanus tristis (Racehorse Monitor)			

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





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



### **EPBC Act Protected Matters Report**

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 29/09/18 15:20:28

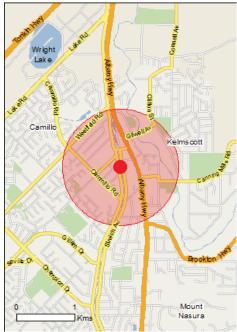
**Summary** 

**Details** 

Matters of NES
Other Matters Protected by the EPBC Act
Extra Information

Caveat

<u>Acknowledgements</u>



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 1.0Km



### Summary

#### Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	26
Listed Migratory Species:	9

#### Other Matters Protected by the EPBC Act

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

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

A <u>permit</u> 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.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	14
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

#### **Extra Information**

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	32
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

#### **Details**

Chuditch, Western Quoll [330]

#### Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Forrestdale and thomsons lakes	Within 10km of Ramsar

#### Listed Threatened Ecological Communities [ Resource Information ] For threatened ecological communities where the distribution is well known, maps are derived from recovery plans. State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps. Name Status Type of Presence Banksia Woodlands of the Swan Coastal Plain Endangered Community likely to occur ecological community within area Listed Threatened Species [ Resource Information ] Name Status Type of Presence Birds Botaurus poiciloptilus Australasian Bittern [1001] Endangered Species or species habitat known to occur within area Calidris ferruginea Curlew Sandpiper [856] Species or species habitat Critically Endangered may occur within area Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034] Vulnerable Species or species habitat known to occur within area Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769] Roosting known to occur Endangered within area Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo Endangered Species or species habitat [59523] known to occur within area Leipoa ocellata Malleefowl [934] Vulnerable Species or species habitat likely to occur within area Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] Critically Endangered Species or species habitat may occur within area Rostratula australis Australian Painted-snipe, Australian Painted Snipe Endangered Species or species habitat [77037] may occur within area Mammals Bettongia penicillata ogilbyi Woylie [66844] Species or species habitat Endangered likely to occur within area Dasyurus geoffroii

Vulnerable

Species or species habitat likely to occur within area

Name	Status	Type of Presence
<u>Pseudocheirus occidentalis</u> Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat likely to occur within area
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat may occur within area
Plants		
Anthocercis gracilis Slender Tailflower [11103]	Vulnerable	Species or species habitat may occur within area
Calytrix breviseta subsp. breviseta Swamp Starflower [23879]	Endangered	Species or species habitat may occur within area
<u>Diuris micrantha</u> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
<u>Diuris purdiei</u> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area
<u>Drakaea elastica</u> Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
<u>Drakaea micrantha</u> Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus x balanites Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area
Goodenia arthrotricha [12448]	Endangered	Species or species habitat may occur within area
Grevillea curviloba subsp. incurva Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat may occur within area
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Serpentine (G.R. Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area
Thelymitra stellata Star Sun-orchid [7060]	Endangered	Species or species habitat likely to occur within area
Listed Migratory Species  * Species is listed under a different scientific name on	the EPBC Act - Threatened	[Resource Information]  d Species list.
Name Migratory Marine Birds	Threatened	Type of Presence
Midratory Marine Birds		

Migratory Marine Birds

Name	Threatened	Type of Presence
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat
		likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat
		may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat
		may occur within area
Calidria carreinata		
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat
Sharp-tailed Sandpiper [674]		may occur within area
		may seed. Wallin area
<u>Calidris ferruginea</u>		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat
		may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat
		may occur within area
Nicona de la constanta de la c		
Numenius madagascariensis	Critically Endangered	Charles or angeles habitat
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
		may coodi witim area
Pandion haliaetus		
Osprey [952]		Species or species habitat
		likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat

#### Other Matters Protected by the EPBC Act

#### Commonwealth Land [Resource Information]

likely to occur within area

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

#### Name

Commonwealth Land -

Commonwealth Land -		
Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the	ne EPBC Act - Threatened	Species list.
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

#### **Extra Information**

#### Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Carduelis carduelis		
European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within

Name	Status	Type of Presence
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]	1	Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large- leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	reichardtii	Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area

#### Caveat

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

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

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

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

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

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

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

- migratory and
- marine

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

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

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

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

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

### Coordinates

-32.11823 116.01426

#### 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.

# APPENDIX C OBSERVED FAUNA LISTING

## Fauna Observed During Survey Period

**Denning Avenue** 

Compiled by Greg Harewood - Oct 2018

Class Family Species	Common Name	Conservation Status
ves		
Psittacidae Parrots		
Cacatua roseicapilla	Galah	LC
Cacatua sanguinea	Little Corella	LC
Calyptorhynchus banksii naso	Forest Red-tailed Black-Cockatoo	S3 VU Bp LC
Calyptorhynchus baudinii	Baudin's Black Cockatoo	S2 EN Bp EN A3cde
Calyptorhynchus latirostris	Carnaby's Black Cockatoo	S2 EN Bp EN A2bcde
Trichoglossus haematodus	Rainbow Lorikeet	Introduced
Acanthizidae Thornbills, Geryones, Fieldwrens & Whitefaces		
Smicrornis brevirostris	Weebill	LC
Meliphagidae Honeyeaters, Chats		
Anthochaera carunculata	Red Wattlebird	LC
Lichenostomus virescens	Singing Honeyeater	LC
Lichmera indistincta	Brown Honeyeater	LC
<b>Dicruridae</b> Monarchs, Magpie Lark, Flycatchers, Fantails, D	Drongo	
Grallina cyanoleuca	Magpie-lark	LC
Corvidae Ravens, Crows		
Corvus coronoides	Australian Raven	LC

WC Act Status - S1 to S7, EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, DBCA Priority Status - P1 to P4, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, IUCN Red List Category Definitions LC = Least Concern - see http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria for others.

## APPENDIX D HABITAT TREE DETAILS

Habitat Trees DBH >50cm Datum - GDA94

Entrance Size Ranges - Small = >5cm, Medium = 5 to 10cm, Large = >10cm

Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrnace Size Range	Occupancy	Potential Cockatoo Nest Hollow	Comments
wpt001	50H			Unknown Euc	0-5	>50	0		No Signs	No	
wpt002	50H	406950	6445893	Marri	20+	>50	0		No Signs	No	
wpt009	50H	406955	6445898	Marri	20+	>50	0		No Signs	No	
wpt056	50H	406984	6445912	Marri	15-20	>50	0		No Signs	No	
wpt057	50H	407017	6445755	Marri	20+	>50	0		No Signs	No	
wpt058	50H	406995	6445612	Jarrah	10-15	>50	0		No Signs	No	
wpt059	50H	406916	6445653	Unknown Euc	20+	>50	0		No Signs	No	
wpt060	50H	406920	6445647	Unknown Euc	20+	>50	0		No Signs	No	
wpt061	50H	406922	6445645	Unknown Euc	20+	>50	0		No Signs	No	
wpt062	50H	406928	6445640	Unknown Euc	20+	>50	0		No Signs	No	
wpt063	50H	406932	6445636	Unknown Euc	20+	>50	0		No Signs	No	
wpt064	50H	406943	6445626	Unknown Euc	20+	>50	0		No Signs	No	
wpt065	50H	406959	6445610	Unknown Euc	15-20	>50	0		No Signs	No	
wpt066	50H	406977	6445591	Unknown Euc	15-20	>50	0		No Signs	No	
wpt067	50H	406981	6445588	Unknown Euc	20+	>50	0		No Signs	No	
wpt068	50H	406989	6445583	Unknown Euc	20+	>50	0		No Signs	No	
wpt069	50H	406991	6445579	Unknown Euc	20+	>50	0		No Signs	No	
wpt070	50H	406956	6445337	Marri	20+	>50	0		No Signs	No	
wpt071	50H	406962	6445349	Unknown Euc	15-20	>50	0		No Signs	No	
wpt072	50H	406968	6445357	Unknown Euc	15-20	>50	0		No Signs	No	
wpt073	50H	406973	6445367	Marri	10-15	>50	0		No Signs	No	
wpt074	50H	406972	6445373	Marri	20+	>50	0		No Signs	No	
wpt075	50H	406998	6445435	Jarrah	15-20	>50	0		No Signs	No	
wpt076	50H	407002	6445457	Jarrah	5-10	>50	2+	Small, Medium & Large	Bees	No	Internal dimensions of hollow unknown
wpt077	50H	407011	6445493	Jarrah	15-20	>50	0		No Signs	No	
wpt078	50H	407021	6445528	Jarrah	15-20	>50	0		No Signs	No	
wpt079	50H	407035	6445735	Marri	15-20	>50	0		No Signs	No	
wpt080	50H	407034	6445785	Marri	15-20	>50	0		No Signs	No	
	50H	407035	6445807	Marri	15-20	>50	0		No Signs	No	
	50H	407032	6445810	Marri	15-20	>50	0		No Signs	No	

Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrnace Size Range	Occupancy	Potential Cockatoo Nest Hollow	Comments
wpt083	50H	407029		Dead Marri	15-20	>50	2+	Small & Medium	No Signs	No	Internal dimensions of hollow unknown
wpt084	50H	407019	6445864		15-20	>50	0		No Signs	No	
wpt085	50H	407015	6445883		20+	>50	0		No Signs	No	
wpt086	50H		6445923	Marri	15-20	>50	0		No Signs	No	
wpt087	50H	407003	6445944	Marri	15-20	>50	0		No Signs	No	
wpt088	50H	407001	6445948	Marri	20+	>50	0		No Signs	No	
wpt089	50H	407006	6445957	Jarrah	15-20	>50	0		No Signs	No	
wpt090	50H	407001	6445970	Marri	15-20	>50	0		No Signs	No	
wpt091	50H	406996	6445999	Marri	15-20	>50	0		No Signs	No	
wpt092	50H	406990	6446026	Marri	15-20	>50	0		No Signs	No	
wpt093	50H	406968	6446136	Marri	15-20	>50	0		No Signs	No	
wpt094	50H	406969	6446143	Marri	15-20	>50	0		No Signs	No	
wpt095	50H	406969	6446143	Marri	15-20	>50	0		No Signs	No	
wpt096	50H	406959	6446194	Marri	15-20	>50	0		No Signs	No	
wpt097	50H	407008	6446167	Marri	20+	>50	0		No Signs	No	
wpt098	50H	407011	6446150	Marri	15-20	>50	0		No Signs	No	
wpt099	50H	407015	6446123	Marri	20+	>50	0		No Signs	No	Ravens Nest in tree
wpt100	50H	407016	6446113	Marri	20+	>50	0		No Signs	No	
wpt101	50H	407017	6446103	Unknown Euc	15-20	>50	0		No Signs	No	
wpt102	50H	407031	6446035	Marri	15-20	>50	0		No Signs	No	
wpt103	50H	407039	6446013	Marri	20+	>50	0		No Signs	No	
wpt104	50H	407039	6445992	Marri	15-20	>50	0		No Signs	No	
wpt105	50H	407042	6445987	Marri	15-20	>50	0		No Signs	No	
wpt106	50H	407043	6445985	Marri	15-20	>50	0		No Signs	No	
wpt107	50H	407047	6445979	Marri	20+	>50	0		No Signs	No	
wpt108	50H	407047	6445970	Marri	20+	>50	0		No Signs	No	
wpt109	50H	407044	6445970	Marri	20+	>50	0		No Signs	No	
wpt110	50H	407051	6445946	Marri	15-20	>50	0		No Signs	No	
wpt111	50H	407062	6445883	Marri	20+	>50	0		No Signs	No	
wpt112	50H	407065	6445873	Marri	15-20	>50	0		No Signs	No	
wpt113	50H	407062	6445869	Jarrah	15-20	>50	0		No Signs	No	
wpt114	50H	407066	6445852	Marri	15-20	>50	0		No Signs	No	
wpt115	50H	407073	6445835		15-20	>50	0		No Signs	No	
wpt116	50H	407074	6445814	Marri	15-20	>50	0		No Signs	No	

Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrnace Size Range	Occupancy	Potential Cockatoo Nest Hollow	Comments
wpt117	50H		6445793		15-20	>50	0		No Signs	No	
wpt118	50H		6445722		15-20	>50	0		No Signs	No	
wpt119	50H			Unknown Euc	15-20	>50	0		No Signs	No	
wpt120	50H			Unknown Euc	15-20	>50	0		No Signs	No	
wpt121	50H			Unknown Euc	15-20	>50	0		No Signs	No	
wpt122	50H		6445493		15-20	>50	0		No Signs	No	
wpt123	50H			Unknown Euc	15-20	>50	0		No Signs	No	
wpt124	50H		6445374		15-20	>50	0		No Signs	No	
wpt125	50H		6445369		15-20	>50	0		No Signs	No	
wpt126	50H	407004	6445326	Marri	15-20	>50	0		No Signs	No	
wpt127	50H	407089	6446141	Flooded Gum	20+	>50	0		No Signs	No	
wpt128	50H	407165	6446161	Marri	15-20	>50	0		No Signs	No	
wpt129	50H	407002	6446312	Unknown Euc	20+	>50	0		No Signs	No	
wpt130	50H	407030	6446481	Marri	15-20	>50	1	Small & Medium	Bees	No	Rainbow Lorikeets inspecting hollow
wpt131	50H	407025	6446481	Marri	20+	>50	0		No Signs	No	
wpt132	50H	407022	6446472	Marri	20+	>50	0		No Signs	No	
wpt133	50H	407001	6446467	Unknown Euc	15-20	>50	0		No Signs	No	
wpt134	50H	406991	6446459	Marri	20+	>50	0		No Signs	No	
wpt135	50H	406985	6446436	Unknown Euc	20+	>50	0		No Signs	No	
wpt136	50H	406977	6446451	Marri	15-20	>50	0		No Signs	No	
wpt137	50H	406971	6446486	Dead Unknown	0-5	>50	2+	Small	No Signs	No	Internal dimensions of hollow unknown
wpt138	50H	406962	6446499	Unknown Euc	15-20	>50	0		No Signs	No	
wpt139	50H	406942	6446533	Marri	15-20	>50	0		No Signs	No	
wpt140	50H	406984	6446556	Unknown Euc	20+	>50	0		No Signs	No	
wpt141	50H	406969	6446577	Unknown Euc	15-20	>50	0		No Signs	No	
wpt142	50H	406950	6446615	Unknown Euc	15-20	>50	0		No Signs	No	
wpt143	50H	406860	6446669	Marri	15-20	>50	0		No Signs	No	
wpt144	50H	406861	6446665	Marri	15-20	>50	0		No Signs	No	
wpt145	50H	406862	6446598	Unknown Euc	20+	>50	0		No Signs	No	
wpt146	50H	406874	6446537	Flooded Gum	15-20	>50	0		No Signs	No	
wpt147	50H	406874	6446530	Flooded Gum	15-20	>50	0		No Signs	No	
wpt148	50H	406875	6446519	Flooded Gum	15-20	>50	0		No Signs	No	
wpt149	50H	406875	6446518	Flooded Gum	15-20	>50	0		No Signs	No	
wpt150	50H	406877	6446517	Flooded Gum	15-20	>50	0		No Signs	No	

Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrnace Size Range	Occupancy	Potential Cockatoo Nest Hollow	Comments
wpt151	50H	406878	6446502	Flooded Gum	15-20	>50	0		No Signs	No	
wpt152	50H	406880	6446502	Flooded Gum	15-20	>50	0		No Signs	No	
wpt153	50H	406894	6446424	Marri	15-20	>50	0		No Signs	No	
wpt154	50H	406931	6446346	Marri	15-20	>50	0		No Signs	No	
wpt155	50H	407308	6446223	Flooded Gum	15-20	>50	0		No Signs	No	
wpt156	50H	407310	6446228	Unknown Euc	15-20	>50	0		No Signs	No	

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