

Fauna Report



Waroona Cemetery Crown Reserve 4835 Lot 389 Mitchell Avenue Waroona

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SUMMARY

This report details the results of a fauna assessment over the Waroona Cemetery (the survey area). The Shire of Waroona is proposing to clear sections of the 4.1 ha survey area to facilitate ongoing use of the site for its current purpose. It is understood that the results of the assessment will be used along with other information to support a clearing permit application to be submitted to the Department of Water and Environmental Regulation (DWER).

The fauna assessment has included a literature review and a field reconnaissance survey. The field component of the fauna assessment was carried out on 30 November 2022 by Greg Harewood (Zoologist).

Key Findings

- The survey area has a total extent of about 4.1 ha and is comprised a mosaic of remnant native vegetation, planted endemic, non-endemic and exotic trees and shrubs and existing cleared land. Two broad scale “fauna habitats” have been defined (primarily based on vegetation units), these being a jarrah and marri dominated woodland over a shrubland or grassland and existing cleared/partly cleared areas (i.e. the main cemetery grounds and tracks/firebreaks).
- With respect to fauna habitat values, much of the remnant native vegetation appears to be in good to very good condition and would therefore have the capacity to support a wide range native fauna species known to frequent the wider area. The capacity of the area to support some fauna species is however compromised by the fact that the cemetery is relatively isolated being surrounded by degraded/totally degraded land (e.g. residential areas). The survey areas small size means that it would not have the capacity to support viable populations of many species.
- Despite the survey area’s history of disturbance, small size and lack of connectivity, the sections of more coherent remnant vegetation are still likely to be utilised in some fashion by a reasonably wide range of species though most would be relatively common and widespread bird species. Exceptions to this generalised statement include black cockatoos, which may utilise the area for foraging and possibly breeding.
- The subject site was found to contain 106 potential “black cockatoo breeding habitat trees” (DBH >50cm). Six trees (6) appeared to contain at least one hollow considered potentially suitable for black cockatoos to use for nesting purposes however none showed any conclusive evidence of actual use by nesting black cockatoos.
- Quality foraging habitat within the survey area can mainly be defined as the areas containing marri, jarrah and banksia dominated vegetation which makes up just over half of the survey area (i.e. about 2.4 ha). This vegetation type has a total extent of about 7.9 ha. No existing roosting trees (trees used at night by black cockatoos to rest) were positively identified during the survey.
- In summary two vertebrate fauna species of conservation significance were positively identified as utilising the survey area:

- Forest Red-tailed Black Cockatoo – Vulnerable (WA/Federal);
- Carnaby’s Black Cockatoo – Endangered (WA/Federal);
- Several additional species of conservation significance may also utilise the survey area, though, as no evidence of their presence was identified during the field survey, their status in the area remains uncertain:
 - Peregrine Falcon – Specially Protected (WA);
 - Masked Owl – Priority 3 (DBCA Priority Species);
 - Baudin’s Black Cockatoo – Endangered (WA/Federal);
 - Quenda – Priority 4 (WA Priority Species);
 - Western False Pipistrelle – Priority 4 (WA Priority Species).
- Under the assumption that if clearing of some or all of the site was undertaken and some or all of the hollow bearing trees identified could be retained the following conclusions have been drawn on likely impacts based on observations made. In cases where some habitat is present and available information indicates at least some probability of the species occurrence, likely impacts are anticipated to be low primarily due to likely low population densities and the relatively small total area of vegetation/habitat present (i.e. only a small number of individuals, if any will be affected).
- No overall change in the conservation status of any fauna species currently utilising the survey area is therefore anticipated. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.
- If approval for the propose clearing is obtained it is recommended that a fauna spotting/relocation program be implemented prior to and during clearing works to ensure direct impact on fauna most likely to be encountered, are minimised.

1. INTRODUCTION

This report details the results of a fauna assessment over the Waroona Cemetery (Crown Reserve 4835/Lot 389 Mitchell Avenue, Waroona) (the survey area) (Figure 1). The survey area is approximately 4.1 hectares (ha) in size and is covered with mosaic of remnant native vegetation, planted endemic, non-endemic and exotic trees and shrubs and existing cleared land (Figure 2).

The Shire of Waroona (the Shire) is proposing to clear sections of the survey area to facilitate ongoing use of the site for its current purpose. It is understood that the results of the assessment will be used along with other information to support a clearing permit application to be submitted to the Department of Water and Environmental Regulation (DWER) pursuant to Section 51E of the *Environmental Protection Act 1986*.

The information presented here will be used by regulatory authorities to assess the potential impact of the proposal on fauna and fauna habitats at the site, during the project evaluation and clearing permit approval process.

Information obtained as part of this fauna assessment report will also be used in conjunction with other environmental investigations to guide project planning and for the formulation of management plans, which will aim to minimise potential environmental impacts.

2. SCOPE OF WORKS

The scope of works is to carry out “fauna survey”. To fulfil the anticipated requirements of DWER the following is proposed.

To fulfil the required scope of works the following is proposed:

1. A basic (Level 1) Fauna Assessment (EPA 2020);
2. Targeted searches for black cockatoo habitat/site use (habitat trees, existing and potential nest hollows, foraging and roosting habitat);
3. Targeted searches for evidence of the likely presence of other fauna species of conservation significance (based on desktop review); and
4. Report for summarising methods and results.

Note: For the purposes of this report the term black cockatoo is in reference to Baudin’s black cockatoo *Zanda baudinii*, Carnaby’s black cockatoo *Zanda latirostris* and the forest red-tailed black cockatoo *Calyptorhynchus banksii naso*.

3. METHODS

3.1 LITERATURE REVIEW – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

A list of conservation significant fauna recorded or likely to occur within the survey area 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 2022). A 20 km buffer around the survey area was applied to capture previous fauna records within the immediate vicinity;
- *EPBC Act* Protected Matters database for fauna of national environmental significance (DCCEEW 2022). The minimum buffer (0 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 *Biodiversity Conservation Act 2016 (BC Act)*).

3.2 FIELD SURVEYS

The field component of the fauna assessment was carried out on 30 November 2022 by Greg Harewood (Zoologist) and consisted of a daytime reconnaissance survey of the site as described in the sections below.

3.2.1 FAUNA HABITAT ASSESSMENT

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

The main objective of the assessment was to determine if it were likely that species of conservation significance would utilise the habitats identified as occurring within the survey area based on their documented habitat preference and current known distribution.

3.2.2 FAUNA OBSERVATIONS

Evidence of the presence or likely presence of fauna species of conservation significance (or suitable habitat) was searched for and recorded concurrent with other site surveys. Opportunistic observations of all fauna species were made during all field survey work and recorded where positive species identifications were made.

This aspect of the assessment included but was not limited to:

- Undertaking a series of transects across the survey area.

- 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 Commonwealth of Australia (2012 and 2022) guidelines which state 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 12 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.

The Commonwealth of Australia (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 survey area 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 "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 as being over the threshold DBH will be recorded with a GPS and details on tree species, number and size of hollows (if any) noted. Trees observed to contain hollows (of any size/type) will be marked with "H" using spray paint.

Hollow/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);
- 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 and apparent hollow appears big enough and suitably sized/orientated for a black cockatoo to use for nesting).

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

- Tree <50cm DBH or an unsuitable species (these were not assessed/recorded);
- Tree \geq 50cm DBH, no hollows seen;
- Tree \geq 50cm DBH, one or more hollows seen, none of which were considered suitable for black cockatoos to use for nesting; or
- Tree \geq 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 visible hollows (cavities within the trunk or branches) or possible hollows suitable for occupation by black cockatoo for the purpose of nesting/breeding. 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, were 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). Details recorded included hollow size, height, type, orientation, comments on suitability and any evidence of use

Trees with possible nest hollows were also scratched and raked with a large stick in attempt to flush any sitting birds from hollows and calls of chicks were listened for. Where the assessment was inconclusive, and if possible, trees identified as having potential nest hollows were subsequently examined and photographed using a drone (DJI Mavic Air).

A review of available literature was carried out to determine the location/extent of any known/likely black cockatoo breeding habitat areas in the vicinity of the survey area.

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 – FAUNA SPECIES OF CONSERVATION SIGNIFICANCE

The literature review identified multiple fauna species of conservation significance as potentially occurring in the general area as listed in Table 1. The NatureMap (DBCA 2022) and Protected Matter Search Tool (DCCEE 2022) 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 survey area.

Species	Conservation Status ¹	
	BC Act	EPBC Act
Carter's Freshwater Mussel <i>Westralunio carteri</i>	VU	VU
Malleefowl <i>Leipoa ocellata</i>	VU	VU
Australasian Bittern <i>Botaurus poiciloptilus</i>	EN	EN
Migratory Shorebirds/Wetland Species	Various	Various
Peregrine Falcon <i>Falco peregrinus</i>	OS	-
Grey Falcon <i>Falco hypoleucos</i>	VU	VU
Masked Owl <i>Tyto novaehollandiae novaehollandiae</i>	P3	-
Blue-billed Duck <i>Oxyura australis</i>	P4	-
Carnaby's Black Cockatoo <i>Zanda latirostris</i>	EN	EN
Baudin's Black Cockatoo <i>Zanda baudinii</i>	EN	EN
Forest Red-tailed Black Cockatoo <i>Calyptorhynchus banksii naso</i>	VU	VU
Fork-tailed Swift <i>Apus pacificus</i>	MI	Mig
Grey Wagtail <i>Motacilla cinerea</i>	MI	Mig
Noisy Scrub-Bird <i>Atrichornis clamosus</i>	EN	EN
Chuditch <i>Dasyurus geoffroii</i>	VU	VU

See Appendix A for conservation status codes

Species	Conservation Status ¹	
	BC Act	EPBC Act
Quenda <i>Isoodon fusciventer</i>	P4	-
South-western Brush-tailed Phascogale <i>Phascogale tapoatafa wambenger</i>	OS	-
Numbat <i>Myrmecobius fasciatus</i>	EN	EN
Western Ringtail Possum <i>Pseudocheirus occidentalis</i>	CR	CE
Western Brush Wallaby <i>Notamacropus irma</i>	P4	-
Water Rat <i>Hydromys chrysogaster</i>	P4	-
Western False Pipistrelle <i>Falsistrellus mackenziei</i>	P4	-

5.2 FIELD SURVEYS

5.2.1 FAUNA HABITAT ASSESSMENT

The survey area has a total extent of about 4.1 ha and is comprised a mosaic of remnant native vegetation, planted endemic, non-endemic and exotic trees and shrubs and existing cleared land (Figure 2). Two broad scale “fauna habitats” have been defined (primarily based on vegetation units), these being a jarrah and marri dominated woodland over a shrubland or grassland and existing cleared/partly cleared areas (i.e. the main cemetery grounds and tracks/firebreaks). Example images of the various fauna habitats present and are provided in Table 2.

With respect to fauna habitat values, much of the remnant native vegetation appears to be in good to very good condition and would therefore have the capacity to support a wide range native fauna species known to frequent the wider area. The capacity of the area to support some fauna species is however compromised by the fact that the cemetery is relatively isolated being surrounded by degraded/totally degraded land (e.g. residential areas). The survey areas small size means that it would not have the capacity to support viable populations of many species.

Despite the survey area’s history of disturbance, small size and lack of connectivity, the sections of more coherent remnant vegetation are still likely to be utilised in some fashion by a reasonably wide range of species though most would be relatively common and widespread bird species. Exceptions to this generalised statement include black cockatoos, which may utilise the area for foraging and possibly breeding (see section 5.2.3).

Table 2: Example images of the fauna habitats within the survey area

Fauna Habitat Description	Example Image
<p>Jarrah and Marri dominated woodland with occasional Banksia over a shrubland/low shrubland or grassland and open shrubland .</p>	 <p>The table contains two example images of Jarrah and Marri dominated woodland. The top image shows a dense stand of trees with green foliage, with a date of 30 Nov 2022, 11:07:28. The bottom image shows a similar woodland with drier, yellowish grass, with a date of 30 Nov 2022, 11:19:00. Both images include a ZOOTOPIA logo in the bottom left corner and a location marker at the top.</p>

Fauna Habitat Description	Example Image
<p>Existing cleared areas with scattered endemic, non-endemic and exotic trees and shrubs included firebreaks and tracks.</p>	 <p>The top photograph shows a wide, cleared area with scattered trees and a dirt path. The bottom photograph shows a dirt path lined with trees and shrubs.</p>

5.2.2 FAUNA OBSERVATIONS

Fourteen fauna species (mainly common bird species) were observed or secondary evidence of their presence recorded during the field survey. A full listing of the species observed is held on Appendix C.

Evidence of the forest red-tailed black cockatoo and Carnaby’s black cockatoo was detected during the day survey in the form of a chewed marri and jarrah fruits (see Section 5.2.3). Several forest red-tailed black cockatoo individuals were also heard calling and flying overhead during the field survey.

No evidence of any other fauna species of conservation significance was observed. However, this does not eliminate the potential for some species to still occur, if only infrequently. An assessment of the likelihood of presence of the various fauna species of conservation significance previously recorded in the wider area is provided in Section 6 of this report.

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 survey area comprised the following species:

- Marri – *Corymbia calophylla*;
- Jarrah – *Eucalyptus marginata*; and
- Dead Unidentified – *Eucalyptus/Corymbia* spp.
- Non-Endemic Eucalypt (planted) - *Eucalyptus* spp.

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

Table 3: Summary of potential habitat trees (DBH \geq 50cm) within the survey area

Total Number of Habitat Trees (DBH > 50cm)	Number of Habitat Trees with <u>No Hollows Observed</u>	Number of Habitat Trees with <u>Possible Hollows considered Unsuitable for Black Cockatoos</u>	Number of Habitat Trees with <u>Possible Hollows considered Potentially suitable for Black Cockatoos</u>	Tree Species			
				Marri	Jarrah	Unidentified Dead	Non-Endemic
106	87	13	6	43	57	5	1

The assessment identified 106 trees within the survey area with a DBH of \geq 50cm. Most of these trees (87) appeared to not contain hollows of any size. Thirteen (13) 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 low height above ground level.

Six trees (6) appeared to contain at least one hollow considered potentially suitable for black cockatoos to use for nesting purposes. None of the hollows showed any conclusive evidence of actual use by nesting black cockatoos.

Based on available mapping, there is approximately 17,400 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2023). Much of this is likely to contain “potential” breeding habitat as defined by DCCEEW (i.e. suitable tree species with a DBH \geq 50cm).

5.2.3.2 Foraging Habitat Assessment


The following flora species, known to be or 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 survey area during the field survey:



- Marri – *Corymbia calophylla*;
- Jarrah – *Eucalyptus marginata*;
- Bull Banksia - *Banksia grandis*; and
- Grass Tree - *Xanthorrhoea preissii* and
- Pine Tree – *Pinus* spp.

It should be noted that some of the above-mentioned species (e.g. grass trees) while foraged upon on occasions would make up only a small proportion of any one bird’s diet relative to more favoured plant species such as marri.

Evidence of black cockatoos foraging was observed during the field survey at a number of locations. The evidence was in all cases in the form of chewed fruits from marri and jarrah trees. The foraging activity was attributed to either the forest red-tailed black cockatoo or Carnaby’s black cockatoo. Examples of the foraging debris observed and the species attributed to the activity are provided in Table 4.

Table 4: Foraging Evidence Examples

Foraging Evidence Description	Example Image
<p>Jarrah fruits – foraging activity attributed to either the Forest Red-tailed Black Cockatoo or Carnaby’s Black Cockatoo.</p>	

Foraging Evidence Description	Example Image
<p>Marri fruits – foraging activity attributed to the Forest Red-tailed Black Cockatoo.</p>	
<p>Marri fruits – foraging activity attributed to the Carnaby’s Black Cockatoo.</p>	

Quality foraging habitat within the survey area can mainly be defined as the areas containing marri, jarrah and banksia dominated vegetation which makes up just over half of the survey area (i.e. about 2.4 ha).

Based on available mapping there is about 17,400 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2023). Much of 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 survey area was observed during the survey period. It is difficult to determine if trees or groves of trees within the survey area represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees (including non-endemics) may be suitable for roosting but as indicated no actual evidence of use was seen.

A review of the 2019 Great Cocky Count database shows no documented roost sites within the survey area. There are three documented roost sites within 12 km of the survey area, the closest one being just ~300m southeast of the survey area (Site - WARWARR002), within the bounds of the Waroona Golf Course. This roost site was in use by 63 forest red-tailed black cockatoos during the 2019 great cocky count (Peck *et al.* 2019).

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.

Some comments on the possible impacts of any proposed development are also provided though it should be noted that no specific development plans have been made available. It has been assumed that some or all of the hollow bearing trees identified can be retained despite any proposed clearing taking place.

Two fauna species of conservation significance (listed as State or Federal threatened, specially protected or priority species) were positively identified as utilising the survey area for some purpose during the survey period:

- Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso* – Vulnerable (BC/EPBC Act).
Foraging evidence and individuals observed flying overhead and calling. The survey area contains areas of potential black cockatoo breeding habitat (trees with a DBH >50cm) with several trees containing possible large hollows, though no conclusive evidence of actual use recorded. The majority of the remnant native vegetation within the survey area represents foraging habitat for this species. No evidence of roosting observed.
- Carnaby's Black-Cockatoo *Zanda latirostris* – Endangered (BC/EPBC Act).
Foraging evidence observed. The survey area contains areas of potential black cockatoo breeding habitat (trees with a DBH >50cm) with several trees containing possible large hollows, though no conclusive evidence of actual use recorded. The majority of the native vegetation within the survey area represents foraging habitat for this species. No evidence of roosting observed.

Table 5: Likelihood of Occurrence – Fauna Species of Conservation Significance

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	EPBC Act				
Carter's Freshwater Mussel <i>Westralunio carteri</i>	VU	VU	Occurs in greatest abundance in slower flowing streams with stable sediments that are soft enough for burrowing amongst woody debris and exposed tree roots.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Malleefowl <i>Leipoa ocellata</i>	VU	VU	Mainly scrubs and thickets of mallee <i>Eucalyptus</i> spp., boree <i>Melaleuca lanceolata</i> and bowgada <i>Acacia linophylla</i> , also dense litter forming shrublands.	No	Would Not Occur.	Regionally extinct. This species has not been recorded in the immediate area for over 60 years. No impact on this species will occur.
Australasian Bittern <i>Botaurus poiciloptilus</i>	EN	EN	Freshwater wetlands, occasionally estuarine; prefers heavy vegetation such as beds of tall dense <i>Typha</i> , <i>Baumea</i> and sedges in freshwater swamps.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Migratory Shorebirds/Wetland Species/Marine Species (various reptiles, birds and mammals)	MI, Various	Ma, Mig, Various	Varies between species but includes open ocean, beaches and permanent/temporary wetlands varying from billabongs, swamps, lakes, floodplains, sewerage farms, saltwork ponds, estuaries, lagoons, mudflats sandbars, pastures, airfields, sports fields and lawns.	No	Would Not Occur.	No suitable habitat. No impact on this range of species will occur.
Peregrine Falcon <i>Falco peregrinus</i>	OS	-	Diverse from rainforest to arid shrublands, from coastal heath to alpine Mainly about cliffs along coasts, rivers and ranges and about wooded watercourses and lakes.	Yes	Possibly Occurs.	This species is uncommon but the survey area may represent part of a larger home range used by individuals of this species. No significant impact on this species anticipated given small area involved.
Grey Falcon <i>Falco hypoleucos</i>	VU	-	Frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses in addition to treeless areas and tussock grasslands/open woodland.	No	Would Not Occur.	No suitable habitat. Rarely if ever recorded in this area. No impact on this range of species will occur.
Masked Owl (SW population) <i>Tyto n. novaehollandiae</i>	P3	-	Roosts and nests in heavy forest, hunts over open woodlands and farmlands.	Yes	Possibly Occurs.	This species is uncommon but may occur, if only occasionally. No significant impact on this species anticipated given small area involved.
Blue-billed Duck <i>Oxyura australis</i>	P4	-	Well vegetated freshwater swamps, large dams and lakes, winters on more open water. Occasionally salt lakes and estuaries freshened by floodwaters.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Carnaby's Black Cockatoo <i>Zanda latirostris</i>	EN	EN	Forests, woodlands, heathlands, farms; feeds on <i>Banksia</i> , <i>Hakea</i> and Marri.	Yes	Known to Occur	Loss/modification of small areas of habitat including potential nest sites. No significant impact on this species anticipated given small area involved.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	EPBC Act				
Baudin's Black Cockatoo <i>Zanda baudinii</i>	EN	EN	Mainly eucalypt forests where it feeds primarily on the marri seeds.	Yes	Possibly Occurs.	Loss/modification of small areas of habitat including potential nest sites. No significant impact on this species anticipated given small area involved.
Forest Red-tailed Black Cockatoo <i>Calyptorhynchus 15anksia naso</i>	VU	VU	Eucalypt forests, feeds on marri, jarrah, blackbutt, karri, sheoak and snottygobble.	Yes	Known to Occur	Loss/modification of small areas of habitat including potential nest sites. No significant impact on this species anticipated given small area involved.
Fork-tailed Swift <i>Apus pacificus</i>	MI	Ma, Mig	Low to very high airspace over varied habitat from rainforest to semi desert.	Yes	Unlikely to Occur, Flyover only on very rare occasions.	May occur very occasionally for brief periods. Entirely aerial. No impact on this species will occur.
Grey Wagtail <i>Motacilla cinerea</i>	MI	Mig, Ma	In Australia, near running water in disused quarries, sandy, rocky streams in escarpments and rainforest, sewerage ponds, ploughed fields and airfields.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Noisy Scrub-Bird <i>Atrichornis clamosus</i>	EN	EN	Inhabits dense forests with heavy understory and abundant leaf litter. Re-introduced into Darling Range forest areas near Waroona/Harvey.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.
Chuditch <i>Dasyurus geoffroi</i>	VU	VU	Forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest.	Yes	Unlikely to Occur	Rarely recorded outside of large areas of coherent remnant forest areas. Very occasional transients only. No impact on this species will occur.
Quenda <i>Isoodon fusciventer</i>	P4	-	Dense scrubby, often swampy, vegetation with dense cover.	Yes	Possibly Occurs.	Loss/modification of small areas of habitat. No significant impact on this species anticipated given small area involved.
South-west Brush-tailed Phascogale <i>Phascogale tapoatafa wambenger</i>	CD	-	Dry sclerophyll forests and open woodlands that contain hollow-bearing trees but a sparse ground cover.	Yes/Marginal	Unlikely to Occur.	Occasional transients only as area is too small to support a population. No significant impact on this species anticipated given small area involved.
Numbat <i>Myrmecobius fasciatus</i>	EN	EN	Generally found in habitats dominated by eucalypts that provide hollow logs and branches for shelter and termites for food.	No	Would Not Occur.	Locally extinct. No impact on this species will occur.
Western Ringtail Possum <i>Pseudocheirus occidentalis</i>	CR	CE	Coastal peppermint, coastal peppermint-tuart, jarrah-marri associations, sheoak woodland, and eucalypt woodland and mallee.	Yes	Unlikely to Occur.	Locally extinct with no documented records in the immediate vicinity of Waroona. No impact on this species will occur.
Western Brush Wallaby <i>Notamacropus irma</i>	P4	-	Open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets.	Yes	Would Not Occur.	This species does not persist in small isolated remnants. No impact on this species will occur.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Comments/Possible Impacts
	BC Act	EPBC Act				
Western False Pipistrelle <i>Falsistrellus mackenziei</i>	P4	-	Wet sclerophyll forest dominated by karri and in high rainfall zones of the jarrah and marri forest.	Yes	Possibly Occurs.	Loss/modification of small areas of habitat. Negligible impact on species status anticipated given small area involved.
Water Rat <i>Hydromys chrysogaster</i>	P4	-	Permanent water, fresh, brackish or marine.	No	Would Not Occur.	No suitable habitat. No impact on this species will occur.

See Appendix A for conservation status codes

Several additional species of conservation significance may utilise the survey area for some purpose at times, but their status on-site and/or in the general area is difficult to determine because they were not sighted during the field survey, or evidence of use was not observed:

- Peregrine Falcon *Falco peregrinus* – OS (BC Act)
This species potentially utilises some sections of the survey area as part of a much larger home range though it is only likely to occur infrequently. All areas represent potential foraging habitat for this species. Listed as a potential species based on available information.
- Baudin's Black-Cockatoo *Zanda baudinii* – Endangered (BC/EPBC Act).
No evidence of this species recorded. The survey area contains areas of potential black cockatoo breeding habitat (trees with a DBH >50cm). The majority of the native vegetation within the survey area represents foraging habitat for this species. No evidence of roosting observed.
- Masked Owl *Tyto novaehollandae* – P3 (BC Act Priority Species)
Status in the general area is difficult to determine. May utilise woodland areas within and near the survey area for roosting and may forage in more open areas. Probably only present occasionally and for short periods. Some of the identified hollow bearing trees represent possible nest sites. Listed as a potential species based on available information.
- Quenda *Isodon fusciventer* – P4 (BC Act Priority Species)
Areas of dense groundcover represent potential habitat for this species. Listed as a potential species based on available information.
- Western False Pipistrelle *Falsistrellus mackenziei* – P4 (BC Act Priority Species)
Status of this species within the survey area is difficult to determine, however, given the location is within its documented range, some recent nearby records and the presence of habitat that appears suitable it must be assumed to be present. All sections of the survey area represent potential foraging habitat for this species and any hollow bearing trees represent possible day time roost sites. Listed as a potential species based on available information.

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

As mentioned no specific development plans have been made available but it has been assumed that if clearing of some or all of the site was undertaken it would be reasonable to expect that some or all of the hollow bearing trees identified could be retained while still allowing for the ongoing use of the site for its current purpose. Based on this assumption the following conclusions have been drawn on likely impacts based on observations made.

In cases where some habitat is present and available information indicates at least some probability of the species occurrence, likely impacts are anticipated to be low primarily due to likely low population densities and the relatively small total area of vegetation/habitat present (i.e. only a small number of individuals, if any will be affected).

No overall change in the conservation status of any fauna species currently utilising the survey area is therefore anticipated. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.

In this instance impacts are most likely to be related to the loss of habitat and the potential for some species to be killed or injured during clearing, including the possible presence of breeding black cockatoos in at least one hollow at certain times of the year.

7. CONCLUSION

The fauna assessment within the survey area was primarily undertaken to document black cockatoo habitat and to determine the possible presence of other conservation significant fauna species and/or their habitat.

The subject site was found to contain 106 potential “black cockatoo breeding habitat trees” (DBH \geq 50cm). Six trees (6) appeared to contain at least one hollow considered potentially suitable for black cockatoos to use for nesting purposes however none showed any conclusive evidence of actual use by nesting black cockatoos.

Quality foraging habitat within the survey area can mainly be defined as the areas containing marri, jarrah and banksia dominated vegetation which makes up just over half of the survey area (i.e. about 2.4 ha). This vegetation type has a total extent of about 7.9 ha. No existing roosting trees (trees used at night by black cockatoos to rest) were positively identified during the survey.

Two fauna species of conservation significance (listed as State or Federal threatened, specially protected or priority species) were positively identified as utilising the survey area for some purpose during the survey period (two species of black cockatoos). Several additional species of conservation significance may also utilise the survey area for some purpose at times, but their status on-site and/or in the general area is difficult to determine because they were not sighted during the field survey, or evidence of use was not observed:

Under the assumption that if clearing of some or all of the site was undertaken and some or all of the hollow bearing trees identified could be retained the following conclusions have been drawn on likely impacts based on observations made. In cases where some habitat is present and available information indicates at least some probability of the species occurrence, likely impacts are anticipated to be low primarily due to likely low population densities and the relatively small total area of vegetation/habitat present (i.e. only a small number of individuals, if any will be affected).

No overall change in the conservation status of any fauna species currently utilising the survey area is therefore anticipated. While some small, localised residual loss of fauna habitat may occur for some species, regional impacts on the status of any one species are anticipated to be negligible/non-existent.

If approval for the proposed clearing is obtained it is recommended that a fauna spotting/relocation program be implemented prior to and during clearing works to ensure direct impact on fauna most likely to be encountered, are minimised.

8. REFERENCES

Commonwealth of Australia (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*.

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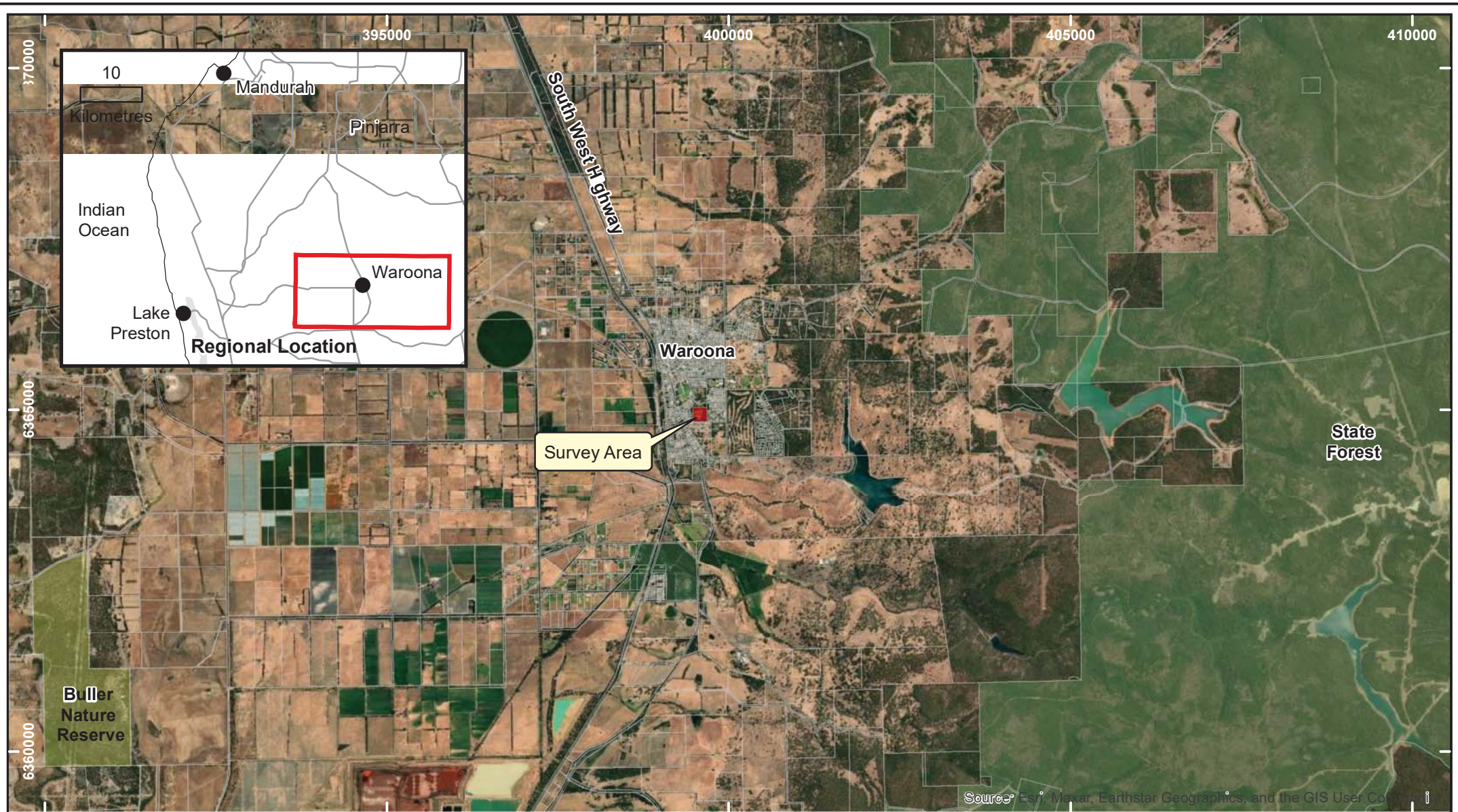
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FIGURES



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

 Survey Area




Drawn: G Harewood
Date: 03-Jan-23
Scale: 1:75,000

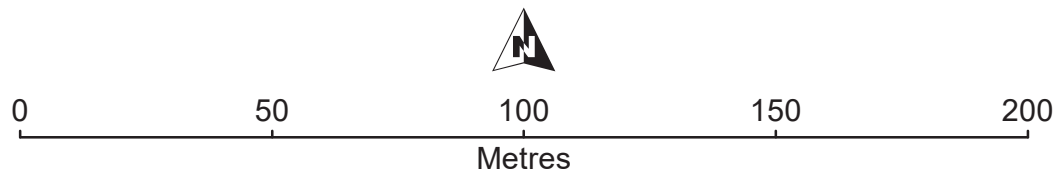
Waroona Cemetery
Waroona

**Survey Area
and
Surrounds**



Legend

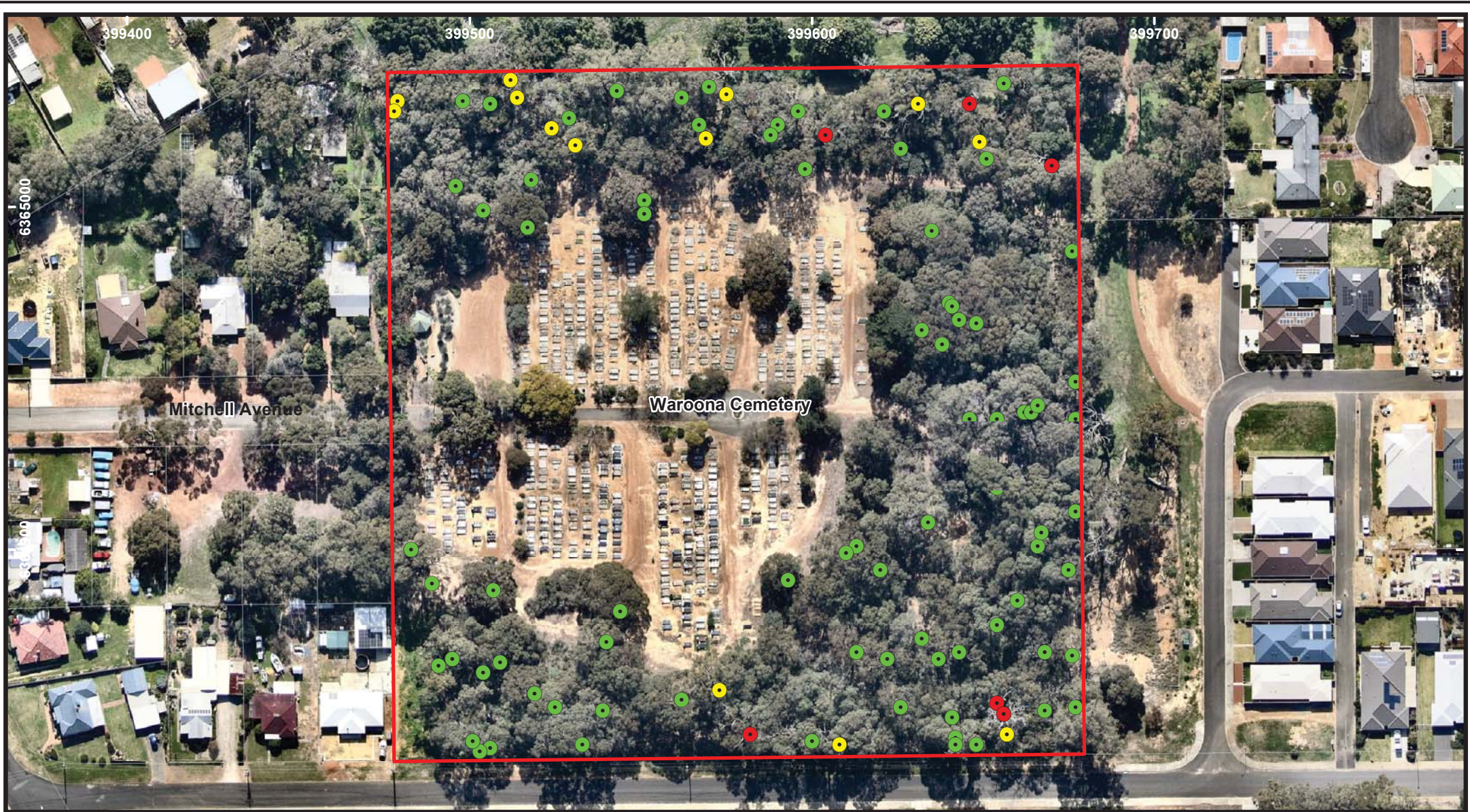
 Survey Area




Drawn: G Harewood
Date: 03-Jan-23
Scale: 1:1,500




Waroona Cemetery
Waroona

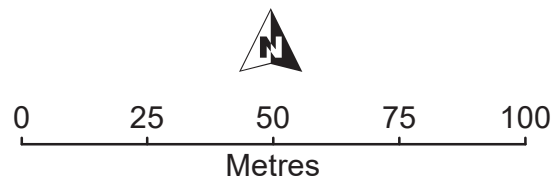
**Survey Area
Aerial Photograph**



Legend

 Survey Area

-  Habitat Tree - One or more large hollows possibly suitable for black cockatoos
-  Habitat Tree - One or more possible small/medium hollows, none appear suitable for black cockatoos
-  Habitat Tree - No hollows seen



Drawn: G Harewood
Date: 03-Jan-23
Scale: 1:1,500

Waroona Cemetery
Waroona

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

APPENDIX A

CONSERVATION CATEGORIES

APPENDIX B
NATUREMAP DATABASE SEARCH
AND
PROTECTED MATTERS SEARCH TOOL RESULTS

Nature Map Records - 10km Radius

Row Labels	COUNT
Animalia	3252
AMPHI	132
Crinia georgiana	12
Crinia glauerti	15
Crinia insignifera	28
Geocrinia leai	3
Heleioporus eyrei	44
Limnodynastes dorsalis	6
Litoria adelaidensis	5
Pseudophryne guentheri	19
BIRD	2071
Acanthiza apicalis	54
Acanthiza chrysorrhoa	31
Acanthiza inornata	10
Acanthorhynchus superciliosus	6
Accipiter cirrocephalus	3
Accipiter cirrocephalus subsp. cirrocephalus	1
Accipiter fasciatus	2
Accipiter fasciatus subsp. fasciatus	1
Acrocephalus australis	1
Anas gracilis	19
Anas rhynchotis	9
Anas superciliosa	43
Anhinga melanogaster	3
Anhinga novaehollandiae	2
Anthochaera carunculata	50
Anthochaera lunulata	5
Aquila audax	5
Ardea alba subsp. modesta	7
Ardea garzetta subsp. nigripes	1
Ardea modesta	1
Ardea novaehollandiae	9
Ardea pacifica	9
Artamus cinereus	4
Artamus cyanopterus	4
Atrichornis clamosus	4
Aythya australis	5
Barnardius zonarius	21
Biziura lobata	11
Burhinus grallarius	2
Cacatua roseicapilla	9
Cacatua sanguinea	4
Cacomantis flabelliformis	7
Cacomantis pallidus	1
Calyptorhynchus banksii	41
Calyptorhynchus banksii subsp. naso	47
Calyptorhynchus baudinii	19
Calyptorhynchus latirostris	20
Calyptorhynchus sp.	2

<i>Calyptorhynchus</i> sp. 'white-tailed black cockatoo'	2
<i>Charadrius melanops</i>	1
<i>Chenonetta jubata</i>	16
<i>Chrysococcyx basalis</i>	1
<i>Chrysococcyx lucidus</i>	8
<i>Cincloramphus mathewsi</i>	1
<i>Circus approximans</i>	3
<i>Cladorhynchus leucocephalus</i>	3
<i>Climacteris rufa</i>	1
<i>Colluricincla harmonica</i>	11
<i>Coracina maxima</i>	1
<i>Coracina novaehollandiae</i>	30
<i>Corvus coronoides</i>	100
<i>Coturnix pectoralis</i>	1
<i>Cracticus tibicen</i>	69
<i>Cracticus torquatus</i>	16
<i>Cygnus atratus</i>	8
<i>Dacelo novaeguineae</i>	41
<i>Dacelo novaeguineae</i> subsp. <i>novaeguineae</i>	1
<i>Daphoenositta chrysoptera</i>	7
<i>Dromaius novaehollandiae</i>	8
<i>Egretta novaehollandiae</i>	8
<i>Elanus caeruleus</i>	1
<i>Elseyornis melanops</i>	4
<i>Eolophus roseicapillus</i>	3
<i>Eopsaltria georgiana</i>	25
<i>Eopsaltria griseogularis</i>	3
<i>Epthianura albifrons</i>	1
<i>Erythrogonys cinctus</i>	2
<i>Falco cenchroides</i>	9
<i>Falco longipennis</i>	1
<i>Fulica atra</i>	12
<i>Fulica atra</i> subsp. <i>australis</i>	8
<i>Gallinula tenebrosa</i> subsp. <i>tenebrosa</i>	1
<i>Gallirallus philippensis</i>	1
<i>Gerygone fusca</i>	84
<i>Glossopsitta porphyrocephala</i>	1
<i>Grallina cyanoleuca</i>	18
<i>Haliastur sphenurus</i>	3
<i>Himantopus himantopus</i>	4
<i>Hirundo neoxena</i>	14
<i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i>	5
<i>Lichenostomus virescens</i>	13
<i>Lichmera indistincta</i>	135
<i>Malacorhynchus membranaceus</i>	2
<i>Malurus elegans</i>	9
<i>Malurus splendens</i>	62
<i>Megalurus gramineus</i>	1
<i>Melithreptus brevirostris</i>	1
<i>Melithreptus chloropsis</i>	6
<i>Melithreptus lunatus</i>	1

<i>Merops ornatus</i>	9
<i>Microcarbo melanoleucos</i>	7
<i>Microeca fascinans</i>	3
<i>Myiagra inquieta</i>	1
<i>Neophema elegans</i>	1
<i>Ninox novaeseelandiae</i>	3
<i>Ocyphaps lophotes</i>	12
<i>Oxyura australis</i>	2
<i>Pachycephala pectoralis</i>	51
<i>Pachycephala rufiventris</i>	35
<i>Pachyptila desolata</i>	1
<i>Pandion haliaetus</i>	1
<i>Pardalotus punctatus</i>	8
<i>Pardalotus striatus</i>	60
<i>Pelecanus conspicillatus</i>	2
<i>Petrochelidon nigricans</i>	11
<i>Petroica boodang</i>	15
<i>Petroica goodenovii</i>	1
<i>Petroica multicolor</i>	5
<i>Phalacrocorax carbo</i>	6
<i>Phalacrocorax melanoleucos</i>	7
<i>Phalacrocorax sulcirostris</i>	10
<i>Phalacrocorax varius</i>	3
<i>Phaps chalcoptera</i>	28
<i>Phylidonyris albifrons</i>	1
<i>Phylidonyris melanops</i>	1
<i>Phylidonyris novaehollandiae</i>	62
<i>Platalea flavipes</i>	5
<i>Platycercus icterotis</i>	6
<i>Platycercus icterotis</i> subsp. <i>icterotis</i>	7
<i>Platycercus spurius</i>	11
<i>Platycercus zonarius</i>	26
<i>Podargus strigoides</i>	14
<i>Poliocephalus poliocephalus</i>	5
<i>Porphyrio porphyrio</i>	3
<i>Porphyrio porphyrio</i> subsp. <i>bellus</i>	4
<i>Porzana fluminea</i>	1
<i>Porzana tabuensis</i>	1
<i>Purpureicephalus spurius</i>	14
<i>Recurvirostra novaehollandiae</i>	1
<i>Rhipidura albiscapa</i>	56
<i>Rhipidura fuliginosa</i>	91
<i>Rhipidura leucophrys</i>	33
<i>Sericornis frontalis</i>	25
<i>Smicrornis brevirostris</i>	33
<i>Sterna bergii</i>	2
<i>Strepera versicolor</i>	5
<i>Streptopelia senegalensis</i>	3
<i>Tachybaptus novaehollandiae</i>	8
<i>Tachybaptus novaehollandiae</i> subsp. <i>novaehollandiae</i>	6
<i>Tadorna tadornoides</i>	26

Threskiornis molucca	26
Threskiornis spinicollis	14
Todiramphus sanctus	7
Trichoglossus haematodus	1
Tyto alba subsp. delicatula	3
Zosterops lateralis	48
FISH	9
Bostockia porosa	4
Carassius auratus	1
Gonorynchus greyi	1
Hyporhamphus regularis	1
Nannoperca vittata	2
INVERT	259
Acariformes sp.	8
Aeshnidae sp.	4
Aganippe raphiduca	1
Ancylidae sp.	1
Antichiropus variabilis	1
Arachnura higginsii	2
Artoria linnaei	3
Austracantha minax	1
Austrocorduliidae sp.	1
Baetidae sp.	5
Caenidae sp.	2
Ceinidae sp.	2
Ceratopogonidae sp.	4
Cherax cainii	6
Cherax destructor	1
Cherax quinquecarinatus	7
Cherax spp.	1
Chironominae sp.	12
Coenagrionidae sp.	1
Corduliidae sp.	6
Corixidae sp.	1
Cormocephalus aurantiipes	3
Culicidae sp.	3
Cyclosa trilobata	2
Dytiscidae sp.	9
Empididae sp.	1
Gomphidae sp.	7
Gripopterygidae sp.	7
Gyrinidae sp.	1
Hemicorduliidae sp.	1
Hydrobiosidae sp.	3
Hydrophilidae sp.	4
Hydropsychidae sp.	1
Hydroptilidae sp.	5
Latrodectus hasseltii	1
Leptoceridae sp.	10
Leptophlebiidae sp.	9
Lestidae sp.	2

Megapodagrionidae sp.	5
Missulena granulosa	6
Nematoda sp.	1
Nephila edulis	1
Oligochaeta sp.	11
Orthocladiinae sp.	8
Palaemonidae sp.	6
Parastacidae sp.	8
Perthiidae sp.	5
Pinkfloydia harveii	1
Psychodidae sp.	1
Pyralidae sp.	1
Raveniella peckorum	1
Scirtidae sp.	4
Simuliidae sp.	9
Storena formosa	1
Styloniscidae sp.	1
Synsphyronus magnus	1
Synthemistidae sp.	5
Tanypodinae sp.	9
Telephlebiidae sp.	4
Temnocephalidea sp.	1
Tipulidae sp.	5
Urodacus hartmeyeri	2
Urodacus novaehollandiae	4
Urodacus planimanus	10
Veliidae sp.	7
Venatrix pullastra	1
Westralunio carteri	1
MAMMAL	423
Antechinus flavipes subsp. leucogaster	7
Cercartetus concinnus	2
Chalinolobus gouldii	4
Chalinolobus morio	2
Dasyurus geoffroii	23
Equus caballus	1
Falsistrellus mackenziei	3
Felis catus	1
Hydromys chrysogaster	5
Isoodon fusciventer	9
Isoodon obesulus	9
Isoodon obesulus subsp. fusciventer	2
Macropus fuliginosus	120
Macropus irma	3
Mormopterus planiceps	3
Mus musculus	104
Myrmecobius fasciatus	2
Notamacropus irma	3
Nyctophilus geoffroyi	9
Nyctophilus gouldi	2
Nyctophilus timoriensis	2

<i>Oryctolagus cuniculus</i>	10
<i>Phascogale tapoatafa</i> subsp. <i>tapoatafa</i>	3
<i>Phascogale tapoatafa</i> subsp. <i>wambenger</i>	1
<i>Pseudomys albocinereus</i>	15
<i>Rattus rattus</i>	4
<i>Sminthopsis griseoventer</i>	24
<i>Sus scrofa</i>	2
<i>Tachyglossus aculeatus</i>	3
<i>Tadarida australis</i>	1
<i>Tarsipes rostratus</i>	24
<i>Trichosurus vulpecula</i>	5
<i>Trichosurus vulpecula</i> subsp. <i>vulpecula</i>	8
<i>Vespadelus regulus</i>	4
<i>Vulpes vulpes</i>	3
REPTILE	358
<i>Acritoscincus trilineatum</i>	4
<i>Acritoscincus trilineatus</i>	1
<i>Aprasia repens</i>	3
<i>Brachyuropsis semifasciata</i>	11
<i>Chelodina colliei</i>	1
<i>Christinus marmoratus</i>	1
<i>Crenadactylus ocellatus</i>	1
<i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i>	1
<i>Cryptoblepharus buchananii</i>	12
<i>Cryptoblepharus plagiocephalus</i>	1
<i>Ctenophorus adalaidensis</i>	35
<i>Ctenopus australis</i>	1
<i>Ctenopus fallens</i>	26
<i>Ctenopus labillardieri</i>	3
<i>Ctenopus schomburgkii</i>	7
<i>Delma fraseri</i>	1
<i>Diplodactylus polyophthalmus</i>	2
<i>Egernia napoleonis</i>	2
<i>Elapognathus coronatus</i>	1
<i>Hemiergis gracilipes</i>	2
<i>Hemiergis initialis</i>	4
<i>Hemiergis initialis</i> subsp. <i>initialis</i>	2
<i>Hemiergis quadrilineata</i>	2
<i>Lerista christinae</i>	5
<i>Lerista distinguenda</i>	10
<i>Lerista elegans</i>	20
<i>Lerista microtis</i> subsp. <i>microtis</i>	1
<i>Lerista praepedita</i>	11
<i>Lialis burtonis</i>	7
<i>Menetia greyii</i>	19
<i>Morelia spilota</i> subsp. <i>imbricata</i>	2
<i>Morethia butleri</i>	2
<i>Morethia lineoocellata</i>	5
<i>Morethia obscura</i>	26
<i>Neelaps bimaculatus</i>	6
<i>Nephrurus milii</i>	1

Notechis scutatus	8
Parasuta gouldii	3
Parasuta nigriceps	1
Pogona minor	26
Pogona minor subsp. minor	1
Pseudonaja affinis subsp. affinis	15
Pygopus lepidopodus	11
Ramphotyphlops australis	15
Simoselaps bertholdi	2
Strophurus spinigerus	17
Tiliqua rugosa	12
Tiliqua rugosa subsp. rugosa	1
Underwoodisaurus miii	2
Varanus gouldii	2
Varanus rosenbergi	1
Varanus tristis subsp. tristis	2
Grand Total	3252

Nature Map Records - 10km Radius

Threatened/Specially Protected/Priority Species

	TAXON	CLASS	CONS
Noisy Scrub Bird	<i>Atrichornis clamosus</i>	BIRD	EN
Forest Red-tailed Black Cockatoo	<i>Calyptorhynchus banksii</i> subsp. <i>naso</i>	BIRD	VU
Baudin's Black Cockatoo	<i>Calyptorhynchus baudinii</i>	BIRD	EN
Carnabys Black Cockatoo	<i>Calyptorhynchus latirostris</i>	BIRD	EN
Chuditch	<i>Dasyurus geoffroii</i>	MAMMAL	VU
Western False Pipestrelle	<i>Falsistrellus mackenziei</i>	MAMMAL	P4
Water Rat	<i>Hydromys chrysogaster</i>	MAMMAL	P4
Quenda	<i>Isoodon fusciventer</i>	MAMMAL	P4
Numbat	<i>Myrmecobius fasciatus</i>	MAMMAL	EN
Westrn Brush Wallaby	<i>Notamacropus irma</i>	MAMMAL	P4
Blue-billed Duck	<i>Oxyura australis</i>	BIRD	P4
SW Brush-tailed Phascogale	<i>Phascogale tapoatafa</i> subsp. <i>wambenger</i>	MAMMAL	CD
Carter's Fresh Water Mussel	<i>Westralunio carteri</i>	INVERT	VU



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 28-Dec-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	19
Listed Migratory Species:	7

Other Matters Protected by the EPBC Act

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

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

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Peel-yalgorup system	10 - 20km upstream from Ramsar site

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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

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

Community Name	Threatened Category	Presence Text
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community may occur within area

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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 [77037]	Endangered	Species or species habitat may occur within area
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Species or species habitat likely to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding likely to occur within area
MAMMAL		
Dasyurus geoffroi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area
PLANT		
Banksia mimica Summer Honey-pot [82765]	Endangered	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Synaphea sp. Fairbridge Farm (D. Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area
Synaphea sp. Pinjarra Plain (A.S. George 17182) [86878]	Endangered	Species or species habitat may occur within area
Synaphea sp. Serpentine (G.R. Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area
Synaphea stenoloba Dwellingup Synaphea [66311]	Endangered	Species or species habitat may occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
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
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Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
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

Scientific Name	Threatened Category	Presence Text
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

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

Commonwealth Land Name	State
Unknown	
Commonwealth Land - [50831]	WA

Listed Marine Species [\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text
Bird		
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 overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
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 overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine 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 overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat may occur within area overfly marine area

Extra Information

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included.

RFA Name	State
South West WA RFA	Western Australia

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV,	2015/7522	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<u>sthrn two thirds of Australia</u>			
<u>INDIGO Central Submarine Telecommunications Cable</u>	2017/8127	Not Controlled Action	Completed
<u>Waroona mineral sand mine</u>	2005/2345	Not Controlled Action	Completed
Not controlled action (particular manner)			
<u>INDIGO Marine Cable Route Survey (INDIGO)</u>	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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APPENDIX C

OBSERVED FAUNA LISTING

Fauna Observed During Survey Period

Waroona Cemetery

Compiled by Greg Harewood - December 2022

Class Family Species	Common Name	Conservation Status
----------------------------	----------------	------------------------

Reptilia

Scincidae Skinks

<i>Cryptoblepharus buchananii</i>	Fence Skink	LC
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Aves

Columbidae Pigeons, Doves

<i>Phaps chalcoptera</i>	Common Bronzewing	Bh LC
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Psittacidae Parrots

<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	VU Bp LC
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<i>Platycercus spurius</i>	Red-capped Parrot	LC
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<i>Platycercus zonarius</i>	Australian Ringneck	LC
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<i>Zanda latirostris</i>	Carnaby's Black Cockatoo	EN Bp EN
--------------------------	--------------------------	----------

Halcyonidae Tree Kingfishers

<i>Dacelo novaeguinea</i>	Laughing Kookaburra	Introduced
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Acanthizidae Thornbills, Geryones, Fieldwrens & Whitefaces

<i>Gerygone fusca</i>	Western Gerygone	LC
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Pardalotidae Pardalotes

<i>Pardalotus striatus</i>	Striated Pardalote	LC
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Meliphagidae Honeyeaters, Chats

<i>Anthochaera carunculata</i>	Red Wattlebird	LC
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<i>Lichmera indistincta</i>	Brown Honeyeater	LC
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BC Act Status/EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, BC Act 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.

Class Family Species	Common Name	Conservation Status
Dicruridae Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo		
<i>Grallina cyanoleuca</i>	Magpie-lark	LC
Cracticidae Currawongs, Magpies & Butcherbirds		
<i>Cracticus tibicen</i>	Australian Magpie	LC
Corvidae Ravens, Crows		
<i>Corvus coronoides</i>	Australian Raven	LC

BC Act Status/EPBC Act Status - CR = Critically Endangered, EN = Endangered, VU = Vulnerable, EX = Extinct, BC Act 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 Size of Hollow Entrance	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow
wpt001	50H	399484	6364933	Marri	20+	>50	0				
wpt002	50H	399483	6364900	Marri	15-20	>50	0				
wpt003	50H	399489	6364890	Marri	20+	>50	0				
wpt004	50H	399507	6364888	Jarrah	15-20	>50	0				
wpt005	50H	399491	6364866	Jarrah	15-20	>50	0				
wpt006	50H	399495	6364868	Marri	15-20	>50	0				
wpt007	50H	399504	6364864	Marri	15-20	>50	0				
wpt008	50H	399509	6364867	Jarrah	15-20	>50	0				
wpt009	50H	399519	6364858	Jarrah	15-20	>50	0				
wpt010	50H	399506	6364842	Marri	15-20	>50	0				
wpt011	50H	399503	6364841	Marri	20+	>50	0				
wpt012	50H	399501	6364844	Jarrah	15-20	>50	0				
wpt013	50H	399533	6364843	Marri	20+	>50	0				
wpt014	50H	399582	6364846	Jarrah	20+	>50	2+	Small, Medium & Large (Cockatoo)	Bees	No Signs	Yes
wpt015	50H	399600	6364844	Jarrah	15-20	>50	0				
wpt016	50H	399608	6364843	Dead Unknown	15-20	>50	2+	Small & Medium	No Signs	No Signs	No
wpt017	50H	399642	6364845	Jarrah	15-20	>50	0				
wpt018	50H	399642	6364843	Jarrah	15-20	>50	0				
wpt019	50H	399648	6364843	Marri	15-20	>50	0				
wpt020	50H	399657	6364846	Marri	15-20	>50	1	Medium	Bees	No Signs	No
wpt021	50H	399677	6364854	Marri	15-20	>50	0				
wpt022	50H	399676	6364869	Jarrah	15-20	>50	0				
wpt023	50H	399668	6364870	Jarrah	15-20	>50	0				
wpt024	50H	399654	6364878	Jarrah	15-20	>50	0				
wpt025	50H	399643	6364870	Jarrah	15-20	>50	0				
wpt026	50H	399637	6364868	Jarrah	15-20	>50	0				
wpt027	50H	399632	6364874	Marri	15-20	>50	0				

wpt028	50H	399622	6364868	Jarrah	15-20	>50	0				
wpt029	50H	399613	6364870	Jarrah	15-20	>50	0				
wpt030	50H	399573	6364859	Jarrah	20+	>50	2+	Small	No Signs	No Signs	No
wpt031	50H	399562	6364856	Jarrah	20+	>50	0				
wpt032	50H	399539	6364853	Jarrah	15-20	>50	0				
wpt033	50H	399525	6364854	Marri	15-20	>50	0				
wpt034	50H	399540	6364873	Jarrah	15-20	>50	0				
wpt035	50H	399544	6364882	Jarrah	15-20	>50	0				
wpt036	50H	399626	6364854	Jarrah	15-20	>50	0				
wpt037	50H	399641	6364851	Jarrah	15-20	>50	0				
wpt038	50H	399654	6364855	Dead Unknown	15-20	>50	2+	Small, Medium & Large (Cockatoo)	No Signs	No Signs	Yes
wpt039	50H	399656	6364852	Dead Unknown	15-20	>50	2+	Small, Medium & Large (Cockatoo)	No Signs	No Signs	Yes
wpt040	50H	399668	6364853	Jarrah	15-20	>50	0				
wpt041	50H	399675	6364894	Marri	15-20	>50	0				
wpt042	50H	399677	6364911	Marri	20+	>50	0				
wpt043	50H	399677	6364921	Marri	15-20	>50	0				
wpt044	50H	399644	6364929	Marri	15-20	>50	0				
wpt045	50H	399613	6364930	Marri	15-20	>50	0				
wpt046	50H	399613	6364901	Jarrah	15-20	>50	0				
wpt047	50H	399610	6364899	Jarrah	15-20	>50	0				
wpt048	50H	399593	6364891	Jarrah	15-20	>50	0				
wpt049	50H	399620	6364894	Jarrah	15-20	>50	0				
wpt050	50H	399634	6364908	Marri	20+	>50	0				
wpt051	50H	399660	6364885	Marri	15-20	>50	0				
wpt052	50H	399666	6364901	Marri	15-20	>50	0				
wpt053	50H	399667	6364905	Marri	15-20	>50	0				
wpt054	50H	399654	6364918	Jarrah	15-20	>50	0				
wpt055	50H	399674	6364931	Marri	20+	>50	0				
wpt056	50H	399675	6364936	Dead Unknown	10-15	>50	0				
wpt057	50H	399677	6364938	Marri	15-20	>50	0				
wpt058	50H	399677	6364949	Marri	20+	>50	0				
wpt059	50H	399676	6364987	Jarrah	15-20	>50	0				
wpt060	50H	399635	6364993	Marri	15-20	>50	0				
wpt061	50H	399640	6364972	Jarrah	15-20	>50	0				

wpt062	50H	399641	6364971	Jarrah	15-20	>50	0				
wpt063	50H	399643	6364967	Jarrah	20+	>50	0				
wpt064	50H	399648	6364966	Jarrah	15-20	>50	0				
wpt065	50H	399638	6364960	Jarrah	15-20	>50	0				
wpt066	50H	399632	6364964	Marri	15-20	>50	0				
wpt067	50H	399646	6364938	Marri	20+	>50	0				
wpt068	50H	399654	6364938	Marri	15-20	>50	0				
wpt069	50H	399662	6364940	Marri	15-20	>50	0				
wpt070	50H	399664	6364940	Marri	15-20	>50	0				
wpt071	50H	399666	6364942	Marri	15-20	>50	0				
wpt072	50H	399670	6365012	Dead Jarrah	15-20	>50	2+	Small, Medium & Large (Cockatoo)	No Signs	No Signs	Yes
wpt073	50H	399656	6365036	Jarrah	15-20	>50	0				
wpt074	50H	399646	6365030	Dead Unknown	15-20	>50	2+	Small, Medium & Large (Cockatoo)	No Signs	No Signs	Yes
wpt075	50H	399631	6365030	Jarrah	20+	>50	2+	Small & Medium	No Signs	No Signs	No
wpt076	50H	399621	6365028	Jarrah	15-20	>50	0				
wpt077	50H	399575	6365033	Dead Jarrah	15-20	>50	2+	Small & Medium	Bees	No Signs	No
wpt078	50H	399570	6365035	Marri	15-20	>50	0				
wpt079	50H	399562	6365032	Marri	20+	>50	0				
wpt080	50H	399543	6365034	Marri	20+	>50	0				
wpt081	50H	399514	6365032	Jarrah	20+	>50	2+	Small & Medium	Bees	No Signs	No
wpt082	50H	399512	6365037	Marri	20+	>50	2+	Small	No Signs	No Signs	No
wpt083	50H	399506	6365030	Marri	15-20	>50	0				
wpt084	50H	399498	6365031	Jarrah	15-20	>50	0				
wpt085	50H	399479	6365031	Jarrah	20+	>50	1	Small	No Signs	No Signs	No
wpt086	50H	399478	6365028	Jarrah	20+	>50	1	Small	No Signs	No Signs	No
wpt087	50H	399496	6365006	Marri	20+	>50	0				
wpt088	50H	399504	6364999	Marri	15-20	>50	0				
wpt089	50H	399517	6364994	Jarrah	15-20	>50	0				
wpt090	50H	399518	6365008	Marri	15-20	>50	0				
wpt091	50H	399524	6365023	Marri	15-20	>50	2+	Small	No Signs	No Signs	No
wpt092	50H	399529	6365026	Jarrah	15-20	>50	0				
wpt093	50H	399531	6365018	Jarrah	20+	>50	2+	Small	No Signs	No Signs	No
wpt094	50H	399567	6365024	Marri	15-20	>50	0				
wpt095	50H	399569	6365020	Jarrah	20+	>50	2+	Small	No Signs	No Signs	No

wpt096	50H	399598	6365011	Jarrah	20+	>50	0					
wpt097	50H	399651	6365014	Jarrah	15-20	>50	0					
wpt098	50H	399649	6365019	Jarrah	15-20	>50	2+	Small & Medium	No Signs	No Signs	No	
wpt099	50H	399626	6365017	Jarrah	15-20	>50	0					
wpt100	50H	399604	6365021	Jarrah	20+	>50	2+	Small, Medium & Large (Cockatoo)	No Signs	No Signs	Yes	
wpt101	50H	399596	6365028	Jarrah	20+	>50	0					
wpt102	50H	399590	6365024	Marri	15-20	>50	0					
wpt103	50H	399588	6365021	Jarrah	20+	>50	0					
wpt104	50H	399551	6365002	Jarrah	15-20	>50	0					
wpt105	50H	399551	6364998	Jarrah	15-20	>50	0					
wpt106	50H	399502	6364934	Unknown Euc	15-20	>50	0					

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