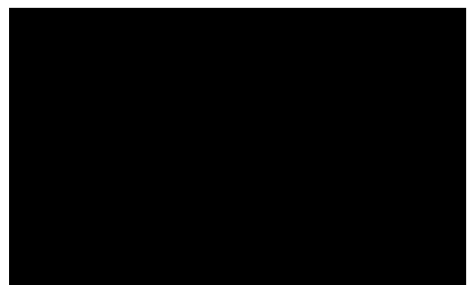
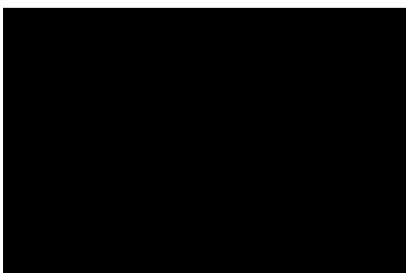


Fauna Assessment
Proposed Clearing Permit Area
Intersection
Orchard, Clayton and Yealering-Kulin Roads
Shire of Kulin



February 2020



Executive Summary

The Shire of Kulin is proposing to clear up to 0.42 hectares of vegetation to allow for the upgrade of the intersection between Orchard, Clayton and Yealering-Kulin Roads (the Survey Area) (**Figure 1 and Figure 2**)

This report details the results of a fauna habitat assessment of the proposed clearing area carried out to support a clearing permit application to be submitted to the Department of Water and Environmental Regulation in the near future.

The scope of works was to conduct a Level 1 fauna survey as defined by the EPA (EPA 2016a). In accordance with these guidelines the assessment has therefore included a literature review and a field reconnaissance survey. Because some listed threatened species (e.g. Carnaby's black cockatoo) are known to occur in the general area, the scope of the survey work was expanded to include a targeted assessment of the site's significance to these species as well.

Day time field survey work at the site was carried out the 21 December 2019. All survey work was carried out by Greg Harewood (Zoologist).

Examples images of the single fauna habitat/dominant vegetation type present within the Survey Area as mapped by Ecoedge (2019) are provided in **Table 2**. The extent of the unit is shown within **Figure 3**.

The remnant bushland with the Survey Area consists is totally made up of a woodland of salmon gum over low open woodland of green dumosa mallee and shrubby she-oak over an open shrubland over a low open shrubland and scattered herbs on yellow-brown loam.

Overall fauna biodiversity with the Survey Area is anticipated to be low given that it represents a small area of relatively degraded and isolated bush land with a largely cleared landscape.

The Survey Area was found to contain 11 "black cockatoo habitat trees" (i.e. DBH >30cm (Figure 3). Most of the trees (10) appeared not to contain hollows of any size. One tree was observed to contain at least two possible small hollows (entrance size <5cm), but these were assessed as being unsuitable for black cockatoos to use for nesting purposes.

The Survey Area contains a limited amount of vegetation that represents black cockatoo foraging habitat. Black cockatoos have been documented as feeding to varying degrees on salmon gum (and other small fruited eucalypts), *Allocasuarina* spp. and *Grevillea* spp. While these plant species are all present in various densities within the survey area the extent of the foraging resource is small (<0.42 ha) and its removal will not represent a significant reduction in the total extent of foraging habitat in the wider area.

No evidence of black cockatoos roosting within the Survey Area was observed and it is considered unlikely that it would be used for this purpose given the lack of large trees.

No evidence of any of the conservation significant fauna species identified during the literature review was observed. This includes secondary evidence of some fauna species such as malleefowl mounds, tracks, scats and feathers, none of which were seen.

The extent of habitats within the Survey Area is extremely small and therefore any fauna species actually present are only likely to be represented by a small number of individuals at any one time.

It is considered unlikely that any fauna species of conservation significance will be significantly impacted on by the proposed clearing. This conclusion is primarily based on the lack of suitable habitats, the known local extinction of some species and the relatively small size of the impact footprint. Impacts on fauna habitat are therefore anticipated to be localised, small/negligible and as a consequence manageable.

The assessment also indicates that the Survey Area doesn't have what would be considered a high level of biological diversity or constitute the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia and is therefore unlikely to be in variance to those clearing principles which relate directly to fauna.

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Statement of Limitations

Reliance on Data

In the preparation of this report, Ecoedge has relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report. Unless stated otherwise in the report, Ecoedge has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Ecoedge will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed to Ecoedge.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and for no other party. Ecoedge assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including, without limitation, matters arising from any negligent act or omission of Ecoedge or for any loss or damage suffered by any other party relying on the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions, and should make their own enquiries and obtain independent advice in relation to such matters.

DISCLAIMER

This fauna assessment report ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Greg Harewood ("the Author"). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints. In accordance with the scope of services, the Author has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

The conclusions 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 preparing the report. Also it should be recognised that site conditions, can change with time.

Within the limitations imposed by the scope of services, the field assessment and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

1 Introduction

The Shire of Kulin is proposing to clear vegetation to allow for the upgrade of the intersection between Orchard, Clayton and Yealering-Kulin Roads (the Survey Area) (Figures 1 and 2).

The removal of up to 0.42 hectares (ha) of vegetation will be required from the Survey Area and as such a clearing permit application will be required from the Department of Water and Environmental Regulation (DWER).

This report details the results of a fauna habitat assessment of the proposed clearing area carried out to support the clearing permit application.

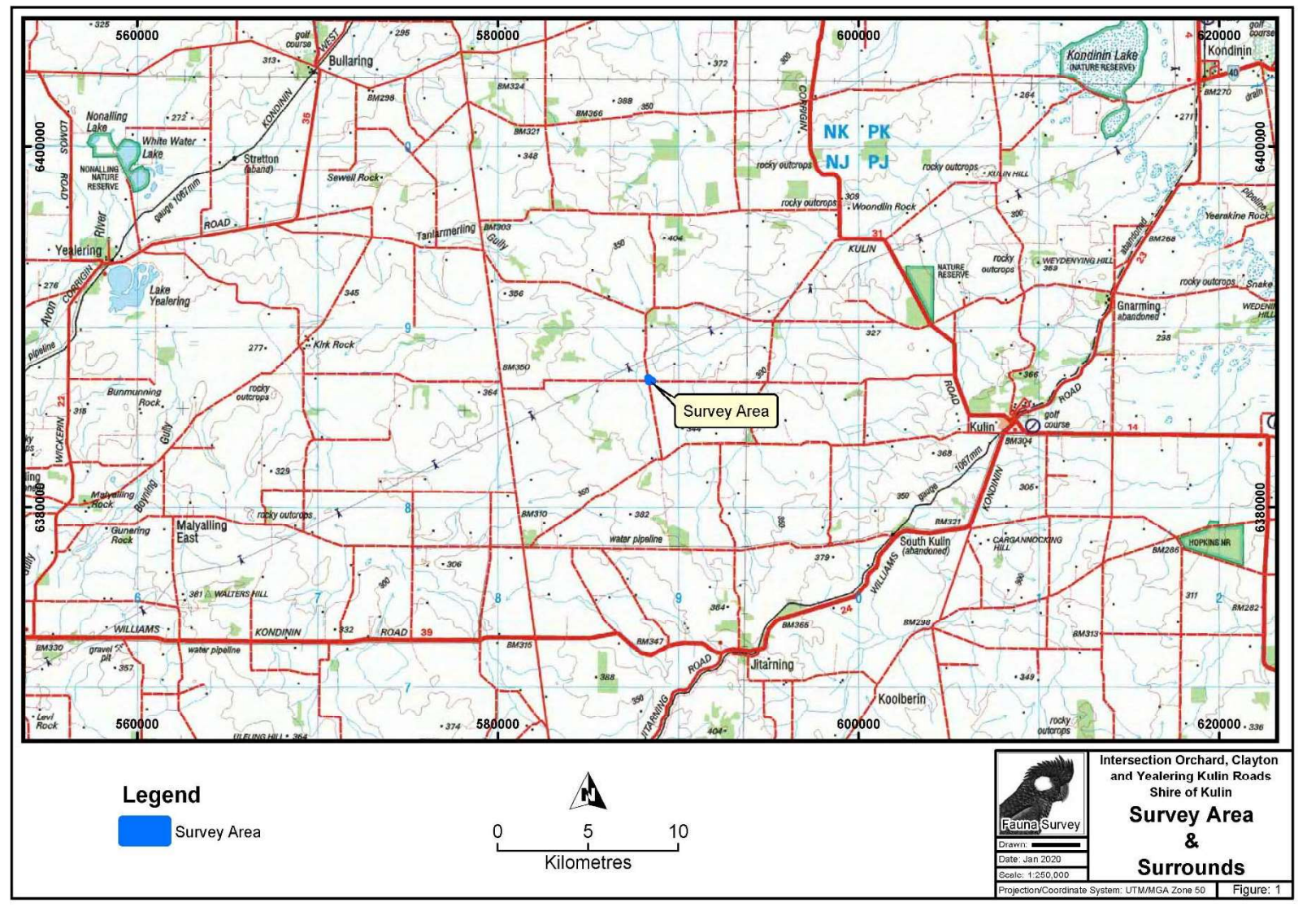


Figure 1. Survey Area and Surrounds.

1.1 Scope of Works

The scope of works was to conduct a level 1 fauna survey as defined by the EPA (EPA 2016a). Because the area falls within the documented range of Carnaby's black cockatoos the scope of the survey work has been expanded to include a Level 2 (EPA 2016b) assessment of the site's significance to this species as well. The fauna assessment has therefore included:

- Level 1 fauna assessment (in accordance with Technical Guidance – Terrestrial Fauna Surveys (EPA 2016a) and Technical Guidance – Sampling Methods for Terrestrial Vertebrate Fauna (EPA 2016b));
- Targeted searches for black cockatoo habitat/site use (habitat trees, existing and potential nest hollows, foraging and roosting habitat);
- Identification of any other potentially occurring significant fauna species and their habitat; and
- Report summarising methods and results.

This survey report has been prepared for use in DWER's clearing permit approval process and is considered suitable for this purpose.

Note: For the purposes of this report the term black cockatoo is in reference to Carnaby's black cockatoo *Calyptorhynchus latirostris*.

2 Methods

2.1 Literature Review

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 2019). A 40 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 2019). 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 Biodiversity Conservation Act 2016) (BC Act)), those species recognised under international treaties (CAMBA, JAMBA and the Bonn Convention) and Priority Fauna (as listed by DBCA).

2.2 Site Surveys

The field component of the fauna assessment was carried out on 21 December 2019 by Greg Harewood (Zoologist) and consisted of a reconnaissance survey, described in the sections below.

2.2.1 Fauna Habitat Assessment

The objective of the habitat assessment was to determine if it was likely that species of conservation significance would utilise the habitats identified within the Survey Area.

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 a flora survey of the area (Ecoedge 2020) and the site reconnaissance survey have been used to define broad fauna habitat types across the Survey Area.

2.2.2 Black Cockatoo Habitat Assessment

The following methods were employed during the black cockatoo habitat assessment to comply with the defined scope of works and are based on guidelines published by the DotEE (Commonwealth of Australia 2012) 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.

Habitat used by black cockatoos have been placed into three categories by the DotEE (Commonwealth of Australia 2012) these being:

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

2.2.2.1 Black Cockatoo Breeding Habitat

The black cockatoo breeding habitat assessment aimed to identify all suitable breeding tree species within the Survey Area that have a Diameter at Breast Height (DBH) equal to or greater than 30cm (>50 cm for trees other than wandoo and salmon gum). The DBH of each tree was estimated using a pre-made callipers.

Target tree species included wandoo, salmon gum, York gum and any other *Corymbia/Eucalyptus* species of a suitable size that was present. *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);
- Medium = ~5cm-10cm diameter (i.e. entrance too small for a black cockatoo);
- Large = ~>10cm diameter (entrance large enough for a black cockatoo but possible hollow appears to be unsuitable for nesting i.e. wrong orientation, too small, too low or too shallow); or
- Large (cockatoo) = ~>10cm diameter (entrance appears big enough to provide access to a possible hollow that may be suitable for a black cockatoo to use for nesting).

Based on this assessment trees present within the Survey Area have been placed into one of four categories:

- Tree < 30cm DBH or an unsuitable species (not recorded);
- Tree >30cm DBH, no hollows seen;
- Tree >30cm DBH, one or more hollows seen, none of which were considered suitable for black cockatoos to use for nesting; or
- Tree >30cm 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 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 considered potentially suitable for occupation by a 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 black cockatoo 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). Trees with possible nest hollows were also scratched and raked with a large stick/pole in attempt to flush any sitting birds from hollows and calls of chicks were also listened for. It should be noted that the survey may have been conducted outside of the main breeding season of one or more of the three species of black cockatoo

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.

2.2.2.2 *Black Cockatoo Foraging Habitat*

The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the reconnaissance survey was recorded. The nature and extent of potential foraging habitat present was also documented irrespective of the presence of any actual foraging evidence.

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.

2.2.2.3 *Black Cockatoo Roosting Habitat*

Direct and indirect evidence of black cockatoos roosting within trees was with the Survey Area was noted if 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.

2.2.3 Other Fauna Species of Conservation Significance

Evidence of the presence or likely presence of other fauna species of conservation significance (or suitable habitat) was searched for and recorded concurrent with other site surveys. The aim was to obtain enough information to make a definitive comment on the likely significance of the Survey Area to other fauna species of conservation significance.

Methods involved searching microhabitats such as logs, rocks, leaf litter and observations with binoculars. Secondary evidence of a species presence such as tracks, scats, skeletal remains, foraging evidence or calls were also noted if observed/heard.

2.2.4 Opportunistic Fauna Observations

Opportunistic observations of 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/listening for evidence (i.e. individuals, nest mounds, burrows, tracks, scats, calls) of potential conservation significant species including investigating under logs, rocks and leaf litter.
- Observing bird species with binoculars.

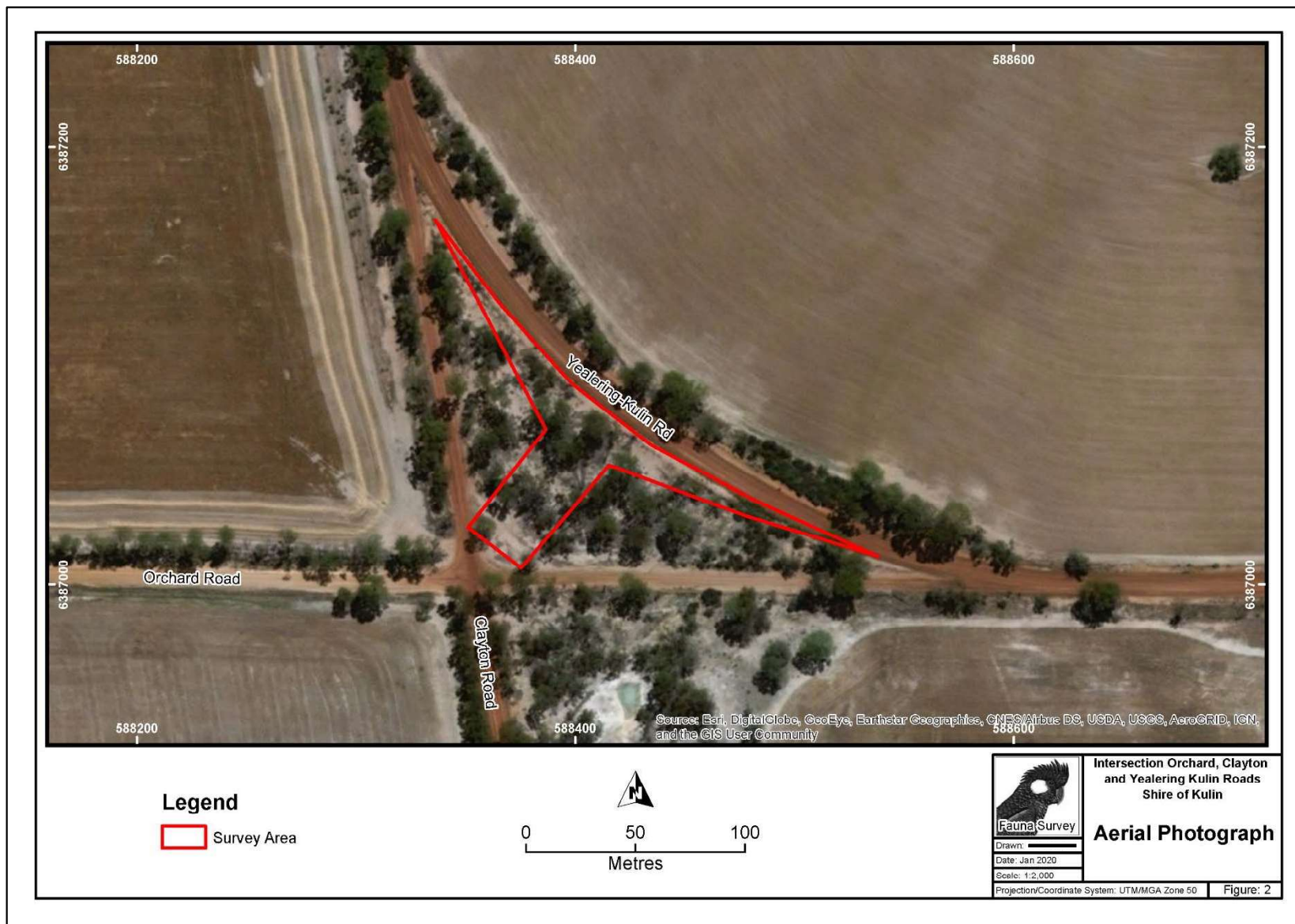


Figure 2. Aerial Photograph.

3 Survey Limitations

No seasonal sampling has been 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 and are therefore merely indicative of the environmental condition of the site at the time of the field assessments. It should also be recognised that site conditions can change with time.

Some fauna species are reported as potentially occurring based on there being suitable habitat (quality and extent) within the Survey Area or immediately adjacent. With respect to opportunistic observations, the possibility exists that certain species may not have been detected during field investigations due to:

- seasonal inactivity during the field survey;
- species present within micro habitats not surveyed;
- cryptic species able to avoid detection; and
- transient wide-ranging species not present during the survey period.

Lack of observational data on some species should therefore 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.

The habitat requirements and ecology of many of the species known to occur in the wider area are often not well understood or documented. It can therefore be difficult to exclude species from the potential list based on an apparent lack of a specific habitat or microhabitat within the Survey Area. Because of this limitation the potential fauna list produced is most likely an overestimation of those species that actually utilise the Survey Area for some purpose. Some species may be present in the general area but may only use the Survey Area itself on rare occasions or as vagrants/transients.

In recognition of survey limitations, a precautionary approach has been adopted for this assessment. Any fauna species that would possibly occur within the Survey Area (or immediately adjacent), as identified through ecological databases, publications, discussions with local experts/residents and the habitat knowledge of the Author, has been assumed to potentially occur in the Survey Area.

During the black cockatoo habitat survey 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.

4 Results

4.1 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 2019) and Protected Matter Search Tool (DotEE 2019) 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/ DBCA Priority	EPBC Act
Unnamed fairy shrimp <i>Branchinella simplex</i>	P1	-
Malleefowl <i>Leipoa ocellata</i>	S3	VU
Migratory Shorebirds/Wetland Species	Various	Various
Blue-billed Duck <i>Oxyura australis</i>	P4	-
Peregrine Falcon <i>Falco peregrinus</i>	S7	-
Carnaby's Black Cockatoo <i>Calyptorhynchus latirostris</i>	S2	EN
Muir's Corella <i>Cacatua pastinator pastinator</i>	S7	-
Western Rosella (inland) <i>Platycercus icterotis xanthogenys</i>	P4	-
Fork-tailed Swift <i>Apus pacificus</i>	S5	Mig
Grey Wagtail <i>Motacilla cinerea</i>	S5	Mig
Chuditch <i>Dasyurus geoffroii</i>	S3	VU
Red-tailed Phascogale <i>Phascogale calura</i>	S3	VU
Numbat <i>Myrmecobius fasciatus</i>	S3	VU
Bilby <i>Macrotis lagotis</i>	S3	VU
Western Brush Wallaby <i>Notamacropus irma</i>	P4	-
Tammar Wallaby <i>Notamacropus eugenii derbianus</i>	P4	-

¹ See Appendix A for conservation status codes

4.2 Site Surveys


4.2.1 Fauna Habitat Assessment

Examples images of the single fauna habitat/dominant vegetation type present within the Survey Area as mapped by Ecoedge (2019) are provided in **Table 2**. The extent of the unit is shown within **Figure 2**.

The remnant bushland with the Survey Area consists is totally made up of a woodland of salmon gum over low open woodland of green dumosa mallee and shrubby she-oak over an open shrubland over a low open shrubland and scattered herbs on yellow-brown loam.

Overall fauna biodiversity with the Survey Area is anticipated to be low given that it represents a small area of relatively degraded and isolated bush land with a largely cleared landscape.

Table 2. Example Images of the Fauna Habitats within the Survey Area

Fauna Habitat Description	Example Images
Woodland of Salmon Gum (<i>Eucalyptus salmonophloia</i>) over low open woodland of Green Dumosa Mallee (<i>E. phenax</i> subsp. <i>Phenax</i>) and Shrubby she-oak (<i>Allocasuarina campestris</i>) over an open shrubland over a low open shrubland and scattered herbs on yellow-brown loam.	 <p>The top image shows a woodland of Salmon Gum trees over low open woodland of Green Dumosa Mallee and Shrubby she-oak. The bottom image shows a similar habitat with a dirt road in the foreground.</p>

4.2.2 Black Cockatoo Habitat Assessment

4.2.2.1 Black Cockatoo Habitat Tree Assessment

The Survey Area was found to contain 11 “black cockatoo habitat trees” (i.e. DBH >30cm (Figure 3). Most of the trees (10) appeared not to contain hollows of any size. One tree was

observed to contain at least two possible small hollows (entrance size <5cm), but these were assessed as being unsuitable for black cockatoos to use for nesting purposes.

Additional details on each habitat trees can be found in Appendix C

4.2.2.2 Black Cockatoo Foraging Habitat Assessment

The Survey Area contains a limited amount of vegetation that represents black cockatoo foraging habitat. Black cockatoos have been documented as feeding to varying degrees on salmon gum (and other small fruited eucalypts), *Allocasuarina* spp. and *Grevillea* spp. While these plant species are all present in various densities within the survey area the extent of the foraging resource is small (<0.42 ha) and its removal will not represent a significant reduction in the total extent of foraging habitat in the wider area.

4.2.2.3 Black Cockatoo Roosting Habitat Assessment

No evidence of black cockatoos roosting within the Survey Area was observed and it is considered unlikely that it would be used for this purpose given the lack of large trees.

4.2.3 Other Fauna Species of Conservation Significance

No evidence of any of the conservation significant fauna species identified during the literature review was observed. This includes secondary evidence of some fauna species such as malleefowl mounds, tracks, scats and feathers, none of which were seen.

The extent of habitats within the Survey Area is extremely small and therefore any fauna species actually present are only likely to be represented by a small number of individuals at any one time.

4.2.4 Opportunistic Fauna Observations

Four fauna species were positively identified as being present during the site reconnaissance survey or were pictured on camera traps, these being:

- Black-faced Cuckoo-shrike (*Coracina novaehollandiae*);
- Yellow-throated Miner (*Manorina flavigula*);
- Australian Magpie (*Cracticus tibicen*);
- Grey Butcherbird (*Cracticus torquatus*).

The limited number of fauna species observed can be attributed to the relatively short space of time spent on site (1 hour), its' very small size and the uniform nature of the habitat present.



Figure 3. Fauna Habitats & Habitat Trees

5 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 within the Survey Area has been assessed. A summary of this assessment is presented in Table 3.

Table 3. Likelihood of Occurrence – Fauna Species of Conservation Significance (continues on following page).

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Potential Impact
	BC Act/ DBCA Priority	EPBC Act				
Unnamed fairy shrimp <i>Branchinella simplex</i>	P1	-	Temporary standing waters, i.e. in clay pans, gnammas on rock outcrops, vegetated pools, newly filled freshwater lakes, salt lakes, ephemeral farm dams, roadside ditches, disconnected creek pools	No	Would not Occur	Nil
Malleefowl <i>Leipoa ocellata</i>	S3	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	Nil
Migratory Shorebirds/Wetland Species	Various	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	Nil
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	Nil
Peregrine Falcon <i>Falco peregrinus</i>	S7	-	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/Marginal	Possibly Occurs (occasional transients only)	Nil
Carnaby's black cockatoo <i>Calyptrorhynchus latirostris</i>	S2	EN	Forests, woodlands, heathlands, farms; feeds on <i>Banksia</i> , <i>Hakea</i> and Marri.	Yes – minor low-quality foraging habitat only.	Possibly Occurs	Loss/modification of a very small area of possible foraging habitat.

Species	Conservation Status		Habitat Preferences	Habitat Present	Likelihood of Occurrence	Potential Impact
	BC Act/ DBCA Priority	EPBC Act				
Western Rosella (inland) <i>Platycercus icterotis xanthogenys</i>	P4	-	Mainly eucalypt and casuarina woodlands and scrubs, especially of wandoo, flooded gum, salmon gum, tall mallee and <i>Allocasuarina huegeliana</i> .	Yes – minor foraging habitat only.	Possibly Occurs	Loss/modification of a small area of possible foraging habitat.
Fork-tailed Swift <i>Apus pacificus</i>	S5	Mig	Low to very high airspace over varied habitat from rainforest to semi desert.	Yes – air space	Possibly Occurs (very rare transients only)	Nil
Grey Wagtail <i>Motacilla cinerea</i>	S5	Mig	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	Nil
Chuditch <i>Dasyurus geoffroii</i>	S3	VU	Forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest.	No/Marginal	Would not Occur	Nil
Red-tailed Phascogale <i>Phascogale calura</i>	S3	VU	Red-tailed Phascogale's preferred habitats are Allocasuarina woodlands with hollow-containing eucalypts (e.g. <i>Eucalyptus wandoo</i>) and <i>Gastrolobium</i> spp.	No	Would not Occur	Nil
Numbat <i>Myrmecobius fasciatus</i>	S3	VU	Open Woodlands generally dominated by eucalypts that provide hollow logs and branches for shelter and termites for food.	No	Would not Occur	Nil
Bilby <i>Macrotis lagotis</i>	S3	VU	Acacia shrublands, spinifex and hummock grassland. Mitchell grass and stony downs country if cracking clay, also desert sand plains and dune fields.	No	Would not Occur – regionally extinct.	Nil
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.	No/Marginal	Would not Occur – locally extinct.	Nil
Tammar Wallaby <i>Notamacropus eugenii derbianus</i>	P4	-	Dense, low vegetation for daytime shelter and open grassy areas for feeding. This species inhabits coastal scrub, heath, dry sclerophyll forest and thickets in mallee and woodland.	No	Would not Occur – locally extinct.	Nil

See Appendix A for conservation status codes

As indicated no fauna species of conservation significance were recorded within the Survey Area though the literature review and habitat assessment suggest that some species may occur, at least in the general area.

The likelihood of occurrence and impact assessment does however indicate that no fauna species of conservation significance is likely to be significantly affected by the

proposal if it proceeds in its current form. This conclusion is primarily based on the limited extent of the proposed clearing and the presence of large expanses and wider range of habitats in adjoining/nearby areas.

6 Legislative Obligations – Environmental Protection Act 1986

The purpose of the Environmental Protection Act (1986) is “...to provide for an Environmental Protection Authority, for the prevention, control and abatement of pollution and environmental harm, for the conservation, preservation, protection enhancement and management of the environment and for matters incidental to or connected with the foregoing”.

The powers of the Environmental Protection Act 1986 are administered by DWER, which in relevant cases advises to the EPA.

Legislation proclaimed on 8 July 2004 protects all native vegetation in Western Australia. Under the law, clearing native vegetation is prohibited, unless a clearing permit is granted by the DWER, or the clearing is for an exempt purpose. These exemptions ensure that low impact day to day activities involving clearing can be undertaken. People that wish to clear are required to submit an application if an exemption does not apply.

Clearing applications are assessed against ten defined clearing principles related to native vegetation in the EP Act. These principles provide a guide for when native vegetation should not be cleared and DWER must consider all 10 principles when making a decision on whether or not to issue a clearing permit. DWER has set out the minimum requirements and standards for addressing each of the principles in detail in its assessment methodology.

Any proposed clearing should not be in variance to any of the 10 clearing principles, these being:

Native vegetation should not be cleared if:

- (a) it comprises a high level of biological diversity;
- (b) it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia;
- (c) it includes, or is necessary for the continued existence of, rare flora;
- (d) it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community;
- (e) it is significant as a remnant of native vegetation in an area that has been extensively cleared;

(f) it is growing in, or in association with, an environment associated with a watercourse or wetland;

(g) the clearing of the vegetation is likely to cause appreciable land degradation;

(h) the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;

(i) the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or

(j) clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

One purpose of the assessment reported on here is to provide information relevant to fauna as covered by Principle (a) & (b).

Based on the assessment results and despite the fact that the Survey Area may possibly be utilised by some species of conservation significance it is the Author's opinion that the site doesn't have what would be considered a high level of biological diversity or constitute the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

This opinion is based on the fact that fauna habitats present within the Survey Area are typical of that found in the general area, the extent of clearing is very small and the fauna assemblage present is very unlikely to be different to that found in similar habitats located elsewhere in the immediate vicinity.

It can therefore be concluded that the Survey Area does not contain habitats of high ecological significance from a faunal perspective or contain faunal assemblages that are ecologically significant. The vegetation types proposed to be cleared are well represented within the local area including several reserves, and therefore it is unlikely the areas to be cleared would be considered to be locally or regionally significant remnants.

The Survey Area is not considered to contain an unusually high level of biological diversity and the proposed clearing is therefore not considered to be at variance with Principle (a). In addition, based on the assessment above, vegetation proposed to be cleared is not considered to contain significant habitat for any fauna species and the therefore the proposed clearing is also not anticipated to be at variance to Principle (b).

7 Conclusion

The fauna assessment of the Survey Area was primarily undertaken for the purposes of identifying the presence of conservation significant fauna species and/or their habitat.

While no fauna species of conservation significance were positively identified as utilising the Survey Area, based on habitats present, it has been determined that several species may possibly occur at times though their current status on-site and/or in the general area is difficult to determine.

It is however considered unlikely that any fauna species of conservation significance will be significantly impacted on by the proposed clearing. This conclusion is primarily based on the lack of suitable habitats, the known local extinction of some species and the relatively small size of the impact footprint. Impacts on fauna habitat are therefore anticipated to be localised, small/negligible and as a consequence manageable.

The assessment also indicates that the Survey Area doesn't have what would be considered a high level of biological diversity or constitute the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia and is therefore unlikely to be in variance to those clearing principles which relate directly to fauna.

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*.

Department of Biodiversity, Conservation and Attractions (DBCA) (2019). NatureMap Database search. "By Circle" - 117° 56' 32" E, 32° 39' 04" S (plus 40km buffer). Accessed 27/12/2019.

Department of the Environment and Energy (DotEE) (2019). EPBC Act Protected Matters Report: "By Point" - 32.65104 117.94209 (1km Buffer). Available from: <http://www.environment.gov.au>. Accessed 27/12/2019.

Ecoedge (2020). Reconnaissance and Targeted Flora and Vegetation Survey - Intersection Orchard, Clayton and Yealering-Kulin Roads. Unpublished report for the Shire of Kulin

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

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

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 <i>EPBC Act</i>

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

Wildlife Conservation (Specially Protected Fauna) Notice 2018 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 in the immediate future.
Schedule 2 (S2) Endangered species	EN	Threatened species considered to be facing a very high risk of extinction in the wild in the near future.
Schedule 3 (S3) Vulnerable species	VU	Threatened species considered to be facing a high risk of extinction in the wild in the medium-term future.
Schedule 4 (S4) Presumed extinct species	EX	Species which have been adequately searched for and there is no reasonable doubt that the last member of the species has died.
Schedule 5 (S5) Migratory birds protected under an international agreement	MI	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or 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	<p>(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.</p> <p>(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.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>

*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*™ 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 NatureMap & Protected Matters Search Tool Results.

NatureMap - Kulin

Created By [REDACTED] on 27/12/2019

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 117° 56' 32" E, 32° 39' 04" S
Buffer 40km
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	464	5106
Other specially protected fauna	3	46
Priority 1	1	2
Priority 4	4	8
Protected under international agreement	4	10
Rare or likely to become extinct	7	65
TOTAL	483	5237

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Rare or likely to become extinct				
1.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
2.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
3.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
4.	24092 <i>Dasyurus geoffroii</i> (Chuditch, Western Quoll)		T	
5.	24557 <i>Leipoa ocellata</i> (Malleefowl)		T	
6.	24168 <i>Macrotis lagotis</i> (Bilby, Dalgyte, Ninu)		T	
7.	24146 <i>Myrmecobius fasciatus</i> (Numbat, Walpurti)		T	
Protected under international agreement				
8.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
9.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
10.	24516 <i>Stercorarius longicaudus</i> (long-tailed jaeger, long-tailed skua)		IA	
11.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
Other specially protected fauna				
12.	24724 <i>Cacatua pastinator</i> subsp. <i>pastinator</i> (Muir's Corella, Muir's Corella (Western Corella SW WA))		S	
13.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
14.	24098 <i>Phascogale calura</i> (Red-tailed Phascogale, Kenngoor)		S	
Priority 1				
15.	33935 <i>Branchinella simplex</i> (fairy shrimp (inland WA))		P1	
Priority 4				
16.	48024 <i>Notamacropus eugenii</i> subsp. <i>derbianus</i> (Tammar Wallaby, Tammar)		P4	
17.	48022 <i>Notamacropus irma</i> (Western Brush Wallaby)		P4	
18.	24328 <i>Oxyura australis</i> (Blue-billed Duck)		P4	
19.	24746 <i>Platycercus icterotis</i> subsp. <i>xanthogenys</i> (Western Rosella (inland))		P4	
Non-conservation taxon				
20.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
21.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
22.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
23.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
24.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
25.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
26.	24282 <i>Accipiter fasciatus</i> subsp. <i>fasciatus</i> (Brown Goshawk)			
27.	<i>Acerella falcipes</i>			
28.	<i>Aedes</i> sp.			
29.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
30.	24301 <i>Aegotheles cristatus</i> subsp. <i>cristatus</i> (Australian Owlet-nightjar)			
31.	<i>Agraptocorixa parvipunctata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
32.	<i>Agraptocorixa</i> sp.			
33.	<i>Ainudrilus nhama</i>			
34.	<i>Alboa worooa</i>			
35.	<i>Alboglossiphonia</i> sp.			
36.	<i>Allodessus bistrigatus</i>			
37.	<i>Alona rigidicaudis</i>			
38.	<i>Amblyomma triguttatum</i>			
39.	<i>Aname mainae</i>			
40.	24310 <i>Anas castanea</i> (Chestnut Teal)			
41.	24312 <i>Anas gracilis</i> (Grey Teal)			
42.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
43.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
44.	<i>Anax papuensis</i>			
45.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
46.	<i>Anisops gratus</i>			
47.	<i>Anisops hyperion</i>			
48.	<i>Anisops</i> sp.			
49.	<i>Anisops stali</i>			
50.	<i>Anisops thienemanni</i>			
51.	<i>Anopheles annulipes</i> s.l.			
52.	<i>Anopheles novaguinesis</i>			
53.	24561 <i>Anthochaera carunculata</i> (Red Wattlebird)			
54.	24562 <i>Anthochaera lunulata</i> (Western Little Wattlebird)			
55.	<i>Antiporus gilberti</i>			
56.	<i>Antiporus</i> sp.			
57.	<i>Apocyclops dengizicus</i>			
58.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
59.	<i>Arcella discoides</i>			
60.	41324 <i>Ardea modesta</i> (great egret, white egret)			
61.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
62.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
63.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
64.	<i>Argiope trifasciata</i>			
65.	<i>Arrenurus</i> (Arrenurus) <i>balladoniensis</i>			
66.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
67.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
68.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
69.	<i>Atrichopogon</i> sp. 2 (SAP)			
70.	<i>Austracantha minax</i>			
71.	<i>Australocamptus</i> sp. 5 (SAP)			
72.	<i>Australocyclops australis</i>			
73.	<i>Australocyclops similis</i>			
74.	<i>Australocypris insularis</i>			
75.	<i>Austroagrimon cyane</i>			
76.	<i>Austrochiltonia subtenuis</i>			
77.	<i>Austrolestes analis</i>			
78.	<i>Austrolestes annulosus</i>			
79.	<i>Austrolestes aridus</i>			
80.	<i>Austrolestes</i> sp.			
81.	<i>Austrothrombium kondininum</i>			Y
82.	24318 <i>Aythya australis</i> (Hardhead)			
83.	<i>Barnardius zonarius</i>			
84.	<i>Bdelloidea med-large</i> contracted of RJS (SAP)			
85.	<i>Bennelongia barangaroo lineage</i>			
86.	<i>Bennelongia</i> sp.			
87.	<i>Berosus approximans</i>			
88.	<i>Berosus discolor</i>			
89.	<i>Berosus munitipennis</i>			
90.	<i>Berosus nutans</i>			
91.	<i>Berosus</i> sp.			
92.	<i>Bezzia</i> sp. (not 1 or 2)			
93.	<i>Bezzia</i> sp. 2 (SAP)			
94.	24319 <i>Biziura lobata</i> (Musk Duck)			
95.	<i>Boeckella robusta</i>			
96.	<i>Boeckella triarticulata</i>			
97.	<i>Brachionus angularis</i>			
98.	<i>Brachionus quadridentatus</i>			
99.	<i>Brachionus quadridentatus cluniorbicularis</i>			
100.	<i>Brachionus urceolaris</i> s.l.			
101.	42381 <i>Brachyrophis semifasciatus</i> (Southern Shovel-nosed Snake)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
102.	<i>Branchinella affinis</i>			
103.	<i>Branchinella halsei</i>			
104.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)			
105.	<i>Cabonocypris nunkeri</i>			
106.	25714 <i>Cacatua pastinator</i> (Western Long-billed Corella)			
107.	25715 <i>Cacatua roseicapilla</i> (Galah)			
108.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
109.	24727 <i>Cacatua sanguinea subsp. westralensis</i> (Little Corella)			
110.	25598 <i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
111.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
112.	<i>Calamoecia ampulla</i>			
113.	<i>Calamoecia</i> sp. 342 (ampulla variant) (CB)			
114.	<i>Candonocypris novaezelandiae</i>			
115.	<i>Canthocamptidae</i> sp. 4 (SAP)			
116.	<i>Ceratopogonidae</i> sp.			
117.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
118.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
119.	24187 <i>Chalinolobus morio</i> (Chocolate Wattled Bat)			
120.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
121.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
122.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
123.	<i>Cherax destructor</i>			
124.	<i>Chironomus</i> aff. <i>alternans</i> (V24) (CB)			
125.	<i>Chironomus occidentalis</i>			
126.	<i>Chironomus tepperi</i>			
127.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
128.	<i>Chroicocephalus novaezelandiae</i>			
129.	24431 <i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
130.	24288 <i>Circus approximans</i> (Swamp Harrier)			
131.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
132.	<i>Cladopelma curtipalva</i>			
133.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
134.	<i>Coelopynia pruinosa</i>			
135.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
136.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
137.	<i>Conochilus dossuarius</i>			
138.	25568 <i>Coracina novaezelandiae</i> (Black-faced Cuckoo-shrike)			
139.	<i>Cormocephalus aurantiipes</i>			
140.	25592 <i>Corvus coronoides</i> (Australian Raven)			
141.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
142.	<i>Coxiella exposita</i>			
143.	<i>Coxiella glabra</i>			
144.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
145.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
146.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
147.	25456 <i>Crenadactylus ocellatus</i> (Clawless Gecko)			
148.	24918 <i>Crenadactylus ocellatus subsp. ocellatus</i> (Clawless Gecko)			
149.	<i>Cricotopus 'brevicornis'</i>			
150.	25401 <i>Crinia pseudinsignifera</i> (Bleating Froglet)			
151.	30893 <i>Cryptoblepharus buehneri</i>			
152.	25020 <i>Cryptoblepharus plagiocephalus</i>			
153.	<i>Cryptochironomus griseidorsum</i>			
154.	42385 <i>Ctenophorus chapmani</i> (Eastern Heath Dragon)			
155.	24871 <i>Ctenophorus cristatus</i> (Bicycle Dragon)			
156.	25460 <i>Ctenophorus maculatus</i> (Spotted Military Dragon)			
157.	24879 <i>Ctenophorus maculatus subsp. griseus</i> (Spotted Military Dragon)			
158.	24883 <i>Ctenophorus ornatus</i> (Ornate Crevice-Dragon)			
159.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
160.	24888 <i>Ctenophorus salinarum</i> (Salt Pan Dragon)			
161.	25039 <i>Ctenotus fallens</i>			
162.	25047 <i>Ctenotus impar</i>			
163.	25074 <i>Ctenotus schomburgkii</i>			
164.	<i>Culicoides</i> sp.			
165.	<i>Curculionidae</i> sp.			
166.	24322 <i>Cygnus atratus</i> (Black Swan)			
167.	<i>Cypretta baylyi</i>			
168.	<i>Cypricerus salinus</i>			
169.	<i>Cyprinotus cingalensis</i> (ex edwardi)			
170.	30901 <i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
171.	<i>Daphnia carinata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
172.	<i>Daphnia cephalata</i>			
173.	<i>Daphnia cf. cephalata</i>			
174.	<i>Daphnia n. sp. b (Frank Hahn) (SAP)</i>			
175.	<i>Daphnia queenslandensis</i>			
176.	<i>Daphnia sp.</i>			
177.	<i>Daphnia truncata</i>			
178.	25673 <i>Daphnoesitta chrysoptera (Varied Sittella)</i>			
179.	25766 <i>Delma fraseri (Fraser's Legless Lizard)</i>			
180.	<i>Dero digitata</i>			
181.	<i>Diacypris spinosa</i>			
182.	<i>Diaphanosoma sp.</i>			
183.	<i>Diaphanosoma unguiculatum</i>			
184.	25607 <i>Dicaeum hirundinaceum (Mistletoebird)</i>			
185.	<i>Diffugia sp.</i>			
186.	<i>Dingosa murata</i>			
187.	<i>Dingosa simsoni</i>			
188.	24929 <i>Diplodactylus granariensis subsp. granariensis</i>			
189.	24940 <i>Diplodactylus pulcher</i>			
190.	<i>Dolichopodidae sp. A (SAP)</i>			
191.	24470 <i>Dromaius novaehollandiae (Emu)</i>			
192.	24650 <i>Drymodes brunneopygia (Southern Scrub-robin)</i>			
193.	<i>Egretta novaehollandiae</i>			
194.	<i>Elanus axillaris</i>			
195.	24290 <i>Elanus caeruleus subsp. axillaris (Australian Black-shouldered Kite)</i>			
196.	47937 <i>Eileynornis melanops (Black-fronted Dotterel)</i>			
197.	<i>Enchytraeidae sp.</i>			
198.	<i>Enochrus elongatulus</i>			
199.	<i>Eolophus roseicapillus</i>			
200.	24651 <i>Eopsaltria australis subsp. griseogularis (Western Yellow Robin)</i>			
201.	<i>Ephydriidae sp. 3 (SAP)</i>			
202.	24567 <i>Epthianura albifrons (White-fronted Chat)</i>			
203.	24570 <i>Epthianura tricolor (Crimson Chat)</i>			
204.	<i>Eretes australis</i>			
205.	<i>Eriophora biapicata</i>			
206.	24379 <i>Erythronys cinctus (Red-kneed Dotterel)</i>			
207.	<i>Ethmostigmus rubripes</i>			
208.	<i>Euchlanis dilatata</i>			
209.	<i>Eucyclops australiensis</i>			
210.	<i>Eucyclops sp.</i>			Y
211.	24368 <i>Eurostopodus argus (Spotted Nightjar)</i>			
212.	<i>Eylais sp.</i>			
213.	25621 <i>Falco berigora (Brown Falcon)</i>			
214.	25622 <i>Falco cenchroides (Australian Kestrel, Nankeen Kestrel)</i>			
215.	24472 <i>Falco cenchroides subsp. cenchroides (Australian Kestrel, Nankeen Kestrel)</i>			
216.	25623 <i>Falco longipennis (Australian Hobby)</i>			
217.	<i>Ferrissia petterdi</i>			
218.	<i>Forcypomyia sp.</i>			
219.	25727 <i>Fulica atra (Eurasian Coot)</i>			
220.	24761 <i>Fulica atra subsp. australis (Eurasian Coot)</i>			
221.	34028 <i>Galaxias occidentalis (Western Minnow)</i>			
222.	<i>Gallus gallus</i>			
223.	24959 <i>Gehyra variegata</i>			
224.	24401 <i>Geopelia cuneata (Diamond Dove)</i>			
225.	25530 <i>Gerygone fusca (Western Gerygone)</i>			
226.	47962 <i>Glyciphila melanops (Tawny-crowned Honeyeater)</i>			
227.	24443 <i>Grallina cyanoleuca (Magpie-lark)</i>			
228.	<i>Gymnometriccnemus sp. B (=V45=sp. A&2=ortho sp. O)</i>			
229.	<i>Gymnometriccnemus sp.=ortho sp A (?VSC11) (SAP)</i>			
230.	24295 <i>Haliastur spheonurus (Whistling Kite)</i>			
231.	<i>Haliplus gibbus</i>			
232.	<i>Haloniscus searlei</i>			
233.	25408 <i>Heleioporus albopunctatus (Western Spotted Frog)</i>			
234.	25412 <i>Heleioporus psammophilus (Sand Frog)</i>			
235.	<i>Hemicordulia tau</i>			
236.	42408 <i>Hesperoedura reticulata</i>			
237.	<i>Heteroceridae sp.</i>			
238.	<i>Heterocypris tatei</i>			
239.	<i>Heterocypris vatia</i>			
240.	47965 <i>Hieraaetus morphnoides (Little Eagle)</i>			
241.	25734 <i>Himantopus himantopus (Black-winged Stilt)</i>			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
242.	24775	<i>Himantopus himantopus subsp. leucocephalus</i> (Black-winged Stilt)			
243.	24491	<i>Hirundo neoxena</i> (Welcome Swallow)			
244.		<i>Hoggicosa castanea</i>			
245.		<i>Holocnemus plucheii</i>			
246.		<i>Hyderodes crassus</i>			
247.		<i>Hyderodes</i> sp.			
248.		<i>Hydraena luridipennis</i>			
249.		<i>Hydrophilidae</i> sp.			
250.		<i>Hyphydrus elegans</i>			
251.		<i>Hyphydrus</i> sp.			
252.		<i>Idiomata blackwalli</i>			
253.		<i>Ilyocypris australiensis</i>			
254.		<i>Ilyodromus amplicolis</i>			
255.		<i>Ilyodromus</i> sp. 566 (aff. <i>amplicolis</i>) (south-west, SAP)			
256.		<i>Ischnura aurora aurora</i>			
257.		<i>Isometroides vesus</i>			
258.		<i>Isopedella cana</i>			
259.		<i>Keratella australis</i>			
260.		<i>Keratella slacki</i>			
261.		<i>Kiefferulus martini</i>			
262.		<i>Lacinularia</i> sp.			
263.		<i>Lamponina scutata</i>			
264.		<i>Lancetes lanceolatus</i>			
265.	24511	<i>Larus novaehollandiae subsp. novaehollandiae</i> (Silver Gull)			
266.		<i>Latrodectus hasseltii</i>			
267.		<i>Leberis cf. diaphanus</i>			
268.		<i>Lecane bulla</i>			
269.		<i>Lecane luna</i>			
270.		<i>Lecane</i> sp. s.str.			
271.		<i>Lepadella ovalis</i>			
272.		<i>Lepadella patella</i>			
273.		<i>Lepadella</i> sp.			
274.		<i>Lepidurus apus viridis</i>			
275.		<i>Leptoceridae</i> sp.			
276.	25131	<i>Lerista distinguenda</i>			
277.	25005	<i>Lialis burtonis</i>			
278.		<i>Libellulidae</i> sp.			
279.	24573	<i>Lichenostomus cratitius</i> (Purple-gaped Honeyeater)			
280.	25659	<i>Lichenostomus leucotis</i> (White-eared Honeyeater)			
281.	25661	<i>Lichmera indistincta</i> (Brown Honeyeater)			
282.		<i>Limnesia dentifera</i>			
283.		<i>Limnocythere</i> sp. 447 (aff. <i>porphyretica</i>) (SAP)			
284.	25415	<i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
285.		<i>Limnoxenus</i> sp.			
286.		<i>Limnoxenus zelandicus</i>			
287.	41413	<i>Liopholis multiscutata</i> (Bull Skink)			
288.	30935	<i>Lucasium maini</i>			
289.		<i>Lycosa australicola</i>			
290.		<i>Lycosa gilberta</i>			
291.		<i>Lycosa godeffroyi</i>			
292.		<i>Lynceus</i> sp.			
293.	24132	<i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
294.		<i>Macrothrix cf. schauinslandi</i> (SAP)			Y
295.	24326	<i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
296.	25652	<i>Malurus leucopterus</i> (White-winged Fairy-wren)			
297.	24551	<i>Malurus pulcherrimus</i> (Blue-breasted Fairy-wren)			
298.	25654	<i>Malurus splendens</i> (Splendid Fairy-wren)			
299.		<i>Manayunkia n. sp.</i>			
300.	24583	<i>Manorina flavigula</i> (Yellow-throated Miner)			
301.		<i>Megaporus howittii</i>			
302.	47997	<i>Melanodryas cucullata</i> (Hooded Robin)			
303.	25663	<i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			
304.	24736	<i>Melopsittacus undulatus</i> (Budgerigar)			
305.	25184	<i>Menetia greyii</i>			
306.		<i>Meridiecylops baylyi</i>			
307.	24598	<i>Merops ornatus</i> (Rainbow Bee-eater)			
308.		<i>Merredinia damsonoides</i>			
309.		<i>Mesochra nr flava</i>			
310.		<i>Mesocyclops brooksi</i>			
311.		<i>Mesostigmata</i> sp.			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
312.	<i>Metacyclops/Pescecyclops</i> sp.			
313.	<i>Microcarbo melanoleucos</i>			
314.	25693 <i>Microeca fascians</i> (Jacky Winter)			
315.	<i>Micronecta gracilis</i>			
316.	<i>Micronecta robusta</i>			
317.	<i>Missulena granulosa</i>			
318.	<i>Missulena hoggi</i>			
319.	<i>Missulena occatoria</i>			
320.	<i>Moina australiensis</i>			
321.	<i>Moina micrura</i> s.l.			
322.	24904 <i>Moloch horridus</i> (Thorny Devil)			
323.	<i>Molycris vokes</i>			
324.	25240 <i>Morelia spilota</i> subsp. <i>imbricata</i> (Carpet Python)			
325.	25190 <i>Morethia butleri</i>			
326.	25192 <i>Morethia obscura</i>			
327.	24223 <i>Mus musculus</i> (House Mouse)	Y		
328.	<i>Myandra bicincta</i>			
329.	25610 <i>Myiagra inquieta</i> (Restless Flycatcher)			
330.	25420 <i>Myobatrachus gouldii</i> (Turtle Frog)			
331.	<i>Mytilocypris ambiguosa</i>			
332.	<i>Mytilocypris mytiloides</i>			
333.	<i>Naididae</i> (ex <i>Tubificidae</i>)			
334.	<i>Necterosoma penicillatus</i>			
335.	<i>Necterosoma regulare</i>			
336.	<i>Nematoda</i> sp.			
337.	25421 <i>Neobatrachus albigipes</i> (White-footed Trilling Frog)			
338.	25425 <i>Neobatrachus kunapalari</i> (Kunapalari Frog)			
339.	25426 <i>Neobatrachus pelobatoides</i> (Humming Frog)			
340.	24738 <i>Neophema elegans</i> (Elegant Parrot)			
341.	<i>Nephila edulis</i>			
342.	<i>Nicodamus mainae</i>			
343.	<i>Nitocra</i> sp. 5 (nr <i>reducta</i>) (SAP)			
344.	<i>Nomindra flavipes</i>			
345.	24229 <i>Notomys mitchellii</i> (Mitchell's Hopping-mouse)			
346.	<i>Novakiella trituberculosa</i>			
347.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
348.	24194 <i>Nyctophilus geoffroyi</i> (Lesser Long-eared Bat)			
349.	<i>Ochthebius</i> sp.			
350.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
351.	<i>Oecetis</i> sp.			
352.	<i>Opisthopora</i> sp.			
353.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
354.	34011 <i>Oreoica gutturalis</i> subsp. <i>gutturalis</i> (Crested Bellbird (southern))			
355.	<i>Oribatida</i> sp.			
356.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
357.	<i>Ostracoda</i> (unident.)			
358.	<i>Ozestheria packardii</i>			
359.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
360.	<i>Paracladopelma</i> sp. A (nr M2) (SAP)			
361.	<i>Paracyclops chiltoni</i>			
362.	<i>Parakiefferiella variegatus</i>			
363.	<i>Paralimnophyes pullulus</i> (V42)			
364.	<i>Paramerina levidensis</i>			
365.	<i>Parartemia longicaudata</i>			
366.	25253 <i>Parasuta gouldii</i>			
367.	25681 <i>Pardalotus punctatus</i> (Spotted Pardalote)			
368.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
369.	<i>Paroster niger</i>			
370.	24674 <i>Pavo cristatus</i> (Common Peafowl, Indian Peafowl)	Y		
371.	<i>Perca fluviatilis</i>			
372.	<i>Pescecyclops</i> sp. 442=462=465=CB2 (salinarum in Morton)			
373.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
374.	48066 <i>Petroica boodang</i> (Scarlet Robin)			
375.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
376.	25698 <i>Phalacrocorax melanoleucos</i> (Little Pied Cormorant)			
377.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
378.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
379.	<i>Philosciidae</i> sp.			
380.	48071 <i>Phylidonyris niger</i> (White-cheeked Honeyeater)			
381.	24596 <i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
382.	24841	<i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
383.	25720	<i>Platycercus icterotis</i> (Western Rosella)			
384.	24745	<i>Platycercus icterotis</i> subsp. <i>icterotis</i> (Western Rosella)			
385.	25721	<i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
386.	24750	<i>Platycercus zonarius</i> subsp. <i>semitorquatus</i> (Twenty-eight Parrot)			
387.	24751	<i>Platycercus zonarius</i> subsp. <i>zonarius</i> (Port Lincoln Parrot)			
388.		<i>Pleuroxus inermis</i>			
389.	25703	<i>Podargus strigoides</i> (Tawny Frogmouth)			
390.	25704	<i>Podiceps cristatus</i> (Great Crested Grebe)			
391.	25510	<i>Pogona minor</i> (Dwarf Bearded Dragon)			
392.	24907	<i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
393.	24681	<i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
394.		<i>Polyarthra dolichoptera</i>			
395.		<i>Polypedilum nubifer</i>			
396.		<i>Polypedilum watsoni</i>			
397.	25722	<i>Polytelis anthopeplus</i> (Regent Parrot)			
398.	30854	<i>Polytelis anthopeplus</i> subsp. <i>westralis</i> (Regent Parrot)			
399.	24683	<i>Pomatostomus superciliosus</i> (White-browed Babbler)			
400.	34013	<i>Pomatostomus superciliosus</i> subsp. <i>ashbyi</i> (White-browed Babbler (western wheatbelt))			
401.		<i>Proalidae</i> sp.			
402.		<i>Procladius paludicola</i>			
403.	25261	<i>Pseudechis australis</i> (Mulga Snake)			
404.	25259	<i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
405.	42416	<i>Pseudonaja mengdeni</i> (Western Brown Snake)			
406.	25433	<i>Pseudophryne guentheri</i> (Crawling Toadlet)			
407.		<i>Psychodidae</i> sp.			
408.		<i>Psychodinae</i> sp. 2 (SAP)			
409.	42344	<i>Purnella albifrons</i> (White-fronted Honeyeater)			
410.	25008	<i>Pygopus lepidopodus</i> (Common Scaly Foot)			
411.		<i>Pyralidae</i> nr. sp. 39/40 of JHH (SAP)			
412.	24278	<i>Pyrrholaemus brunneus</i> (Redthroat)			
413.	24245	<i>Rattus rattus</i> (Black Rat)	Y		
414.	24776	<i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
415.		<i>Reticyprius walbu</i>			
416.		<i>Rhantus suturalis</i>			
417.	48096	<i>Rhipidura albiscapa</i> (Grey Fantail)			
418.	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
419.		<i>Rotaria</i> sp. b (SAP)			Y
420.		<i>Saldula brevicornis</i>			
421.		<i>Sarscyridopsis aculeata</i>			
422.		<i>Sciomyzidae</i> sp.			
423.		<i>Scirtidae</i> sp.			
424.		<i>Scolopendra laeta</i>			
425.		<i>Scolopendra morsitans</i>			
426.	25534	<i>Sericornis frontalis</i> (White-browed Scrubwren)			
427.	24279	<i>Sericornis frontalis</i> subsp. <i>maculatus</i> (White-browed Scrubwren)			
428.		<i>Simocephalus victoriensis</i>			
429.	25266	<i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
430.	30948	<i>Smicromis brevirostris</i> (Weebill)			
431.	24108	<i>Sminthopsis crassicaudata</i> (Fat-tailed Dunnart)			
432.	24109	<i>Sminthopsis dolichura</i> (Little long-tailed Dunnart)			
433.	24111	<i>Sminthopsis gilberti</i> (Gilbert's Dunnart)			
434.	24112	<i>Sminthopsis granulipes</i> (White-tailed Dunnart)			
435.		<i>Staphylinidae</i> sp.			
436.		<i>Sternopriscus multimaculatus</i>			
437.		<i>Sternopriscus</i> sp.			
438.		<i>Storena formosa</i>			
439.		<i>Stratiomyidae</i> sp.			
440.	25597	<i>Strepera versicolor</i> (Grey Currawong)			
441.	25590	<i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
442.	25518	<i>Strophurus spinigerus</i>			
443.	24943	<i>Strophurus spinigerus</i> subsp. <i>inornatus</i>			
444.		<i>Synsphyronus mimulus</i>			
445.		<i>Tabanidae</i> sp.			
446.	25705	<i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
447.	24207	<i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			
448.	24331	<i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
449.		<i>Tanytarsus barbitarsis</i>			
450.		<i>Tanytarsus fuscithorax/semibarbitarsis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
451.	<i>Tardigrada</i> sp.			
452.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
453.	<i>Tasmanicosa leuckartii</i>			
454.	<i>Tasmanocoenis tillyardi</i>			
455.	<i>Teyl luculentus</i>			
456.	<i>Thereuopoda lesueurii</i>			
457.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
458.	25203 <i>Tiliqua occipitalis</i> (Western Bluetongue)			
459.	25519 <i>Tiliqua rugosa</i>			
460.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
461.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
462.	<i>Trichocerca rattus</i>			
463.	<i>Trichocerca rattus carinata</i>			
464.	<i>Trichocerca</i> sp.			
465.	24755 <i>Trichoglossus haematodus</i> subsp. <i>moluccanus</i> (Rainbow Lorikeet)	Y		
466.	24158 <i>Trichosurus vulpecula</i> subsp. <i>vulpecula</i> (Common Brushtail Possum)			
467.	<i>Triplectides australis</i>			
468.	<i>Trombidioidea</i> sp. 3 (SAP)			
469.	<i>Tubifex tubifex</i>			
470.	<i>Turbellaria</i> sp.			
471.	48147 <i>Turnix varius</i> (Painted Button-quail)			
472.	24852 <i>Tyto alba</i> subsp. <i>delicatula</i> (Barn Owl)			
473.	24983 <i>Underwoodisaurus milii</i> (Barking Gecko)			
474.	<i>Urodacus novaehollandiae</i>			
475.	<i>Urodacus yaschenkoi</i>			
476.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
477.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
478.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
479.	<i>Venator immansueta</i>			
480.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
481.	<i>Wesmaldra talgomine</i>			
482.	<i>Xanthagrimon erythroneurum</i>			
483.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

Conservation Codes

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

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

EPBC Act Protected Matters Report

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

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

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

Report created: 27/12/19 17:42:45

[Summary](#)

[Details](#)

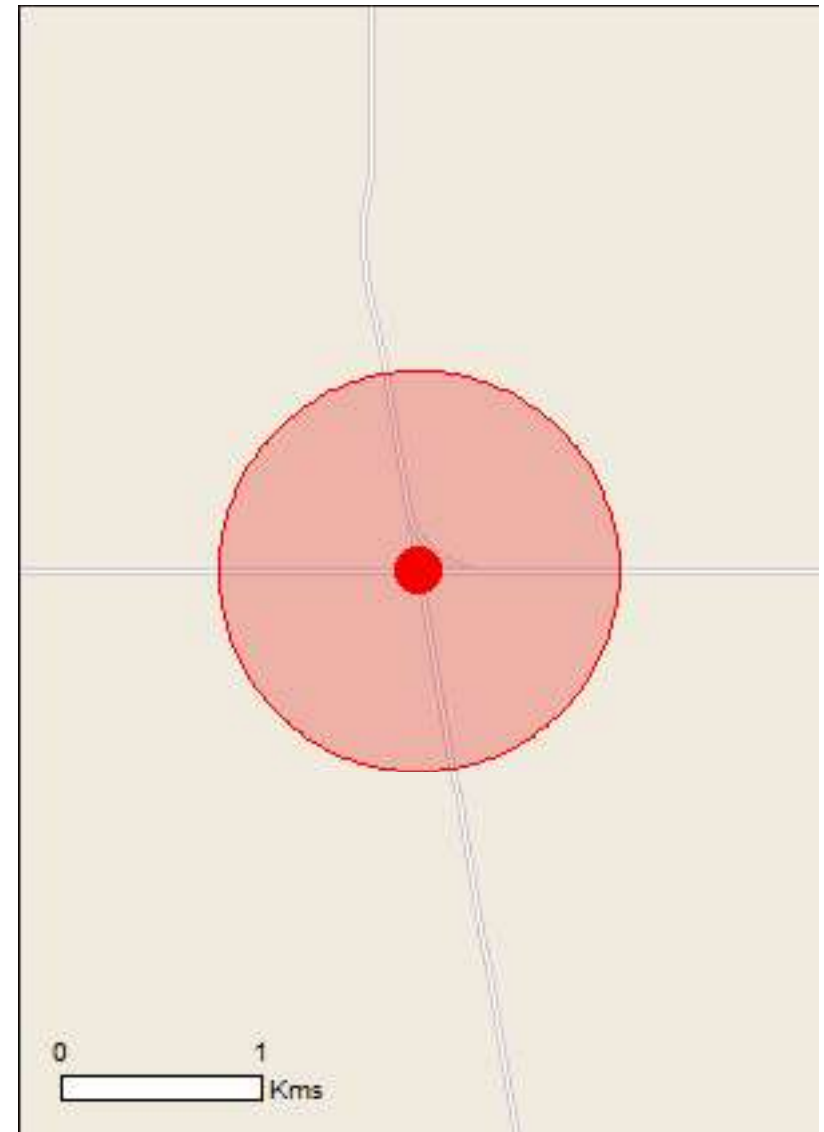
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[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

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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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	11
Listed Migratory Species:	6

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	11
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:	14
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

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
Eucalypt Woodlands of the Western Australian Wheatbelt	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[Resource Information]

Name	Status	Type of Presence
Birds		

Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat may occur within area

Mammals

Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
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Phascogale calura Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]	Vulnerable	Species or species habitat likely to occur within area
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Plants

Banksia oligantha Wagin Banksia [20697]	Endangered	Species or species habitat may occur within area
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Boronia capitata subsp. capitata a shrub [29156]	Endangered	Species or species habitat may occur within area
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Grevillea dryandroides subsp. hirsuta Hairy Phalanx Grevillea [64577]	Endangered	Species or species habitat likely to occur within area
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Grevillea scapigera Corrigin Grevillea [12195]	Endangered	Species or species habitat may occur within area
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Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat may occur within area
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Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
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
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

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the 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
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

Black-eared Cuckoo [705]	Species or species habitat likely to occur within area
Haliaeetus leucogaster	
White-bellied Sea-Eagle [943]	Species or species habitat may 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

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		
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [803]		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
Mammals		
Canis lupus familiaris		
Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus		
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer		
Feral deer species in Australia [85733]		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
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

Carrichtera annua Ward's Weed [9511]	Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]	Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]	Species or species habitat may occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]	Species or species habitat likely to occur within area

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

-32.65104 117.94209

[-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: Habitat Tree Details

Habitat Trees

DBH >50cm

Datum - GDA94

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

Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
wpt001	50H	588366	6387043	Salmon Gum	15-20	50-75	0					
wpt002	50H	588371	6387042	Salmon Gum	15-20	50-75	0					
wpt003	50H	588380	6387045	Salmon Gum	15-20	50-75	0					
wpt004	50H	588402	6387040	Salmon Gum	15-20	50-75	0					
wpt005	50H	588409	6387069	Salmon Gum	15-20	50-75	2+	Small	No Signs	No Signs	No	
wpt006	50H	588392	6387079	Salmon Gum	15-20	50-75	0					
wpt007	50H	588385	6387078	Salmon Gum	15-20	50-75	0					
wpt008	50H	588391	6387061	Salmon Gum	15-20	50-75	0					
wpt009	50H	588377	6387011	Salmon Gum	10-15	50-75	0					
wpt010	50H	588355	6387028	Salmon Gum	10-15	50-75	0					
wpt011	50H	588520	6387017	Salmon Gum	15-20	50-75	0					Bird of prey nest