

Bussell Highway - Hutton Road to Sabina section (30.91 – 44.18 SLK)

Level 1 Fauna and Targeted Western Ringtail Possum Survey

Prepared for: Main Roads Western Australia

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opeople

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Executive Summary

Main Roads South West Region (Main Roads) is planning to construct a second carriageway on a 12.4 km section of the Bussell Highway (30.91 – 44.18 Straight Line Kilometre [SLK]) between approximately 950 m west of Hutton Road to 450 m west of the Sabina River crossing.

The Project requires the clearing of native and rehabilitated/regrowth vegetation. Clearing will possibly impact on habitat for conservation significant fauna listed under the Environment Protection and Biodiversity Conservation Act (1999) (EPBC Act), particularly the Western Ringtail Possum (WRP) and potentially all three of the Black Cockatoo species. Therefore a Level 1 fauna assessment was undertaken with the primary focus being the assessment of potential habitat in the Survey Area for the Western Ringtail Possum and three species of Black Cockatoo (Baudin's, Carnaby's and Forest Red-tailed Black Cockatoo).

A 7 km Department of Parks and Wildlife threatened fauna database search and a 10 km radial NatureMap and EPBC Protected Matters Search Tool (PMST) search was undertaken from the centre of the Survey Area. The searches were undertaken to identify fauna species of conservation significance potentially occurring in the Survey Area. In addition, Greg Harewood freely provided us with his WRP survey database Harewood, G. (2012).

The field assessment was undertaken on 16 and 17 June 2016. The purpose of the field assessment was to verify the accuracy of the desktop assessment and to further delineate and characterise the fauna assemblages and fauna habitat in the Survey Area. Nonetheless, the primary objective was to assess the Survey Area for use (indirectly by looking for signs and directly via observations) by and potential habitat for the WRP and Black Cockatoos given their status as nationally listed species of conservation significance.

During the survey one drey was recorded in a Peppermint tree, however, it was inactive and there were old scats underneath on the ground (Plate 1 and Figure 2e). We also recorded WRP scats in a number of other locations. During the assessment we mapped 33.96 ha of potential WRP habitat that includes both potential foraging and potential denning habitat in which they could build dreys (no suitable hollows were observed) (Figures 2a - 2g). Of this 33.96 ha of potential WRP habitat, 19.59 ha is considered regrowth and 13.69 ha is remnant vegetation. We have also added WRP records from Greg Harewood's database to illustrate that there are a relatively high number of records surrounding the Survey Area (Figures 2a - 2g).

During the survey, a small group of Carnaby's Black Cockatoos were observed flying over the Survey Area. Chewed Marri nuts, with markings from Carnaby's Black Cockatoos were observed at several locations in the Survey Area. We also observed chewed Tuart nuts and Pine Cones in several locations and can most likely attribute the chewed Pine Cones to Carnaby's Black Cockatoo.



Three species of Eucalypts, Marri, Tuart and Flooded Gum recorded in the Survey Area are considered Black Cockatoo potential future breeding habitat. We also recorded eight Eucalypts that could not be attributed to a particular species and appear to be non-endemic. This is as reflected by the Ecoedge Environmental flora and vegetation survey (Ecoedge 2014).

The Survey Area contains 92 potential future breeding trees with a DBH of more than 500 mm (Marri [48], dead Marri [2], Tuart [25], Flooded Gum [9] and *Eucalyptus sp.* [8]). The dimensions and the locations of the potential breeding trees are displayed in Appendix F and Figures 3a – 3g. No suitable hollows for which Black Cockatoos could potentially nest in were observed from the ground during the assessment.

During the assessment we mapped 31.51 ha of potential Black Cockatoo habitat that includes both potential foraging and potential breeding habitat (Figures 3a – 3g). Of this 31.51 ha of potential Black Cockatoo habitat, 18.81 ha is considered regrowth, 13.69 ha is remnant vegetation and 2.01 ha is Pine plantation. Foraging habitat in the Survey Area includes species such as Marri, Tuart, Flooded Gum, *Acacia sp., Banksia sp.,* Peppermint and *Jacksonia sp.*

During the survey two broad fauna habitats were identified in the Survey Area and these were Remnant and Regrowth Vegetation (Figures 4a - 4g). The Survey Area is also highly fragmented and linear in nature, surrounded by Pine Plantations, paddocks and the Bussell Highway on the western side.

A large section of the Survey Area that is vegetated represents regrowth; as such we examined historical aerial imagery from 1996 to determine what sections of vegetation in the Survey Area represented remnants and what was regrowth.

During the 2016 survey, there was a section of Pine plantation to the south of Ludlow-Hithergreen Road, Busso Highway, on the eastern side of the Bussell Highway. Pine are typically relatively species poor and not commonly used for nesting by bird species, consequently we didn't examine them as a specific fauna habitat (Disney & Stokes 1976; Friend 1982: Curry 1991) during the survey. However, we acknowledge that they are a food resource for Baudin's and Carnaby's Black Cockatoo and probably the WRP (Johnstone & Kirkby 2011; Shedley & Williams 2014). This area of Pine plantation, however was harvested under a separate clearing approval, in late 2016.

The remaining sections of the Survey Area were cleared of vegetation, apart from mostly introduced grasses, most likely pasture grasses. The cleared areas represented over half of the Survey Area, or 41.76 ha (total size of the Survey Area is 77.92 ha).

Due to the results of the June 2016 fauna survey, a Targeted WRP survey was subsequently commissioned by Main Roads to provide greater clarity around use (or lack of use) in the proposed clearing area along Bussell Highway. During the Targeted WRP survey undertaken in June 2017 the following was recorded in the Survey Area: two WRP, one drey and a number of scats. High rainfall was forecast later in the survey schedule and so the likelihood of observing WRP may have been reduced due to inclement weather.



More effort was therefore focused at the start of the survey to maximise WRP detection in the dry weather. Despite these conditions WRP were detected while spotlighting on two separate nights (20-21 June 2017).



Table of Contents

1	Introduction	. 4
1.1	The Project	. 4
1.2	Background to the Protection of Fauna	. 7
1.3	Background to the WRP	. 8
1.4	Background to Black Cockatoos	10
2	Methods	11
2.1	Background	11
2.2	Fauna Survey Methods	11
2.3	WRP Habitat Assessment	13
2.4	Black Cockatoo Habitat Assessment	14
3	Results	16
3.1	Fauna Survey Limitations and Constraints	16
3.2	Fauna Results	18
3.3	WRP Survey Results	21
3.4	Black Cockatoo Survey Results	24
4	Discussion	27
4.1	Fauna of Conservation Significance	27
4.2	WRP Habitat Assessment	29
4.3	Black Cockatoo Habitat Assessment	30
4.4	Fauna Habitat Types	32
5	Acknowledgements	34
6	References	35
7	Limitations	39



List of Tables

Table 1: Motion Sensitive camera locations – Targeted WRP survey
Table 2: Limitations and Constraints Associated with the Survey Area
Table 3: Conservation significant fauna potentially occurring in the Survey Area

List of Figures

-igure 1: Location of the Survey Area6
-igure 2a: WRP Habitat
Figure 2b: WRP Habitat
-igure 2c: WRP Habitat
Figure 2d: WRP Habitat
Figure 2e: WRP Habitat
Figure 2f: WRP Habitat
Figure 2g: WRP Habitat
-igure 3a: Black Cockatoo Habitat
-igure 3b: Black Cockatoo Habitat
-igure 3c: Black Cockatoo Habitat
-igure 3d: Black Cockatoo Habitat
-igure 3e: Black Cockatoo Habitat
-igure 3f: Black Cockatoo Habitat53
-igure 3g: Black Cockatoo Habitat
-igure 4a: Habitat Type
-igure 4b: Habitat Type
-igure 4c: Habitat Type
-igure 4d: Habitat Type
-igure 4e: Habitat Type
Figure 4f: Habitat Type
- igure 4g: Habitat Type61



List of Appendices

Appendix A: Definition of Threatened Fauna Species Categories
Appendix B: DotE Western Ringtail Possum Distribiution Map
Appendix C: DotE Black Cockatoo Distribiution Map
Appendix D: Database Search Results
Appendix E: Species List
Appendix F: Black Cockatoo Potential Breeding Trees
Appendix G: Habitat Assessemnts



1 Introduction

1.1 The Project

Main Roads South West Region (Main Roads) is planning to construct a second carriageway on a 12.4 km section of the Bussell Highway (30.91 – 44.18 Straight Line Kilometre [SLK]) between approximately 950 m west of Hutton Road to 450 m west of the Sabina River crossing (the Project [Survey Area]) (Figure 1). Main Roads has already completed the following surveys for the Project:

- Level 1 Flora and Vegetation Survey (Ecoedge 2014);
- Aboriginal Heritage Survey (Brad Goode and Associates 2016); and
- Dieback Assessment (Gleven 2016).

In order to progress environmental approvals for the Project, Main Roads commissioned a Level 1 fauna survey in 2016. Due to the results of this survey, a Targeted WRP survey was also commissioned in 2017.

The Project requires the clearing of approximately 25 ha of native vegetation and regrowth. Clearing will possibly impact on habitat for conservation significant fauna listed under the *Environment Protection and Biodiversity Conservation Act* (1999) (EPBC Act), particularly the Western Ringtail Possum (WRP) and potentially all three of the Black Cockatoo species. Therefore referral to the Commonwealth Department of the Environment and Energy (DEE) under the EPBC Act will likely be required. Consequently the primary focus of the fauna assessment is the WRP and Black Cockatoos.

It is important to note that a 2.01 ha section of Pine plantation in the Survey Area is due to be cleared under a separate clearing approval. The Pine plantation was still examined (during the 2016 survey) and included in this report so that a comprehensive assessment of the entire Survey Area was undertaken. During the 2017 survey, it was noted that this Pine plantation had now been cleared.

1.1.1 Objectives

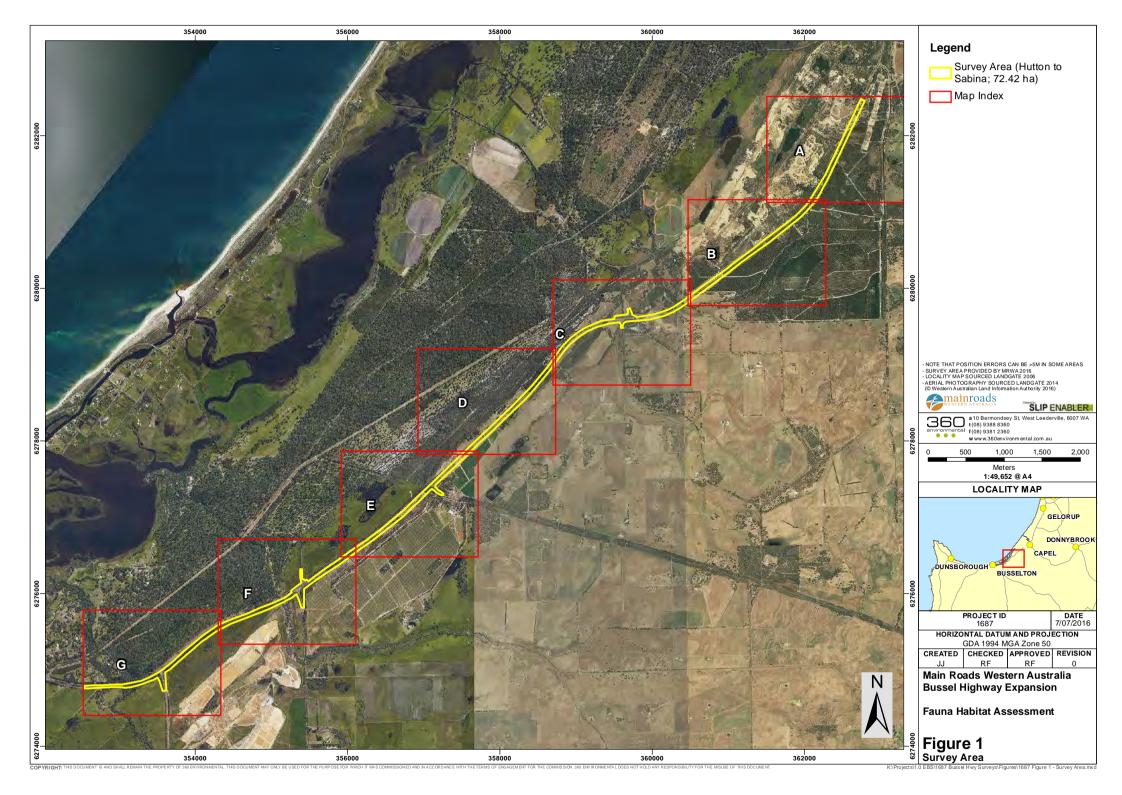
The objectives of the 2016 Level 1 fauna survey were to:

- Complete a desktop review;
- Undertake a Level 1 fauna survey of the area potentially impacted by the Project;
- Carry out a WRP and Black Cockatoo habitat assessment;
- Map and identify fauna habitat, particularly potential WRP and Black Cockatoo habitat; and
- Prepare a report documenting the results of the desktop review and field assessment.



Following the results of the Level 1 survey; the objectives of the 2017 Targeted WRP survey were:

- To further define the level of use of the proposed clearing area by the WRP; and
- Incorporated the results into an update of the previous Level 1 fauna survey report (360 Environmental July 2016).





1.2 Background to the Protection of Fauna

Western Australian fauna is protected formally and informally by various legislative and non-legislative measures, which are as follows:

Legislative measures:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act);
- Wildlife Conservation Act 1950 (WC Act); and
- Environmental Protection Act 1986 (EP Act).

Non-legislative measures:

- Department of Biodiversity Conservation and Attractions (DBCA) (formally) Western Australian Department of Parks and Wildlife (DPaW) Priority lists for fauna; and
- Recognition of locally significant populations by the DBCA.

A short description of each is given below. Other definitions, including species conservation categories, are provided in Appendix A.

1.2.1 EPBC Act

The EPBC Act aims to protect matters of national environmental significance (MNES). Under the EPBC Act, the Commonwealth Department of the Environment and Energy (DEE) lists threatened species and communities in categories determined by criteria set out in the Act (www.environment.gov.au/epbc/index.html) (Appendix A).

The WRP (*Pseudocheirus occidentalis*) is listed as Vulnerable under the EPBC Act. Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) is listed as Endangered under the EPBC Act. The Forest Red-tailed Black Cockatoo (FRTBC [*Calyptorhynchus banksii naso*]) and Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) are classified as Vulnerable.

Projects likely to cause a significant impact on MNES should be referred to the DEE for assessment under the EPBC Act.

1.2.2 WC Act

The WA DBCA lists fauna under the provisions of the WC Act as protected according to their need for protection (Appendix A).

Fauna are classified as Schedule 1 to Schedule 7 according to their need for protection.

The WRP is listed as Critically Endangered under the WC Act. Under the WC Act both Carnaby's Black Cockatoo and Baudin's Black Cockatoo are listed as Endangered and the FRTBC is listed as Vulnerable.



1.2.3 EP Act

The Environmental Protection Act 1986 (EP Act) is the principal legislative Act dealing with the protection of the environment in Western Australia.

1.2.4 DBCA Priority Lists

The DBCA lists 'Priority' fauna that have not been assigned statutory protection under the WC Act, but which are under consideration for 'Scheduled' fauna. Fauna assessed as Priority 1-3 are considered to be in urgent need of further survey. Priority 4 fauna require monitoring every 5-10 years and Priority 5 fauna are subject to a specific conservation programme (Appendix A).

1.2.5 Informal Recognition of Fauna

Certain populations may be of local significance or interest because of their patterns of distribution and abundance. For example, specific locations of fauna may be locally significant because they are range extensions to the previously known distribution, or are newly discovered species (and have the potential to be of more than local significance). In addition, many species are in decline as a result of threatening processes (e.g. land clearing, grazing and changed fire regimes), and relict populations of such species assume local importance for the DBCA. It is not uncommon for the DBCA to make comment on these species of interest.

1.3 Background to the WRP

The WRP is a nocturnal arboreal mammal endemic to the south-west of WA. Its conservation status is currently listed as Vulnerable under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and as rare or likely to become extinct under the *Western Australian Wildlife Conservation Act 1950*. The management and recovery of the WRP is guided by a species recovery plan (DBCA 2014a).

The WRP is a medium-sized nocturnal, arboreal, folivorous marsupial. It has dark brown or occasionally dark grey fur above with cream or grey fur below. Its ears are short and rounded compared with the larger species, the Common Brushtail Possum (*Trichosurus vulpecular*), and it has a slender strongly prehensile tail with a terminal white tip, rather than a brushtail. The WRP weighs up to 1.3 kg with a body length of 40 cm and tail length of 41cm (Van Dyck & Strahan 2008). Average mature adult weights for both sexes are approximately 1000g and they attain sexual maturity at about 830 – 1000g (Ellis & Jones, 1992; Jones *et al.*, 1994).

WRP populations have declined or become locally extinct over much of their former range in the south-west as a result of clearing and fragmentation of habitat associated with agricultural development (Jones *et al.* 1994; Shedley & Williams 2014). However, even in the relatively intact forested regions of the south-west, populations have declined



significantly, particularly since 1998 (Shedley & Williams 2014; Woinarski *et al.* 2014). Threatening processes include logging intensity, inappropriate fire regimes, dieback, and a drying climate may have all contributed to the degradation of WRP habitat, and increased the exposure of WRP to predation by foxes (*Vulpes vulpes*) and cats (*Felis catus*) or to heat stress (Jones *et al.* 1994; Wayne *et al.* 2006; Woinarski *et al.* 2014).

The population extent of WRP in the south-west has been declining since about 1900 particularly in the drier inland parts of it range (Jones *et al.* 1994; Jones 2004). However, there are no reliable estimates of the current total population size, or of the minimum viable WRP population in WA (Burbidge & de Tores 1998; DSEWPaC 2012; DBCA 2014). This situation arises because the species is elusive and difficult to survey in a cost effective manner, with predominately low detection rates that vary in different vegetation types (Wayne *et al.* 2005; de Tores & Elscot 2010). On the basis of limited existing survey data, the population in the Bunbury to Dunsborough region has been estimated to be between 2,000 and 5,000 individuals.

The highest population densities of WRP are now found around this Bunbury (Binningup) to Dunsborough coastal strip, which coincides with an area of urban development and loss of prime habitat (Shedley & Williams 2014). This coastal strip is considered to be a stronghold for the WRP and is therefore a focus for recovery and conservation of the species (Harewood 2008; DBCA 2014). High WRP population densities have been recorded in some urban areas, particularly where mature Peppermint trees (*Agonis flexuosa*) with large, dense and overlapping canopies have been retained (Harewood 2008). This habitat type is thought to provide high quality shelter and food. High population densities may indicate that WRP have benefited from some forms of urbanisation, or alternatively have been displaced from the broader setting by vegetation clearing and are confined to smaller pockets of remnant habitat.

Most ringtail species are traditionally associated with higher rainfall areas and more mesic habitats and rainforest environments (Van Dyck & Strahan 2008). WRP obtain most of their water requirements from their foliage diet, but will drink water when affected by heat stress. They appear to be particularly susceptible to heat stress and die during periods of high daytime temperatures (Jones *et al.* 1994b).

The recent significant decline in WRP population in inland areas and apparent contraction to the coastal areas may be a response to climate change over the last thirty to forty years that has seen a decrease in annual rainfall of 30% and a warming trend. While WRP are likely responding to changes across a range of interrelated bioclimatic factors, attributes of moisture and temperature and the interactions between these factors are expected to be among the most important.

Stream flows have reduced by more than 50% in recent years in inland forested catchments due to reduced rainfall (DBCA 2014), and this lack of surface water during summer may be contributing to the decline in WRP in these areas. WRP may benefit from the cooler, moist environment that is available during the critical summer period on the



coastal plain and the shady micro-climate provided within the dense canopy of peppermints and shrubs to maintain their body temperature. Thermoregulation and maintenance of body temperature within the thermoneutral zone are important for survival and this is achieved by behavioural or physiological mechanisms (Frappell & Mortola 2000).

The modelled distribution of the WRP can be seen in the 2014 DotE distribution maps in Appendix B. The Survey Area is within the known distribution of the WRP.

1.4 Background to Black Cockatoos

Three species of Black Cockatoo are found in south-west WA; Carnaby's Black Cockatoo, FRTBC and Baudin's Black Cockatoo. All three Black Cockatoos have suffered a substantial decline in numbers and breeding distribution in the past 50 years (Johnstone & Storr 1998a). Direct causes of population decline include the large numbers shot by orchardists (mainly associated with Baudin's Black Cockatoo), clearing and fragmentation of habitat (especially the loss of breeding hollows), the impact of hollow competitors including the Galah (*Cacatua roseicapilla*), corellas including Butler's Corella (*Cacatua pastinator butleri*), Australian Shelduck (*Tadorna tadornoides*), Australian Wood Duck (*Chenonetta jubata*), the feral European honey bee (*Apis mellifera*), and also vehicle strikes. Around 60% of the original vegetation on the Swan Coastal Plain has been cleared and up to 85% in other parts of the south-west region for agriculture (crops), meat production, dairying, farms, orchards, vineyards, pine plantations, mining, timber and wood chipping, cities and towns. At present, extensive tracts of uncleared land only remain in State forest and conservation reserves and what is left of remnant vegetation (in roadside verges etc.) is often disturbed to a varying degree (Johnstone & Kirkby 2011).

The south-west region is now a severely fragmented landscape and the further loss of foraging habitat, the lack of suitable breeding sites, climate change, and alterations in the landscape led to significant changes in forest structure. Almost every part of the Jarrah-Marri forest has been logged in the past, and most present day trees are too young to form hollows, and competition with exotic species, exacerbate the future conservation of Carnaby's Black Cockatoo, FRTBC's and Baudin's Black Cockatoo (Johnstone & Kirkby 2011).

The modelled distribution of all three Black Cockatoo species can be seen in the 2014 DotE distribution maps in Appendix C. The Survey Area is within the known distribution of all three Black Cockatoos.



2 Methods

2.1 Background

The Level 1 fauna and Targeted WRP surveys were compliant with the EPA requirements for the environmental surveying and reporting of fauna in WA, and EPBC Act survey and referral guidelines where practical and relevant, and as set out in the following documents:

- Terrestrial Biological Surveys as an Element of Biodiversity Protection. Position Statement No. 3 (EPA 2002);
- Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia. Guidance Statement No. 56 (EPA 2004b);
- EPBC Act Policy Statement 3.10: Significant impact guidelines for the vulnerable Western Ringtail Possum (*Pseudocheirus occidentalis*) in the southern Swan Coastal Plain, Western Australia (DEWHA 2009);
- Technical Guide Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA-DEC 2010); and
- EPBC Act referral guidelines for three threatened Black Cockatoo species (DSEWPaC 2012).

2.2 Fauna Survey Methods

2.2.1 Fauna Database Review

A 7 km DPaW threatened fauna database search and a 10 km radial NatureMap and EPBC Protected Matters Search Tool (PMST) search was undertaken from the centre of the Survey Area. The searches were undertaken to identify fauna species of conservation significance potentially occurring in the Survey Area (DPaW 2016a; DPaW 2016b, DotE 2016 [now known as DEE]). In addition, Greg Harewood freely provided us with his WRP survey database.

Collectively, these sources were used to compile a list of species that have been previously recorded in the vicinity of the Survey Area (Appendix D). This list invariably includes some species that do not occur in the Survey Area, as some fauna have a limited or patchy distribution or a high level of habitat specificity for habitats which are not located in the Survey Area e.g. waders/shorebirds that require coastal shores for habitat. Some fauna may also have become locally extinct or were erroneously identified in previous surveys. These fauna were examined and then excluded from the list where relevant.



2.2.2 Field assessment (2016)

The field assessment was undertaken on 16 and 17 June 2016 by two Zoologists. The survey was consistent with standard protocols for the region and relevant EPA Guidance Statements and EPBC Act Survey Guidelines as outlined above in section 2.1 (where relevant and practical).

The purpose of the field assessment was to verify the accuracy of the desktop assessment and to further delineate and characterise the fauna assemblages and fauna habitat in the Survey Area. Nonetheless, the primary objective was to assess the Survey Area for use (indirectly by looking for signs and directly via observations) by and potential habitat for the WRP and Black Cockatoos given their status as nationally listed species of conservation significance (see survey methods for these two species below).

To verify the accuracy of the background research, the field component of the Level 1 fauna survey incorporated the following tasks:



- hand foraging for inactive and/or cryptic species (raking leaf litter, searching under rocks and logs and under loose litter);
- o looking for scats, pellets, skeletal material, tracks, diggings; and
- o opportunistic observations (visual or heard) of active species, in particular birds.
- Assessment of the habitat (within the Survey Area) to support species protected under State and/or Federal legislation or by the DBCA as a Priority species was undertaken.

Amphibians, reptiles and mammals are mainly recorded through intensive trapping (level 2 type surveys) and are infrequently recorded opportunistically. However, these animals will be noted when active, or by identifiable signs such as scats, tracks and diggings.

2.2.3 Camera Traps (2016)

Four camera traps were setup during the 2016 Level 1 fauna field survey and each ran for one night. These cameras were placed at locations with suitable WRP habitat as well as previous WRP records.

A mixture of peanut butter, oats and water were placed in the field of view for all cameras.

2.2.4 Taxonomy

For species identified in the desktop assessment, where there is doubt as to their true taxonomy (through subsequent name changes or taxonomic reviews), an effort was made to determine the current scientific name for each species. In some cases, old scientific names may be presented where correct nomenclature could not be determined due to name changes. Some taxon names may be followed by 'sp.', meaning that the species



name was not given in the data source or the identification is in doubt. Where there are previously recorded species such as this that have the potential to be a conservation significant species, they are discussed specifically in the results and discussion section.

Taxonomy and nomenclature in this report follows the accepted listing of published terrestrial vertebrate species. The listing for amphibians and reptiles follows Cogger (2014), birds follows Christidis & Boles (2008) and mammals Van Dyck & Strahan (2008).

2.3 WRP Habitat Assessment

2.3.1 Level 1 Fauna Survey (2016)

The WRP habitat assessment during the Level 1 fauna survey consisted of the following:

- Daytime searches for potential den sites were undertaken in areas where there were trees considered large enough to contain hollow-bearing trees of a suitable size (this typically coincided with areas where there were trees considered to be potential Black Cockatoo breeding trees [>500 mm DBH]); and
- Daytime searches for signs of activity, such as dreys in trees, scratches on tree trunks and scats on the ground below trees with hollows or dreys were undertaken.

Given the length and width of the Survey Area (12.4 km x 50 m) these searches had to target areas of habitat where WRP are known to forage in and build dreys or den in (Jones *et al.* 1994: Inions *et al.* 1989). Therefore two Zoologists walked on foot along transects (approximately 20 m apart where possible) in areas where there were large trees such as Tuarts, Marri and Flooded Gum (*Eucalyptus gomphocephala, Corymbia calophylla* and *Eucalyptus rudis*) and particularly in areas where there were Peppermint and Spearwood (*Kunzea glabrescens*).

For this assessment potential WRP habitat in the Survey Area was classified as vegetation containing species known to be used for shelter (dens and dreys) and species known to form part of their diet. This for example included areas with Tuart, Marri, Peppermint, Flooded Gum, Spearwood, *Melaleuca viminea*, Christmas Tree (*Nuytsia floribunda*), Woody Pear (*Xylomelum occidentale*) and *Acacia saligna*.

2.3.2 Targeted WRP Survey (2017)

The targeted WRP survey was undertaken from 20-22 June 2017. The survey utilised passive sampling detection methods which included:

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Two Zoologists walking transects (approximately 20 m apart) throughout the previously identified WRP habitat (with a focus on locations where there were previous records);

Daytime searches for potential den sites in hollow-bearing trees, signs of activity, such as dreys in trees, scratches on tree trunks and scats on the ground below trees with dreys and skeletal material;



- Spotlighting and head torching at night from vehicle and on foot;
- Any observation (visual or heard) of a WRP was recorded by means of a hand-held Global Positioning System (GPS) unit;
- Ten camera traps placed across the Survey Area and baited. Camera traps were placed in areas where WRP records (Greg Harewoods database) or suitable habitat were identified in the 2016 Level 1 fauna survey and in locations where dreys or fresh scats were recorded (Table 1).

CAMERA NO.	EASTING	Northing	PLACED OUT	COLLECTED
8	365593	6296760	20/6/17	22/6/17
1	362407	6281723	20/6/17	22/6/17
4	359819	6279617	20/6/17	22/6/17
5	358078	6278317	20/6/17	22/6/17
12	357047	6277369	20/6/17	22/6/17
3	357032	6277342	20/6/17	22/6/17
9	353419	6274891	20/6/17	22/6/17
2	353322	6274848	20/6/17	22/6/17
11	353237	6274815	20/6/17	22/6/17
6	355150	6275894	20/6/17	22/6/17

Table 1: Camera trap locations – Targeted WRP survey.

2.4 Black Cockatoo Habitat Assessment

The Black Cockatoo habitat assessment involved traversing and searching the Survey Area by foot. These searches targeted areas of habitat where Black Cockatoos are known to forage, roost and or potentially nest in.

Any trees meeting each of the following criteria for potential breeding were recorded and electronically logged using a hand held Global Positioning System (GPS) unit:



Native trees (e.g. Jarrah, Tuart, Marri etc.);

- Diameter at breast height (DBH) > 500 mm (300 mm for Wandoo and Salmon Gum) regardless of the presence or absence of hollows;
- Trees were placed in the following size class categories:
 - \circ A = 500 1000 mm DBH
 - \circ B = 1000 2000 mm DBH
 - \circ C = >2000 mm DBH

The Black Cockatoo habitat assessment involved examining the habitat for tree and shrub species known to be important dietary items e.g. Marri, Tuart and *Banksia sp.* It also



included looking for evidence of feeding (chewed cones, seed and nut material); and opportunistic observations of Black Cockatoos in the Survey Area, either perching, foraging or while on the wing.

For this assessment potential Black Cockatoo habitat in the Survey Area was classified as vegetation containing species known to be used for nesting and species known to form part of their diet. This for example included areas with Tuart, Marri, Flooded Gum, *Banksia sp.*, Pine (*Pinus pinaster*), *Acacia sp.*, Peppermint and *Xanthorrhoea sp.*





3 Results

3.1 Fauna Survey Limitations and Constraints

It is important to note the specific constraints imposed on surveys and these constraints are often difficult to predict, as is the extent to which they influence survey effort. Survey constraints of the fauna assessment are listed below in Table 2.

VARIABLE	IMPACT ON SURVEY OUTCOMES			
Access	The entire Survey Area was accessible as it ran beside Bussell Highway.			
Experience	The personnel who executed these surveys were practitioners suitably qualified in their respective fields:			
	Field Zoologists: Dr Ron Firth (18 years' experience) and Laura Stevens (5 years' experience);			
	Data Interpretation and Reporting: Laura Stevens			
	Report Review: Dr Ron Firth.			
Timing, weather, season	The Level 1 fauna survey was conducted on the 16 and 17 June 2016. We sourced minimum and maximum temperatures and rainfall data for these days from the Busselton Airport weather station (BoM 2016). Daily minimum temperatures for the 16 and 17 were 10.9°C and 10.1°C respectively. Daily maximum temperatures for the 16 and 17 were 15.5°C and 15.8°C respectively. There was no rainfall recorded on both days.			
	The Targeted WRP survey was conducted from 20-22 June 2017. We sourced minimum and maximum temperatures and rainfall data for these days from the Busselton Airport weather station (BoM 2017). Daily minimum temperatures were 7.3°C, 13.9°C and 12.6°C respectively. Daily maximum temperatures were 21.3°C, 18.2°C and 18.9°C respectively. Daily rainfall was 2.0 mm, 17.8 mm and 23.6 mm respectively.			
	Due to the higher rainfall forecast later in the survey, more effort was focused at the start of the survey to maximise WRP detection. Despite these conditions WRP were detected while spotlighting on two separate nights (20-21 June 2017).			

Table 2: Limitations and	Constraints	Associated with	the Survey Area
1 a D C Z. LIIIIItations and	Constraints	Associated with	I LIE OUIVEY AIEA.



Scope: Life forms sampled	The scope of this project was to undertake a Level 1 fauna
	survey (reconnaissance survey and an assessment of
	habitats in the Survey Area), primarily focussing on
	undertaking a habitat assessment for the WRP and all
	three species of Black Cockatoo. The Level 1 fauna survey
	was followed by a Targeted WRP survey.
	Given the level of survey, many species that occur in the
	Survey Area would not have been observed, particularly
	small ground-dwelling fauna that are normally captured by
	methods such as trapping. All conservation significant
	species previously recorded in the area have been
	considered. Based on the habitat present, those species
	deemed to potentially occur in the Survey Area have been
	addressed in this report.
Sources of information	The desktop analysis used several sources to produce a list
	of fauna species previously recorded in the vicinity of the
	Survey Area. This includes records from DBCA
	Threatened Fauna Database search (DBCA 2016b),
	NatureMap fauna search (DBCA 2016a), and the EPBC
	PMST (DotE 2016), as well as field guides and other
	scientific literature.
Completeness	Level 1 fauna survey:
	Five fauna habitat assessments were carried out. Searches
	for potential WRP dens and dreys (and other signs such as
	scats) in suitable habitat were undertaken. All trees
	considered to be potential Black Cockatoo breeding trees
	were measured and searches of their foraging (chewed
	nuts and cones) was also undertaken in the Survey Area.
	Targeted WRP:
	A total of eight hours of daytime searches and eight hours
	of spotlighting was undertaken, to identify WRP dreys,
	signs, scats and individuals.
Disturbances	During the Level 1 fauna survey a large section of the
	Survey Area has been cleared of native vegetation and
	only introduced grasses are present. Further to this a
	considerable portion of the Survey Area is regrowth
	(having been cleared sometime in the past), while other
	(having been cleared sometime in the past), while other sections been severely altered and are parkland like (trees
	sections been severely altered and are parkland like (trees
	sections been severely altered and are parkland like (trees and no midstorey vegetation). There are sections of
	sections been severely altered and are parkland like (trees



During the Targeted WRP survey, further areas of cleared
vegetation were recorded.

3.2 Fauna Results

3.2.1 Database Searches

Database searches returned 264 vertebrate species from 85 families as potentially occurring in the vicinity of the Survey Area. Of these, 11 species were amphibians from 4 families, 26 were reptiles from 8 families, 186 were bird species from 49 families and 41 were mammals from 24 families.

A total of 75 conservation significant vertebrate species (including Priority species) from 30 families were identified during the desktop review of the database searches (Appendix D). These were comprised of 4 amphibian species, 54 bird species from 17 families, and 17 mammals from 12 families.

3.2.2 Previous Surveys

Some examples of recent past consultant fauna surveys undertaken in the vicinity of the Survey Area are outlined below, including the type of assessment undertaken and the key findings of the survey.

GHD (2015). Bussell Highway - Capel to Hutton Section (26.38 - 32.15 SLK) Fauna Assessment. Report prepared for Main Roads Western Australia.

GHD undertook a level 1 fauna survey on 17-18 February 2015. During the assessment two WRP dreys were observed and 66 potential black cockatoo habitat trees, including three with hollows were recorded. They also recorded 6.44 ha of black cockatoo foraging habitat.

Biologic (2014). Wonnerup North Vertebrate Fauna Assessment. Report prepared for Cristal Mining Australia.

Biologic carried out a level 2; two season survey from 13 – 15 May 2013 and 16 – 21 October 2013. During the assessment five species of conservation significance were recorded and included:



Western Ringtail Possum (Pseudocheirus occidentalis);









Greg Harewood (2012). Bussell Highway Capel to Hutton Road Upgrade Fauna Assessment. Report prepared for GHD.

Greg Harewood undertook a level 1 fauna survey and targeted WRP and Black Cockatoo assessment on 16 and 19 March 2012. Several WRP dreys and individuals were recorded, including while spotlighting. The black cockatoo breeding habitat assessment identified 97 potential breeding trees. Only one of the trees appeared to contain a hollow considered large enough for breeding.

3.2.3 Conservation Significant Fauna

The 7 km radial DBCA threatened fauna database, NatureMap and EPBC PMST 10 km search returned a number of wetland species, in particular birds (i.e. marine birds and waders), as well as a number of marine Turtles and mammals that require specific habitats (i.e. oceans, shorelines and wetlands) that are not present in the Survey Area.

Many of these wetland, marine and coastal species in the databases may occur nearby; however, given the absence of suitable habitat in the Survey Area, all marine and wetland species are unlikely to occur in the Survey Area itself.

A number of species returned were also known to be historical records of species now extinct (e.g. Western Quoll) in the local area and or more broadly in the region. These species have been omitted from any further discussion.

It is important to note, that the EPBC PMST is not entirely based on point records, but also on broader information, for example bioclimatic distribution models. Whereas DBCAs threatened fauna database and NatureMap is, consequently, the results of the EPBC PMST are in some cases less accurate, particularly at a local scale. Consequently, the EPBC PMST will include species that do not occur in the search area because for example there is no habitat or they are now known to be locally extinct.

In addition, many fauna are not distributed evenly across the landscape, are more abundant in some places than others are, and consequently more detectable (Currie 2007). Furthermore, some small, common ground-dwelling reptile and mammal species tend to be habitat specific, and many bird species can occur as regular migrants, occasional visitors or vagrants. Therefore all these species have been omitted from any further discussion regarding fauna results.

With the afore mentioned marine species removed, a total of 10 conservation significant species (including Priority species) from the database searches are potentially considered to either be likely, possibly or unlikely to occur in the Survey Area. These 10 species comprise five bird and five mammal species.

Of these 10 conservation significant species, three species were recorded during the field assessment, three species are considered as 'Likely' to occur, two species are considered 'Possible' and two species are considered 'Unlikely' to occur in the Survey Area (Table 3).

The Likelihood of each species is based on the following criteria:



Recorded: Recorded during the field assessment;

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Likely: Suitable habitat is present in the Survey Area and the Survey Area is in the species' known distribution;

- Possible: Limited or no suitable habitat is present in Survey Area, but is nearby. The species has good dispersal abilities and is known from the general area; and
- Unlikely: No suitable habitat is present in Survey Area but is nearby, the species has poor dispersal abilities, but is known from the general area; or suitable habitat is present, however the Survey Area is outside of the species' known distribution.

Table 3: Conservation significant fauna potentially occurring in the Survey Area.

En = Listed as Endangered under the EBPC Act, Vu = Listed as Vulnerable under the EBPC Act, Mi = Listed as Migratory under the EBPC Act, Ma = Listed as Marine under the EBPC Act, S = Scheduled under the WC Act, and P = Listed as Priority by the DBCA.

SPECIES	CONSERVATION STATUS	Likelihood
Birds		
Peregrine Falcon (Falco peregrinus)	S7	Unlikely
Forest Red-tailed Black-Cockatoo (Calyptorhynchus banksii naso)	Vu, S3	Likely
Baudin's Black Cockatoo (Calyptorhynchus baudinii)	Vu, S2	Likely
Carnaby's Black Cockatoo (Calyptorhynchus latirostris)	En, S2	Recorded
Rainbow Bee-eater (Merops ornatus)	MaMi, S5	Likely
Mammals	•	
Southern Brush-tailed Phascogale (Phascogale tapoatafa)	S3	Possible
Southern Brown Bandicoot (Isoodon obesulus fusciventer)	P5	Recorded
Western Ringtail Possum (Pseudocheirus occidentalis)	Vu, S2	Recorded
Water Rat (Hydromys chrysogaster)	P4	Possible
Western Mouse (Pseudomys occidentalis)	P4	Unlikely

3.2.4 Field assessment Results

During the field assessment 29 species from 19 families were recorded. This consisted of one reptile species, 24 bird species from 14 families and four mammal species from four families (Appendix E).

3.2.4.1 Amphibians

From the database searches, 11 amphibian species have been previously recorded from the following four families in the surrounding area: Cheloniidae, Limnodynastidae, Myobatrachidae and Hylidae (Appendix E). During the survey, no amphibians were recorded.



3.2.4.2 Reptiles

From the database searches, a total of 26 reptile species have been previously recorded from the following eight families in the surrounding area; Pygopodidae, Gekkonidae, Scincidae, Agamidae, Varanidae, Typhlopidae, Boidae and Elapidae. During the field assessment 1 reptile species was recorded; the Tree Dtella (Appendix E).

3.2.4.3 Birds

From the database searches, a total of 186 bird species from 49 families have been previously recorded in the surrounding area. During the field assessment 24 bird species were recorded from the following 14 families: Columbidae, Accipitridae, Falconidae, Psittacidae, Cacactuidae, Acanthizidae, Meliphagidae, Pachycephalidae, Artamidae, Dicruridae, Cracticidae, Corvidae, Petroicidae and Timaliidae (Appendix E).

3.2.4.4 Mammals

From the database searches, a total of 41 mammal species from 24 families have been previously recorded in the surrounding area. During the field assessment four mammal species were recorded; the Southern Brown Bandicoot (digging were observed in several locations), the Western Ringtail Possum (scats and one drey), the Western Grey Kangaroo and the European Rabbit (Appendix E).

3.2.5 Camera Traps

No images were recorded on the camera traps during the Level 1 fauna survey. During the Targeted WRP survey, one rodent species and a Fox were recorded. No WRP were recorded on the cameras in either survey.

3.3 WRP Survey Results

All of the three database searches returned records of the WRP. The DBCA threatened fauna database had 115 records in the 7 km radial search area.

3.3.1 Level 1 fauna survey (2016)

During the Level 1 fauna survey one drey was recorded in a Peppermint, however, it was inactive and there were old scats underneath on the ground (Plate 1 and Figure 2e). A number of WRP scats were recorded in nearby locations.





Plate 1: Disused WRP drey in a Peppermint.

3.3.2 Level 1 fauna survey (2016) - WRP Habitat

During the Level 1 fauna survey we mapped 33.96 ha of potential WRP habitat that includes both potential foraging and potential denning habitat in which they could build dreys (no suitable hollows were observed) (Figures 2a - 2g). Of this 33.96 ha of potential WRP habitat, 19.59 ha is considered regrowth and 13.69 ha is remnant vegetation. We have also added WRP records from Greg Harewood's database to illustrate that there are a relatively high number of records surrounding the Survey Area (Figures 2a - 2g).

3.3.3 Targeted WRP survey (2017)

During the targeted WRP survey, two WRP were recorded. One WRP was recorded during spotlighting in a large Peppermint tree (353284 / 6274843) on 20 June 2017 (Plate 2) (Figure 2g). A second WRP was seen while spotlighting nearby to the previous location in a large Tuart tree (353150 / 6274800) on 21 June 2017. No dreys were observed in the nearby Survey Area surrounding these two WRP sightings. These WRP were most likely foraging in the Peppermints and possibly denning nearby due to the presence of a small number of trees with hollow entrances that would be potentially suitable for WRP (Plate 3).





Plate 2: Large Peppermint tree in which a WRP was observed (centre of image).



Plate 3: An example of a potentially suitable WRP hollow (approximately in the centre of the image).



One drey was recorded during the Targeted WRP survey. The drey was approximately 8 m high, so it was difficult to see clearly if it was currently in use. Scats were recorded underneath it however, so it is possible (Figure 2e).

The drey that was recorded during the 2016 Level 1 fauna survey was no longer present during the Targeted WRP survey.

A number of WRP scats were recorded in the Survey Area. These were recorded near the drey (Plate 4).



Plate 4: WRP scats.

Three dead WRP were recorded on Bussell Highway, approximately 1 km south of the southernmost extent of the Survey Area. There are areas of fragmented, but native vegetation surrounding the Survey Area. It is likely the WRP in the vicinity will utilise these areas as well as the suitable habitat in the Survey Area and as such will cross the highway regularly.

3.4 Black Cockatoo Survey Results

All three Black Cockatoo species were returned in the database searches; however, there was only one record of the FRTBC in the DBCA threatened fauna database. During the survey, a small group of Carnaby's Black Cockatoos were observed flying over the Survey Area. Chewed Marri nuts, with markings from Carnaby's Black Cockatoos were observed at several locations in the Survey Area. We also observed chewed Tuart nuts and Pine Cones in several locations and can most likely attribute the chewed Pine Cones to Carnaby's Black Cockatoo.



3.4.1.1 Potential Breeding Habitat

Three species of Eucalypts, Marri, Tuart and Flooded Gum recorded in the Survey Area are considered Black Cockatoo potential future breeding habitat. We also recorded eight Eucalypts that could not be attributed to a particular species and we think that they may be non-endemic.

The Survey Area contains 92 potential future breeding trees with a DBH of more than 500 mm (Marri [48], dead Marri [2], Tuart [25], Flooded Gum [9] and *Eucalyptus sp.* [8]). The dimensions and the locations of the potential breeding trees are displayed in Appendix F and Figures 3a – 3g. No suitable hollows for which Black Cockatoos could potentially nest in were observed from the ground during the assessment.

3.4.1.2 Foraging Habitat

During the assessment we mapped 31.51 ha of potential Black Cockatoo habitat that includes both potential foraging and potential breeding habitat (Figures 3a – 3g). Of this 31.51 ha of potential Black Cockatoo habitat, 18.81 ha is considered regrowth, 13.69 ha is remnant vegetation and 2.01 ha is Pine plantation (this Pine was harvested in late 2016). Foraging habitat in the Survey Area includes species such as Marri, Tuart, Flooded Gum, *Acacia sp., Banksia sp.*, Peppermint and *Jacksonia sp.*

3.4.2 Fauna Habitat

Five fauna habitat assessments were undertaken during the survey and two broad fauna habitats were identified in the Survey Area (Appendix G) (Figures 4a - 4g).

A large section of vegetation in the Survey Area represents regrowth; as such we examined historical aerial imagery from 1996 to determine what sections of vegetation in the Survey Area represented remnants and what was regrowth.

There was also a section of Pine plantation; however, these are typically relatively species poor and not commonly used for nesting by bird species, consequently we didn't examine them as a specific fauna habitat (Disney & Stokes 1976; Friend 1982: Curry 1991). As previously mentioned this Pine plantation is due to be cleared under a separate clearing approval.

Remnant Vegetation

This habitat has an overstorey that typically included Marri, Tuart and Flooded Gum, a midstorey that was comprised of a number of species in various sections of the Survey Area and included Acacia sp., Banksia sp., Christmas Tree, Peppermint, Spearwood, Jacksonia sp., Melaleuca sp., and Xanthorrhoea sp., over a relatively sparse understorey of mixed herbs and grasses. There were also some small sections that consisted almost entirely of large old Peppermints with no midstorey species and a weedy grass understorey.



The large Eucalypt trees provide potential breeding and foraging habitat for Black Cockatoos, while midstorey species such as *Banksia sp.*, Peppermints, Spearwood and *Xanthorrhoea sp.* provide potential foraging habitat for conservation significant species such as the WRP and Black Cockatoos.

Regrowth Vegetation

This habitat was to some extent a mix of many species and with a similar broad composition to the Remnant Vegetation habitat in some sections. However, most of the Eucalypts in this habitat were not large enough to be considered potential Black Cockatoo breeding trees. Large sections of this habitat consisted of *Acacia sp.* and Spearwood regrowth which can be considered potential habitat for the WRP, particularly potential foraging habitat and to a lesser extent potential denning habitat.



4 Discussion

4.1 Fauna of Conservation Significance

During the field assessment, three conservation significant species were recorded either directly or indirectly; One disused WRP drey and scats were recorded, chewed marri nuts with Carnaby's Black Cockatoo marking were recorded in several locations and a small flock were seen flying over the Survey Area. There was also evidence of Black Cockatoo feeding on Banksias with cones on the ground. Bandicoot diggings were also recorded at several locations in the Survey Area. As a WRP and Black Cockatoo habitat assessment forms part of this report, these species will be discussed further below.

4.1.1 Species Recorded

Southern Brown Bandicoot

The Bandicoot is listed as P5 under the DBCA Priority List. This species once occurred throughout south-west WA; it now occurs from Guilderton southwards on the SCP, including the Perth Metropolitan area, in Jarrah and Karri (*Eucalyptus diversicolor*) forests and adjacent coastal vegetation complexes. The species inhabits scrubby, often swampy, vegetation with dense cover up to about 1 m high. It feeds in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover. The Bandicoot is patchily distributed in suitable habitat, with populations inhabiting Jarrah and Wandoo forests usually associated with watercourses. On the Swan Coastal Plain it is often associated with wetlands with dense vegetation where they feed on fruit, seeds, insects and fungi (Woinarski *et al.* 2014). The DBCA threatened fauna database returned 23 records from between 1981 to 2015. The Survey Area does contain foraging and likely nesting habitat and this is evident by the diggings observed in various locations.

4.1.2 Species Considered Likely to Occur

Three species are considered Likely to occur in the Survey Area; Baudin's Black Cockatoo, FRTBC and the Rainbow Bee-eater. As a Black Cockatoo habitat assessment forms part of this report, these species will be discussed below.

Rainbow Bee-eater

The Rainbow Bee-eater is listed as Marine and Migratory under the EPBC Act and Schedule 5 under the WC Act. This species is one of the most common and widespread birds in Australia with a distribution that covers the majority of Australia (Barrett *et al.* 2003). It occurs in lightly wooded, often sandy country, preferring areas near water. It feeds on airborne insects, and nests throughout its range in WA in burrows excavated in sandy ground or banks, often at the margins of roads and tracks. In WA this species can occur as a 'resident, breeding visitor, postnuptial nomad, passage migrant and winter visitor' (Johnstone & Storr 1998b). The DBCA threatened fauna database returned 61 records of the Rainbow Bee-eater from between 1998 to 2014. This species was also



recorded by Biologic (2014) during their assessment in Wonnerup North which is very close to this Survey Area. The Survey Area contains potential foraging habitat for this species.

4.1.3 Species Considered as Possibly Occurring

Two species are considered as Possibly occurring in the Survey Area; Southern Brushtailed Phascogale and Water Rat.

Southern Brush-tailed Phascogale

The Southern Brush-tailed Phascogale is listed Schedule 3 under the WC Act. It is restricted to the extreme south-west, and its characteristic low population densities make it vulnerable to localised extinction (Van Dyck & Strahan 2008). This subspecies has been observed in dry sclerophyll forests and open woodlands containing hollow-bearing trees with a sparse ground cover.

The DBCA threatened fauna database returned 20 records of the Southern Brush-tailed Phascogale. The Biologic (2014) survey in Wonnerup North which is very close to this Survey Area recorded six animals in 2013. Some sections of the Survey Area do have potential foraging habitat for this species, however, there were very few hollows observed in which the species could den.

Water Rat

The Water Rat is listed as Priority 4 under the DBCA Priority List. The species lives in the vicinity of permanent water bodies of fresh or brackish water and can travel a considerable distance overland. Dens are made at the end of tunnels in banks or occasionally in logs. The Water Rat hunts on land but takes much of its food from the water, searching among vegetation along the shoreline and diving around submerged roots and logs. It is an opportunistic hunter and scavenger of large aquatic insects, fish, crustaceans and mussels, also taking frogs, lizards, water birds, small mammals, turtles and their eggs, fresh carrion and a little plant material (Van Dyck 2008).

The DBCA threatened fauna database returned just two records of the Water Rat. This species is notoriously cryptic and not often detected during wildlife surveys. Suitable habitat is present in a number of water ways that intersect Survey Area, including Abba and Sabina River.

4.1.4 Species Considered as Unlikely to Occur

A total of two species of conservation significance are considered unlikely to occur in the Survey Area; the Peregrine Falcon and Western Mouse.

Peregrine Falcon

The Peregrine Falcon is listed as Schedule 7 under the WC Act and is an uncommon but a wide-ranging bird across Australia. It occurs mainly along rivers and ranges as well as wooded watercourses and lakes and nests primarily on cliffs, granite outcrops, quarries



and in large tree hollows. The diet of the Peregrine Falcon has been well studied and includes primarily flocking species such as European Starlings (Olsen *et.al.* 2008).

The DBCA results returned 12 records of the Peregrine Falcon from between 1999 to 2014. The Survey Area lacks any suitable nesting habitat, but it could hunt in the Survey Area given their large home range.

Western Mouse

The Western Mouse is listed as Priority 4 under the DBCA Priority List. This species is restricted to small areas of the remnant vegetation in the wheatbelt (Woinarski *et al.* 2014). There are two records of this species in the DBCA threatened fauna database from 2013 and the site name is attributed to Wonnerup North. The Biologic (2014) field survey in Wonnerup North was undertaken in 2013 so I have assumed that the two records are from that survey. However, the Biologic (2014) report does not mention the Western Mouse, nor do the other two reports that were examined as part of this assessment. Given our current understanding of the species distribution, it assumed to be a database error.

4.2 WRP Habitat Assessment

The Survey Area does contain sections of foraging and denning habitat (Figures 2a – 2g) and this was made evident by the recoding of two WRP, dreys with scats underneath on the ground in the both the 2016 Level 1 fauna survey and the 2017 targeted WRP survey, as well as recording scats in several other locations in both surveys (see Figures 2a – 2g). There are also over 100 records of the WRP in the DBCA threatened fauna database and the species was recorded in the three previous reports reviewed as part of this work. Further to this we plotted records from Greg Harewood's WRP database and 17 of these occurred in or adjacent to this Survey Area (Figures 2a, 2c, 2d, and 2g). This is not an unexpected result given that the Survey Area sits in the coastal strip between Bunbury and Dunsborough, an area where the species population density is at its highest (Shedley & Williams 2014).

This is further evidenced by the fact that the WRP was recorded on both nights of spotlighting during the Targeted WRP survey. One was recorded in a large Peppermint tree and one was recorded in a large Tuart tree (Figure 2g).

WRP are active at night and need to shelter during the day. They use a variety of shelters including tree hollows and forks, dreys, grass trees (*Xanthorrhoea spp.*), hollow logs, rabbit burrows and forest debris (de Tores *et al.*, 2005). In inland areas, tree hollows are more commonly used while in coastal areas, hollows may be used in tuart forest and dreys in peppermint woodland (Ellis and Jones, 1992; Inions *et al.*, 1989; Jones *et al.* 1994; Jones and Hillcox 1995). However, dreys are used in some dense habitats in jarrah forest indicating that vegetation structure may determine the different shelter types used by WRP.



Dreys are constructed from flexible twigs and foliage and are attached to branches of trees or shrubs in usually dense vegetation (Ellis & Jones, 1992). As observed in the Survey Area, nest materials include peppermint foliage, as well as bracken fern fronds, creepers and sedge leaves. The average height of dreys varied from 1.6m to 5.4m. Dreys break down over time or are abandoned but have been known to persist from 6 to 38 months, although a new drey may be re-built in the same position as an old one. WRP may occupy around 40–46% of dreys present, usually by a single male or female, or a female and her young (Ellis & Jones 1992).

Shelters and nest sites need to provide protection from the effects of high ambient temperatures and from a variety of predators, both introduced and native, and attacking either from the ground or air. Tree hollows have an advantage in providing better insulation against excessive heat than dreys (Pahl 1984), but possums may be more prone to attack from pythons and large goannas in hollows. Dreys built in thin branches can vibrate easily when disturbed and this may give resident possums early warning of approaching predators (Russell *et al.* 2003). Dreys built in open or recently burnt vegetation would be more exposed to heat than those built in dense vegetation (Russell *et al.* 2003) and would be more visible to predators.

It is likely that the choice of shelter sites is determined not only by the vegetation structure present but by the physiological requirements of the WRP and by the type and abundance of predators. Other factors such as fire regimes and drought may also affect the availability of shelter sites.

4.3 Black Cockatoo Habitat Assessment

The Survey Area is in the known distribution of all three species of Black Cockatoo (Appendix C) and we identified areas of potential foraging habitat and mapped potential breeding trees (Figures 3a – 3g).

Carnaby's Black Cockatoo

Carnaby's Black Cockatoo was present in all three databases (DBCA threatened fauna database, NatureMap and EPBC PMST) and was observed flying over during the field assessment. Foraging evidence in the form of chewed Marri nuts and too a much lesser extent on Banksia cones was observed in sections of the Survey Area and there were chewed Pine Cones in some areas outside of the Pine Plantation section of the Survey Area, though they were typically found adjacent to Pine Plantations.

Forest Red-tailed Black Cockatoo

FRTBC was present in all three databases (DBCA threatened fauna database, NatureMap and EPBC PMST). However, no birds were seen or heard in the Survey Area or flying over during the assessment and further to this no foraging evidence was recorded. The DBCA threatened fauna database had only one record of the FRTBC from 2012. This species was also not recorded during previous surveys that are in close proximity to this assessment



(Harewood 2012; Biologic 2014; GHD 2015). Sections of the Survey Area contain species such as Marri that provide potential suitable foraging habitat for the FRTBC.

Baudin's Black Cockatoo

Baudin's Black Cockatoo was present in all three databases (DBCA threatened fauna database, NatureMap and EPBC PMST). However, no birds were seen or heard in the Survey Area or flying over during the assessment and furthermore no foraging evidence was recorded. The DBCA threatened fauna database has 19 records of the Baudin's Black Cockatoo from 1999 to 2013. This species was recorded during surveys undertaken in 2013 near Wonnerup North (Biologic 2014). Sections of the Survey Area contain species such as Marri that provide potential suitable foraging habitat for Baudin's Black Cockatoo.

4.3.1 Breeding Habitat

Black Cockatoos breed in large hollow-bearing trees, generally within woodlands or forests (Johnstone *et al.* 2013a). The size of the tree can be a useful indication of the hollowbearing potential of the tree. Trees of suitable DBH are potentially important for maintaining breeding in the long-term, through maintaining the integrity of the habitat and allowing trees to provide future nest hollows. Maintaining the long-term supply of trees of a size to provide suitable nest hollows is particularly important in woodland stands that are known to support Black Cockatoo breeding (DSEWPaC 2012).

The Black Cockatoo habitat assessment revealed that the Survey Area contains Marri, Tuart, Flooded Gum and non-endemic *Eucalyptus sp.* trees which have reached a size that are considered to be potential future hollow bearing trees, therefore potential breeding trees (>500 mm DBH) according to the EPBC Act Black Cockatoo referral guidelines.

In total, 92 trees were recorded which met the criteria to be classed as a potential future breeding tree (Appendix F). This suggests that these trees may develop hollows and have the potential to be use for breeding in the future. In order to be suitable for Black Cockatoos, the hollow entrances need to be greater than 120 mm diameter, particularly for the FRTBC (Johnstone *et al.* 2013a). No suitable hollows for which Black Cockatoos could potentially nest in were observed from the ground during the assessment.

4.3.2 Foraging Habitat

During the 2016 fauna survey we mapped 31.51 ha of potential Black foraging habitat (Figures 3a – 3g). Of this 31.51 ha of potential Black Cockatoo foraging habitat, 18.81 ha is considered regrowth, 13.69 ha is remnant vegetation and 2.01 ha is Pine plantation. In the 2017 Targeted WRP survey, this Pine plantation had been cleared. The resulting factor is a total of 29.5 ha of Black Cockatoo foraging habitat now being present in the Survey Area. Foraging evidence in the form of chewed Marri nuts and too a much lesser extent on Banksia and Pine cones was observed in sections of the Survey Area. There is foraging habitat present in the Survey Area for all three species of Black Cockatoos and this



includes species such as Marri, Tuart, Flooded Gum, *Acacia sp.*, *Banksia sp.*, Peppermint and *Jacksonia sp.* (Johnstone & Kirkby 2011).

4.4 Fauna Habitat Types

During the survey two broad fauna habitats were identified in the Survey Area and these were Remnant and Regrowth Vegetation (Figures 4a – 4g). The Remnant Vegetation in the Survey Area is for the most part analogous to Eucalypt woodland that has an overstorey that is either dominated by Marri or Tuart and Flooded Gum when beside rivers such as Abba and Sabina or wetter areas. The Survey Area is also highly fragmented and linear in nature, surrounded by Pine Plantations, paddocks and the Bussell Highway on the western side.

A large section of the Survey Area that is vegetated represents regrowth; as such we examined historical aerial imagery from 1996 to determine what sections of vegetation in the Survey Area represented remnants and what was regrowth.

And the remaining sections of the Survey Area were cleared of vegetation, apart from mostly introduced grasses, most likely pasture grasses. The cleared areas represented over half of the Survey Area, or 41.76 ha (total size of the Survey Area is 77.92 ha).

Remnant Vegetation

This habitat has an overstorey that typically included Marri, Tuart and Flooded Gum, a midstorey that was comprised of a number of species in various sections of the Survey Area and included Acacia sp., Banksia sp., Christmas Tree, Peppermint, Spearwood, Jacksonia sp., Melaleuca sp., and Xanthorrhoea sp., over a relatively sparse understorey of mixed herbs and grasses. There were also some small sections that consisted almost entirely of large old Peppermints with no midstorey species and a weedy grass understorey.

The large Eucalypt trees provide potential breeding and foraging habitat for Black Cockatoos, while midstorey species such as *Banksia sp.*, Peppermints, Spearwood and *Xanthorrhoea sp.* provide potential foraging habitat for conservation significant species such as the WRP and Black Cockatoos.

This habitat has vegetation in multiple strata (canopy, midstorey and understorey), woody debris and leaf litter that provides habitat for small reptile, bird and mammal species. However, as many of these patches are fragmented and isolated, fauna movement between them is limited, particularly for the less mobile groups such as small reptiles and mammals.

Regrowth Vegetation

This habitat was to some extent a mix of many species and with a similar broad composition to the Remnant Vegetation habitat in some sections. However, most of the Eucalypts in this habitat were not large enough to be considered potential Black Cockatoo breeding



trees. Large sections of this habitat consisted of *Acacia sp.* and Spearwood regrowth which can be considered potential habitat for the WRP, particularly potential foraging habitat and to a lesser extent potential denning habitat.

Much of this habitat lacks vegetation in multiple strata (canopy, midstorey and understorey) and woody debris; however, there is considerable leaf litter and cover in some sections that provides habitat, particularly for small reptiles and birds. However, as many of these patches are fragmented and isolated, fauna movement between them is limited, particularly for the less mobile groups such as small reptiles and mammals.



5 Acknowledgements

360 Environmental would like to thank Greg Harewood for freely providing us with his extensive database of WRP records.



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Aspects of this report, including the opinions, conclusions and recommendations it contains, are based on the results of the investigation, sampling and testing set out in the contract and otherwise in accordance with normal practices and standards. The investigation, sampling and testing are designed to produce results that represent a reasonable interpretation of the general conditions of the site that is the subject of this report. However, due to the characteristics of the site, including natural variations in site conditions, the results of the investigation, sampling and testing may not accurately represent the actual state of the whole site at all points.

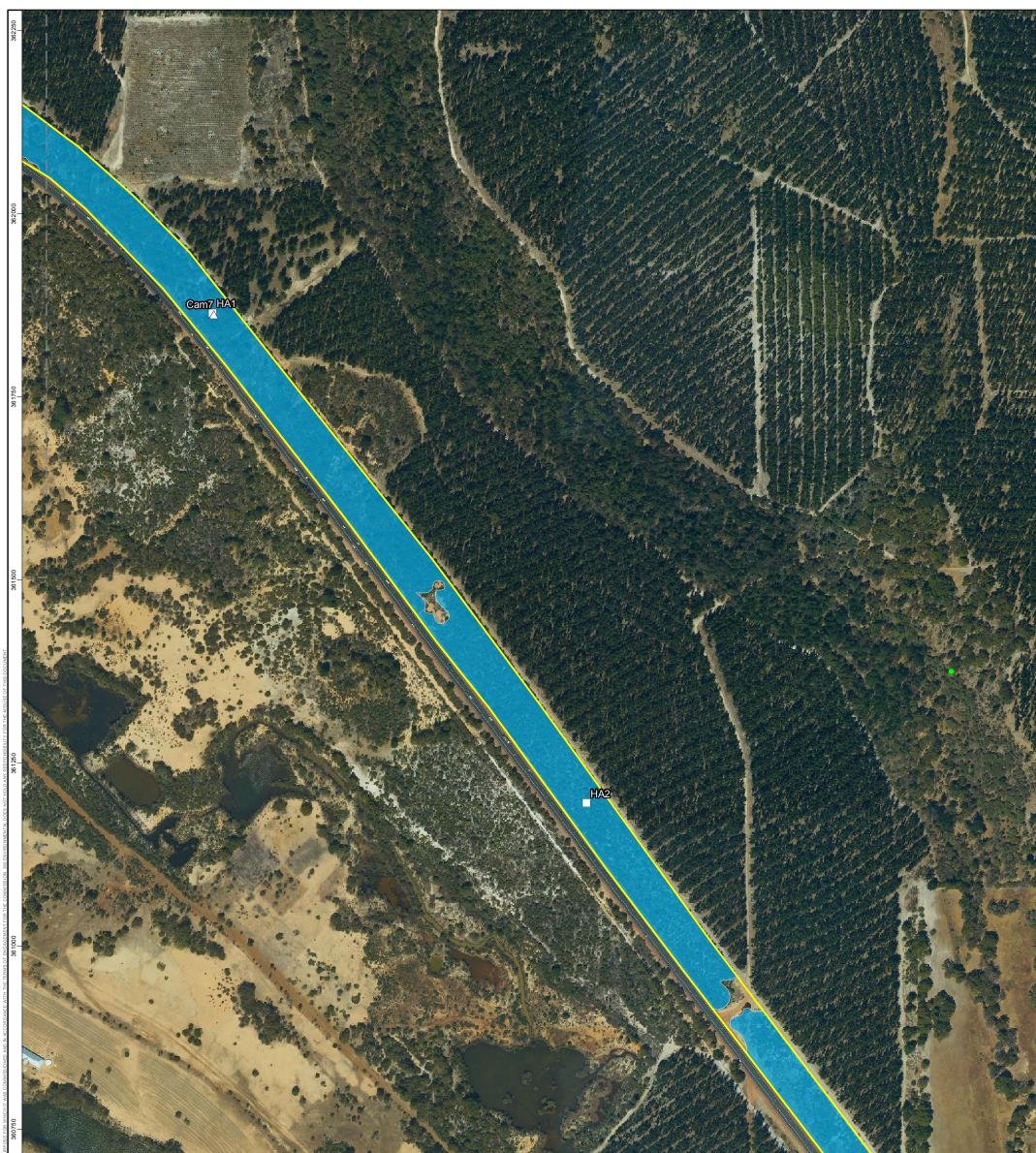
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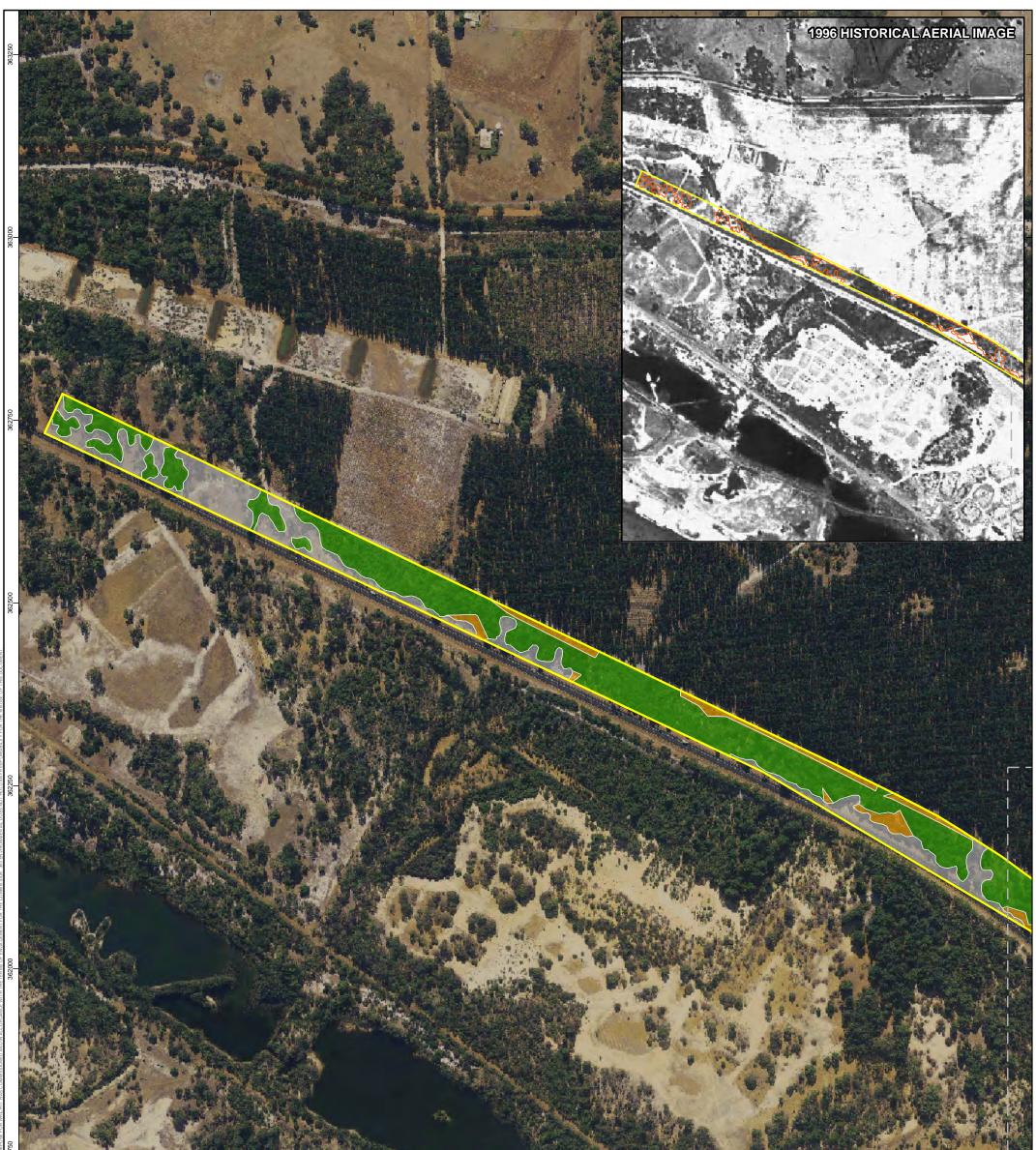


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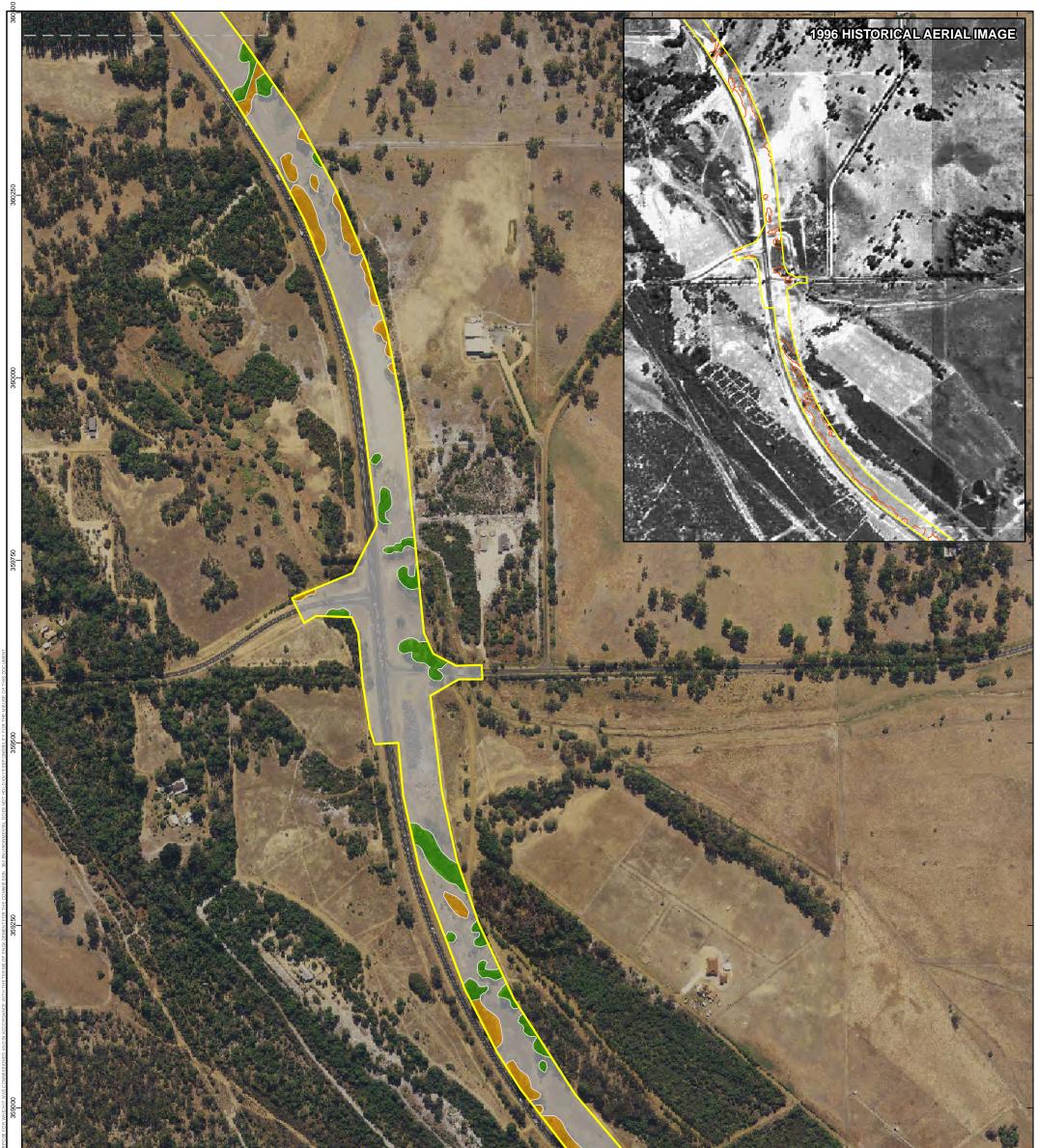




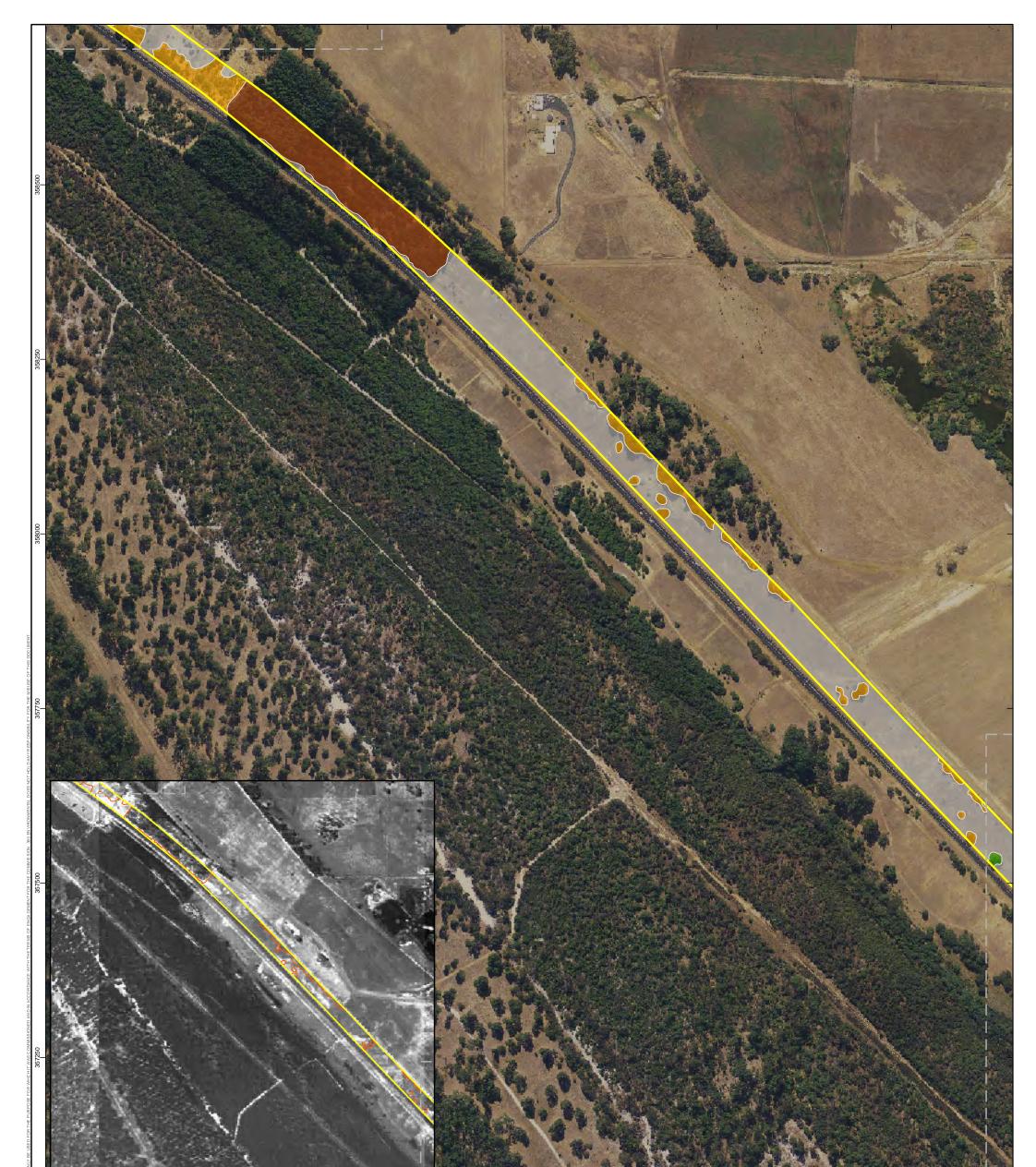
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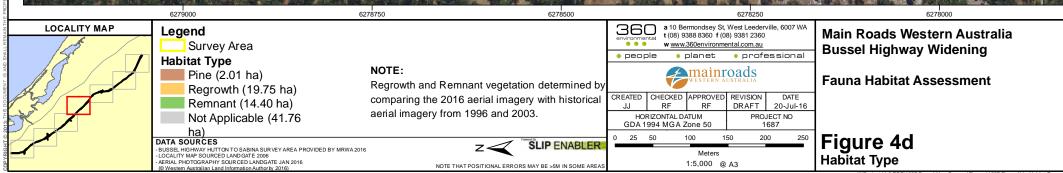


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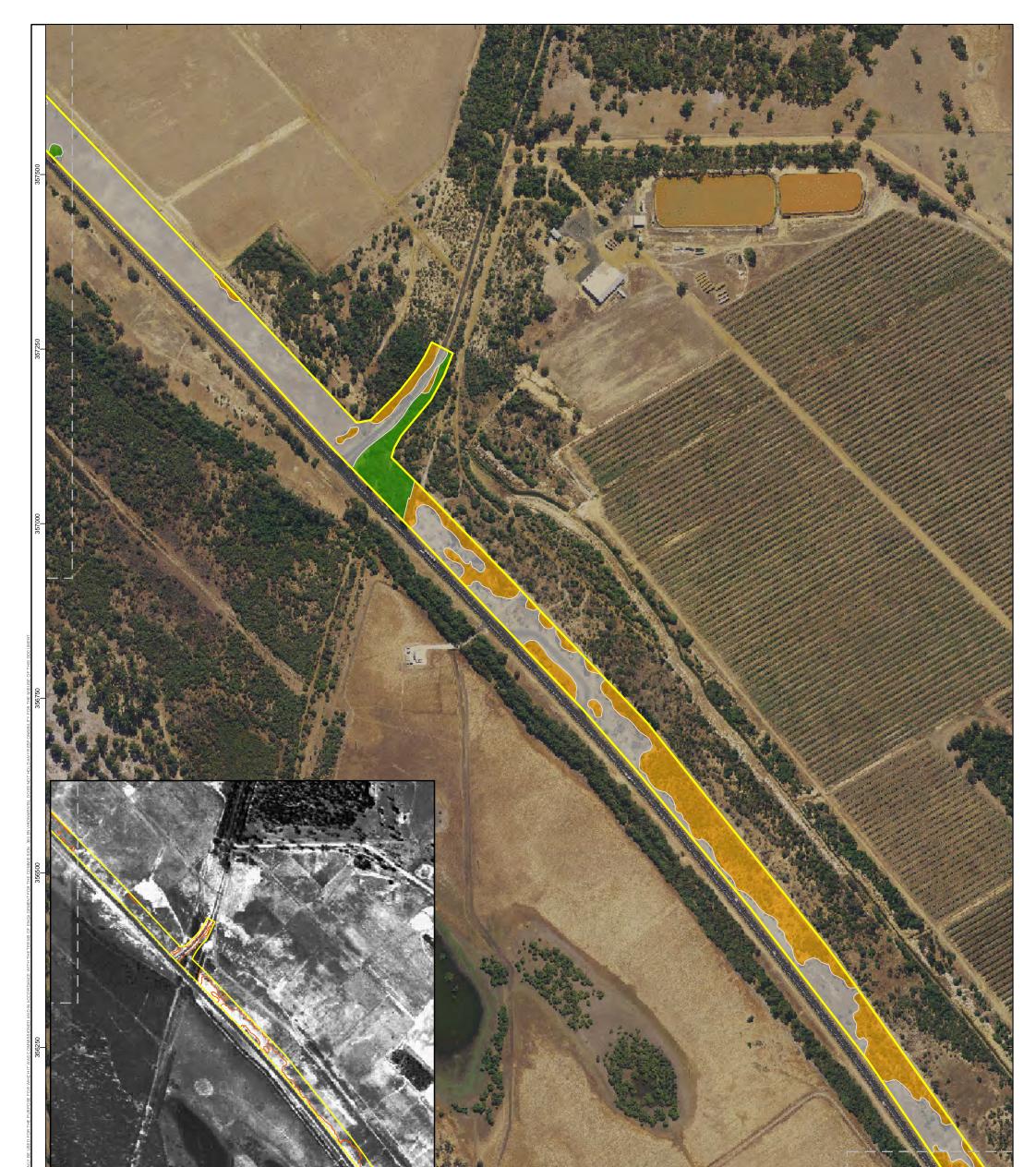


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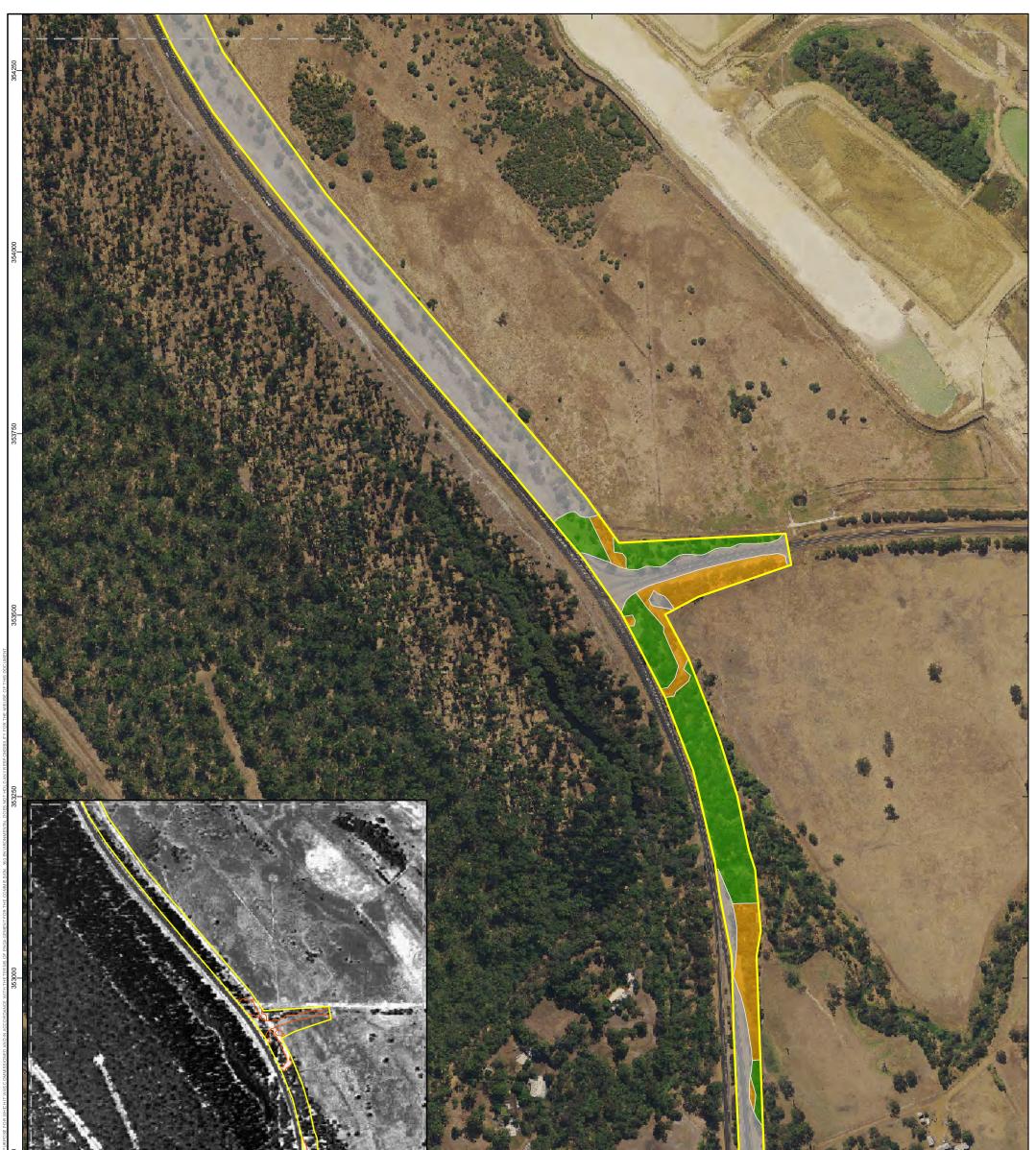
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APPENDIX A

Definition of Threatened Fauna Species Categories



CODE CATEGORY DESCRIPTION Rare or likely to become extinct as critically endangered Schedule 1 S1 fauna. Fauna that is rare or is likely to become extinct as Schedule 2 S2 endangered fauna. Fauna that is rare or is likely to become extinct as vulnerable Schedule 3 S3 fauna. Fauna presumed to be extinct. Schedule 4 S4 Schedule 5 S5 Migratory birds protected under an international agreement. Fauna that is of special conservation need as conservation Schedule 6 S6 dependent fauna. Schedule 7 S7 Other specially protected fauna

Western Australian Threatened Fauna Categories Wildlife Conservation Act 1950 (WA)

Department of Parks and Wildlife Fauna Priority Codes

CATEGORY	CODE	DESCRIPTION
Priority 1	P1	Taxa with few, poorly known populations on threatened lands.
Priority 2	P2	Taxa with few, poorly known populations on conservation lands.
Priority 3	P3	Taxa with several, poorly known populations, some on conservation lands.
Priority 4	P4	Taxa in need of monitoring: not currently threatened or in need of special protection, but could become so. Usually represented on conservation lands.
Priority 5	P5	Taxa in need of monitoring: not considered threatened, but the subject of a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of Threatened Fauna Species under the EPBC Act

CONSERVATION CODE	DESCRIPTION		
Ex	Extinct		
	Taxa which at a particular time if, at the time, there is no reasonable doubt		
	that the last member of the species has died.		
ExW	Extinct in the Wild		
	Taxa which is known only to survive in cultivation, in captivity or as a		
	naturalised population well outside its past range; or it has not been		
	recorded in its known and/or expected habitat, at appropriate seasons,		



e in its past range, despite exhaustive surveys over a time frame ate to its life cycle and form.
Endepagered
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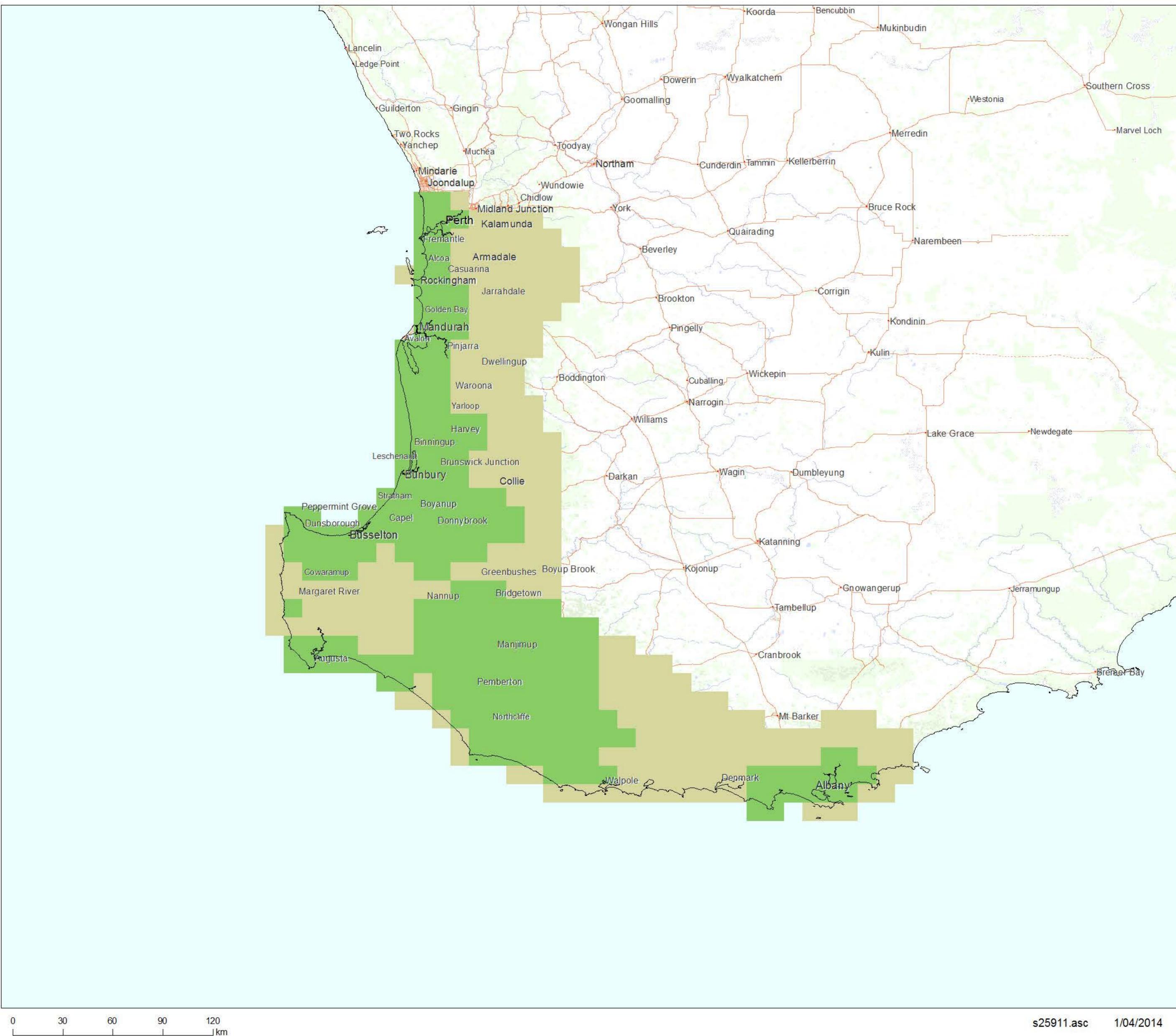
Source: Environment Protection and Biodiversity Conservation Act 1999



APPENDIX B

DotE Western Ringtail Possum Distribution Map

Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir



Species of National Environmental Significance, Map Summary Version 1 2014

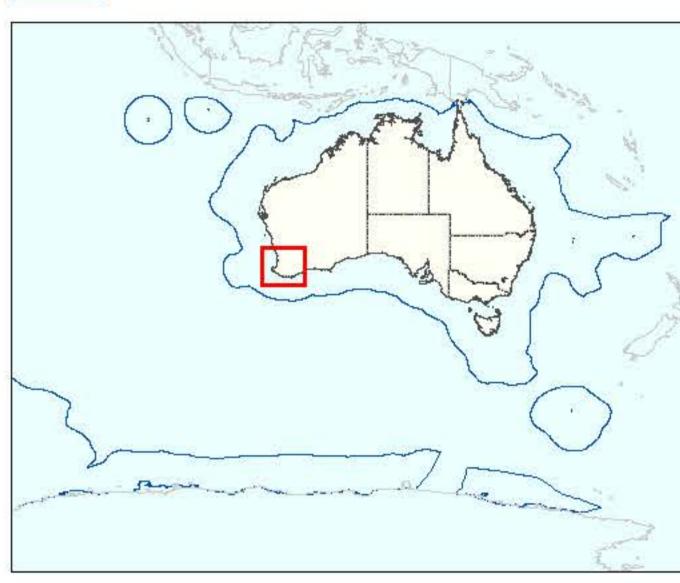
Distribution

Species or species habitat likely to occur



Species or species habitat may occur

Commonwealth Marine Area



Produced by: Environmental Resources Information Network Contextual data source: Geoscience Australia (2006), Geodata Topo 250K Topographic Data

Indicative Map Only: This map has been compiled from datasets with a range of geographic scales and quality. Species distributions are indicative only and not to be used for local assessment. Local knowledge and information should be sought to confirm the presence of the species, or its habitat, at the location of interest.



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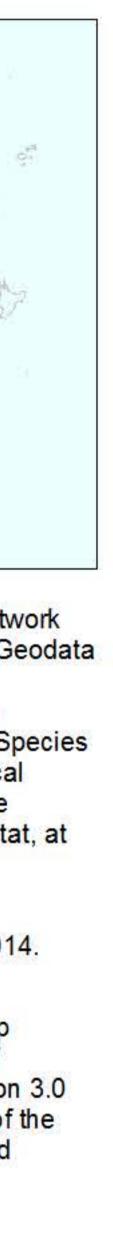
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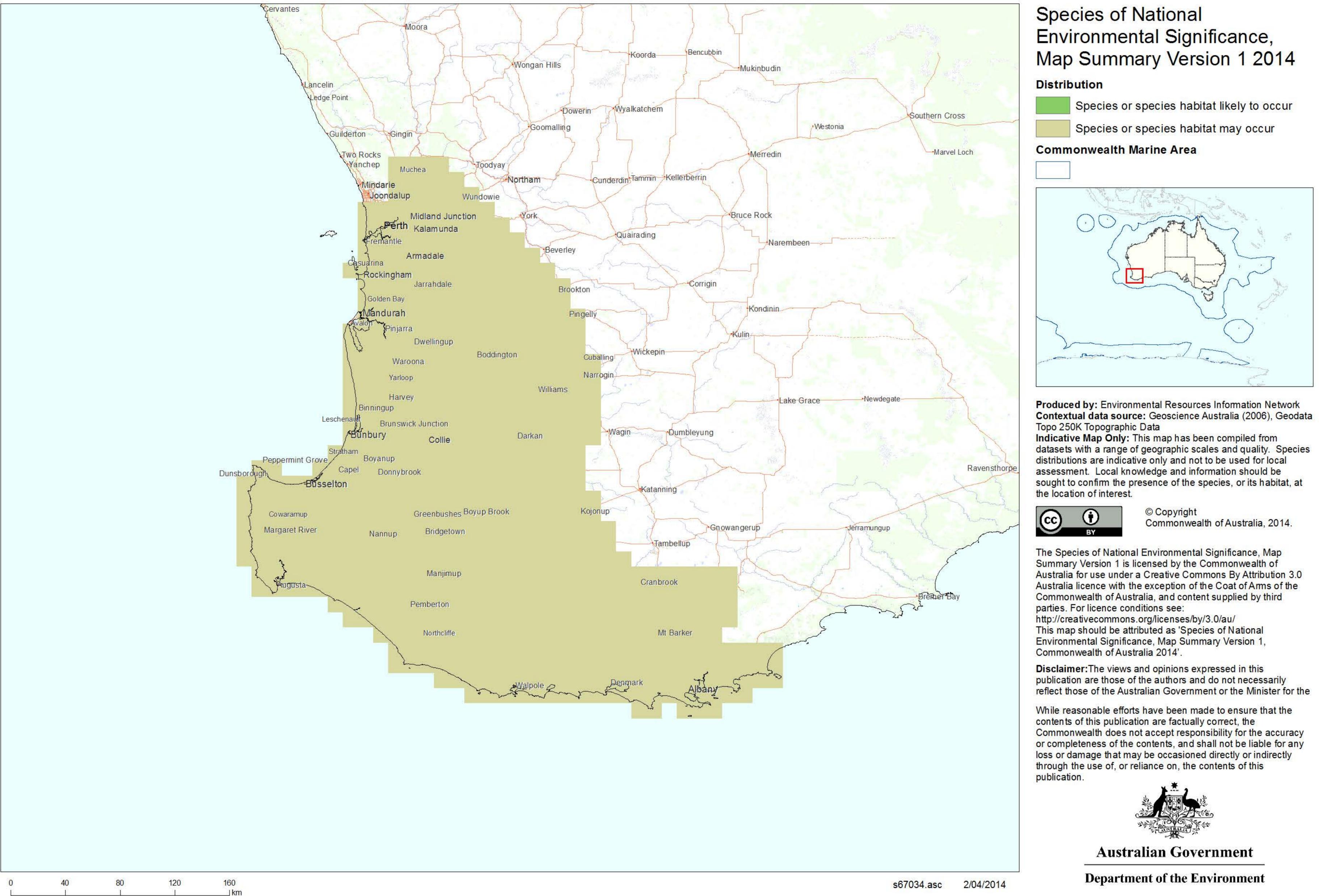


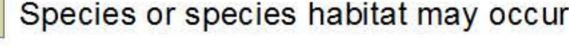


APPENDIX C

DotE Black Cockatoo Distribution Map

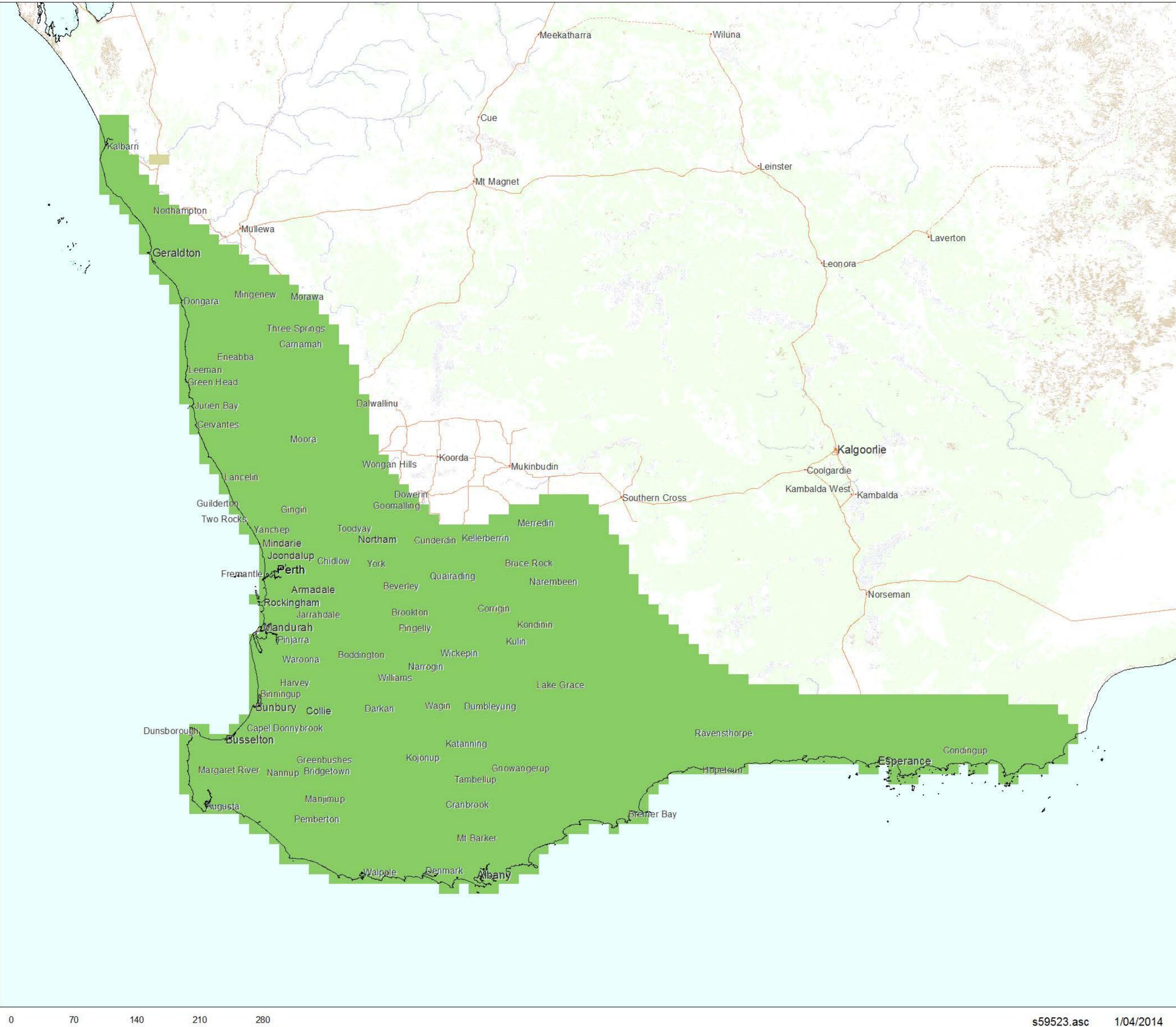
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo





Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo

] km



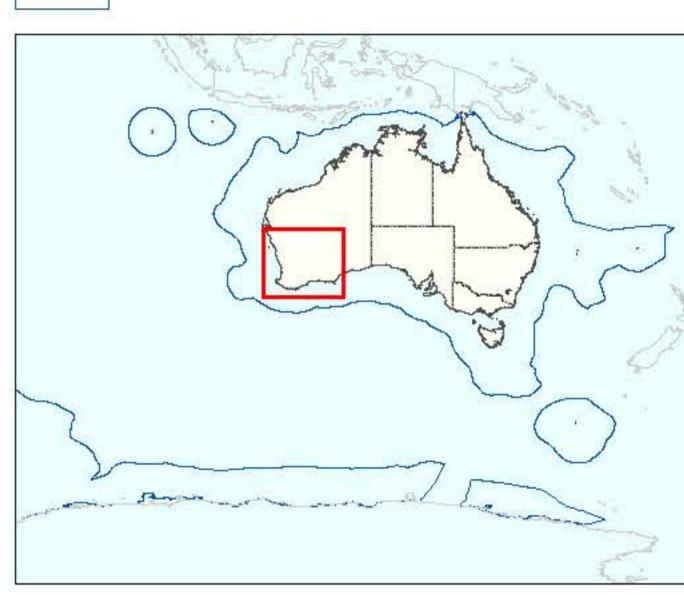
Species of National Environmental Significance, Map Summary Version 1 2014

Distribution

Species or species habitat likely to occur



Commonwealth Marine Area



Produced by: Environmental Resources Information Network Contextual data source: Geoscience Australia (2006), Geodata Topo 250K Topographic Data

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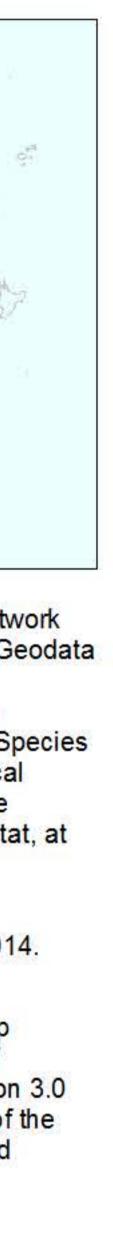
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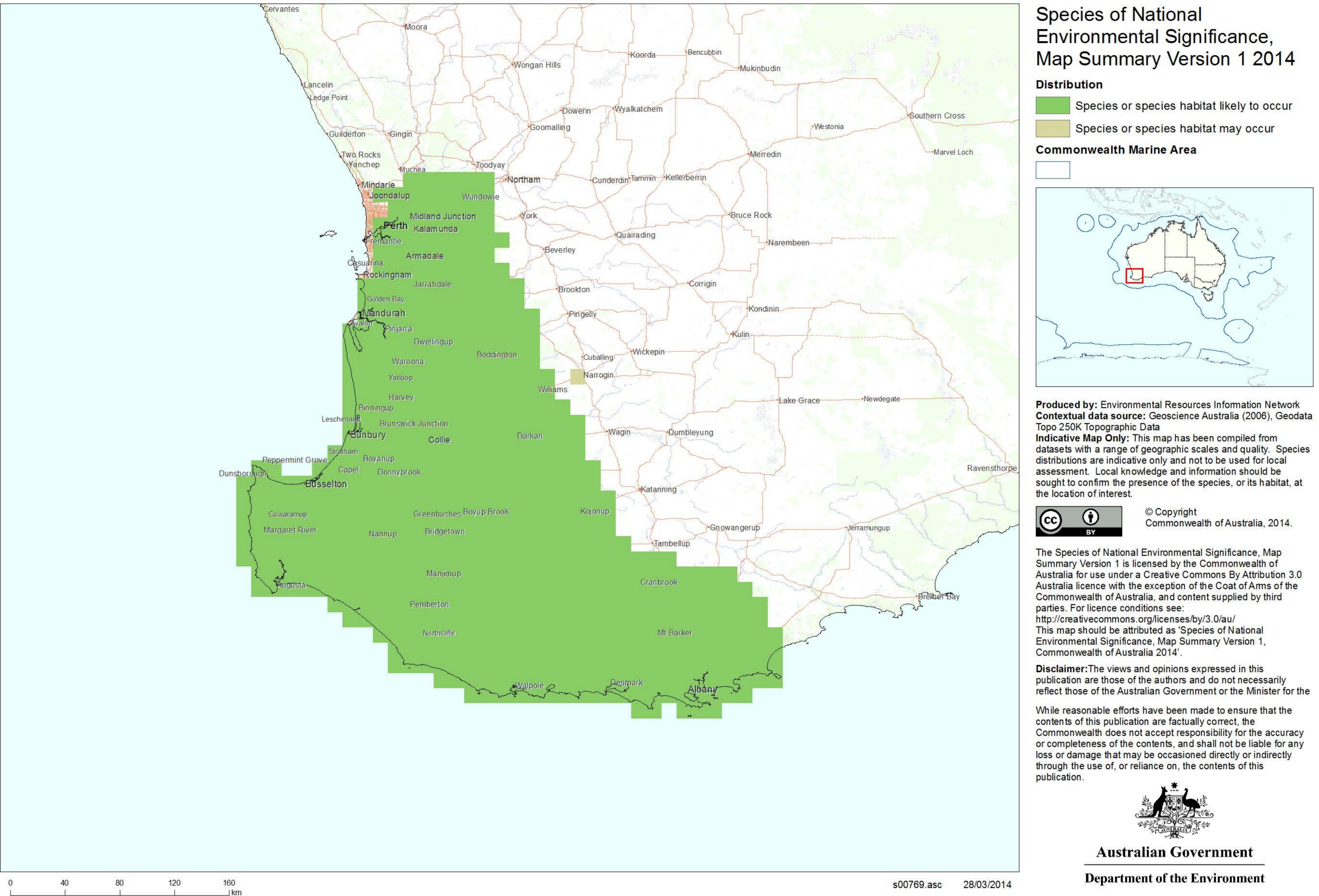


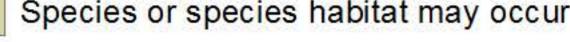
Australian Government





Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo







APPENDIX D

Database Search Results

	NAME	SQURCE COD	SQURCE ID NAME ID	FAMILY
Chara	Rotaurus poiclioptilus	WAM_BIRDS	umilial taxonomy one au AVE-347	24345 Ardeidae
	Calyptorhynchus baudinii Calyptorhynchus baudinii	WAM_BIRDS BIRDATLAS2	um:hid:taxonomy.org.au:AVF:382 A368461366	24733 Poltacidae 34733 Roltacidae
	Calyptorhynchus baudinii	BIRDATLAS2	476920 266	24733 Polttacidae
	Calyptorhynchus baudinii	BIRDATLAS2	\$12\$209 266	24733 Pattacidae
	Calvptorhytechus baudinii Calvptorhytechus baudinii	BRDATLAS2 BRDATLAS2	2957811266	24733 Pottacidae 24733 Pottacidae
	Calyptorhynchus baudinii	BRDATLAS2	295778 266	24733 Poltacidae
	Calyptorhynchus baudinii	BIRDATLAS2	4589871266	24723 Psittacidae
	Calyptorhynchus baudinii	BRDATLAS2	458982 266	24733 Pattacidae
	Calyptorhynchus baudinii	BRDATLAS2	775818 266	24733 Pattacidae
	Calyptomytchus baudini Calyptomytchus baudini	BROATLAS2	//5826 [286 #851221365	34732 Reffection
	Calyptorhynchus baudinii	BIRDATLAS2	488627 266	24733 Polttacidae
Altern </td <td>Calyptorhynchus baudinii</td> <td>BIRDATLAS2</td> <td>4865321266</td> <td>24733 Pattacidae</td>	Calyptorhynchus baudinii	BIRDATLAS2	4865321266	24733 Pattacidae
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And<	Calyptorhynchus baudinii	BRDATLAS2	488624 266	24733 Psittacidae
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Chara </td <td>Osyura australis</td> <td>BRDATLAS2</td> <td>5053414[216</td> <td>24328 Anatidae</td>	Osyura australis	BRDATLAS2	5053414[216	24328 Anatidae
AlterAl	Osyuta australis	BIRDATLAS2	\$043972[215	24328 Anatidae
	Oxyuta australis	BRDATLAS2	\$043960[256	24328 Anatidae
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	Oxyuta australis	BIRDATLAS2	199012 216	24328 Anatidae
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	Osyuta australis	BRDATLAS2	142591 216	24328 Anatidae
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	Onyura australis Oneura australis	BRDATLAS2 BRDATLAS2	142587[216	26328 Anatidae 36228 Anatidae
	Ovyura australis	BIRDATLAS2	62961 216	24328 Anatidae
	Oxyura australis	BIRDATLAS2	58445(216	24328 Anatidae
Name<	Ovyura australis Ovyura australis	BRDATLAS2 BRDATLAS2	40585[216 97781216	24328 Anatidae 36229 Anatidae
	Onyura australis	BRDATLAS2	495134[215	26328 Anatidae
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	Calyptorhynchus latirostris	TEAUNA	30305	24734 Psittacidae
Serie <	Calvptorhytechus latirostris	TEAUNA	30303	24734 Pottacidae 24734 Pottacidae
	Calyptorhynchus latirostris	TFAUNA	30304	24734 Paktacidae
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Name	Calyptorhynchus latirostris	TEAUNA	26801	24734 Psittacidae
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	Catyptorhytichus latirostris Catyptorhytichus interventric	TFAUNA TFAUNA	20202	24734 Poltacidae 24734 Poltacidae
	Calyptorhynchus latirostris	FAUNASURVEY	50516	24734 Pultacidae
	Calyptorhynchus latirostris	FAUNASURVEY	1030927	24734 Psittacidae
	caryptorhynchus latirostris	EAUNASURVEY	103022	24/36 Polttacidae 34736 Bolttacidae
	Calyptorhytichus latirostris	FAUNASURVEY	50654	24736 Poltacidae
	Calyptorhynchus latirostris	FAUNASJEVEY	883292	24736 Poltacidae
	Calyptorhynchus latirostris	FAUNASURVEY	883291	24734 Psittacidae
	caryptorhynchus latirostris	EAUNASURVEY	884293 8833n6	24/34 Poltacidae 34734 Boltacidae
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	Calyptorhynchus latirostris	FAUNASURVEY	883334	24734 Psittacidae
	Calyptorhynchus latirostris	FAUNASURVEY	883305	24734 Psittacidae
	Calvetorhynchus latirostris	FAUNASURVEY	883294	24734 Psittacidae
And a	Calyptorhynchus latirostris	FAUNASURVEY	883295	24734 Psittacidae
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And a	Calyptorhynchus latirostris	BIRDATLAS2	151291 794	24734 Psittacidae
	Calyptorhynchus latirostris	BIRDATLAS2	5012487[794	24734 Psittacidae
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	Tringa nebularia	BRDATLAS2	7781771158	24808 Scologacidae
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	Tringa nebularia	BRDATLAS2	459003 158	24828 Scolopacidae
	Tringa nebularia	BIRDATLAS2	270509 158	24808 Scolopacidae
	Tringa nebularia Tringa nebularia	BRDATLAS2	268704 158	24808 Scolopacidae
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	Tringa nebularia	BRDATLAS2	486513 158	24808 Scolopacidae
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Math Math Math Math M	Calidris ferruginea Calidris ferruginea	AUNA TEAUNA	23029	24784 Scolopacidae 24784 Scolopacidae
Name	Calidris ferruginea	BIRDATLAS2	70409[161	24784 Scolopacidae
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Mark	Piegadis falcinellus	BIRDATLAS2	124736 178	24843 Threekiomithidae
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	Ardea modesta Ardea modesta	BRDATLAS2 BRDATLAS2	775774 187 488621 187	41226 Ardeidae 41226 Ardeidae	Ardea Ardea	modesta modesta		graut agret, white agret graut agret, white agret	Animalia Animalia	и. 980 и. 980	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Malbup bird hide,Wonnerup Malbup bird hide,Wonnerup	500 500	115.43330000000 -33.6333000000 115.4333000000 -33.6333000000	7 22	12 2009 10 2007	ź
	Ardea modesta Ardea modesta Ardea modesta	BRDATLAS2 BRDATLAS2 BRDATLAS2	769401187 107931187 633481187	41324 Ardeidae 41324 Ardeidae 41324 Ardeidae	Ardea Ardea Ardea	modesta modesta modesta		graat ogret, white ogret graat ogret, white ogret graat ogret, white ogret	Animalia Animalia Animalia	M 880 M 880 M 880	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 RUNGON	Vasse - Wonnerup Situary Wonnerup Strahan Valley farm, Bussell Hwy	500 500 5000	115.4182000000 -33.6321000000 115.4167000000 -33.633000000 115.4515000000 -33.6321000000	19 28 7	3 2000 3 1995 1 2000	
	Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2	427282 187 458992 187	41324 Ardeidae 41324 Ardeidae	Ardea Ardea	modesta modesta		graut egret, white egret graut egret, white egret	Animalia Animalia	IA 880 IA 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Wonnerup Malbup bird hide Wonnerup	0	115.4348000000 -33.6321000000 115.4348000000 -33.6321000000	28	9 2003 10 2004	4
	Ardea modesta Ardea modesta	BRDATLAS2 BRDATLAS2	489743 187 495134 187	41224 Ardeidae 41224 Ardeidae	Ardea Ardea	modesta		graut egret, white egret graut egret, white egret graut egret, white egret	Animalia Animalia	и, ано и, ано	Moderately certain Moderately certain	Observational Observational	1 WOWNERUP 1 WOWNERUP	Wannerup Estuary VasseRiver/Estuary	0	115.4323000000 -32.6323000000 115.4323000000 -32.6333000000	21	2 2008	1
	Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2	489741 187 775866 187	41224 Ardeidae 41224 Ardeidae	Ardea Ardea	modesta modesta		great egret, white egret great egret, white egret	Animalia Animalia	A 880 A 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vacue River/Estuary Vacue River & Estuary	0	115.4323000000 -32.6323000000 115.4323000000 -33.6333000000	20	2 2009 7 2001	i.
	Ardea modesta Ardea modesta	BRDATLAS2 BRDATLAS2	775811 187 775819 187	41224 Ardeidae 41224 Ardeidae	Ardea Ardea	modesta modesta		great egret, white egret great egret, white egret great egret, white egret	Animalia Animalia	и. 880 и. 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vasse R estuary Vasse R & Estuary	0	115.4323000000 -32.6323000000 115.4323000000 -32.6333000000	20 21 14	5 2009 9 2009	í.
	Ardea modesta Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2 BIRDATLAG2	775815 187 775794 187 775796 187	41224 Ardeidae 41224 Ardeidae 41224 Ardeidae	Accles Accles Accles	modesta modesta		graut egret, white egret graut egret, white egret erent erent white egret	Animalia Animalia Animalia	A 980 A 980	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Vacue R & Estuary Vacue R & estuary Vacue R & Estuary	0	115.4223000000 -22.6223000000 115.4223000000 -23.6223000000 115.4223000000 -23.6223000000	20 10	7 2009 8 2009 7 2009	i -
	Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2	495123 187 495111 187	41324 Ardeidae 41324 Ardeidae	Ardea Ardea	modesta modesta		graut egret, white egret graut egret, white egret	Animalia Animalia	IA 880 IA 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vacce Estuary Vacce Estuary	0	115.4333000000 -33.6333000000 115.4333000000 -33.6333000000	16 13	4 2009 1 2009	4
	Ardea modesta Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2 BIRDATLAG2	4897451187 4897261187 4897241187	41224 Ardeidae 41224 Ardeidae 41224 Ardeidae	Ardea Ardea Ardea	modesta modesta		grazt egret, white egret grazt egret, white egret grazt egret, white egret	Animalia Animalia Animalia	и цан и аяр и аяр	Moderately certain Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Vacce Estuary Vacce Estuary Vacce Estuary	0	115.4223000000 -22.6223000000 115.4223000000 -23.6223000000 115.4223000000 -23.6223000000	2 14 8	12 2007 12 2007	ź
No. No. </td <td>Ardea modesta Ardea modesta</td> <td>BIRDATLAG2 BIRDATLAG2</td> <td>486513 187 5006757 187</td> <td>41224 Ardeidae 41224 Ardeidae</td> <td>Ardea Ardea</td> <td>modesta modesta</td> <td></td> <td>great egret, white egret great egret, white egret</td> <td>Animalia Animalia</td> <td>1A 880 1A 890</td> <td>Moderately certain Moderately certain</td> <td>Observational Observational</td> <td>1 WONNERUP 1 WONNERUP</td> <td>Vacce Extuary Vacce Wetlands</td> <td>0</td> <td>115.4323000000 -33.6333000000 115.4306000000 -33.6312000000</td> <td>19 16</td> <td>6 2007 9 2006</td> <td>-</td>	Ardea modesta Ardea modesta	BIRDATLAG2 BIRDATLAG2	486513 187 5006757 187	41224 Ardeidae 41224 Ardeidae	Ardea Ardea	modesta modesta		great egret, white egret great egret, white egret	Animalia Animalia	1A 880 1A 890	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vacce Extuary Vacce Wetlands	0	115.4323000000 -33.6333000000 115.4306000000 -33.6312000000	19 16	6 2007 9 2006	-
NAPP	Ardea modesta Ardea modesta	BIRDATLAS2 BIRDATLAS2	295778 187 295776 187	41324 Ardeidae 41324 Ardeidae	Ardea Ardea	modesta modesta		great egret, white egret great egret, white egret	Animalia Animalia	и. 980 и. 980	Moderately certain Moderately certain	Observational Observational	1 CAPEL 1 CAPEL	Capel wetlands Centre Capel wetlands Centre	0	115.5182000000 -33.5821000000 115.5182000000 -33.5821000000	18 8	90 2002 90 2003	i
	Charadhus Hech Plavialis squatar Caretta caretta	etaultsi BREATLAG2 ola BREATLAG2 WAM_REPTLES	5043993 136 um/hid taonomy on au 9691/971	24382 Charadhidae 24382 Charadhidae 25325 Chelonidae	Pluvialis Caretta	squatarola caretta		greater cand prover, range cand prover grey plover loggerhead turtle	Animalia Animalia Animalia	A BRD A BRD A BRD	Moderately certain WAM Vouchered	Observational Observational Specimen	1 WONNERUP 1 WONNERUP 1 WONNERUP	Wonnerup Estuary, Forrest Beac WONNERUP	100 50000	115.4273000000 -27.573000000 115.4599000000 -23.599000000 115.4567000000 -23.6167000000	17 27 16	1 2009 9 1990	
	Caretta caretta Tringa stagnatile	TEAUNA BIRDATLAS2	10144 5044004(159	25235 Chelonidae 24809 Scolopacidae	Caretta Tringa	caretta stagnatilis		loggerhead turtle marsh sandpiper, little greenshank	Animalia Animalia	IN REPILE	Very certain Moderately certain	Released Observational	1 FORREST BEACH 1 WONNERUP	Forest Beach Tuart Forest NP, Vasse Wonnera	10000	115.47399970000 -23.56319636000 115.42180000000 -23.6235000000	1 27	1 1984 1 2005	i i
NA	Tringa stagnatile Tringa stagnatile Tringa stagnatile	BRDATLAG2 BRDATLAG2 BRDATLAG2	495336[159 489343[159 495111[159	24809 Scolopacidae 24809 Scolopacidae 26809 Scolopacidae	Tringa Tringa Tringa	stagnatilis stagnatilis		marsh candpiper, istoe greenshank marsh sandpiper, little greenshank marsh sandpiper, little greenshank	Animalia Animalia	0480 AJ 0480 AJ 0490 AJ	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WOWNERUP 1 WOWNERUP 1 WOWNERUP	Maibap birbinde,Wonnerup Wannerup Ectuary Vacce Ectuary	900 0	115.4223000000 -22.6223000000 115.4223000000 -23.6223000000 115.4223000000 -23.6223000000	21 13	2 2009	1
Norpow Norpow </td <td>Tringa stagnatile Tringa stagnatile Exiro nemerinus</td> <td>BRDATLAG2 BRDATLAG2 Calima C BVCV</td> <td>489725 159 489726 159 1030665</td> <td>26809 Scolopacidae 26809 Scolopacidae 26524 Exicopidae</td> <td>Tringa Tringa Estro</td> <td>stagnatils stagnatils</td> <td></td> <td>marsh sandpiper, little greenshank marsh sandpiper, little greenshank paraetina fairre.</td> <td>Animalia Animalia Animalia</td> <td>N 280 N 280 N 280</td> <td>Moderately certain Moderately certain Certain</td> <td>Observational Observational</td> <td>1 WONNERUP 1 WONNERUP</td> <td>Vacue Estuary Vacue Estuary Lutines Mining Janua, B</td> <td>0</td> <td>115.4223000000 -22.6223000000 115.4223000000 -22.6223000000 115.405000000 -23.5655000000</td> <td>2 14</td> <td>2 2000 12 2007</td> <td>1</td>	Tringa stagnatile Tringa stagnatile Exiro nemerinus	BRDATLAG2 BRDATLAG2 Calima C BVCV	489725 159 489726 159 1030665	26809 Scolopacidae 26809 Scolopacidae 26524 Exicopidae	Tringa Tringa Estro	stagnatils stagnatils		marsh sandpiper, little greenshank marsh sandpiper, little greenshank paraetina fairre.	Animalia Animalia Animalia	N 280 N 280 N 280	Moderately certain Moderately certain Certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vacue Estuary Vacue Estuary Lutines Mining Janua, B	0	115.4223000000 -22.6223000000 115.4223000000 -22.6223000000 115.405000000 -23.5655000000	2 14	2 2000 12 2007	1
	Faico peregrinus Faico peregrinus	FAUNASURVEY FAUNASURVEY	601011 50472	25624 Falconidae 25624 Falconidae	Falco Falco	peregrinus peregrinus		peregrine faicon peregrine faicon	Animalia Animalia	05 880 05 880	Cettain Cettain	survey survey	1 LUDLOW 1 FORREST BEACH	Ludiow, Ludiow Mining Lease Ludiow, Site C	3000 100	115.4908000000 -33.5876000000 115.50610000000 -33.5800000000	21 5	12 2012 12 2008	í.
No. No. </td <td>Faico peregrinus Faico peregrinus Faico perverinus</td> <td>BRDATLAS2 BRDATLAS2 BRDATLAS2</td> <td>4776951237 1989541237 50206031237</td> <td>25624 Falconidae 25624 Falconidae 25624 Falconidae</td> <td>Falco Falco Falco</td> <td>peregrinus peregrinus perverinus</td> <td></td> <td>peregrine faicon peregrine faicon peregrine faicon</td> <td>Animalia Animalia Animalia</td> <td>05 880 05 880 05 880</td> <td>Moderately certain Moderately certain Moderately certain</td> <td>Observational Observational Observational</td> <td>1 WONNERUP 1 WONNERUP 1 WONNERUP</td> <td>Wonnerup Estuary Floodgates Wonnerup Estuary Wonnerup paddocks</td> <td>100 100 100</td> <td>115.4258000000 -33.6156000000 115.4247000000 -33.6142000000 115.4144000000 -33.6222000000</td> <td>2 26 2</td> <td>2 2007 9 2005 1 2009</td> <td>1</td>	Faico peregrinus Faico peregrinus Faico perverinus	BRDATLAS2 BRDATLAS2 BRDATLAS2	4776951237 1989541237 50206031237	25624 Falconidae 25624 Falconidae 25624 Falconidae	Falco Falco Falco	peregrinus peregrinus perverinus		peregrine faicon peregrine faicon peregrine faicon	Animalia Animalia Animalia	05 880 05 880 05 880	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Wonnerup Estuary Floodgates Wonnerup Estuary Wonnerup paddocks	100 100 100	115.4258000000 -33.6156000000 115.4247000000 -33.6142000000 115.4144000000 -33.6222000000	2 26 2	2 2007 9 2005 1 2009	1
	Faico peregrinus Faico peregrinus	BIRDATLAG2 BIRDATLAG2	29187[237 775753]237	25624 Falconidae 25624 Falconidae	Falco Falco	peregrinus peregrinus		peregrine faicon peregrine faicon	Animalia Animalia	05 880 05 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Wonnerup Taart Forest Wonnerup Taart Forest	500 500	115.4348000000 -33.6321000000 115.4323000000 -33.633000000	18 15	7 1995 6 2005	ł.
NAME	Faico penegrinus Faico penegrinus Faico penegrinus	BRDATLAG2 BRDATLAG2 BRDATLAG2	489341[237 775811[237	25624 Falconidae 25624 Falconidae	Falos Falos	peregrinus peregrinus		peregnine faitzen peregnine faitzen peregnine faitzen	Animalia Animalia	05 880 05 880	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONARUP 1 WONARUP 1 WONARUP	Maibag bird tide,Wonnerap Vacce River/Estuary Vacce R estuary	900 0	115.4223000000 -22.6223000000 115.4223000000 -23.6223000000 115.4223000000 -22.6223000000	20 21	2 2008	1
Normal Normal </td <td>Falco peregrinus Iscodon obesulu grondro ab</td> <td>BRDATLAG2 s fusciventer WAM_MAMMALS s fusciventer WAM_MAMMALS</td> <td>489724 [237 um hid: taxonomy one au MAMM 1 um hid: taxonomy one au MAMM 1</td> <td>25624 Falconidae 24153 Peramelidae 24153 Reconstitue</td> <td>Falco Isoadon Isoarion</td> <td>obeculus obeculus</td> <td>fusciventer fusciventer</td> <td>peregrine faizon quenda, southern brown bandizoot quenda, southern brown bandizoot</td> <td>Animalia Animalia Animalia</td> <td>05 BIED P4 MAMMAL P4 MAMMAL</td> <td>Moderately certain WAM Vouchered WAM Worksawd</td> <td>Observational Specimen Szecimen</td> <td>1 WONNERUP 1 WONNERUP 1 WONNERUP</td> <td>Vacce Estuary</td> <td>0 20000</td> <td>115.4333000000 -33.5333000000 115.4333000000 -33.5333000000 115.4333000000 -33.5333000000</td> <td>8</td> <td>12 2007 0 0</td> <td>3</td>	Falco peregrinus Iscodon obesulu grondro ab	BRDATLAG2 s fusciventer WAM_MAMMALS s fusciventer WAM_MAMMALS	489724 [237 um hid: taxonomy one au MAMM 1 um hid: taxonomy one au MAMM 1	25624 Falconidae 24153 Peramelidae 24153 Reconstitue	Falco Isoadon Isoarion	obeculus obeculus	fusciventer fusciventer	peregrine faizon quenda, southern brown bandizoot quenda, southern brown bandizoot	Animalia Animalia Animalia	05 BIED P4 MAMMAL P4 MAMMAL	Moderately certain WAM Vouchered WAM Worksawd	Observational Specimen Szecimen	1 WONNERUP 1 WONNERUP 1 WONNERUP	Vacce Estuary	0 20000	115.4333000000 -33.5333000000 115.4333000000 -33.5333000000 115.4333000000 -33.5333000000	8	12 2007 0 0	3
	ixoodan abesulu	s fusciventer WAM_MAMMALS	umilid talonomy ore au MAMM 1 15688	24153 Peramelidae 24153 Peramelidae	loadon loadon	obeculus obeculus	fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia	Pé MAMMAL Pé MAMMAL	WAM Vouchered Very certain	Specimen Day sighting	1 WONNERUP 1 ABEA RIVER	2.4 km want alone Princefield Rd fro	10000 50	115.4223000000 -22.6223000000 115.47983470000 -22.68435866000	0 22	- 0 0 7 2003	1
	ixoodan abesulu ixoodan abesulu ixoodan abesulu	s fusciventer TEAUNA s fusciventer TEAUNA s fusciventer TEAUNA	15690 15705 763	24153 Peramelidae 24153 Peramelidae 24153 Peramelidae	koodon koodon koodon	obeculus obeculus obeculus	fusciventer fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia Animalia	P6 MAMMAL P6 MAMMAL P6 MAMMAH	Very certain Very certain Very certain	Day sighting Dead	1 RUADON 1 RUADON 1 WONNEPHD	Approx Skm E of Ludiow Hitherane corr Lodina: Mithanesean Brt and Bro Woonerup	500 500 1000	115.55521990000 -23.64831997000 115.55575310000 -23.64528341000 115.43582760000 -23.6221333000	6 1 8	3 2000 5 2006 5 4644	1
	ixoodan abesulu ixoodan abesulu	s fusciventer TFAUNA s fusciventer TFAUNA	67836 5808	24153 Peramelidae 24153 Peramelidae	kuadon kuadon	obeculus obeculus	fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia	Pé MAMMAL Pé MAMMAL	Moderately certain Very certain	Dead	1 ABBA RIVER 1 LUDLOW	Cor Luis Bri B. Wonnarun Courb Bro Luction Mining Lease for Cable Sare	2000 2000	115.44125770000 -23.67009825000 115.4964626000 -23.58547000000	16 24	5 2012 90 2005	4
	koodan abesulu koodan abesulu koodan abesulu	s fusciventer TEAUNA s fusciventer TEAUNA s fusciventer TEAUNA	5804 5805 5809	24153 Peramelidae 24153 Peramelidae 24153 Peramelidae	koadon koadon koadon	obeculus obeculus	fusdventer fusdventer fusdventer	quenda, southern brown bandicoot quenda, southern brown bandicoot ouenda, southern brown bandicoot	Animalia Animalia Animalia	P6 MAMMAL P6 MAMMAL P6 MAMMAL	Very certain Very certain Very certain		1 LUDLOW 1 LUDLOW 1 LUDLOW	Ludiow Mining Lease for Cable Sare Ludiow Mining Lease for Cable Sare Ludiow Mining Lease for Cable Sare	2000 2000 2000	115.49371820000 -33.58528331000 115.49371820000 -33.58528331000 115.49371820000 -33.58528331000	21 1 25	3 2005 4 2005 20 2005	i a
	ixoodan abesulu ixoodan abesulu	s fusciventer TEAUNA s fusciventer TEAUNA	68444 5807	24153 Peramelidae 24153 Peramelidae	loadon loadon	obeculus obeculus	fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia Animalia	P6 MAMMAL P6 MAMMAL	Moderately certain Very certain	Day sighting	1 LUDLOW 1 LUDLOW	Ludiow-Hithergreen Road, Ludiow Ludiow Mining Lease for Cable San	2000 2000	115.48719400000 -33.61705615000 115.48485630000 -33.59799904000	4 24	6 2012 10 2005	1
	koodan abeaulu koodan abeaulu	s fusciventer TEAUNA s fusciventer TEAUNA	80769 67827	24153 Peramelidae 24153 Peramelidae	koadon	obeculus obeculus	fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia	Pé MAAMAAL Pé MAAMAAL	Moderately certain Moderately certain	Day sighting Day sighting	1 RIARON 1 RIARON	Tutunuo Road. neur intersection wi 136 Wonnerup South Road. Ruabo	2000 2000	115.50629920000 -22.64549742000 115.44097610000 -23.65880416000	1 16	9 2015 5 2012	2
	koodan obesulu koodan obesulu koodan obesulu	s fusciventer TEAUNA s fusciventer TEAUNA s fusciventer EAUNA CIEVEY	10130 8342 1030988	24153 Peramelidae 24153 Peramelidae 24153 Berweelidae	koadon koadon	obeculus obeculus	fusciventer fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia Animalia	P6 MAMMAAL P6 MAMMAAL P8 MAMMAAL	Very certain Very certain Certain	Dead Caught or trapped	1 WONNERUP 50 LUDLOW	Wonnerup Casel Wetlands Centre, around wet Ludious Mining Jasse, A	10000 10000	115.42700190000 -33.62550365000 115.53333490000 -33.61666536000 115.48270000000 -33.58280000000	1 1	7 1985 3 2001	i.
	ixoodan abesulu ixoodan abesulu	s fusciventer FAUNASURVEY s fusciventer FAUNASURVEY	1030989 1030990	24153 Peramelidae 24153 Peramelidae	koadon koadon	obeculus obeculus	fusciventer fusciventer	quenda, southern brown bandicoot quenda, southern brown bandicoot	Animalia Animalia	P6 MAAMAAL P6 MAAMAAL	Cettain Cettain	ourvey ourvey	1 LUDLOW 2 FORREST BEACH	Ludiow Mining Lease, B Ludiow Mining Lease, C	100 100	115.4906000000 -33.5865000000 115.5061000000 -33.57990000000	18 18	12 2014 12 2014	i i
	isodon obeculu Merops ornatus Merops ornatus	E fusciventer FAUNASURVEY FAUNASURVEY FAUNASURVEY	601005 1031009 1031010	24152 Peramelidae 24598 Merupidae 24598 Merupidae	loodon Merops Merops	obeculus ornatus ornatus	fusciventer	quenda, southern brown bandicost rainbow bee-eater rainbow bee-eater	Animalia Animalia Animalia	Pé MAMMAL IA BIRD IA BIRD	Cettain Cettain Cettain	survey survey survey	1 LUDLOW 1 LUDLOW 1 LUDLOW	Ludiow, Ludiow Mining Lease Ludiow Mining Lease, A Ludiow Mining Lease, B	2000 100 100	115.4908000000 -33.5876000000 115.4927000000 -33.5839000000 115.4906000000 -33.5865000000	21 18 18	12 2012 12 2014 12 2014	1
Norm	Merops ornatius Merops ornatius	FAUNASURVEY FAUNASURVEY	1031011 883300	24598 Meropidae 24598 Meropidae	Merops Merops	ornatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia	A 280 A 260	Cettain Cettain	sanwy sanwy	1 LUDLOW 1 RUARON	Ludiow Mining Lease, G Wonnerup North,	100 100	115.4842000000 -33.602000000 115.4452000000 -33.6544000000	18	12 2014 5 2013	į.
No. No. </td <td>Merops ornatus Merops ornatus</td> <td>FAUNASURVEY</td> <td>\$83341 601019</td> <td>24598 Merupidae 24598 Merupidae</td> <td>Merops Merops</td> <td>ornatus ornatus</td> <td></td> <td>rainbox ber-ester rainbox ber-ester</td> <td>Animalia Animalia</td> <td>и ано и ано и ано</td> <td>Cettain Cettain</td> <td>survey survey survey</td> <td>1 RUARON 1 LUDLOW</td> <td>Wonnerup North, Ludiow, Ludiow Mining Lease</td> <td>100 3000</td> <td>115.4428000000 -33.6559000000 115.4908000000 -33.5876000000</td> <td>13 21</td> <td>5 2013 12 2013</td> <td>2</td>	Merops ornatus Merops ornatus	FAUNASURVEY	\$83341 601019	24598 Merupidae 24598 Merupidae	Merops Merops	ornatus ornatus		rainbox ber-ester rainbox ber-ester	Animalia Animalia	и ано и ано и ано	Cettain Cettain	survey survey survey	1 RUARON 1 LUDLOW	Wonnerup North, Ludiow, Ludiow Mining Lease	100 3000	115.4428000000 -33.6559000000 115.4908000000 -33.5876000000	13 21	5 2013 12 2013	2
	Merops ornatius Merops ornatius	BRDATLAS2 BRDATLAS2	50280891229 50280941229	26598 Meropidae 26598 Meropidae	Merops Merops	ornatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia	1A 280 1A 280	Moderately certain Moderately certain	Observational Observational	1 WOWNERUP 1 WOWNERUP	Wonnerup Floodgate, Vasse Wonn Malbup Ck Birdhide, Vasse Wonn	100 100	115.4273000000 -23.6144000000 115.4251000000 -23.6294000000	11 11	3 2007 3 2007	i.
	Merops ornatus Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2 BRDATLAG2	142574 329 5043999 329	24598 Merupidae 24598 Merupidae	Merops Merops	ornatus ornatus		rainbow bee-exter rainbow bee-exter rainbow bee-exter	Animalia Animalia	N 880 N 880 N 880	Moderately certain Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Wonnerup satuary Lockville Coast Vasse Floodgates, Vasse Wonner	100 100 100	115.414/000000 -41.5122000000 115.4187000000 -33.6152000000 115.4151000000 -33.6180000000	15 27	1 2005 1 2005 1 2006	
	Merops ornatus Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2 BRDATLAG2	5043987(229 5073096(229 124726(229	26598 Meropidae 26598 Meropidae 26598 Meropidae	Merops Merops	ornatus ornatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia Animalia	1A 280 1A 280	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WORNERUP 1 WORNERUP 1 UID/OW	Vacue Floodgates, Vacue Wonner Jan and Dicks Wonnerup Estuary Canal Watland Centra	100 100	115.4151000000 -33.618000000 115.4147000000 -33.630300000 115.5171000000 -33.5827000000	2 2	11 2007 20 2010	
Name	Merops ornatus Merops ornatus	BIRDATLAG2 BIRDATLAG2	620101329 6590381329	24598 Meropidae 24598 Meropidae	Merops Merops	ornatus.		rainbow bee-ester rainbow bee-ester	Animalia Animalia	A 880 A 880	Moderately certain Moderately certain	Observational Observational	1 LUDLOW 1 WONNERUP	Malbup Creek Wonnerup Tuart Forest	100 500	115.4751000000 -33.6058000000 115.4368000000 -33.6221000000	7 18	1 2000 1 2005	4
Name	Merops ornatus Merops ornatus Merops ornatus	BRDATLAS2 BRDATLAS2 BRDATLAS2	4590321329 4272501329	26598 Meropidae 26598 Meropidae 26598 Meropidae	Merops Merops	omatus omatus		rainbow bee-eater rainbow bee-eater rainbow bee-eater	Animalia Animalia	0480 AJ 0480 AJ 0490 AJ	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WOWNERUP 1 WOWNERUP 1 WOWNERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500 500	115.4348000000 -43.622000000 115.4348000000 -33.622000000 115.43480000000 -33.622000000	20 14 13	11 2004 12 2004 20 2003	a
	Merops ornatus Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2 BRDATLAG2	2957901329 2957681329 3682011329	24598 Meropidae 24598 Meropidae 24598 Meropidae	Merops Merops	omatus omatus		rainbow bee-exter rainbow bee-exter	Animalia Animalia Animalia	M 880 M 880 M 880	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERP 1 WONNERP 1 WONNERP	Wonnerup Tuart Forest Wonnerup Tuart Forest Winnerup Tuart Forest	500 500	115.4348000000 -33.6321000000 115.4348000000 -33.6321000000 115.4348000000 -33.6321000000	18 17 20	1 2003 11 2003	1
Norm	Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2	2687001329 2685991329	24598 Merupidae 24598 Merupidae	Merops Merops	omatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia	и 880 И 880	Moderately certain Moderately certain	Observational Observational	1 WONKERUP 1 WONKERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500	115.4348000000 -33.6321000000 115.4348000000 -33.6321000000	16 11	12 2001 11 2001	:
NAME	Merops ornatius Merops ornatius Merops ornatius	BRDATLAS2 BRDATLAS2 BRDATLAS2	198997 329 8766 329 62958 329	26598 Meropidae 26598 Meropidae 26598 Meropidae	Merops Merops Merops	ornatus ornatus ornatus		rainbow bee-eater rainbow bee-eater rainbow bee-eater	Animalia Animalia Animalia	и вко и вко и вко	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500 500	115.4348000000 -33.62200000 115.4348000000 -33.6221000000 115.4348000000 -33.6221000000	25 15 18	10 2001 1 1999 12 1999	i.
NameN	Merops ornatius Merops ornatius	BIRDATLAS2 BIRDATLAS2	58443 329 58442 329	24598 Meropidae 24598 Meropidae	Merops Merops	omatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia	и. 980 и. 980	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500	115.43480000000 -33.63210000000 115.43480000000 -33.63210000000	14 21	11 1999 10 1999	i.
Norm	Merops ornatus Merops ornatus Merops ornatus	BRDATLAS2 BRDATLAS2 BRDATLAS2	8763[329 8767[329 295771[329	26598 Meropidae 26598 Meropidae	Merops Merops	ornatus ornatus		rainbow bee-eater rainbow bee-eater rainbow bee-eater	Animalia Animalia	и. 280 и. 280 и. 280	Moderately certain Moderately certain Moderately certain	Observational Observational	1 WOWNERUP 1 WOWNERUP 1 WOWNERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest Malbup bird hide,Wonnerup	500 500	115.4348000000 -43.62200000 115.4348000000 -33.62200000 115.4348000000 -33.6221000000	20 17 11	11 1998 12 1998 12 2002	2
VALUE	Merops ornatius Merops ornatius	BIRDATLAG2 BIRDATLAG2	142592 329 142590 329	24598 Meropidae 24598 Meropidae	Merops Merops	ornatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia	A 880 A 880	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Malbup bird hide,Wonnerup Malbup bird hide,Wonnerup	500 500	115.4348000000 -33.6321000000 115.4348000000 -33.6321000000	15 11	1 2001 11 2000	i.
Norm	Merops ornatus Merops ornatus	BRDATLAS2 BRDATLAS2	7757581820 7755751829	24598 Merupidae 24598 Merupidae	Merops Merops	omatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia	и. 880 и. 980	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Womerup Taart Forest Womerup Taart Forest	500 500	115.4323000000 -32.6323000000 115.4323000000 -33.6333000000	7	12 2009 10 2009	í.
Math	Merops ornatius Merops ornatius Merops ornatius	BRDATLAS2 BRDATLAS2 BRDATLAS2	495101 329 489722 329 488620 329	26598 Meropidae 26598 Meropidae 26598 Meropidae	Merops Merops Merops	ornatus ornatus ornatus		rainbow bee-ester rainbow bee-ester rainbow bee-ester	Animalia Animalia Animalia	и вко и вко и вко	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WOWNERUP 1 WOWNERUP 1 WOWNERUP	Wonnerup Tuart Forest Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500 500	115.4333000000 -33.6333000000 115.4333000000 -33.6333000000 115.4333000000 -33.6333000000	21 8 22	1 2008 12 2007 20 2007	i a
Norm	Merops ornatius Merops ornatius	BRDATLAG2 BRDATLAG2	484599 329 477681 329	24598 Meropidae 24598 Meropidae	Merops Merops	ornatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia	IA 880 IA 890	Moderately certain Moderately certain	Observational Observational	1 WONAGRUP 1 WONAGRUP	Wonnerup Tuart Forest Wonnerup Tuart Forest	500 500	115.4333000000 -33.6333000000 115.4333000000 -33.633000000	10 29	1 2007 11 2006	į.
Norm	Merops ornatus Merops ornatus	BRDATLAS2 BRDATLAS2	63348 229 459047 329	24598 Merupidae 24598 Merupidae	Merops Merops	ornabus ornatus		rainbox be-ester rainbox be-ester	Animalia Animalia	и, ано и, ано	Moderately certain Moderately certain	Observational Observational	1 RUARON 1 WONNERUP	Strahan Valley farm, Bussell Hwy Vasse Estuary	5000 0	115.4515000000 -23.6321000000 115.4348000000 -33.6321000000	7 2	1 2000 1 2005	ś
Mart	Merops ornatius Merops ornatius Merops ornatius	BRDATLAG2 BRDATLAG2 BRDATLAG2	495111 329 489725 329 295781 329	24598 Meropidae 24598 Meropidae 24598 Meropidae	Merops Merops Merops	ornatus ornatus ornatus		rainbow bee-ester rainbow bee-ester rainbow bee-ester	Animalia Animalia Animalia	и вко и вко и вко	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 CAFEL	Vasse Estuary Vasse Estuary Casel wetlands Centre	0	115.4333000000 -33.6333000000 115.4333000000 -33.6333000000 115.5382000000 -33.5821000000	13 2 29	1 2008 2 2008 10 2002	i
	Merops ornatius Merops ornatius	BIRDATLAS2 BIRDATLAS2	295778 329 295776 329	26598 Meropidae 26598 Meropidae	Merops Merops	ornatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia	IA BRD	Moderately certain Moderately certain	Observational Observational	1 CAPEL 1 CAPEL	Capel wetlands Centre Capel wetlands Centre	0	115.5182000000 -33.5821000000 115.5182000000 -33.5821000000	18 8	10 2002 30 2002	i.
Math	Merops ornatus Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2 BRDATLAG2	4589891329 4589881329	24598 Meropidae 24598 Meropidae 24598 Meropidae	Merops Merops	ornatus ornatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia Animalia	A 880 A 880 A 880	Moderately certain Moderately certain Moderately certain	Observational Observational	1 CAPEL 1 CAPEL 1 CAPEL	Capel Wetland Centre Capel Wetland Centre Capel Wetland Centre	0		19 14 28	11 2003 1 2005 1 2005	1
Name	Merops ornatus Merops ornatus Merops ornatus	BRDATLAG2 BRDATLAG2 BRDATLAG2	4589871229 4589831229 4589821229	26598 Meropidae 26598 Meropidae 26598 Meropidae	Merops Merops	ornatus ornatus		rainbow bee-ester rainbow bee-ester	Animalia Animalia Animalia	1A 980 1A 980	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 CAPEL 1 CAPEL 1 CAPEL	Capel Wetland Centre Capel Wetland Centre Capel Wetland Centre	0	115.5182000000 -33.5821000000 115.5182000000 -33.5821000000 115.5182000000 -33.5821000000	14 19	10 2005 11 2004 11 2004	i.
Name	Merops ornatius Merops ornatius	BIRDATLAG2 BIRDATLAG2	4886271329 4886241329	24598 Meropidae 24598 Meropidae	Merops Merops	omatus omatus		rainbow bee-eater rainbow bee-eater	Animalia Animalia	и 880 и 880	Moderately certain Moderately certain	Observational Observational	1 LUDLOW 1 LUDLOW	Capel Wetlands Centre Capel Wetland Centre	0	115.5167000000 -33.5832000000 115.5167000000 -33.5832000000	7	11 2007 20 2007	1
Math	Merops ornatus Merops ornatus Calidris ruficoliis	BRDATLAS2 BRDATLAS2 BRDATLAS2	4776701329 50280931562	26598 Meropidae 26598 Meropidae 26788 Scolopacidae	Merops Calidris	ornatus ornatus ruficollis		rainbow bee-eater rainbow bee-eater red-necked stint	Animalia Animalia	0480 AJ 0480 AJ 0490 AJ	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 LUDLOW 1 LUDLOW 1 WORMERUP	Capel Wetland Centre Capel Wetland Centre Womerup Estuary, Forrest Reac	0 100	115.525.7000000 -47.587.8000000 115.5267000000 -33.5833000000 115.4509000000 -33.593000000	17 18 11	10 2006 3 2007	;
Marcial	Calidris ruficollis Calidris ruficollis Calidris ruficollis	BRDATLAS2 BRDATLAS2	70409 162 76940 162	24788 Scolopacidae 24788 Scolopacidae	Calidris Calidris	ruficoliis ruficoliis		red-necked stint red-necked stint	Animalia Animalia	1A 280 1A 280	Moderately certain Moderately certain	Observational Observational	1 WONNERLP 1 WONNERLP	Wonnerup Estuary Vasse - Wonnerup Estuary	100 500	115.4456000000 -23.5964000000 115.4182000000 -23.6321000000	6 19	3 2000 3 2000	j.
Marcial	Calidris ruficollis Calidris ruficollis	BIRDATLAS2 BIRDATLAS2	775828 162 775299 162	24788 Scolopacidae 24788 Scolopacidae	Calidris Calidris	ruficolis		red-necked stint red-necked stint	Animalia Animalia	и. 880 и. 980	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 WONNERUP	Vasue R Estuary Vasue Estuary	0	115.4323000000 -32.6323000000 115.4323000000 -33.633000000	26 17	3 2001 3 2005	ź
Image Image <	Calidris ruficollis Calidris ruficollis Calidris ruficollis	BRDATLAG2 BRDATLAG2 BRDATLAG2	489735[162 489726[162 486513]162	24788 Scolopacidae 24788 Scolopacidae 24788 Scolopacidae	Calidris Calidris Calidris	ruficolis ruficolis ruficolis		red-necked stint red-necked stint red-necked stint	Animalia Animalia Animalia	016 Al 016 Al 016 Al	Moderately certain Moderately certain Moderately certain	Observational Observational Observational	1 WONNERUP 1 WONNERUP 1 WONNERUP	Vacce Estuary Vacce Estuary Vacce Estuary	0	115.4223000000 -22.6223000000 115.4223000000 -22.6223000000 115.4223000000 -22.6223000000	2 14 19	2 2009 12 2007 6 2007	í z
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	Calidris acumina Calidris acumina	ta BRDATLAG2 ta BRDATLAG2	5028096 163 5057078 163	24779 Scolopacidae 24779 Scolopacidae	Calidris	acuminata acuminata		sharp-tailed sandpiper sharp-tailed sandpiper	Animalia Animalia	и ако и ако и ако	Moderately certain Moderately certain	Observational Observational	1 WONNERUP 1 FORREST BEACH	Tuart Forest NP, Vasse Wonneru Vasse Swamp	100	115.4218000000 -33.6325000000 115.4611000000 -33.5814000000	11 17	- 2007 3 2007 2 2008	
And a	Macronectes gig Observanis Faun Pharconnis	ANDERS TEALING AND	10150 com high teachers and an Addated I com high teachers and an Addated I	24690 Procellariidae 34045 Darpuridae 34045 Percentidae	Macronectes Phascogale Physiciania	giganteus tapostala tapostela	tapoatafa tapoar-du	southern giant petrel south-western bruch-tailed phascogaie, wambenger south-western bruch-tailed phascogaie, wambenger	Animalia Animalia Animalia	IA BID VU MAMMAL VU MAMMAL	Very certain WAM Vouchered WAM Workered	Caught or trapped Specimen Specimen	1 WONNERUP 1 WONNERUP 1 WONNERUP	Wonnerup	2000 20000	115.4220020000 -33.61179554000 115.4361000000 -33.630600000 115.43230000000 -33.63354000000	6 0 90	7 1973 0 0 12	i.
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And stands And sta	Phascogale tapo Phascogale tapo Phascogale tapo	atata subso IWAM WAM MAAMAALS atata subso. IWAM TEAJINA atata subso. IWAM TEAJINA	umitidi taxonomv ore au MAAMM 1 15547 15560	34345 Derpuridae 34345 Derpuridae 34345 Derpuridae	Phascogale Phascogale Phascogale	tapoatafa tapoatafa tapoatafa	tapoatala subsp. (WAM M-634) subsp. (WAM M-634)	south-western bruch-tailed phacogaie, wambenger south-western bruch-tailed phacogaie, wambenger south-western bruch-tailed phacogaie, warr	Animalia Animalia Animalia	VU MAMMAL VU MAMMAL VU MAMMAL	WAM Vouchered Very certain Very certain	Specimen Dead Day sietting	1 LUDLOW 1 WORNERUP 1 LUDLOW	ABBA RIVER LUDLOW-HITHERGRED Tuart Rd, just before Layman Rd At Ludiow turnoff from Europal sciet	0 500 500	115.4833000000 -33.6167000000 115.42379110000 -33.64434665000 115.48763200000 -33.617644*****	27 29 6	11 189 4 2000 5 1000	
Processing Process	Phascogale tapo Phascogale tapo	atafa subso /WAM TEAUNA atafa subso. /WAM TEAUNA	5800 16712	34045 Despuridae 34045 Despuridae	Phascogale Phascogale	tapostafa tapostafa	subsp. (WAM M 634) subsp. (WAM M 634)	south-wettern bruth-tailed phacogais, wantbright south-wettern bruth-tailed phacogais, wamberger	Animalia Animalia	VU MAMMAL VU MAMMAL	Very certain Very certain	Night sighting	1 FORREST BEACH 1 LUDLOW	Cable Sands minine site in forest N Ludlow River. Pine Plantation ISF 1:	500 2000	115.50512270000 -33.58002869000 115.52227730000 -33.60519764000	21 9	- 1000 3 2000 4 2008	i i
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Phascogale tapo Phascogale tapo Phascogale tapo	atata subus, IWAM TEAUNA atata subus, IWAM TEAUNA atata subus, IWAM FAUNASURNEY	15583 15582 1031055	34345 Dorpuridae 34345 Dorpuridae 34345 Dorpuridae	Phascogale Phascogale Phascogale	tapoatafa tapoatafa tapoatafa	subsp. (WAM M434) subsp. (WAM M434) subsp. (WAM M434)	south-western brush-tailed phascogale, wambenger south-western brush-tailed phascogale, wambenger south-western brush-tailed phascogale, wambenger	Animalia Animalia Animalia	VU MAAMMAL VU MAAMMAL VU MAAMMAL	Very certain Very certain Certain	Day sighting survey	1 LUDLOW 1 LUDLOW 8 LUDLOW	succel Hishwav near Simoson Roac Half wav between Ludiow and Bucc Ludiow Mining Lease, E	1000 10000 100	113.48471210000 -22.61641716000 115.45817840000 -22.63271405000 115.4925000000 -22.57800000000	2 8 19	4 1993 4 1993 12 2014	4
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Nydamy drygger ToleNA 168 2011 Made Nydamy drygger were, dad Albed Alb	Phascogale tapo Diomedea esular Diomedea esular	arana subsa. IWAM FAUNASURVEY n. TEAUNA n. TEAUNA	882300 6588 6588	34345 Darpuridae 25618 Diomedeidae 25618 Diomedeidae	Phascogale Diomedea Diomedea	tapoatala exulans exulans	subsp. (WAM M434)	south-western brush-tailed phacogale, wambenger wandering albatross wandering albatross	Animalia Animalia Animalia	VU MAMAAL VU & M BRD VU & M BRD	Certain Very certain Very certain	survey Day sighting Day sighting	1 RUARON 1 WONNERUP 1 WONNERUP	Wonnerup North, Mouth of Wonnerup Inlet Mouth of Wonnerup Inlet	100 2000 2000	115.44170000000 -33.6569000000 115.42300070000 -33.61140246000 115.42300070000 -33.61140246000	13 5 5	5 2013 9 1972 9 497	1
	Hydramys chrys	ogaster TEAUNA	15499	24215 Muridae	Hydromys	chrysogaster		water-rat, rakali	Animalia	P6 MAMMAL	Moderately certain	Dead	1 LUDLOW	Ludiow settlement	1000	115.47920900000 -33.60220440000	5	5 1992	1

Hydromys chrysogaster Macropus inna Fakistrellas mackenziei	TEAUNA TEAUNA WAM_MAAMMALS FAUNASURVEY FAUNASURVEY	8343 15617	24215 Muridae 24123 Marropodidae 24189 Vesperilionidae 24240 Maridae	Hydromys	chrysogaster	water-rat, rakali western bruch wallaby western false pipistrelle	Animalia	P4		MAMMAL	Very certain Very certain WAM Vouchered	Caught or trapped Day sighting Specimen survey specimen Specimen Specimen Specimen Specimen Specimen Specimen Specimen Datad Datad		1 LUDLOW 1 RIJARON 1 FORRESTREACH 1 RIJARON 4 RIJARON	Capel Wetlands Centre, around wet	10000 500	115.52223490000 115.46814960000	-33.61666506000	1	3	2001 1995
Falsistrellus mackenziei	WRM_MAMMALS	umitid taxonomy ore au MAMM 1 882325 882326	24189 Vespertiloridae	Hydromys Macropus Falsistrellus Pseudomys	chrysogaster inna mackenziel occidentalis	western false pipistrelle	Acientia Acientia Acientia Acientia genra Acientia genra Acientia genra Acientia genra Acientia genra Acientia genra Acientia	2		MAMMAAL MAAMMAAL MAAMMAAL MAAMMAAL MAAMMAAL	WAM Vouchered	Specimen		1 FORREST BEACH	Rusbon road 1km from Russell Hat JAMISS PADDOCK	10000 100	115.5000000000	-22.63642722000 -23.63642722000 -23.6687000000 -23.64870000000	0	0	
Pseudomys occidentalis Pseudomys occidentalis	FAUNASURVEY	883325 883336		Pseudomys Pseudomys Pseudocheirus	occidentalis occidentalis	weden nouse weden nouse	Animalia Animalia	P4 P4		MAMMAL	Cetain Cetain	sawey			Wonnerup North, Wonnerup North,	100			12	5	2013
Pseudocheirus occidentalis Pseudocheirus occidentalis		umitid taxonomy ore au MAMM 1 umitid taxonomy ore au MAMM 1	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	western ringtall possum, western ringtall possum.	nguara Animalia Nguara Animalia	DN DN	4	MAMMAL	WAM Vouchered WAM Vouchered	Specimen Specimen		1 LUDLOW 1 WONNERUP	LUDLOW STATE FOREST BUSSEL HWY	50 10000	115.44640000000 115.43220000000	-33.62780000000 -33.61670000000	7 24	3	1993 1991
Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis	WAM_MAAMMALS WAM_MAAMMALS WAM_MAAMMALS TEALNA TEALNA	umbile teacher or a school of a school of the umbile teacher or as AMAMM 1 umbile teacher or as a MAAMM 1 umbile teacher or as a MAAMM 1 9927 15420	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pteudocheirus Pteudocheirus Pteudocheirus Pteudocheirus		wetern ringtal pocum, wetern ringtal pocum, wetern ringtal pocum,	nguara Animalia Animalia	EN DI		MAMMAL MAMMAL MAMMAL MAMMAL MAMMAL	WAM Vouchered WAM Vouchered	Specimen Snarimen		1 WONNERUP 1 LUDLOW 24 REINSCOURT	ABBA RIVER	10000 10000	115.43330000000	-22.62220000000	17 35	3	1991
Pseudocheirus occidentalis	TEAUNA	9927	24166 Pseudocheiridae		occidentalis		nguara Animalia	EN EN		MAMMAL		Night sighting	2	24 REINSCOURT	LUDLOW STATE FOREST Lot 2 Tuart Drive, Dunsberbugh	50	115.41855350000	-33.64420761000	25	5	1985 2004 2005 2008
Pseudocheirus occidentalis Pseudocheirus occidentalis	TEAUNA	15281	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis	western ringtall possum, western ringtall possum,		EN EN	4		Very certain Very certain	Day sighting		1 NAENALUP 1 REINSCOURT	R/w Wonnerup South Rd and Lavm Tuart Drive southwest of Tuart NP	500	115.44030680000 115.41962510000	-23.64509723000 -23.64634056000	10	2	2008
Pseudocheirus occidentalis Pseudocheirus occidentalis	TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA TEADNA	79098 76912	24166 Pseudocheiridae 24166 Pseudocheiridae	Preudacheirus Preudacheirus	occidentalis occidentalis	weten ringtal posum, weten ringtal posum.	nguara Animalia Animalia Animalia	DN DN	4	MAMMAL MAMMAL	Very certain Very certain	tay ugeting Sighting Caught or trapped Dead Definite signs Sighting Scats		1 WONNERUP 1 WONNERUP	Forest Beach Womenup house, Busselton	2000 2000	115.44196040000 115.43089840000	-23.59877285000 -23.62820648000	0 28	2	2014
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	TEAUNA TEAUNA	80578	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis	wettern ringtall possum, wettern ringtall possum, wettern ringtall possum,	gara Arinalia gara Arinalia gara Arinalia gara Arinalia gara Arinalia gara Arinalia	EN CN		MAMMAL MAMMAL MAMMAL MAMMAL	Very certain Very certain Moderately certain Very certain	Dead Definite sizes		1 WONNERUP 1 WONNERUP 0 WONNERUP 1 WONNERUP	Wonerup nouse, sussetton Layman Rd, Wonnerup House Lexuer Receive, obsolité Wonneru Bussetton / Port Geograph / Wonn Lot 1992 Downs Road, Ludiow	2000	115.42920370000 115.41221610000 115.45085010000	-33.63010382000 -33.6193880000 -33.6193880000 -33.62158167000	30 15	6	2015
Pseudocheirus occidentalis Pseudocheirus occidentalis	TEAUNA	79294	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis	wettern ringtall possum, wettern ringtall possum,	nguara Animalia	EN	4	MAMMAL	Very certain Very certain	Sighting		1 WONNERUP 0 LUDLOW	Bucselton / Port Geograph / Wonn	1000 1000	115.41085010000 115.52850160000	-23.62158167000 -23.62071998000	0	0	0
Pseudocheirus occidentalis	TEAUNA	8786	24166 Pseudocheiridae	Pseudocheirus	occidentalis		igara Animalia	EN EN		MAMMAL MAMMAL	Very certain	Night sighting		1 LUDLOW		2000	115.50384780000	-22.58272779000	â	12	2003
Pseudocheirus occidentalis Pseudocheirus occidentalis Pseudocheirus occidentalis	TEAUNA	79099	24166 Pasudocheiridae 24166 Pasudocheiridae 24166 Pasudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia Inguara Animalia	EN EN		MAMMAL MAMMAL MAMMAL	Very certain Very certain	Sighting Sighting		1 LUDLOW 1 LUDLOW	Ludiow Settlement Ludiow, Ludiow State Forest	2000 2000	115.48484230000 115.48177310000	-23.59868428000 -23.60225394000	8	0	
Pseudocheirus occidentalis Pseudocheirus occidentalis	TEAUNA TEAUNA	79112	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia	EN		MAMMAL MAMMAL	Very certain Very certain	Sighting Niehr siehring		1 LUDLOW 2 FORREST BEACH	Ludiow, Tuart Forest National Park Ludiow Tuart Forest National Park	2000 2000	115.47357280000 115.50715090000	-33.60891668000 -33.57925054000	0	0	0
Pseudocheirus occidentalis Pseudocheirus occidentalis	TEAUNA	16640	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis		nguara Animalia	EN	4	MAMMAL MAMMAL		Dead				2000	115.50500310000 115.52310000000	-23.64500279000 -23.58290000000	28	11	2007
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	588065	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus	occidentalis	wettern ringtal possum, wettern ringtal possum,	nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cetain	sanwy		1 LUDLOW	Capel, MRWA - Bussell Highway	100	115.52320000000	-22.5850000000 -23.5850000000 -23.60280000000	19	3	2012
Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	585776 588045		Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posun, wetern ringtal posun, wetern ringtal posun, wetern ringtal posun,	nguara Animalia Animalia Animalia	EN EN	4	MAMMAL MAMMAL MAMMAL MAMMAL	Cettain Cettain Cettain Cettain Cettain Cettain Cettain Cettain	sanwy		2 LUDLOW 2 LUDLOW 2 LUDLOW 2 LUDLOW	Capel, MRWA - Bussell Highway Capel, MRWA - Bussell Highway Southern Swan Coastal Plain DSSW Capel, MRWA - Bussell Highway	100	115.52080000000 115.51840000000		9	4	2008
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	588042 588141	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus	occidentalis	western ringtali pocsurit,	nguara Animalia Animalia	EN DI		MAMMAL	Cettain	salvey			Capel, MRWA - Russell Highway Capel, MRWA - Russell Highway	100	115.51710000000 115.5165000000	-33.59410000000 -33.5952000000	16	3	2012
	FAUNASURVEY	S#5775	24166 Pseudocheiridae	Pseudocheirus	occidentalis	western ringtail possum,	nguara Animalia	EN CH		MAMMAL		sanwy		3 LUDLOW		100	115.50570000000	-33.61160000000	2	4	2008
Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	585790	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis	wetern ringtal posun, wetern ringtal posun, wetern ringtal posun, wetern ringtal posun,	gara Arinala gara Arinala	EN EN		MAMMAAL MAMMAAL MAMMAAL MAMMAAL MAMMAAL MAMMAAL	Cettain Cettain Cettain Cettain Cettain	Night signifies Expense Signing Night signifies Dad term Signifies		1 LUDLOW 1 LUDLOW 1 LUDLOW 1 LUDLOW 1 LUDLOW	Luciow, Road Kil - Aucoel Highway Southern Swan Coartal Plain, OSDA Southern Swan Coartal Plain, OSDA	100	115.47210000000	-33.6322000000 -33.63620000000	11	4	2002 2008 2002 2002 2003 2008 2008 2008
		585789 585823	24166 Pseudocheiridae		occidentalis occidentalis		nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cettain Cettain	sanwy		1 LUDLOW 1 LUDLOW		100	115.46950000000 115.46920000000	-22.62510000000	11 14	4	2008
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	582884 583882	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posum, wetern ringtal posum.		DN DN	4	MAMMAL		salvey salvey		1 REINSCOURT 1 REINSCOURT	Ludiow, Deale - Lot 2 Tuart Drive Ludiow, Deale - Lot 2 Tuart Drive	100	115.42070000000 115.42010000000	-33.6451000000 -33.6452000000	25	5	2005
Pseudocheirus occidentalis	FAUNASURVEY	583879	24166 Pseudocheiridae	Pseudocheirus	occidentalis	wetern ringtal possan, wetern ringtal possan, wetern ringtal possan, wetern ringtal possan,	iguara Animalia	EN CH	-	MAMMAL	Cettain	sanwy		1 REINSCOURT 1 REINSCOURT	Ludiow, Deale - Lot 2 Tuart Drive	100	115.4200000000	-23.64590000000	25	5	2005
Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	582893	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis	wetern ringtall posum,	gana Animata gana Animata gana Animata gana Animata gana Animata gana Animata	EN EN		MAMMAL MAMMAL MAMMAL MAMMAL	Certain Certain Certain Certain Certain Certain	survey		1 REINSCOURT 1 REINSCOURT	Ludiou, Deale - Lot 2 Tuant Drive Ludiou, Deale - Lot 2 Tuant Drive Ludiou, Deale - Lot 2 Tuant Drive	100	115.41970000000 115.41940000000	-33.6439000000 -33.64420000000	25	5	2005 2005 2005 2005 2005 2005
	FAUNASURVEY	583891 583883			occidentalis occidentalis		nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cetain Cetain	savey		1 REINSCOURT		100	115.41920000000	-33.64420000000 -33.64520000000	25	5	2005
Pseudocheirus occidentalis Pseudocheirus occidentalis			24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	western ringtall possum, western ringtall possum.	nguara Animalia Muara Animalia	DN DN	4		Cetain Cetain	Safvey Safvey		1 REINSCOURT 1 REINSCOURT	Luctiow, Deale - Lot 2 Tuart Drive Luctiow, Deale - Lot 2 Tuart Drive	100	115.41890000000 115.41880000000	-33.64590000000 -33.64500000000	25	5	2005
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURVEY FAUNASURVEY FAUNASURVEY	583886	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudacheirus Pseudacheirus Pseudacheirus	occidentalis	western ringstall possum, western ringstall possum, western ringstall possum,	nguara Animalia nguara Animalia nguara Animalia nguara Animalia	EN EN		MAMMAL MAMMAL MAMMAL MAMMAL	Cettain	salvey		1 REINSCOURT 1 REINSCOURT 1 REINSCOURT 1 REINSCOURT	Ladiou, Deale - Lot 2 Tuart Drive Ludiou, Deale - Lot 2 Tuart Drive Ludiou, Deale - Lot 2 Tuart Drive Ludiou, Deale - Lot 2 Tuart Drive	100	115.4188000000 115.4187000000 115.4187000000	-23.6450000000 -23.6448000000 -23.6457000000	ž	5	2005
		583876			occidentalis	western ringtall possum.	iguna Animala Iguara Animala	EN EN		MAMMAL	Cetain	sarvey				100			2	5	2005
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	saradi Seseo	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	conterents conterents	wetern ringtall possum, wetern ringtall possum,	guara Animalia	DI DI		MAMMAL MAMMAL	Cettain Cettain Cettain Cettain Cettain Cettain	Lanny Lanny		3 REINSCOURT 2 REINSCOURT	Luctiow, Deale - Lot 2 Tuart Drive Luctiow, Deale - Lot 2 Tuart Drive	100 100	115.41840000000 115.41810000000	-23.6455000000 -23.64460000000	25	5	2005
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	582877 582892	24166 Pusudocheiridae 24166 Pusudocheiridae 24166 Pusudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal possum, wetern ringtal possum, wetern ringtal possum, wetern ringtal possum,	nguara Animalia Nguara Animalia	EN EN	4	MAMMAL MAMMAL MAMMAL MAMMAL	Cetain Cetain	survey survey		1 REINSCOURT 2 REINSCOURT 1 REINSCOURT	Luciou, Deale - Lot 2 Tuant Drive Luciou, Deale - Lot 2 Tuant Drive	100	115.41810000000 115.41800000000 115.41710000000	-33.64590000000 -33.64420000000 -33.64440000000	26 26	5	2005
Pseudocheirus occidentalis	FAUNASURVEY	582890	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis	western ringtall possum, western ringtall possum,	iguara Animalia	EN	-	MAMMAL	Cettain	savey		1 REINSCOURT 2 REINSCOURT	Ludiow, Deale - Lot 2 Tuart Drive	100	115.41710000000 115.41700000000	-33.64440000000 -33.64470000000	25	5	2005
Pseudocheirus occidentalis Pseudocheirus occidentalis Pseudocheirus occidentalis		583896	24166 Preudocheiridae 24166 Preudocheiridae		occidentalis			EN EN		MAMMAL	Cettain Cettain Cettain Cettain Cettain Cettain Cettain	salvey		1 REINSCOURT 1 REINSCOURT	Lucilow, Deale - Lot 2 Tuart Drive Lucilow, Deale - Lot 2 Tuart Drive	100	115.41690000000	-23.6433000000	25	ŝ	2005 2005 2005 2005 2005 2005
Pseudocheirus occidentalis Pseudocheirus occidentalis	FALINASURATY FALINASURATY FALINASURATY FALINASURATY FALINASURATY	583895		Pseudacheirus Pseudacheirus Pseudacheirus Pseudacheirus Pseudacheirus	occidentalis	wetern ringtal posun, wetern ringtal posun, wetern ringtal posun, wetern ringtal posun,	nguara Animalia Inguara Animalia	EN EN	4	MAMMAAL MAMMAAL MAMMAAL MAMMAAL MAMMAAL MAMMAAL	Cetain	sanwy			Luciow, Deale - Lot 2 Tuart Drive Luciow, Deale - Lot 2 Tuart Drive	100	115.41670000000	-33 64330000000	25	5	2005
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURVEY FAUNASURVEY	854849 854847	24166 Pseudocheiridae 24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posum, wetern ringtal posum.	nguara Animalia Nguara Animalia	EN EN	4	MAMMAL	Certain Certain Certain Certain Certain Certain	salvey salvey		1 VALVALUP 1 VALVALUP 1 VALVALUP	Luciou, Deale - Loc 2 Tuart Drive Woneerus Bemai - Wonerus Mir Wonerus Bemai - Wonerus Mir Wonerus Est. Bemai - Wonerus Mir Wonerus Est. Bemai - Lot 7 Bain	100	115.43980000000 115.43970000000	-23.65120000000	6	3	2013 2013 2006 2006 2006 2013
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	584369 584370	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia Animalia	EN D		MAMMAL MAMMAL	Cetain	salvey		1 TAETAELIP 2 TAETAELIP	Wonnerup East. Bemax - Lot 7 Bam Wonnerup East Bemax - Lot 7 Bam	100	115.43920000000 115.4390000000	-33.6500000000 -33.64940000000	24	5	2006
Pseudocheirus occidentalis Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	584371	24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus	occidentalis			EN EN		MAMMAL	Cetain Cetain	sanwy		1 TALTALUP 1 TALTALUP	Wonnerup East, Bernax - Lot 7 Bain Wonnerup East, Bernax - Lot 7 Bain	100	115.43880000000 115.43880000000	-23.6482000000	24	5	2006
Pseudocheirus occidentalis Pseudocheirus occidentalis		584368			occidentalis	wetern ringtal posum, wetern ringtal posum,	nguara Animalia Inguara Animalia	EN EN	4	MAMMAL		sanwy			Wonnerup, wenax - Wonnerup Mir Wonnerup East Bemax - Lot 7 Bam	100			24	5	2006
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURATY FAUNASURATY FAUNASURATY FAUNASURATY	584400 584298	24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posum, wetern ringtal posum, wetern ringtal posum, wetern ringtal posum,	nguara Animalia Aguara Animalia Aguara Animalia Aguara Animalia	DN DN	4	MAMMAL MAMMAL MAMMAL MAMMAL	Certain Certain Certain	saney saney		1 TALIALUP 1 TALIALUP 2 TALIALUP 1 TALIALUP	Wonnerus Exit Bernar - Lot 7 Ban Wonnerus Exit Bernar - Lot 7 Ban Wonnerus Exit Bernar - Lot 7 Ban	100	115.42860000000 115.42850000000	-33.64730000000	8 8	6	2006 2006 2006 2006
Pseudocheirus occidentais		584299	24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis			DN CH		MAMMAL		salvey			Wonnerup East Bernax - Lot 7 Barn Wonnerup Bernar - Wonnerup Mir	100	115.43840000000	-33.64840000000 -33.64850000000	8	-	2006
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURVEY FAUNASURVEY FAUNASURVEY	855421	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus	ecclonerals ecclonerals	wettern ringtall possum, wettern ringtall possum, wettern ringtall possum,	guara Animalia guara Animalia guara Animalia guara Animalia guara Animalia guara Animalia	EN EN		MAMMAL MAMMAL MAMMAL MAMMAL MAMMAL	Cettain Cettain Cettain Cettain Cettain	Landay La		1 VALVALUP 1 VALVALUP 1 VALVALUP 1 VALVALUP	Winnerun Gemer - Wonnerun Mir Winnerun Gemer - Wonnerun Mir	100	115.43830000000 115.43750000000		28	1	2014 2014 2019 2009 2006
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	587170	24166 Pseudocheiridae 24166 Pseudocheiridae		occidentalis		nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cetain	sanwy		1 TALTALDP	Wonnerup Eaut, Remax - Lot 7	100		-33.6468000000 -33.65510000000	27	20	2009
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	584297 584367	24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtall posum, wetern ringtall posum.		DN DN	4			salvey salvey		1 TALTALUP 1 TALTALUP	Wonnerup Faut Bernax - Lot 7 Barn Wonnerup Faut Bernax - Lot 7 Barn	100	115.43720000000 115.43710000000	-33.6552000000 -33.6551000000	8 24	6	2006
Pseudocheirus occidentalis	FAUNASURVEY	584295	24166 Pseudocheiridae 24166 Resubscheiridae	Preudacheirus Preudacheirus	occidentalis	wettern ringtall possum,	iguara Animalia	D1	-	MAMMAL	Cettain	sanwy		2 YALXALUP 1 YALYALUP	Wonnerup East. Bernax - Lot 7 Barn	100	115.4360000000	-23.65790000000	8	6	2006
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	\$55423	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis	wetern ringtal posum, wetern ringtal posum, wetern ringtal posum, wetern ringtal posum,	gara Arintia gara Arintalia gara Arintalia	EN EN		MAMMAL MAMMAL MAMMAL MAMMAL MAMMAL	Certain Certain Certain Certain Certain Certain Certain Certain Certain Certain Certain Certain Certain Certain	sanwy		1 TALIALUP 1 TALIALUP 1 TALIALUP 2 TALIALUP	Wonnerup Eart, Bernax - Lot 7 Main Wonnerup Barta, Wonnerup Mir Wonnerup Eart, Bernax - Uconerup Mir Wonnerup Eart, Bernax - Lot 7 Kain Wonnerup Eart, Bernax - Lot 7 Kain	100	115.43590000000 115.4359000000 115.4355000000 115.4355000000	-33.65540000000	29	1	2006 2009 2014 2006 2006 2009 2006 2009 2006 2009 2006 2006
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	584362	24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis		nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cetain	sanwy		2 YALYALUP	Wonnerus East, Bernax - Lot 7 Bart Wonnerus East, Bernax - Lot 7 Bart	100	115.4355000000	-33.65930000000	24 24	5	2006
Pseudocherus occidentais	FAUNASURVEY FAUNASURVEY	581294 587167	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia Inguara Animalia	EN EN	4	MAMMAL	Cettain Cettain	sanwy		2 YALYALUP 2 YALYALUP	Wonnerup Last semax - Lot 7 Kain	100	115.43540000000 115.43540000000	-33.6593000000 -33.65930000000	8 27	6 20	2006
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FALINASURVEY FALINASURVEY FALINASURVEY FALINASURVEY FALINASURVEY	584363 584396	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	weten ingtal posses, weten rigstal posses, weten rigstal posses, weten rigstal posses, weten rigstal posses,	nguara Animalia Nguara Animalia	DN DN	4	MAMMANAL MAMMAN MAMMAN MAMMAN MAMMAN MAMMAN	Cetain Cetain	survey survey		1 TALTALUP 2 TALTALUP	Wonnerup Eart, Bernax - Lot 7 Kam Wonnerup Eart, Bernax - Lot 7 Kam Wonnerup Eart, Bernax - Lot 7 Wonnerup Eart, Bernax - Lot 7	100	115.43520000000 115.43470000000	-33.65860000000	24	5	2006
Pseudocheirus occidentalis	FAUNASURVEY	587168	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheinus	occidentalis	western ringtall possum,	nguara Animalia	EN CH		MAMMAL	Cetain	sanwy		2 VALVALUP 1 VALVALUP 1 VALVALUP	Wonnerup East, Bernax - Lot 7	100	115.43470000000 115.43470000000	-33.6585000000	27	20	2009
		584364			occidentalis		guara Animalia	EN EN		MAMMAL	Cettain	saney				100	115.43450000000	-23.65670000000	24	5	2006
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	588365 856830	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis occidentalis	western ringtall possum, western ringtall possum,		EN EN	4	MAMMAL	Cetain Cetain	sawey		1 TALTALUP 2 TALTALUP	Wonnerup East. Bemax - Lot 7 Bam Wonnerup, Bemax - Wonnerup Mir	100	115.43420000000 115.43420000000	-23.65670000000 -23.66040000000	24	5	2006 2013 2009 2006 2006
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	587165 584392	24166 Pusudocheiridae 24166 Pusudocheiridae 24166 Pusudocheiridae	Pseudocheinus Pseudocheinus Pseudocheinus	occidentalis occidentalis	wettern ringtall possum, wettern ringtall possum, wettern ringtall possum,	guara Animalia Iguara Animalia Iguara Animalia	DN DN	4	MAMMAL MAMMAL MAMMAL	Certain Certain	salvey salvey		2 YACKALUP 1 YACKALUP 1 YACKALUP	Wonnerup Est, Bernax - Lot 7 Wonnerup Est, Bernax - Lot 7 Wonnerup Est, Bernax - Lot 7 Ban Wonnerup Est, Bernax - Lot 7 Ban	100	115.43410000000 115.43400000000	-23.6605000000 -23.66050000000 -23.65990000000	27	20 6	2009 2006
Pasudocherus occidentalis Pasudocherus occidentalis Pasudocherus occidentalis Pasudocherus occidentalis	FAUNASURVEY FAUNASURVEY FAUNASURVEY	584359	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	occidentalis	weten ringtal posum, weten ringtal ossum.	nguara Animalia	EN .	4	MAMMAL MAMMAL	Certain Certain Certain	salvey		1 TAETAELIP 1 TAETAELIP	Wonnerup East. Bemax - Lot 7 Bam Wonnerup Cart Bamax - Lot 7 Bam	100	115.43360000000	-33.65990000000	24	5	2006
	FAUNASURVEY	584361			accidentaño cocidentaño ecolontaño	western ringtall possum, western ringtall possum,	nguara Animalia Animalia Animalia	EN EN		MAMMAL	Castalo	Galvey Galvey Galvey Galvey Galvey Galvey		1 YALYALUP		100	115.4332000000 115.4326000000 115.4368000000	-33.65970000000 -33.65950000000 -33.65930000000	24	5	2006 2009 2008 2008 2008 2008 2008 2008 2008
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	58/365 585777	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posum, wetern ringtal posum, wetern ringtal posum, wetern ringtal posum,	nguara Animalia nguara Animalia	DI DI		MAMMAL MAMMAL	Cettain	sahvey sahvey		1 TALTALUP 1 RUARON	wonnerup East, Bernax - Lot 7 Southern Swan Coastal Plain DSEW	100	115.51070000000	-23.64550000000	27 10	90 4	2009 2008
		585780 585784			occidentalis occidentalis			EN EN	4	MAMMAL MAMMAL MAMMAL MAMMAL MAMMAL	Cettain Cettain Cettain Cettain	curvey curvey		1 RUARDN 2 RUARDN 1 RUARDN 1 RUARDN	Wonnerup Fast, Remax - Lot 7 Southern Swan Coastal Plain DSFW Southern Swan Coastal Plain. DSFW Southern Swan Coastal Plain. DSFW	100 100	115.50990000000 115.50980000000	-33.64450000000 -33.64250000000	10 10	4	2008
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	585783 585781	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis	western ringtall possum,	nguara Animalia	Di Co		MAMMAL MAMMAL	Certain Certain	Salvey Debes		1 RUARON 1 RUARON	Southern Swan Coastal Plain DSEW Southern Swan Coastal Plain. DSEW	100	115.50950000000	-22.64220000000	10	4	2008
		585779			occidentalis	western ringtal possum,	Acimalia	EN EN				salvey				100	115.5070000000		10	4	2008
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURNEY FAUNASURNEY FAUNASURNEY FAUNASURNEY	5857/8 585782	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal posum, wetern ringtal posum, wetern ringtal posum, wetern ringtal posum,	nguara Animalia Inguara Animalia	EN EN	4 4	MAMMAL MAMMAL MAMMAL MAMMAL	Cettain Cettain Cettain Cettain Cettain	salvey salvey		2 RLARON 2 RLARON 2 RLARON 2 RLARON	Southern Swan Coastal Plain DSSN Southern Swan Coastal Plain DSSN Rushon, BSD - Lot 1986 Ludiow Hit	100 100	115.5066000000 115.50620000000 115.50510000000	-23.6448000000 -23.6434000000 -23.6386000000	10 10	4	2008
	FAUNASURVEY FAUNASURVEY	854812 854811			occidentalis occidentalis		nguara Animalia Nguara Animalia	DN DN	4	MAMMAL	Cetain Cetain	curvey curvey		1 RUARON 2 RUARON		100 100	115.5048000000		8	12 12	2012 2012
Pseudocheirus occidentalis		587585 587586	24166 Pseudocheiridae	Pseudocheirus	occidentalis			Di Co			Cettain Cettain Cettain Cettain Cettain Cettain	Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny Lahny			Rusbon, 850 - Lot 1986 Ludiow Hit	100	115.50480000000 115.50340000000	-23.64060000000	11	20 90	2011
Pseudocheirus occidentalis	FALINASURATY FALINASURATY FALINASURATY FALINASURATY FALINASURATY	587588	24166 Pseudocheiridae	Pseudacheirus Pseudacheirus Pseudacheirus Pseudacheirus	occidentalis	wetern ringtal posum, wetern ringtal posum, wetern ringtal posum, wetern ringtal posum,	nguara Animalia	Di Di		MAMMAL MAMMAL MAMMAL MAMMAL MAMMAL	Cettain	salvey		2 RUNDON 2 RUNDON 2 RUNDON 2 RUNDON 3 RUNDON	Rusbon 850 - Lot 1986 Ludiow Hit	100	115.5033000000		11	20	2011
Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis Pseudocheinis occidentalis	FAUNASURVEY	587582	24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae 24166 Preudocheiridae	Pseudocheirus	occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia Animalia	EN EN		MAMMAL	Cetain	canvey		2 RUARON	Raibon BDO Lot 1986 Ludow Hit Raibon BDO Lot 1986 Ludow Hit Raibon BDO Lot 1986 Ludow Hit Raibon BDO Lot 1986 Ludow Hit	100	115.50080000000	-33.63850000000 -33.64350000000	11	90 90	2011
Pseudocheirus occidentalis Pseudocheirus occidentalis		587584 854813		Pseudocheirus Pseudocheirus	occidentalis occidentalis	wetern ringtal possum, wetern ringtal possum.	nguara Animalia Nguara Animalia	DN DN	4			curvey curvey			Ruston BLD - Lot 1986 Ludiow Hit Ruston, BSO - Lot 1986 Ludiow Hit	100 100	115.49950000000 115.49900000000	-23.64350000000	11 9	90 12	2011 2012
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	587583	24166 Pseudocheiridae 24166 Pseudocheiridae	Preudacheirus Preudacheirus	occidentalis	wettern ringtall possum,	nguara Animalia Animalia	EN DI		MAMMAL MAMMAL	Certain Certain	salvey		2 RUARON 1 RUARON	Rusbon, 850 - Lot 1986 Ludiow Hit Womenup North.	100	115.4987000000 115.46410000000	-22.64240000000 -22.62570000000	11	90 5	2011
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY	883332	24166 Pseudocheiridae	Pseudocheirus	occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia Animalia Animalia	EN EN		MAMMAL	Cetain	canvey		1 RUARON 1 RUARON	Wonnerup North,	100	115.45840000000	-23.64800000000	13	5	2013
Pseudocheirus occidentalis	FAUNASURVSY	984441 982230	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudacheirus Pseudacheirus	occidentalis	western ringtall possum, western ringtall possum,	nguara Animalia nguara Animalia	EN EN		MAMMAL	Cetain Cetain	canvey		1 RUARON	Wonnerup North, Wonnerup North,	100	115.45580000000 115.44280000000	-23.64840000000 -23.65720000000	13	5	2013 2013
Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	855381 588360	24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus	codemais codemais codemais codemais codemais codemais codemais codemais codemais codemais	western ringtall possum, western ringtall possum,	Asimala Igaza Asimala Igaza Asimala Igaza Asimala Igaza Asimala Igaza Asimala Igaza Asimala Igaza Asimala	EN EN	4	MAMMAL MAMMAL	Cetain	Ganwy Ganwy Ganwy Ganwy Ganwy Ganwy Ganwy		1 RUARON 1 RUARON	Ludiow, Road Kill - Bussell Highway Ludiow, Road Kill - Bussell Highway	100 100	115.44210000000 115.44180000000	-33.64400000000 -33.64430000000	31 26	12 7	2013 2012
Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis Pseudocheinus occidentalis	FAUNASURVEY	882224 882222	20156 Plaudocharidae 20166 Plaudocharidae 20166 Plaudocharidae 20166 Plaudocharidae	Pseudocheirus Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis occidentalis	wettern ringtall postun, wettern ringtall postun, wettern ringtall postun,	nguara Animalia Muara Animalia	EN DA	4 9	MAMMAL MAMMAL MAMMAL MAMMAL	Certain Certain Certain	Salvey Salvey		2 RUARON 1 RUARON 1 RUARON 2 TREVALUP	Luciow, Koak Kil - Autolet Highway Wonnerup North, Wonnerup North, Wonnerup Semax - Wonnerup Mir	100	115.44110000000 115.44990000000	-33.6475000000 -33.64730000000	13 13	5	2013 2013
Pseudocheirus occidentalis Pseudocheirus occidentalis Pseudocheirus occidentalis	FAUNASURVEY FAUNASURVEY	1028515 1028515	24166 Pseudocheiridae 24166 Pseudocheiridae 24166 Pseudocheiridae	Pseudocheirus Pseudocheirus Pseudocheirus	occidentalis	weten ringtal posun, weten ringtal posun, weten ringtal posun,	aguara Animalia	EN EN		MAMMAL MAMMAL	Cettain Cettain Cettain	sulvey		1 KLAUDN 2 YACKALUP 1 YACKALUP	Wonnerup North, Wonnerup Bemax - Wonnerup Mir Wonnerup Bemax - Wonnerup Mir	0	115.4386000000 115.4386000000 115.4372000000	-22.649.20000000 -23.659.20000000 -23.655.20000000	15	1	2012 2013 2013 2015 2015 2015 2015
Pseudocheirus occidentalis	FAUNASURVSY	1028517	24166 Pseudocheiridae	Pseudocheirus	occidentalis	western ringtall possum.		EN EN	4	MAMMAL	Cetain	sarvey sarvey Observational		2 YACKALLP	Wonnerup, Bemax - Wonnerup Mir	0	115.43570000000	-22.65770000000	15	1	2015
Tringa glareola	BIRDATLAS2	8818[154	24806 Scolopacidae	Tringa	glamola	wood tandpiper	Animalia			BRD	Moderately certain	Observational		1 WONNERLP	Layman Road, Vasse system	100	115.42870000000	-23.62830000000	3	1	1999



NatureMap Species Report

Created By Guest user on 23/06/2016

KingdomAnimaliaCurrent Names OnlyYesCore Datasets OnlyYesMethod'By Circle'Centre115° 28' 24" E,33° 37' 19" SBuffer10kmGroup ByFamily

Family	Species	Records
Acanthizidae	8	479
Acariformes	1	11
Accipitridae Actinopodidae	11 2	380 3
Agamidae	- 1	1
Anatidae	14	1304
Anhingidae	1	48
Anobiidae Apogonidae	1 2	1 4
Araneidae	12	117
Ardeidae	8	336
Artamidae Asterinidae	2 1	33 1
Atemnidae	1	1
Atherinidae	2	3
Boidae	1	1
Bombyliidae Bothriuridae	2 1	3 2
Bovidae	1	1
Buccinidae	1	1
Bullidae	1	1
Burramyidae Cacatuidae	1 1	2 58
Campephagidae	2	87
Canidae	2	3
Cassidae	1 9	1
Charadriidae Cheloniidae	9	85 3
Chiltoniidae	1	3
Chironomidae	3	9
Chthoniidae	1	1
Cicadellidae Clinidae	1 3	1 4
Columbellidae	1	1
Columbidae	4	167
Conidae Conopidae	1 1	1
Conopidae	3	321
Coryphaenidae	1	1
Cracticidae	3	371
Cuculidae Curculionidae	5 1	26 2
Cypraeidae	2	2
Dasyuridae	2	9
Delphinidae	2	2
Dicaeidae Dicruridae	1 4	1 284
Diomedeidae	1	1
Dolichopodidae	3	7
Dorididae	1 2	1 2
Dytiscidae Elapidae	2 5	16
Enchytraeidae	1	2
Falconidae	5	66
Flatidae Formicidae	2 44	2 108
Galaxiidae	44	51
Gekkonidae	1	4
Geogarypidae	1	1
Gobiesocidae	2	2 9
Gobiidae Haematopodidae	2	9 5
Halcyonidae	2	176
Haliotidae	2	3
Haliplidae Henicopidae	2 1	4 2
Hersiliidae	2	2 4
Hesperiidae	1	1
Heterodontidae	1	3
Hirundinidae Hydrobiidae	2 2	236 4
Hydrophilidae	2	4
Hylidae	2	5
Ixodidae	1	1
Labridae	3	5



ng Western Australia's biodiversity		
Lamponidae	2	2
Laridae	3	123
Leporidae	1	2
Limnodynastidae	2	45
Macropodidae	3	17
Mactridae Maluridae	1 2	1 124
Megapodagrionidae	∠ 1	7
Meliphagidae	7	394
Meropidae	1	71
Micronectidae	1	1
Micropholcommatidae	1	1
Monacanthidae	7	7
Mugilidae	2	2
Muridae	4	19
Myobatrachidae	3 1	12 1
Nannopercidae Naticidae	1	1
Nemesiidae	1	1
Neosebastidae	1	1
Neosittidae	1	4
Nephilidae	1	4
Nymphalidae	1	3
Octopodidae	1	1
Ostraciidae	1	1
Pachycephalidae	5	110
Palaemonidae Parastacidae	1 3	3 43
Pardalotidae	3	43 108
Pelecanidae	1	70
Peramelidae	2	43
Percichthyidae	2	31
Petroicidae	3	19
Phalacrocoracidae	5	345
Phalangeridae	2	17
Phasianidae	1	4
Philotarsidae Pieridae	1 1	1 1
Plendae	1	1
Podargidae	2	10
Podicipedidae	3	132
Poeciliidae	2	4
Pomatiopsidae	1	3
Potoroidae	1	1
Pratylenchidae	1	3
Procellariidae	2 1	3 536
Pseudocheiridae Psittacidae	19	561
Pygopodidae	1	1
Pyralidae	1	1
Rallidae	8	208
Recurvirostridae	3	144
Rhinotermitidae	1	9 2
Salticidae Scarabaeidae	1 3	2
Scincidae	17	116
Scolopacidae	7	113
Scombridae	1	1
Soleidae	1	1
Sparidae	1	1
Steinernematoidea	1	17
Strigidae	1	18 12
Sylviidae Syngnathidae	3	12 4
Synthemistidae	∠ 1	4
Syrphidae	2	3
Tabanidae	2	2
Tarsipedidae	1	3
Termitidae	4	8
Tetrarogidae	1	2
Tettigoniidae Threskiornithidae	1 5	1 404
Thylacomyidae	1	404
Triaenonychidae	1	20
Trochidae	4	4
Turbinidae	1	2
Tylenchidae	1	1
Typhlopidae	1	3
Tytonidae Urodacidae	2 1	2 2
Varanidae	2	23
Vespertilionidae	2	8
Ziphiidae	1	1
Zosteropidae	2	145
TOTAL	429	9070



museum



Acanthizia24260Acanthiza apicalis (Broad-laiked Thombill, Inland Thombill)2.24261Acanthiza apicalis (Broad-laiked Thombill, Inland Thombill)3.24262Acanthiza apicalis (Broad-laiked Thombill)4.2530Gerygone fusca (Western Gerygone)5.24271Gerygone fusca (Western Gerygone)6.2533Scicomis fornalis (White-horwed Scutwern)8.3080Scicomis forbalis (White-horwed Scutwern)8.3080Scicomis forbalis (White-horwed Scutwern)8.3080Scicomis forbalis (White-horwed Scutwern)8.Acarina sp.Scicomis forbalis (White-horwed Scutwern)8.Acarina sp.Acarina sp.7.2428Acapiter fasciatus (Brown Goshawk)11.2538Acapiter fasciatus (Brown Goshawk)12.2485Aquila audax (Wedge-failed Eagle)13.2538Acapiter fasciatus (Brown Goshawk)14.2493Circus approximans (Swamp Harrier)15.2429Circus approximans (Swamp Harrier)16.Eranse Silvar17.2429Haliaeetus laucoquaster (White-bellied Saa-Eagle)18.Versta swillaris20.Pandon cristatus71.2439Haliaeetus laucoquaster (White-bellied Saa-Eagle)18.Versta swillaris21.Massukera acactinis22.Haliaeetus laucoquaster (White-barded Dragon)23.2431Anas superiliosa (Kalini (Naturatia)24.2431Anas superiliosa (Kalini (Naturatia)	Naturalised Co	onservation Code	¹ Endemic To Query
1. 24260 Acanthiza opicalis (Broad-tailed Thombill, Inlend Thombill) 2. 24261 Acanthiza opicaprina (Vellow-rumped Thombill) 3. 24262 Acanthiza opicaprina (Vellow-rumped Thombill) 4. 25530 Gerygone fusca (Western Gerygone) 6. 2554 Sericonis frontalis subsp. tracculuts (White-browed Scrubwern) 7. 24270 Sericonis frontalis (White-browed Scrubwern) 7. 24273 Sericonis frontalis (White-browed Scrubwern) 7. 24285 Acarina sp. Acarina sp. Acarina sp. Acarina Sp. Acarina sp. Accinica Sparoxinars (Swamp Harier) 11. 11. 2553 Acarina sp. 12. 24285 Aquila morphroidos (Litle Eagle) 13. 24285 Aquila morphroidos (Litle Eagle) 14. 24285 Aquila socaloria 15. 24285 Halisatur spherurus (Whisting Kole) 16. Earus avilleris Masulena occatoria 17. Masulena occatoria Masulena occatoria 20. Pardion cristatus Masulena occatoria 21. Masulena occ			Area
2.24281Acanthiza inomata (Western Thombil)3.24262Acanthiza inomata (Western Thombil)4.25530Gerygone fusca (Western Gerygone)5.24271Gerygone fusca (Western Gerygone)6.25334Sericornis fortalis subs, maculatus (White-browed Scrubwren)7.24279Sericornis fortalis subs, maculatus (White-browed Scrubwren)8.3048Smicrornis brewirostris (Weebil)ActarityActarityActarityActarity is incrornis brewirostris (Weebil)Actarity is incrornis brewirostris (Weebil)Actarity is incrornis brewirostris (Weebil)Actarity is incrornis brewirostris (Weebil)Actarity is incrornis brewirostris (Weebil)Active is approximates (Soverp Harrier)13.2553Aquila morphroides (Little Eagle)14.24285Aquila morphroides (Little Eagle)15.24285(Alusa sessimils (Sovert Harrier)16.Elanus axillaris17.2429Paralon cristausActive policy (White/Hote/Harrier)18.24295Haleasus isocratics (White/Hote)21.Missulena occatoriaActive policy (White/Hote)Active policy (White/Hote)22.Valido (Crest rul Teal)23.24312Anas superilios (Pastria Marchi24.24312Anas superilios (Malard)25.24312Anas superilios (Malard) <t< td=""><td></td><td></td><td></td></t<>			
 2. 24262 Acanthiza inomata (Western Thombili) 2. 24271 Gerygone lucas aubus (usea (Western Gerygone) 2. 24271 Sericomis frontalis (White-browed Scrubwren) 7. 24279 Sericomis frontalis subsp. maculatus (White-browed Scrubwren) 8. 30948 Smicroneis brevirostris (Weebili) 3. 0948 Smicroneis brevirostris (Weebili) 4. Carina sp. <			
4.2530Gerygone Iusca (Western Gerygone)5.2421Gerygone Iusca subsp. Iusca (Western Gerygone)6.2543Scircomis frontial (Mihe-browed Scrubwren)7.2479Saricomis brevirostris (Weball)8.3098Sincomis brevirostris (Weball)8.Adarina sp.8.Carlina sp.10.2553Accipiter fasciatus (Brown Goshawk)11.2553Accipiter fasciatus (Brown Goshawk)12.2428Aquila audax (Wedge-tailed Eagle)13.2553Aquila taudax (Wedge-tailed Eagle)14.2428(Irus assimitis (Sobted Harrier)15.2429Icusa sasimitis (Sobted Harrier)16.Eanus avillaris17.2429Haliastur sphenurus (Whisting Kite)18.2429Haliastur sphenurus (Whisting Kite)19.Lophoictinia isura20.Polyoa minor subsp. minor (Dwarf Bearded Dragon)21.Missulena occatoria22.Masulena occatoria23.2431224313Anas castanea (Chestnut Teal)25.2431326.2431327.2431528.2431429.2431429.2431220.343120.343121.Anas superciliosa (Pacific Back Duck)23.2431224313Anas superciliosa (Pacific Back Duck)25.4431326.343327.2431328.Anas superci			
5.24271Gerygone fusca subsp. fusca (Western Gerygone)6.2553Sericornis torelis (White-browed Scrubwren)7.24279Sericornis brevirostris (Weebill)8.30948Smicrornis brevirostris (Weebill)Acarina sp.Acarina sp.10.2555Accipiter cirrocephalus (Collared Sparrowhawk)11.2555Accipiter fasciatus (Brown Goshawk)12.2428Circus approximans (Swamp Harrier)13.2553Acili anotphnológ (Lifte Eagle)13.24293Irlus audax (Wedge-tailed Eagle)14.24283Circus approximans (Swamp Harrier)15.24293Haleaetus leucogaster (White-bellied Sea-Eagle)16.Eans avillaris17.24293Haleaetus leucogaster (White-bellied Sea-Eagle)18.2405Haleaetus leucogaster (White-bellied Sea-Eagle)19.Laphoictinia isua20.Pandion cristatusActimopodidaeMissulena granulosa21.Missulena occatoria22.Alas castanea (Chestrut Teal)23.2490724.243124.243125.Anas superiliosa (Australasian Showlar)26.2431327.243528.Anas superiliosa (Pacific Black Duck)29.2431629.2431529.2431629.2431629.2431830.243229.2431931.243232.<			
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55. 41: 56. 24: 57. 24: 58. 25: 60. 25: 61. 24: Artamidae 24: 62. 25: 63. 24: Asterinidae 24: 62. 25: Asterinidae 24: 64. 24: Asterinidae 24: Asterinidae 24: Asterinidae 24: Asterinidae 24: Asterinidae 25: Boidae 65. 66. 67. Boidae 68. 69. 70. Bothriuridae 24: Asterinidae 24: Bovidae 24: 71. 24: Buccinidae 24: Burramyidae 24: Cacatuidae 24: Canidae 24: 77. 25: 78. 24: Canidae 24: 77. 25: 78. 24: Canidae 24: 77. 25: 78. 24:	5558 Ardea ibis (Cattle Egret) 1324 Ardea modesta (Eastern Great Egret) 4341 Ardea pacifica (White-necked Heron) 4345 Botaurus policiloptilus (Australasian Bittern) Egretta garzetta Egretta novaehollandiae 5564 Nycticorax caledonicus (Rufous Night Heron) 4350 Nycticorax caledonicus subsp. hilli (Rufous Night Heron) 4353 Artamus cinereus (Black-faced Woodswallow) 4353 Artamus cyanopterus (Dusky Woodswallow) 4353 Artamus cyanopterus (Dusky Woodswallow) 4353 Artamus curtus Atherinosoma elongata Atherinosoma sp. 5240 Morelia spilota subsp. imbricata (Carpet Python) 5241 Goraphonius sulcatus 4251 Eos taurus (European Cattle) 4251 Bos taurus (European Cattle) 4266 Aulu quoyii 4208 Cercartetus concinnus (Western Pygmy-possum, Mundarda)	Υ	IA IA T	
55. 41: 56. 24: 57. 24: 58. 25: 60. 25: 61. 24: Artamidae 24: 62. 25: 63. 24: Artamidae 24: 62. 25: 63. 24: Asterinidae 62. 64. 41: Attemnidae 65. 66. 67. Boidae 68. 25: Bombyliidae 69. 70. Bothriuridae 70. 24: Bovidae 72. 24: Buccinidae 73. 24: Burramyidae 74. 24: Cacatuidae 76. 24: Candae 76. 24: Canidae 79. 30: 79. 30: 80. 80. 24: 24: Cassidae 81.	1324 Ardea modesta (Eastern Great Egret) 4341 Ardea pacifica (White-necked Heron) 4345 Botaurus poiciloptilus (Australasian Bittern) Egretta garzetta Egretta novaehollandiae 5564 Nycticorax caledonicus (Rufous Night Heron) 4353 Artamus cinereus (Black-faced Woodswallow) 4353 Artamus cinereus (Black-faced Woodswallow) 4353 Artamus cyanopterus (Dusky Woodswallow) 4354 Oratemnus curtus 4355 Artherinosoma elongata 4354 Morelia spilota subsp. imbricata (Carpet Python) 5540 Vercophonius sulcatus 5541 Bos taurus (European Cattle) 5542 Bulla quoyii	Υ	IA T	
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68. 25. Sombyliidae 69. 70. 70. Sothriuridae 71. 71. 73. Souccinidae 73. Sullidae 74. 74. 24. Sullidae 74. 75. 24. Cacatuidae 76. 77. 25. 78. 24. Canpephagidae 74. 79. 300. 80. 24. Cassidae 79. 80. 24.	Comptosia tendens Kapu westralica Cercophonius sulcatus 4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	γ	S	
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69. 70. 30thriuridae 71. 30vidae 72. 24: 3uccinidae 73. 3ullidae 74. 3ullidae 75. 24: Cacatuidae 76. Campephagidae 77. 25: 78. 24: Canidae 79. 300 80. 24: Cassidae 81.	Kapu westralica Cercophonius sulcatus 4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	Y		
69. 70. Bothriuridae 71. Bovidae 72. 24: Buccinidae 73. Bullidae 74. Burramyidae 75. 24i Cacatuidae 76. Campephagidae 77. 25: 78. 24i Canidae 79. 300 80. 24i Cassidae 81.	Kapu westralica Cercophonius sulcatus 4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	Y		
70. 30thriuridae 71. 30vidae 72. 24: 30uccinidae 73. 30ullidae 74. 30urramyidae 74. 30urramyidae 76. 24: 26acatuidae 76. 24: 26acatuidae 76. 24: 26acatuidae 76. 24: 26acatuidae 76. 24: 26acatuidae 76.	Kapu westralica Cercophonius sulcatus 4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	Y		
Bothriuridae 71. 71. 72. 24: 24: Buccinidae 73. Bullidae 74. Burramyidae 24: Cacatuidae 24: Cacatuidae 24: T6. 24: Campephagidae 24: T7. 25: 76. 24: Campephagidae 24: Camidae 24: Cassidae 24: Solution 24:	Cercophonius sulcatus 4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	Y		
71. Bovidae 72. 24: Buccinidae 73. Bullidae 74. Burramyidae 75. 24: Cacatuidae 76. Canpephagidae 77. 25: 78. 24: Canidae 73. 79. 300 80. 24: Cassidae 81.	4251 Bos taurus (European Cattle) Cominella (Josepha) tasmanica Bulla quoyii	Υ		
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72. 24: Buccinidae 73. Bullidae 74. Burramyidae 74. 74. 24: Cacatuidae 24: Cacatuidae 24: 76. 24: Campephagidae 4: 77. 25: 78. 24: Canidae 30: 79. 30: 80. 24: Cassidae 81.	Cominella (Josepha) tasmanica Bulla quoyii	Υ		
73. Bullidae 74. Burramyidae 75. 244 Cacatuidae 76. Campephagidae 77. 255 78. 243 Canidae 79. 300 80. 244 Cassidae 81.	Bulla quoyii			
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74. Burramyidae 75. 244 Cacatuidae 76. Campephagidae 77. 254 78. 244 Canidae 79. 304 80. 244 Cassidae 81.				
74. Burramyidae 75. 244 Cacatuidae 76. Campephagidae 77. 254 78. 244 Canidae 79. 304 80. 244 Cassidae 81.				
75. 24 Cacatuidae 76. 25 77. 25 78. 24 Canidae 30 79. 30 80. 24 Cassidae 81.	4086 Cercartetus concinnus (Western Pyamy-possum Mundarda)			
75. 24 Cacatuidae 76. 25 Campephagidae 77. 78. 24 Canidae 79. 79. 300 80. 24 Cassidae 81.	4086 Cercartetus concinnus (Western Pyamy-possum Mundarda)			
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Campephagidae 77. 255 78. 243 Canidae 79. 300 80. 244 Cassidae 81.				
77. 25: 78. 24: Canidae 79. 30: 80. 24: Cassidae 81. 31.	Eolophus roseicapillus			
78. 24: Canidae 24: 79. 30: 80. 24: Cassidae 81.	3			
Canidae 79. 300 80. 240 Cassidae 81.	5568 Coracina novaehollandiae (Black-faced Cuckoo-shrike)			
79. 300 80. 244 Cassidae 81.	4367 Lalage tricolor (White-winged Triller)			
80. 244 Cassidae 81.				
Cassidae 81.	0883 Canis lupus subsp. familiaris (Dog)	Y		
Cassidae 81.	4040 Vulpes vulpes (Red Fox)	Y		
81.				
Charadriidae	Cassis (Hypocassis) fimbriata			
-nai aui liude				
	5575 Charadrius leschenaultii (Greater Sand Plover)		IA	
83. 243	4377 Charadrius ruficapillus (Red-capped Plover)			
84.	Elseyornis melanops			
85. 24	4379 Erythrogonys cinctus (Red-kneed Dotterel)			
	4382 Pluvialis fulva (Pacific Golden Plover)		IA	
	4383 Pluvialis squatarola (Grey Plover)		IA	
88.	Thinomis rubricollis			
	5577 Vanellus miles (Masked Lapwing)			
	4386 Vanellus tricolor (Banded Lapwing)			
Cheloniidae				
			т т	
Chiltoniidae	5335 Caretta caretta (Loggerhead Turtle) 5336 Chelonia mydas (Green Turtle)		·	
93.	5335 Caretta caretta (Loggerhead Turtle) 5336 Chelonia mydas (Green Turtle)			
Chironomidae				
	5336 Chelonia mydas (Green Turtle)			

NatureMap Mapping Western Australia's biodiversity

	Name ID	Species Name N	laturalised	Conservation Code	¹ Endemic To Query
94.		Cladopelma curtivalva			Alea
95.		Procladius paludicola			
96.		Tanytarsus fuscithorax/semibarbitarsus			
Chthoniidae					
97.		Austrochthonius strigosus			Y
		· · · · · · · · · · · · · · · · · · ·			•
98.	9	Paradorydium viridis			
Clinidae					
99.		Cristiceps australis			
100.		Heteroclinus adelaidae			
101.		Heteroclinus sp.			
Columbellid	ae	Euplica sp.			
		Lupita 3p.			
Columbidae					
103.		Columba livia (Domestic Pigeon)	Y		
104.		Ocyphaps lophotes (Crested Pigeon)			
105.		Phaps chalcoptera (Common Bronzewing)			
106.	25590	Streptopelia senegalensis (Laughing Turtle-Dove)	Y		
Conidae					
107.		Conus anemone			
Cononidae					
Conopidae 108.		Setosiconops epixanthus			Y
Corvidae					
109.	24416	Corvus bennetti (Little Crow)			
110.	25592	Corvus coronoides (Australian Raven)			
111.		Corvus sp.			
Coryphaenic	dae				
112.		Coryphaena hippurus			
Cracticidae					
113.	25505	Cracticus tibicen (Australian Magpie)			
114.		Cracticus tibicen subsp. dorsalis (White-backed Magpie)			
115.		Cracticus torquatus (Grey Butcherbird)			
	20000				
Cuculidae					
116.		Cacomantis flabelliformis (Fan-tailed Cuckoo)			
117.		Cacomantis pallidus (Pallid Cuckoo)			
118.		Chrysococcyx basalis (Horsfield's Bronze Cuckoo)			
119.		Chrysococcyx lucidus (Shining Bronze Cuckoo)			
120.	24432	Chrysococcyx lucidus subsp. plagosus (Shining Bronze Cuckoo)			
Curculionida	ae				
121.		Catasarcus coruscus			
Cuprosidos					
Cypraeidae 122.		Zoila friendii			
122.					
		Zoila friendii subsp. friendii			
Dasyuridae					
124.		Phascogale tapoatafa (Brush-tailed Phascogale)			
125.	24099	Phascogale tapoatafa subsp. tapoatafa (Southern Brush-tailed Phascogale,		т	
		Wambenger)			
Delphinidae					
126.		Tursiops aduncus (Indo-Pacific Bottlenose Dolphin)			
127.		Tursiops truncatus (Bottlenose Dolphin)			
		,			
Dicaeidae		Discourse him and the second of the distance is a			
128.	25607	Dicaeum hirundinaceum (Mistletoebird)			
Dicruridae					
129.	24443	Grallina cyanoleuca (Magpie-lark)			
130.	25610	Myiagra inquieta (Restless Flycatcher)			
130.	25613	Rhipidura fuliginosa (Grey Fantail)			
130.	20010	Rhipidura leucophrys (Willie Wagtail)			
		Tripidura leucoprirys (Wille Wagtair)			
131. 132.	25614				
131. 132. Diomedeida	25614 e			т	
131. 132. Diomedeida 133.	25614 e 25618	Diomedea exulans (Wandering Albatross)		Т	
131. 132. Diomedeidae 133. Dolichopodi	25614 e 25618			т	
131. 132. Diomedeida 133.	25614 e 25618			T	
131. 132. Diomedeidae 133. Dolichopodi	25614 25618 dae	Diomedea exulans (Wandering Albatross)		Department	

NatureMap Mapping Western Australia's biodiversity

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
135. 136.		Parentia nudicosta Parentia perthensis			
Dorididae					
137.		Halgerda sp.			
Dytiscidae					
138.		Necterosoma penicillatus			
139.		Necterosoma sp.			
Elapidae					
140.	25250	Elapognathus coronatus (Crowned Snake)			
141.		Hydrophis platurus (Yellow-bellied Seasnake)			
142.	25252	Notechis scutatus (Tiger Snake)			
143.		Parasuta nigriceps			
144.	25511	Pseudonaja affinis (Dugite)			
Enchytraeida	ae				
145.		Enchytraeidae sp.			
Falconidae					
146.	25621	Falco berigora (Brown Falcon)			
147.		Falco cenchroides (Australian Kestrel)			
148.		Falco cenchroides subsp. cenchroides (Australian Kestrel)			
149. 150.		Falco longipennis (Australian Hobby)		0	
150.	20024	Falco peregrinus (Peregrine Falcon)		S	
Flatidae					
151.		Anzora unicolor			
152.		Phantiopsis australiaca			Y
Formicidae					
153.		Amblyopone clarki			
154. 155.		Anisopheidole antipodum Anonychomyrma sp.			
155.		Camponotus ephippium subsp. narses			
157.		Camponotus johnclarki			
158.		Camponotus rufus			
159.		Doleromyrma sp.			
160.		Dolichoderus ypsilon			
161.		Iridomyrmex chasei			
162. 163.		Iridomyrmex conifer Iridomyrmex discors			
164.		Iridomyrmex turbineus			
165.		Iridomyrmex viridiaeneus			
166.		Meranoplus oceanicus			
167.		Monomorium kiliani			
168.		Monomorium rothsteini			
169.		Monomorium rubriceps			
170. 171.		Monomorium sordidum Monomorium sp.			
171.		Monomorium sydneyense			
173.		Myrmecia chasei			
174.		Myrmecia desertorum			
175.		Myrmecia infima			
176.		Myrmecia ludlowi			
177.		Myrmecia nigra			
178. 179.		Myrmecia nigriscapa Myrmecia pavida			
180.		Myrmecia rufinodis			
181.		Myrmecia rugosa			
182.		Myrmecia sp.			
183.		Myrmecia swalei			
184.		Myrmecia testaceipes			
185.		Myrmecia urens			
186. 187.		Myrmecia vindex Notoncus gilberti			
187.		Notoncus hickmani			
189.		Notoncus sp.			
190.		Platythyrea turneri			Y
191.		Polyrhachis phryne			
192.		Rhytidoponera punctigera			
193. 194.		Solenopsis sp. Stigmacros clarki			
194.		Stigmacros clarki		Department	t of



	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area Y
195.		Stigmacros sp.			T
196.		Tapinoma sp.			
Galaxiidae					
197.	34028	Galaxias occidentalis (Western Minnow)			
Gekkonidae 198.	24980	Christinus marmoratus (Marbled Gecko)			
Geogarypida	е				
199.		Geogarypus taylori			
Gobiesocida	e				
200.		Cochleoceps viridis			
201.		Posidonichthys hutchinsi			
Gobiidae					
202.		Favonigobius sp.			
203.		Pseudogobius olorum			
Haamatanad	idao				
Haematopod 204.		Haematopus longirostris (Pied Oystercatcher)			
	27707	. acinatopati fongirotino (r fot oystofotionor)			
Halcyonidae					
205.		Dacelo novaeguineae (Laughing Kookaburra)	Y		
206.	25549	Todiramphus sanctus (Sacred Kingfisher)			
Haliotidae					
207.		Haliotis scalaris subsp. scalaris			
208.		Haliotis semiplicata			
Haliplidae					
209.		Haliplidae sp.			
210.		Haliplus sp.			
		, ,			
Henicopidae					
211.		Henicops dentatus			
Hersiliidae					
212.		Tamopsis distinguenda			
213.		Tamopsis perthensis			
Hesperiidae					
. 214.		Trapezites argenteoornatus			
Heterodontid					
215.	ae	??			
Hirundinidae					
216.		Hirundo neoxena (Welcome Swallow)			
217.	25629	Hirundo nigricans (Tree Martin)			
Hydrobiidae					
218.		Ascorhis occidua			
219.		Tatea rufilabris			
Hydrophilida	е				
220.	-	Berosus discolor			
221.		Berosus sp.			
222.		Hydrophilidae sp.			
Hylidaa					
Hylidae 223.	25378	Litoria adelaidensis (Slender Tree Frog)			
223.		Litoria moorei (Motorbike Frog)			
	_0000				
Ixodidae					
225.		Amblyomma albolimbatum			
Labridae					
226.		Dotalabrus aurantiacus			
227.		Haletta semifasciata			
228.		Siphonognathus radiatus			
Lamponidae					
229.		Lampona cylindrata			
230.		Lampona punctigera			
Laridae					
231.		Chroicocephalus novaehollandiae			
231.		Hydroprogne caspia			
-				Department	of
		NatureMap is a collaborative project of the Department of Parks and Wildlife and the Wester	n Australian Museu	m. Department Parks and V	of Vildlife MUSeun

NatureMap Mapping Western Australia's biodiversity

N	lame ID	Species Name N	aturalised	Conservation Code	¹ Endemic To Query Area
233.		Thalasseus bergii			Alou
_eporidae					
234.	24085	Oryctolagus cuniculus (Rabbit)	Y		
Limnodynasti	dae				
235.		Heleioporus eyrei (Moaning Frog)			
236.	25415	Limnodynastes dorsalis (Western Banjo Frog)			
Macropodidae	•				
237.		Macropus fuliginosus (Western Grey Kangaroo)			
238.	24133	Macropus irma (Western Brush Wallaby)		P4	
239.	24145	Setonix brachyurus (Quokka)		Т	
Mactridae 240.		Mactra (Mactra) australis			
Maluridae	05054				
241.		Malurus splendens (Splendid Fairy-wren)			
242.		Stipiturus malachurus (Southern Emu-wren)			
Megapodagric	onidae				
243.		Archiargiolestes pusillus			
Meliphagidae					
244.	24560	Acanthorhynchus superciliosus (Western Spinebill)			
245.		Anthochaera carunculata (Red Wattlebird)			
246.		Anthochaera lunulata (Western Little Wattlebird)			
247.		Epthianura albifrons (White-fronted Chat)			
248. 249.		Gavicalis virescens (Singing Honeyeater)			
249. 250.		Lichmera indistincta (Brown Honeyeater) Phylidonyris novaehollandiae (New Holland Honeyeater)			
	24550	Phyliothyns novaenollanulae (New Hollanu Honeyealer)			
Meropidae					
251.	24598	Merops ornatus (Rainbow Bee-eater)		IA	
Micronectidae	•				
252.		Micronecta sp.			
Micropholcom	matid	ae			
253.	mana	Raveniella peckorum			
Monoconthida	-				
Monacanthida 254.	e	Acanthaluteres spilomelanurus			
255.		Acanthaluteres shiomeanaras			
256.		Brachaluteres jacksonianus			
257.		Eubalichthys mosaicus			
258.		Meuschenia flavolineata			
259.		Meuschenia freycineti			
260.		Scobinichthys granulatus			
Mugilidae					
261.		Liza argentea			
262.		Mugil cephalus			
Muridae	24245	Hudramus abrussestar (Mater rat)		D4	
263. 264.		Hydromys chrysogaster (Water-rat) Mus musculus (House Mouse)	Y	P4	
265.		Pseudomys occidentalis (Western Mouse)	T	P4	
265.		Rattus rattus (Black Rat)	Y	F 4	
		······································			
Myobatrachid		Odinia alexandi (Olinizian Franci)			
267.		Crinia glauerti (Clicking Frog)			
268. 269.		Crinia insignifera (Squelching Froglet) Pseudonhnune quentheri (Crawling Toadlet)			
		Pseudophryne guentheri (Crawling Toadlet)			
Nannopercida	e				
270.		Edelia vittata			
Naticidae					
271.		Polinices (Conuber) conicus			
lomoniidaa					
Nemesiidae		Anomo toppori			
272.		Aname tepperi			
Neosebastida	е				
COSCDUSTICU		Neosebastes pandus			
273.					
273.					
	25673	Daphoenositta chrysoptera (Varied Sittella)			
273. Neosittidae	25673	Daphoenositta chrysoptera (Varied Sittella)		Department Parks and	

Name ID Species Name

Nephilidae			
275.		Nephila edulis	
Nymphalidae			
276.		Geitoneura minyas	
Octopodidae			
277.		Octopus sp.	
Ostraciidae			
278.		Aracana aurita	
Pachycephali	dae		
279.		Colluricincla harmonica (Grey Shrike-thrush)	
280.	25679	Pachycephala pectoralis (Golden Whistler)	
281.	24623	Pachycephala pectoralis subsp. fuliginosa (Golden Whistler)	
282.	25680	Pachycephala rufiventris (Rufous Whistler)	
283.		Pachycephala sp.	Υ

Conservation Code ¹Endemic To Query

Department of Parks and Wildlife museum

Naturalised

Palaemonidae

284.		Palaemonetes australis	
Parastacidae			
285.		Cherax destructor	
286.		Cherax preissii	
287.		Cherax quinquecarinatus	
Pardalotidae			
288.	25681	Pardalotus punctatus (Spotted Pardalote)	
289.	25682	Pardalotus striatus (Striated Pardalote)	
290.	24630	Pardalotus striatus subsp. westraliensis (Striated Pardalote)	
Pelecanidae			
291.	24648	Pelecanus conspicillatus (Australian Pelican)	
Peramelidae			
292.	25478	Isoodon obesulus (Southern Brown Bandicoot)	P5
293.	24153	Isoodon obesulus subsp. fusciventer (Quenda, Southern Brown Bandicoot)	P5
Percichthyidae	,		
294.		Bostockia porosa	
295.		Nannoperca vittata	
Petroicidae			
296.	24651	Eopsaltria australis subsp. griseogularis (Western Yellow Robin)	
297.	24652	Eopsaltria georgiana (White-breasted Robin)	
298.	25695	Petroica multicolor (Scarlet Robin)	
Phalacrocorac	idae		

299. Microcarbo melanoleucos 300. 25697 Phalacrocorax carbo (Great Cormorant) 301. 24667 Phalacrocorax sulcirostris (Little Black Cormorant) 302. 25699 Phalacrocorax varius (Pied Cormorant) 303. 24668 Phalacrocorax varius subsp. hypoleucos (Pied Cormorant) Phalangeridae 304. 25521 Trichosurus vulpecula (Common Brushtail Possum) 305. 24158 Trichosurus vulpecula subsp. vulpecula (Common Brushtail Possum) Phasianidae 24671 Coturnix pectoralis (Stubble Quail) 306. Philotarsidae 307. Latrobiella guttatus Pieridae 308. Pieris rapae subsp. rapae Y Plectidae 309. Plectus sp. Podargidae 310. 25703 Podargus strigoides (Tawny Frogmouth) 311. 24679 Podargus strigoides subsp. brachypterus (Tawny Frogmouth)

Podicipedidae

ed Grebe)
•

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Poeciliidae					
315.	,	Gambusia affinis			
316.		Gambusia holbrooki			
Pomatiops	:doo				
317.	luae	Coxiella sp.			
Potoroidae 318.		Detternis periollete suber esilleri (Merdie Druch teiled Dettern)		-	
316.	24102	Bettongia penicillata subsp. ogilbyi (Woylie, Brush-tailed Bettong)		Т	
Pratylench	idae				
319.		Radopholus sp.			
Procellariid	dae				
320.	24690	Macronectes giganteus (Southern Giant Petrel)			
321.	25710	Pterodroma macroptera (Great-winged Petrel)			
Pseudoche	eiridae				
322.	24166	Pseudocheirus occidentalis (Western Ringtail Possum)		т	
Psittacidae					
323.	, 	Barnardius zonarius			
324.	25714	Cacatua pastinator (Western Long-billed Corella)			
325.	25715	Cacatua roseicapilla (Galah)			
326.	25716	Cacatua sanguinea (Little Corella)			
327.		Cacatua sp.			
328.		Calyptorhynchus banksii subsp. naso (Forest Red-tailed Black-Cockatoo)		Т	
329.	24733	Calyptorhynchus baudinii (Baudin's Cockatoo (long-billed black-cockatoo), Baudin's Cockatoo)		т	
330.	24734	Calyptorhynchus latirostris (Carnaby's Cockatoo (short-billed black-cockatoo),			
		Carnaby's Cockatoo)		Т	
331.		Calyptorhynchus sp.			
332.	24735	Glossopsitta porphyrocephala (Purple-crowned Lorikeet)			
333.		Neophema elegans (Elegant Parrot)			
334.		Neophema petrophila (Rock Parrot)			
335. 336.		Platycercus icterotis (Western Rosella)			
337.		Platycercus icterotis subsp. icterotis (Western Rosella) Platycercus spurius (Red-capped Parrot)			
338.		Platycercus zonarius (Australian Ringneck, Ring-necked Parrot)			
339.		Platycercus zonarius subsp. semitorquatus (Twenty-eight Parrot)			
340.	25722	Polytelis anthopeplus (Regent Parrot)			
341.		Purpureicephalus spurius			
Pygopodid	ae				
342.	24990	Aprasia pulchella (Granite Worm-lizard)			
Pvralidae					
343.		Pyralidae nr. sp. 39/40 of JHH (SAP)			
Rallidae					
344.	25727	Fulica atra (Eurasian Coot)			
345.		Gallinula tenebrosa (Dusky Moorhen)			
346.		Gallirallus philippensis (Buff-banded Rail)			
347.		Porphyrio porphyrio (Purple Swamphen)			
348.		Porzana fluminea (Australian Spotted Crake)			
349.		Porzana pusilla (Baillon's Crake)			
350. 351.	24771	Porzana tabuensis (Spotless Crake) Tribonyx ventralis			
		Thionyx venualis			
Recurviros					
352.		Cladorhynchus leucocephalus (Banded Stilt)			
353. 354.		Himantopus himantopus (Black-winged Stilt) Recurvirostra novaehollandiae (Red-necked Avocet)			
Rhinoterm	itidae	Contatormon coinceilarmia subar vetter i			
355.		Coptotermes acinaciformis subsp. raffrayi			
Salticidae					
356.		Maratus pavonis			
Scarabaeic	lae				
357.		Onthophagus evanidus			
358.		Onthophagus haagi			
359.		Onthophagus vermiculatus			
Scincidae					

Scincidae

360. 42368 Acritoscincus trilineatus (Western Three-lined Skink)



	Name ID	Species Name Nat	turalised C	Conservation Code	¹ Endemic To Query Area
361.	30893	Cryptoblepharus buchananii			, nou
362.	25020	Cryptoblepharus plagiocephalus			
363.	25047	Ctenotus impar			
364.	25049	Ctenotus labillardieri			
365.	25096	Egernia kingii (King's Skink)			
366.	25100	Egernia napoleonis			
367.	30919	Hemiergis gracilipes			
368.	25475	Hemiergis peronii			
369.	25118	Hemiergis peronii subsp. tridactyla			
370.	25119	Hemiergis quadrilineata			
371.	25131	Lerista distinguenda			
372.	25133	Lerista elegans			
373.	25147	Lerista lineata (Perth Slider, Lined Skink)		P3	
374.	25184	Menetia greyii			
375.	25191	Morethia lineoocellata			
376.	25519	Tiliqua rugosa			
Saalanaaida					
Scolopacidae		Astitis towards uses (Oswards a Oswards and			
377.		Actitis hypoleucos (Common Sandpiper)		IA	
378.		Calidris acuminata (Sharp-tailed Sandpiper)		IA	
379.		Calidris ferruginea (Curlew Sandpiper)		Т	
380.		Calidris ruficollis (Red-necked Stint)		IA	
381.		Limosa limosa (Black-tailed Godwit)		IA	
382.		Tringa glareola (Wood Sandpiper)		IA	
383.	24808	Tringa nebularia (Common Greenshank)		IA	
Scombridae					
384.		Thunnus maccoyii			
304.		Thunnas maccoyn			
Soleidae					
385.		Aseraggodes haackeanus			
Sparidae 386.		Acanthopagrus butcheri			
Steinernemat	toidea				
387.		Steinernema sp.			
o					
Strigidae 388.	25748	Ninox novaeseelandiae (Boobook Owl)			
Sylviidae					
389.	25755	Acrocephalus australis (Australian Reed Warbler)			
390.	24833	Cincloramphus cruralis (Brown Songlark)			
391.	25758	Megalurus gramineus (Little Grassbird)			
Cum ann a thuird a	_				
Syngnathidae	e				
392.		Stigmatopora argus			
393.		Vanacampus poecilolaemus			
Synthemistid ^{394.}	lae	Archaeosynthemis leachii			
Syrphidae					
395.		Eristalinus (Lathyrophthalmus) punctulatus			
396.		Psilota coerulea			Y
Tabanidae					
397.		Scaptia (Pseudoscione) calabyi			
398.		Scaptia (Pseudoscione) regisgeorgii			
Tarsipedidae 399.		Tarsipes rostratus (Honey Possum, Noolbenger)			
Termitidae 400.		Amitermes obeuntis			
401.		Ephelotermes argutus			
402.		Hesperotermes infrequens			
403.		Nasutitermes exitiosus			Y
Tetrarogidae 404.		Gymnapistes marmoratus			
Tettigoniidae					
405.		Kawanaphila mirla			
Threskiornith	echie				
406.		Platalea flavipes (Yellow-billed Spoonbill)			

NatureMap Mapping Western Australia's biodiversity

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
407.	24842	Platalea regia (Royal Spoonbill)			
408.		Plegadis falcinellus (Glossy Ibis)		IA	
409.	24844	Threskiornis molucca (Australian White Ibis)			
410.	24845	Threskiornis spinicollis (Straw-necked Ibis)			
Thudesewi					
Thylacomyic 411.		Macrotis lagotis (Bilby, Dalgyte)		Т	
Triaenonych	idae				
412.	nuuo	Nunciella aspera			
Trochidae					
413.		Cantharidus lepidus			
414.		Odontotrochus chlorostomus			
415.		Phasianotrochus irisodontes			
416.		Thalotia conica			
Turbinidae					
417.		Turbo (Euninella) gruneri			
Tylenshides					
Tylenchidae		T deserves an			
418.		Tylenchus sp.			
Typhlopidae					
419.	44629	Anilios australis			
Tytonidae					
420.	24852	Tyto alba subsp. delicatula (Barn Owl)			
421.	24855	Tyto novaehollandiae subsp. novaehollandiae (Masked Owl (southern subsp))		P3	
Urodacidae					
422.		I tradegue novechallendiae			
422.		Urodacus novaehollandiae			
Varanidae					
423.	25218	Varanus gouldii (Bungarra or Sand Monitor)			
424.	25225	Varanus rosenbergi (Heath Monitor)			
Vespertilion	idae				
425.		Falsistrellus mackenziei (Western False Pipistrelle)		P4	
426.		Vespadelus regulus (Southern Forest Bat)		14	
	2.200				
Ziphiidae					
427.	24078	Mesoplodon grayi (Gray's Beaked Whale)			
Zosteropida	е				
428.	25765	Zosterops lateralis (Grey-breasted White-eye, Silvereye)			
429.	24856	Zosterops lateralis subsp. gouldi (Grey-breasted White-eye)			
429. Conservation Code: T - Rare or likely to b X - Presumed extinct JA - Protected under S - Other specially pr 1 - Priority 1 2 - Priority 2 3 - Priority 2 4 - Priority 4	s ecome extino international	agreement			

4 - Priority 4 5 - Priority 5

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







Australian Government

Department of the Environment

EPBC Act Protected Matters Report

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

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

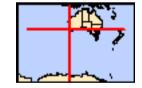
Information is available about <u>Environment Assessments</u> and the EPBC Act including significance guidelines, forms and application process details.

Report created: 23/06/16 16:49:27

Summary Details Matters of NES Other Matters Protected by the EPBC Act Extra Information Caveat Acknowledgements Use to the second secon

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

Coordinates Buffer: 10.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	63
Listed Migratory Species:	42

Other Matters Protected by the EPBC Act

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

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

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	71
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	9
Regional Forest Agreements:	None
Invasive Species:	25
Nationally Important Wetlands:	2
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[Resource Information]
Name	Proximity
Vasse-wonnerup system	Within Ramsar site

[Resource Information]

Listed Threatened Ecological Communities

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
Claypans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area
<u>Shrublands on southern Swan Coastal Plain</u> ironstones	Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
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 known to occur within area
Calyptorhynchus banksii naso		
Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat may occur within area
Calyptorhynchus baudinii		
Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-	Vulnerable	Breeding known to occur

billed Black-Cockatoo, Baudin's Black-Cockatoo, Long- billed Black-Cockatoo [769] Calyptorhynchus latirostris	Vulnerable	Breeding known to occur within area
Carnaby's Black-Cockatoo, Short-billed Black- Cockatoo [59523] Diomedea amsterdamensis	Endangered	Breeding likely to occur within area
Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena		
Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto)		
Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<u>Diomedea exulans (sensu lato)</u>		
Wandering Albatross [1073]	Vulnerable	Foraging, feeding or

Name	Status	Type of Presence
Diomedea sanfordi		related behaviour likely to occur within area
Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<u>Halobaena caerulea</u> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Pachyptila turtur subantarctica		
Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Pezoporus occidentalis		
Night Parrot [59350]	Endangered	Extinct within area
<u>Phoebetria fusca</u> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis		
Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<u>Sternula nereis</u> nereis		
Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within

		area
Thalassarche cauta cauta		
Shy Albatross, Tasmanian Shy Albatross [82345] Thalassarche cauta steadi	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat
Diack-Drowed Albalioss [00472]	vullelable	may occur within area
Mammals		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Dasyurus geoffroii		

Chuditch, Western Quoll [330]

Vulnerable

Species or species habitat likely to occur within area

Name	Status	Type of Presence
<u>Eubalaena australis</u> Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat may occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Vulnerable	Breeding known to occur within area
Plants		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
<u>Banksia nivea subsp. uliginosa</u> Swamp Honeypot [82766]	Endangered	Species or species habitat known to occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat known to occur within area
Brachyscias verecundus Ironstone Brachyscias [81321]	Critically Endangered	Species or species habitat known to occur within area
<u>Caladenia busselliana</u> Bussell's Spider-orchid [24369]	Endangered	Species or species habitat known to occur within area
<u>Caladenia huegelii</u> King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area
<u>Caladenia procera</u> Carbunup King Spider Orchid [68679]	Critically Endangered	Species or species habitat may occur within area
<u>Chamelaucium sp. S coastal plain (R.D.Royce 4872)</u> Royce's Waxflower [87814]	Vulnerable	Species or species habitat known to occur within area

Darwinia whicherensis Abba Bell [83193]	Endangered	Species or species habitat known to occur within area
Daviesia elongata subsp. elongata Long-leaved Daviesia [64883]	Vulnerable	Species or species habitat may occur within area
<u>Diuris drummondii</u> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
<u>Diuris micrantha</u> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Drakaea elastica Glossy-leafed Hammer-orchid, Praying Virgin [16753]	Endangered	Species or species habitat known to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species

Name	Status	Type of Presence
		habitat known to occur
		within area
<u>Grevillea elongata</u>		
Ironstone Grevillea [64578]	Vulnerable	Species or species habitat
		likely to occur within area
Grevillea maccutcheonii		
McCutcheon's Grevillea [64522]	Endangered	Species or species habitat
, , , , , , , , , , , , , , , , , , ,	9	likely to occur within area
Lambertia echinata subsp. occidentalis		.
Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat
		known to occur within area
Petrophile latericola		
Laterite Petrophile [64532]	Endangered	Species or species habitat
		known to occur within area
Synaphea stenoloba		
Dwellingup Synaphea [66311]	Endangered	Species or species habitat
		may occur within area
Tetraria australiensis		
Southern Tetraria [10137]	Vulnerable	Species or species habitat
		known to occur within area
<u>Verticordia densiflora var. pedunculata</u>		
Long-stalked Featherflower [55689]	Endangered	Species or species habitat
		likely to occur within area
Verticordia plumosa var. ananeotes		On a side on an a side habitat
Tufted Plumed Featherflower [23871]	Endangered	Species or species habitat
		likely to occur within area
Verticordia plumosa var. vassensis		
Vasse Featherflower [55804]	Endangered	Species or species habitat
	C C	known to occur within area
Dentilee		
Reptiles		
Caretta caretta	Endangorod	Earaging fooding or related
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur
		within area
<u>Chelonia mydas</u>		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related
		i oraging, recurry or related
		behaviour known to occur
Dermochelys coriacea	Endangorod	behaviour known to occur within area
<u>Dermochelys coriacea</u> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	behaviour known to occur within area Breeding likely to occur
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	behaviour known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered Vulnerable	behaviour known to occur within area Breeding likely to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768]		behaviour known to occur within area Breeding likely to occur
Leatherback Turtle, Leathery Turtle, Luth [1768] <u>Natator depressus</u> Flatback Turtle [59257]		behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related
Leatherback Turtle, Leathery Turtle, Luth [1768] <u>Natator depressus</u> Flatback Turtle [59257] Sharks		behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur
Leatherback Turtle, Leathery Turtle, Luth [1768] <u>Natator depressus</u> Flatback Turtle [59257] <u>Sharks</u> <u>Carcharias taurus (west coast population)</u>	Vulnerable	behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] <u>Natator depressus</u> Flatback Turtle [59257] <u>Sharks</u> <u>Carcharias taurus (west coast population)</u>		 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat
Leatherback Turtle, Leathery Turtle, Luth [1768] <u>Natator depressus</u> Flatback Turtle [59257] Sharks	Vulnerable	behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias	Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias	Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470]	Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470]	Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias	Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus	Vulnerable Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus	Vulnerable Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus Whale Shark [66680]	Vulnerable Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus Whale Shark [66680] Listed Migratory Species	Vulnerable Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Lessour within area
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus Whale Shark [66680] Listed Migratory Species * Species is listed under a different scientific name on	Vulnerable Vulnerable Vulnerable the EPBC Act - Threatene	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat may occur within area I Resource Information
Leatherback Turtle, Leathery Turtle, Luth [1768] Natator depressus Flatback Turtle [59257] Sharks Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752] Carcharodon carcharias Great White Shark [64470] Rhincodon typus Whale Shark [66680] Listed Migratory Species	Vulnerable Vulnerable Vulnerable	 behaviour known to occur within area Breeding likely to occur within area Foraging, feeding or related behaviour known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Species or species habitat known to occur within area Lessour within area

Name	Threatened	Type of Presence
<u>Apus pacificus</u> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Sterna anaethetus Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
<u>Sterna caspia</u> Caspian Tern [59467]		Foraging, feeding or related

Thalassarche carteri Indian Yellow-nosed Albatross [64464]

Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]

Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross Vulnerable [64459]

Thalassarche melanophris Black-browed Albatross [66472]

Thalassarche steadi White-capped Albatross [64462]

Migratory Marine Species

Balaenoptera edeni

Bryde's Whale [35]

Vulnerable*

Vulnerable

Foraging, feeding or related behaviour likely to occur within area

Species or species habitat may occur within area

rolaging, recurry or related behaviour known to occur within area

Foraging, feeding or related behaviour may occur within area

Foraging, feeding or related behaviour likely to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Vulnerable

Vulnerable*

Name	Threatened	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<u>Caretta caretta</u> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur
<u>Chelonia mydas</u> Green Turtle [1765]	Vulnerable	within area Foraging, feeding or related behaviour known to occur
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	within area Breeding likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
<u>Lagenorhynchus obscurus</u> Dusky Dolphin [43]		Species or species habitat may occur within area
<u>Manta alfredi</u> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
<u>Manta birostris</u> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
<u>Natator depressus</u> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur

Orcinus orca Killer Whale, Orca [46]

Rhincodon typus

Whale Shark [66680]

within area

Species or species habitat may occur within area

Vulnerable

Species or species habitat may occur within area

Migratory Terrestrial Species Motacilla cinerea Grey Wagtail [642]

Migratory Wetlands Species Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris ferruginea Curlew Sandpiper [856]

Calidris ruficollis Red-necked Stint [860] Species or species habitat may occur within area

Species or species habitat known to occur within area

Critically Endangered Species or species habitat known to occur within area

Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Charadrius bicinctus		
Double-banded Plover [895]		Species or species habitat known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Tringa glareola		
Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis		
Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
Other Matters Protected by the EPBC Act		
Commonwealth Land		[Resource Information]
The Commonwealth area listed below may indicate the	processo of Comm	

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

Name		
Commonwealth Land -		
Listed Marine Species		[Resource Information]
* Species is listed under a different scientific	name on the EPBC Act - Threat	tened Species list.
Name	Threatened	Type of Presence
Birds		
Anous tenuirostris melanops		
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area

Apus pacificus Fork-tailed Swift [678]

likely to occur within area

Ardea alba Great Egret, White Egret [59541]

Ardea ibis Cattle Egret [59542]

Calidris acuminata Sharp-tailed Sandpiper [874]

Calidris ferruginea Curlew Sandpiper [856]

Calidris ruficollis Red-necked Stint [860]

Catharacta skua Great Skua [59472] Breeding known to occur within area

Species or species habitat may occur within area

Species or species habitat known to occur within area

Critically Endangered Species or spe

Species or species habitat known to occur within area

Species or species habitat known to occur within area

Species or species habitat may occur within area

Name	Threatened	Type of Presence
<u>Charadrius bicinctus</u> Double-banded Plover [895]		Species or species habitat known to occur within area
<u>Charadrius ruficapillus</u> Red-capped Plover [881]		Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<u>Diomedea dabbenena</u> Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or related behaviour likely to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	within area Foraging, feeding or related behaviour likely to occur
<u>Diomedea sanfordi</u> Northern Royal Albatross [64456]	Endangered	within area Foraging, feeding or related behaviour likely to occur
<u>Haliaeetus leucogaster</u> White-bellied Sea-Eagle [943]		within area Species or species habitat known to occur within area
<u>Halobaena caerulea</u> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Black-winged Stilt [870]		Species or species habitat known to occur within area
Limosa Iapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area
<u>Macronectes giganteus</u> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat

Southern Glant-Fetter, Southern Glant Fetter [1000]

may occur within area

Macronectes halli Northern Giant Petrel [1061]

Merops ornatus Rainbow Bee-eater [670]

Motacilla cinerea Grey Wagtail [642]

Pachyptila turtur Fairy Prion [1066]

Pandion haliaetus Osprey [952]

Phoebetria fusca Sooty Albatross [1075]

Pterodroma mollis Soft-plumaged Petrel [1036] Vulnerable

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat known to occur within area

Breeding known to occur within area

Species or species habitat may occur within area

Vulnerable

Vulnerable

Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Puffinus assimilis		
Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Recurvirostra novaehollandiae		
Red-necked Avocet [871]		Species or species habitat known to occur within area
Sterna anaethetus		
Bridled Tern [814]		Foraging, feeding or related behaviour likely to occur within area
Sterna caspia		
Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri		
Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<u>Thalassarche cauta (sensu stricto)</u>		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis		.
Hooded Plover [59510]		Species or species habitat likely to occur within area

Tringa glareola Wood Sandpiper [829]

<u>Tringa nebularia</u>

Common Greenshank, Greenshank [832]

<u>Tringa stagnatilis</u> Marsh Sandpiper, Little Greenshank [833]

Fish <u>Acentronura australe</u> Southern Pygmy Pipehorse [66185]

Campichthys galei Gale's Pipefish [66191]

Heraldia nocturna

Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]

<u>Hippocampus angustus</u> Western Spiny Seahorse, Narrow-bellied Seahorse Species or species habitat known to occur within area

Species or species habitat known to occur within area

Species or species habitat known to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species

Name	Threatened	Type of Presence
[66234]		habitat may occur within area
Hippocampus breviceps		
Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus subelongatus		
West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus		
Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis		
Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloguus		
Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa		
Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata		
Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus		
Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus		
Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phycodurus eques		
Leafy Seadragon [66267]		Species or species habitat may occur within area

<u>Phyllopteryx taeniolatus</u> Common Seadragon, Weedy Seadragon [66268]

Species or species habitat may occur within area

Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]

Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]

Stigmatopora argus Spotted Pipefish, Gulf Pipefish [66276]

<u>Stigmatopora nigra</u> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]

Stigmatopora olivacea a pipefish [74966]

Urocampus carinirostris Hairy Pipefish [66282]

Vanacampus margaritifer Mother-of-pearl Pipefish [66283] Species or species habitat may occur within area

Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Vanacampus phillipi Dart Dhillip Dipatiah (CC294)		Chasica ar species hebitat
Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus		
Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri		
Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Neophoca cinerea		
Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<u>Natator depressus</u> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related
	vunerable	behaviour known to occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata		
Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area

Balaenoptera musculus Blue Whale [36]

Caperea marginata Pygmy Right Whale [39]

Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]

Eubalaena australis Southern Right Whale [40]

<u>Grampus griseus</u> Risso's Dolphin, Grampus [64]

Lagenorhynchus obscurus Dusky Dolphin [43]

Megaptera novaeangliae Humpback Whale [38] Endangered

Endangered

Species or species habitat likely to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Breeding known to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Vulnerable

Congregation or aggregation known to

Name	Status	Type of Presence
		occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Capel	WA
Ruabon Townsite	WA
Sabina	WA
Tuart Forest	WA
Unnamed WA41568	WA
Unnamed WA44838	WA
Unnamed WA46070	WA
Unnamed WA50190	WA
Unnamed WA50270	WA

Invasive Species

[Resource Information]

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

Name	Status	Type of Presence
Birds		
Anas platyrhynchos		
Mallard [974]		Species or species habitat likely to occur within area
Columba livia		
Rock Pigeon, Rock Dove, Domestic Pigeon [8	03]	Species or species habitat likely to occur within area
Streptopelia senegalensis		
Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris		
Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Bos taurus		
Domestic Cattle [16]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
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
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Flori Smilax, Smilax Asparagus [22473]	ist's	Species or species habitat likely to occur within area
Brachiaria mutica		

Brachiaria mutica Para Grass [5879]

Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]

Chrysanthemoides monilifera Bitou Bush, Boneseed [18983] Species or species habitat may occur within area

Species or species habitat

may occur within area

Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]

Genista sp. X Genista monspessulana Broom [67538]

Lycium ferocissimum African Boxthorn, Boxthorn [19235]

Olea europaea Olive, Common Olive [9160]

Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]

Rubus fruticosus aggregate Blackberry, European Blackberry [68406] Species or species habitat may occur within area

Species or species habitat likely to occur within area

Species or species habitat may occur within area

Species or species habitat likely to occur within area

Species or species habitat may occur within area

Species or species habitat may occur within area

Species or species habitat likely to occur within area

Name	Status	Type of Presence		
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii				
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	1	Species or species habitat likely to occur within area		
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypres Salt Cedar [16018]	SS,	Species or species habitat likely to occur within area		
Nationally Important Wetlands		[Resource Information]		
Name		State		
McCarleys Swamp (Ludlow Swamp)		WA		
Vasse-Wonnerup Wetland System		WA		

Caveat

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

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

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

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

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

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

-Parks and Wildlife Commission NT, Northern Territory Government

-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, Atherton and Canberra

-University of New England

-Ocean Biogeographic Information System

-Australian Government, Department of Defence

Forestry Corporation, NSW

-Geoscience Australia

-CSIRO

-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 <u>Contact Us</u> page.

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APPENDIX E

Species List

AMPHIBIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, WC = Wildlife Conservation Act 1950, DPaW = Department of Parks and Wildlife Priority Code, A = Listed in Naturemap, B = DPaW Threatened and Priority fauna search, C = EPBC Protected Matters search, D = Current Survey;

		Conse	ervation	Codes				
Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
CHELONIIDAE								
Caretta caretta	Loggerhead Turtle	MiMa, En	S2		Х	Х	Х	
Chelonia mydas	Green turtle	MiMa, Vu	S3		Х		Х	
Dermochelys coriacea	Leatherback Turtle	MiMa, En	S3				Х	
Natator depressus	Flatback Turtle	MiMa, Vu	S3				Х	
LIMNODYNASTIDAE								
Heleioporus eyrei	Moaning Frog				Х			
Limnodynastes dorsalis	Western Banjo Frog				Х			
MYOBATRACHIDAE								
Crinia glauerti	Clicking Frog				Х			
Crinia insignifera	Squelching Froglet				Х			
Pseudophryne guentheri	Crawling Toadlet				Х			
HYLIDAE								
Litoria adelaidensis	Slender Tree Frog				Х			
Litoria moorei	Motorbike Frog				Х			

REPTILIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, WC = Wildlife Conservation Act 1950, DPaW = Department of Parks and Wildlife Priority Code, A = Listed in Naturemap, B = DPaW Threatened and Priority fauna search, C = EPBC Protected Matters search, D = Current Survey:

		Cons	ervation	Codes				
Scientific Name	Common Name	EPBC	WC	DPaW	Α	В	С	D
PYGOPODIDAE								
Aprasia pulchella	Granite Worm-lizard				Х			
GEKKONIDAE								
Christinus marmoratus	Marbled Gecko				Х			
Gehyra variagata	Tree Dtella							Х
SCINCIDAE								
Acritoscincus trilineatus	Western Three-lined Skink				Х			
Cryptoblepharus buchananii	Buchanans Snake-eyed Skink				Х			
Cryptoblepharus plagiocephalus	Perons Snake-eyed Skink				Х			
Ctenotus impar	Odd-striped Ctenotus				Х			
Ctenotus labillardieri					Х			
Egernia kingii	King's Skink				Х			
Egernia napoleonis	South-western Crevice Skink				Х			
Hemiergis quadrillineata	Two-toed Earless Skink				Х			
Lerista distinguenda	South-western Orange Tailed-Slider				Х			
Lerista elegans	Elegant Slider				Х			
Menetia greyii	Common Dwarf Skink				Х			
Morethia lineococellata	West Coast Morethia Skink				Х			
Tiliqua rugosa	Shingleback				Х			
AGAMIDAE								
Pogona minor	Dwarf Bearded Dragon				Х			
VARANIDAE								
Varanus gouldii	Sand Monitor				Х			
Varanus rosenbergi	Heath Monitor				Х			
TYPHLOPIDAE								
Ramphotyphlops australis	Southern Blind Snake				Х			

		Cons	ervation	Codes				
Scientific Name	Common Name	EPBC	WC	DPaW	Α	В	С	D
BOIDAE								
Morelia spilota imbricata	Carpet Python				Х			
ELAPIDAE								
Elapognathus coronatus	Crowned Snake				Х			
Hydrophis platurus	Yello-bellied Seasnake				Х			
Notechis scutatus	Tiger Snake				Х			
Parasuta nigriceps	Black-backed Snake				Х			
Pseudonaja affinis affinis	Dugite				Х			

AVIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, WC = Wildlife Conservation Act 1950, DPaW = Department of Parks and Wildlife Priority Code, A = Listed in Naturemap, B = DPaW Threatened and Priority fauna search, C = EPBC Protected Matters search, D = Current Survey

		Conse	rvation	Codes				
Scientific Name	Common Name	EPBC	WC	DPaW	Α	В	С	D
PHASIANIDAE								
Coturnix pectoralis	Stubble Quail				Х			
STERCORARIIDAE							•	-
Catharacta skua	Great Skua						Х	
ANATIDAE			-			•	•	-
Anas castanea	Chestnut Teal				Х			
Anas gracillis	Grey Teal				Х			
Anas platyrhynchos	Mallard				Х		Х	
Anas rhynchotis	Australian Shoveler				Х			
Anas superciliosa	Pacific Black Duck				Х			
Aythya australis	Hardhead				Х			
Biziura lobata	Musk Duck				Х			
Chenonetta jubata	Australian Wood Duck				Х			
Cygnus atratus	Black Swan				Х			
Malacorhynchus membranaceus	Pink-eared Duck				Х			
Oxyura australis	Blue-billed Duck			P4	Х	Х		
Stictonetta naevosa	Freckled Duck				Х			
Tadorna tadornoides	Australian Shelduck				Х			
PODICIPEDIDAE								
Poliocephalus poliocephalus	Hoary-headed Greb				Х			
Podiceps cristatus	Great Crested Grebe				Х			
Tachybaptus novaehollandiae	Australian Grebe				Х			
ANHINGIDAE	-							
Anhinga novaehollandiae	Australasian Darter				Х			
PHALACROCORACIDAE								
Phalacrocorax carbo	Great Cormorant				Х			
Phalacrocorax sulcirostris	Little Black Cormorant				Х			
Phalacrocorax varius	Pied Cormorant				Х			

Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
PELECANIDAE								
Pelecanus conspicillatus	Australian Pelican				Х			
ARDEIDAE								
Ardea garzetta	Little Egret				Х			
Ardea ibis	Cattle Egret	Mi			Х		Х	
Ardea modesta	Great Egret	Mi			Х	Х	Х	
Ardea novaehollandiae	White-faced Heron				Х			
Ardea pacifica	White-necked Heron				Х			
Botaurus poiciloptilus	Australaisian Bittern	En	S2		Х	Х	Х	
Calidris ferruginea	Curlew Sandpiper			P1			Х	
Nycticorax caledonicus	Rufous Night Heron				Х			
HAEMATOPODIDAE	· · · · · ·							
Haematopus longirostris	Australian Pied Oystercatcher				Х			
RECURVIROSTRIDAE	· · · · · · · · · · · · · · · · · · ·							
Cladorhynchus leucocephalus	Banded Stilt				Х			
Himantopus himantopus	Black-winged Stilt	Ma			Х		Х	
Recurvirostra novaehollandiae	Red-necked Avocet	Ma			Х		Х	
CHARADRIIDAE	· · · · · ·							
Charadrius bincinctus	Double-banded Plover	MiMa	S5				Х	
Charadrius leschenaultii	Greater Sand Plover	IA			Х	Х		
Charadrius ruficapillus	Red-capped Plover				Х		Х	
Elseyornis melanops	Black-fronted Dotterel				Х			
Erythrogonys cinctus	Red-kneed Dotterel				Х			
Pluvialis fulva	Pacific Golden Plover				Х			1
Pluvialis squatarola	Grey Plover	IA	S5		Х	Х		
Thinornis rubricollis	Hooded Plover	Ma			Х		Х	
Vanellus miles	masked Lapwing				Х			
Vanellus tricolour	Banded Lapwing				Х			
SCOLOPACIDAE								
Actitis hypoleucos	Common Sandpiper	MiMa			Х			
Calidris acuminata	Sharp-tailed Sandpiper	MiMa			Х	Х	Х	
Calidris ferruginea	Curlew Snadpiper	CR, MiMa			Х	Х	Х	
Calidris ruficollis	Red-necked Stint	MiMa	S3		Х	Х	Х	
Limosa lapponica	Bar-tailed Godwit	MiMa	S5				Х	
Limosa lapponica baueri	West Alaskan Bar-tailed Godwit	Vu, MiMa					Х	
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit	CR, MiMa					Х	
Limosa limosa	Black-tailed Godwit	MiMa			Х			
Tringa glareola	Wood Sandpiper	MiMa			Х	Х	Х	
Tringa nebularia	Common Greenshank	MiMa	S3		Х	Х	Х	
Tringa stagnatilis	Little Greenshank	MiMa	S5			Х	Х	

Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
LADIDAE								
Anous tenuirotris melanops	Australian Lesser Noddy	En	S2				Х	
COLUMBIDAE	· · · · · · · · · · · · · · · · · · ·							
Columba livia	Domestic Pigeon				Х		Х	
Ocyphaps lophotes	Crested Pigeon				Х			
Phaps chalcoptera	Common Bronzewing				Х			Х
Streptopelia senegalensis senegalensis	Laughing Dove				Х		Х	
PODARGIDAE	· · ·							
Podargus strigoides	Tawny Frogmouth				Х			
APODIDAE	· · · · · · · · · · · · · · · · · · ·			•		•		
Apus pacificus	Fork-tailed Swift	MiMa					Х	
DIOMEDEIDAE	•			•		•		
Diomedea amsterdamensis	Amsterdam Albatross	En	S5				Х	
Diomedea dabbenena	Tristan Albatross	En	S1				Х	
Diomedea epomophora	Southern Royal Albatross	Vu	S2				Х	
Diomedea exulans	Wandering Albatross	Vu	S3		Х	Х	Х	
Diomedea sanfordi	Northern Royal Albatross	En	S2				Х	
Thalassarche cauta cauta	Shy Albatross	Vu	S5				Х	
Thalassarche cauta steadi	White-capped Albatross	Vu	S5				Х	
Thalassarche chlororhynchos	Yellow-nosed Albatross	Vu	S5				Х	
Thalassarche impavida	Campbell Albatross	Vu	S5				Х	
Thalassarche melanophris	Black-browed Albatross	Vu	S5				Х	
Phoebetria fusca	Sooty Albatross	Vu	S5				Х	
PROCELLARIIDAE								_
Ardenna carneipes	Flesh-footed Shearwater	Ma	S5				Х	
Halobaena caerulea	Blue Petrel	Vu, Ma					Х	
Macronectes giganteus	Southern Giant-Petrel	En	S5		Х	Х	Х	
Macronectes halli	Northern Giant Petrel	Vu	S5				Х	
Pachyptila turtur	Fairy Prion						Х	
Pachyptila turtur subantarctica	Fairy Prion (Southern)	Vu					Х	
Pterodroma macroptera	Great-winged Petrel				Х		Х	
Pterodroma mollis	Soft-plumaged Petrel	Vu					Х	
Puffinus assimilis	Little Shearwater	Ma					Х	
THRESKIORNITHIDAE			-			-		
Plegadis falcinellus	Glossy Ibis	Al			Х	Х		
Platalea regia	Royal Spoonbill				Х			
Plegadis flavipes	Yellow-billed Spoonbill				Х			
Threskiornis molucca	Australian White Ibis				Х			
Threskiornis spinicollis	Straw-necked Ibis				Х			
ACCIPITRIDAE								

Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
Accipiter cirrocephalus cirrocephalus	Collared Sparrowhawk				Х			
Accipiter fasciatus didimus	Brown Goshawk				Х			
Aquila audax	Wedge-tailed Eagle				Х			
Aquila morphnoides	Little Eagle				Х			Х
Circus approximas	Swamp harrier				Х			
Circus assimilis	Spotted Harrier				Х			
Elanus axillaris	Black Souldered Kite				Х			
Haliaeetus leucogaster	White-bellied Sea Eagle	Ma			Х		Х	
Haliastur sphenurus	Whistling Kite				Х			
Lophoictinia isura	Square-tailed Kite				Х			
Pandion cristatus	Osprey	MiMa	S5				Х	
FALCONIDAE								
Falco berigora	Brown Falcon				Х			
Falco cenchroides	Australian Kestrel				Х			Х
Falco longipennis	Australian Hobby				Х			
Falco peregrinus	Peregrine Falcon	S7			Х	Х		
RALLIDAE		·						
Fulica atra	Eurasian Coot				Х			
Gallinula tenebrosa	Dusky Moorhen				Х			
Gallirallus philippensis	Buff-banded Rail				Х			
Porphyrio porphyrio bellus	Purple Swamphen				Х			
Porzana fluminea	Australian Spotted Crake				Х			
Porzana pusilla	Ballions Crake				Х			
Porzana tabuensis	Spotless Crake				Х			
Tribonyx ventralis	Black-tailed Native-hen				Х			
LARIDAE	· · ·	·						
Chroicocephalus novaehollandiae	Silver Gull				Х			
Thalasseus bergii	Crested Tern				Х			
Hydroprogne caspia	Caspian Tern	Ma			Х		Х	
Sternula nereis	Fairy Tern	Vu					Х	
CACACTUIDAE		•						-
Calyptorhynchus banksii naso	Forest Red-tailed Black-Cockatoo	Vu	S1		Х	Х	Х	
Calyptorhynchus baudinii	Baudin's Cockatoo	Vu	S1		Х	Х	Х	
Calyptorhynchus latirostris	Carnaby's Black Cockatoo	En	S1		Х	Х	Х	Х
Cacatua pastinator	Western Long-billed Corella				Х			
Cacatua sanguinea	Little Corella				Х			
Eolophus roseicapilla	Galah				Х			Х
Nymphicus hollandicus	Cockatiel							Х
PSITTACIDAE	· · · · · · · · · · · · · · · · · · ·							
Glossopsitta porphyrocephala	Purple-crowned Lorikeet				Х			

Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
Neophema elegans	Elegant Parrot				Х			
Platycercus icterotis	Western Rosella				Х			
Purpureicephalus spurius	Red-capped Parrot				Х			
Platycercus zonarius	Australian Ringneck				Х			Х
Polytelis anthopeplus	Regent parrot				Х			
Pezoporus occidentalis	Night Parrot	En	S1				Х	
CUCULIDAE								
Cacomantis flabelliformis	Fan-tailed Cockoo				Х			
Cacomantis pallidus	Pallid Cuckoo				Х			
Chrysococcyx basalis	Horsfields Bronze Cuckoo				Х			
Chrysococcyx lucidus plagosus	Shining Bronze Cockoo				Х			
STRIGIDAE			•	-		•	•	
Ninox novaeseelandiae boobook	Boobook Owl				Х			
TYTONIDAE		•	•					
Tyto alba deliculata	Barn Owl				Х			
HALCYONIDAE		•	•					
Dacelo novaeguineae	Laughing Kookaburra				Х			
Todiramphus sanctus sanctus	Sacred Kingfisher				Х			
MEROPIDAE		•	•					
Merops ornatus	Rainbow Bee-eater	MiMa			Х	Х	Х	
MALURIDAE		•	•					
Malurus splendens	Splendid Fairy-wren				Х			
Stipiturus malachurus	Southern Emu-wren				Х			
ACANTHIZIDAE		•	•					
Acanthiza apicalis	Inland Thornbill				Х			
Acanthiza chrysorrhoa	Yellow-rumped Thornbill				Х			
Acanthiza inornata	Western Thornbill				Х			
Gerygone fusca	Western Gerygone				Х			Х
Sericrornis brevirostris	Weebill				Х			Х
Sericornis frontalis	White-browed Scrubwren				Х			
PARDALOTIDAE			•					
Pardalotus punctatus	Spotted Pardalote				Х			
Pardalotus striatus	Striated Pardalote				Х			
MELIPHAGIDAE		•	•					
Acanthorhynchus superciliosus	Western Spinebill				Х			
Anthochaera carunculata	Red Wattlebird				Х			Х
Anthochaera lunulata	Western Little Wattlebird				Х			
Epthianura albifrons	White-fronted Chat				Х			
Gavicalis virescens	Singing Honeyeater				Х			
Lichmera indistincta	Brown Honeyeater				Х	1		Х

Scientific Name	Common Name	EPBC	WC	DPaW	А	В	С	D
Phylidonyris novaehollandiae	New Holland Honeyeater				Х			Х
Phylidonyris niger	White-cheeked Honeyeater							Х
NEOSITTIDAE								
Daphoenositta chyrstoptera	Varied Sittella				Х			
CAMPEPHAGIDAE	· · · · · ·							
Coracina novaehollandiae	Black-faced Cuckoo-shrike				Х			
Lalage tricolour	White-winged Triller				Х			
PACHYCEPHALIDAE								
Colluricincla harmonica	Grey Shrike Thrush				Х			
Pachycephala pectoralis	Golden Whistler				Х			Х
Pachycephala rufiventris	Rufous Whistler				Х			Х
ARTAMIDAE			-			•	-	
Artamus cinereus	Black-faced Woodswallow				Х			Х
Artamus cyanopterus	Dusky Woodswallow				Х			
DICRURIDAE		•						
Grallina cyanoleuca	Magpie-lark				Х			Х
Myiagra inquite	Restless Flycatcher				Х			
Rhipidura albiscapa	Grey Fantail				Х			Х
Rhipidura leucophrys	Willie Wagtail				Х			Х
CRACTICIDAE	· · · · · · · · · · · · · · · · · · ·							
Cracticus tibicen	Australian Magpie				Х			Х
Cracticus tibicen dorsalis	White-backed Magpie				Х			
Cracticus torquatus	Grey Butcherbird				Х			Х
CORVIDAE	· · · ·							
Corvus bennetti	Little Crow				Х			
Corvus coronoides	Australian Raven				Х			Х
PETROICIDAE	· · · · · ·							
Drymodes brunneopygia	Southern Scrub-robin							
Eopsaltria australis griseogularis	Western Yellow Robin				Х			
Eopsaltria georgiana	White-breasted Robin				Х			
Petroica boodang	Scarlet Robin				Х			Х
DICAEIDAE	· · · · ·							
Dicaeum hirundinaceum	Mistletoebird				Х			
ACROCEPHALIDAE	· · · · · ·							
Acrocephalus australis	Australian Reed-Warbler				Х			
MEGALURIDAE				·				
Megalurus gramineus	Little Grassbird				Х			
Cincloramphus cruralis	Brown Songlark				Х			
TIMALIIDAE								
Zosterops lateralis	Silvereye				Х			Х

Scientific Name	Common Name	EPBC WC	DPaW	Α	В	С	D
HIRUNDINIDAE							
Hirundo neoxena	Welcome Swallow			Х			
Hirundo nigricans	Tree Martin			Х			
STURINADAE							
Sturnus vulgaris	Common Starling					Х	
MOTACILLIDAE							
Motacilla cinerea	Grey Wagtail	MiMa				Х	

MAMMALIAN SPECIES RECORDED IN THE REGION

Key: EPBC = Environmental Protection and Biodiversity Conservation Act 1999, WC = Wildlife Conservation Act 1950, DPaW = Department of Parks and Wildlife Priority Code, A = Listed in Naturemap, B = DPaW Threatened and Priority fauna search, C = EPBC Protected Matters search, D = Current Survey

		Conse	rvation Co	odes				
Scientific Name	Common Name	EPBC	WC	DPaW	Α	В	С	D
DASYURIDAE								
Dasyurus geoffroii	Western Quoll	Vu	S3				Х	
Phascogale tapoatafa	Southern Brush-tailed Phascogale		S3		Х	Х		
PERAMELIDAE								
Isoodon obesulus fusciventer	Southern Brown Bandicoot			P4	Х	Х		Х
THYLACOMYIDAE								
Macrotis lagotis	Bilby	Vu	S3		Х	Х		
BURRAMYDAE								
Cercartetus concinnus	Western Pygmy-possum				Х			
PSEUDOCHEIRIDAE								
Pseudocheirus occidentalis	Western Ringtail Possum	Vu	S2		Х	Х	Х	Х
TARSIPEDIDAE								
Tarsipes rostratus	Honey Possum				Х			
PHALANGERIDAE								
Trichosurus vulpecula	Common Brushtail Posusm				Х			
POTOROIDAE								
Bettongia penicillata	Brush-tailed Bettong	CR	S1		Х			
MACROPODIDAE								
Macropus fuliginosus	Western Grey Kangaroo				Х			Х
Macropus irma	Western Brush Wallaby				Х	Х		
Setonix brachyurus	Quokka	Vu	S3		Х			
VESPERTILIONIDAE								
Falsistrellus mackenzie	Western False Pipstrelle			P4	Х	Х		
Vespadelus regulus	Southern Forest Bat				Х			
MURIDAE								
Hydromys chrysogaster	Water Rat			P4	Х	Х		
Mus musculus	House Mouse				Х		Х	

		Conse	rvation Co	odes				
Scientific Name	Common Name	EPBC	WC	DPaW	Α	В	С	D
Pseudomys occidentalis	Western Mouse			P4	Х	Х		
Rattus rattus	Black Rat				Х		Х	
OTARIIDAE								
Neophoca cinerea	Australian Sea-lion	Vu	S3				Х	
Arctoccephalus forsteri	New Zealand Fur Seal	Ма	S7				Х	
CANIDAE	· · · · · · · · · · · · · · · · · · ·							
Canis lupus familiaris	Domestic Dog				Х		Х	
CARNIVORA								
Vulpes vulpes	Red Fox				Х		Х	
FELIDAE								
Felis catus	Cat						Х	
LEPORIDAE								
Oryctolagus cuniculus	European Rabbit				Х			Х
SUIDAE								
Sus scrofa	Pig						Х	
BOVIDAE								
Bos taurus	Cattle				Х		Х	
CERVIDAE								
Dama dama	Fallow Deer						Х	
ZIPHIIDAE								
Mesoplodon grayi	Grays Beaked Whale				Х			
BALAENIDAE								
Eubalaena australis	Southern Right Whale	En	S3				Х	
NEOBALAENIDAE								
Caperea marginata	Pygmy Right Whale	MiMa					Х	
BALAENOPTERIDAE								
Balaenoptera acutorostrata	Dwarf Minke Whale						Х	
Balaenoptera adeni	Brydes Whale	MiMa					Х	
Balaenoptera musculus	Blue Whale	MiMa, En	S2				Х	
Megaptera novaeangliae	Humpback Whale	Vu	S6				Х	
DELPHINIDAE								
Delphinus delphis	Common Dolphin						Х	
Orcinus orca	Orca						Х	
Stenella attenuata	Spotted Dolphin						Х	
Tursiops aduncus	Indo-Pacific Bottlenose Dolphin				Х		Х	



APPENDIX F

Black Cockatoo Potential Breeding Trees

	DBH Size	Height					
Tree Species	Class	(m)	Hollows	Hollow Size	Easting	Northing	Comments
Eucalyptus gomphocephala	А	20			362630	6282153	Splits in two at 1.5 m
Eucalyptus gomphocephala	А	20			362638	6282189	Chewed Tuart nuts
Eucalyptus gomphocephala	А	20			362612	6282188	Chewed Pine cones
Eucalyptus sp.	А	20			362682	6282290	
Eucalyptus sp.	A	20			362687	6282297	Splits in two at 1m
Eucalyptus sp.	А	20			362682	6282298	
Eucalyptus sp.	А	20			362685	6282339	
Eucalyptus sp.	А	20			362715	6282378	
Eucalyptus sp.	А	20			362715	6282378	
Eucalyptus sp.	А	20			362707	6282399	
Eucalyptus sp.	A	16			362757	6282458	
Corymbia calophylla	A	18			362255	6281466	
Corymbia calophylla	A	18			362138	6281251	
Corymbia calophylla	А	16			361919	6280988	
Corymbia calophylla	А	18			361861	6280901	Camera
Eucalyptus gomphocephala	А	20			361637	6280718	Splits in two at 1m (Bandicoot diggings)
ucalyptus gomphocephala	А	20			361637	6280718	Splits in two at 1m
Eucalyptus gomphocephala	А	20			361637	6280718	Splits in two at 1m
Corymbia calophylla	А	18			361549	6280653	
Corymbia calophylla	A	19			361549	6280653	
Corymbia calophylla	А	24			361532	6280620	
Eucalyptus gomphocephala	A	16			360563	6279905	
Eucalyptus rudis	А	15			360405	6279787	Splits in two at 1.8 m
Eucalyptus rudis	А	15			360397	6279775	
Eucalyptus rudis	А	15			360397	6279775	
Corymbia calophylla	А	15			360300	6279792	Under border of Jarrah
Corymbia calophylla	A	15			360300	6279792	Under border of Jarrah
Corymbia calophylla	А	15			360300	6279792	Under border of Jarrah
Eucalyptus gomphocephala	А	18			360277	6279751	
Eucalyptus gomphocephala	A	20			360251	6279739	
Eucalyptus gomphocephala	А	20			360192	6279710	
Eucalyptus gomphocephala	A	20			360192	627910	
Eucalyptus gomphocephala	A	20			360177	6279707	
Corymbia calophylla	A	16			357030	6277373	
Corymbia calophylla	A	21			357018	6277359	
Corymbia calophylla	A	20			357034	6277350	
Eucalyptus gomphocephala	A	20			357034	6277350	
Eucalyptus gomphocephala	A	20			357034	6277350	
Corymbia calophylla	A	20			357043	6277343	
Corymbia calophylla	A	18			357070		Partially dead

Corymbia calophylla	А	17	357059	6277364	
Corymbia calophylla	A	10	 357068	6277400	
Corymbia calophylla	A	17	 357073	6277409	
Corymbia calophylla	A	18	 357086	6277395	
Corymbia calophylla	A	18	 357086	6277394	
Corymbia calophylla	A	16	 357085	6277405	
Corymbia calophylla	A	18	 357085	6277403	
Eucalyptus gomphocephala	A	18	 357009	6277349	
Corymbia calophylla	A	15	 355587	6276243	
Corymbia calophylla	A	15	 355577	6276232	
Corymbia calophylla	A	16	 355406	6275916	
Corymbia calophylla	A	16	 355406	6275916	
Corymbia calophylla	A	22	 355407	6275898	
Corymbia calophylla	A	17	 355409	6275893	
Eucalyptus gomphocephala	A	17	 355409	6275859	
Corymbia calophylla	A	20	 355422	6275833	
Corymbia calophylla	A	18	 355425	6275825	
	A	18	 355425	6275825	
Corymbia calophylla			 		
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Corymbia calophylla	A	18	 355080	6275895	
Eucalyptus rudis	А	18	355108	6275912	
Corymbia calophylla	А	18	353570	6274916	
Corymbia calophylla	А	18	353575	6274892	
Corymbia calophylla	А	16	353439	6274926	
Corymbia calophylla	А	20	353464	6274921	
Eucalyptus rudis	А	15	353480	6274909	
Eucalyptus rudis	А	15	353480	6274909	
Eucalyptus rudis	А	18	353494	6274919	
Corymbia calophylla (dead)	В	22	353477	6274930	1 hollow not vertical
Corymbia calophylla (dead)	А	24	353467	6274925	
Eucalyptus rudis	А	18	353268	6274824	
Eucalyptus rudis	А	18	353246	6274811	
Eucalyptus gomphocephala	А	21	353215	6274838	
Eucalyptus gomphocephala	А	26	353210	6274821	
Eucalyptus gomphocephala	А	26	353210	6274821	
Eucalyptus gomphocephala	А	26	353202	6274822	
Eucalyptus gomphocephala	А	26	353202	6274822	
Eucalyptus gomphocephala	А	26	353202	6274822	

Eucalyptus gomphocephala	А	26	353200	6274805	
Eucalyptus gomphocephala	А	26	353188	6274802	
Corymbia calophylla	А	18	353181	6274813	
Corymbia calophylla	А	20	353163	6274824	
Eucalyptus gomphocephala	А	24	353166	6274791	
Corymbia calophylla	А	18	353139	6274803	
Corymbia calophylla	А	20	353134	6274795	
Corymbia calophylla	А	16	353119	6274804	



APPENDIX G

Habitat Assessments



	-					_		-	
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Prescence	0 none	1 rare	2 moderate	3 common
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2 5km	2 500m - 2km	3 <500m
Suitability for Bats	YE	S		NO	Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present	Total =		Woody Debris	0 none	1 rare	2 moderate	3 common
				SPECI	ES				
Black Cockatoo Foraging H	Habitat								
Species:				% cover		Hollows:			
Corymbia calophylla					20	Small (<120mn	n)	/	
Eucalyptus gomphocephala	3				5				
						Large (>120mr	n)	/	
Birds			Mammals				Reptiles		
			Western Ring	tail Possum Scats	s				



Caves	Absent	Present	Total =		Woody Debris	0 none	1 rare	2 moderate	3 common
				SI	PECIES				
Black Cockatoo Foraging	Habitat								
Species:				% cover		Hollows:			
Corymbia calophylla					5	Small (<120mm)		/	
						Large (>120mm)		/	
Birds			Mammals				Reptiles		
			Western Grey	/ Kangaroo Scats					
			Bandicoot dig	gings					

					(South W	Vest)				
Location: Bu	sselton Highv	vay				Site Number Habi	tat Assessment	#3		
Project:						•				
Date: 17/06	/2016		Easting: 35705	56			Ν	NE	SW	NW
Quadrat Size	e: 50 x 50 m		Northing: 6277	7370		Aspect	E	SE	W	N/A
Soil Texture	:	sand	sandy	-loam	la	bam	cracki	ng clay	cla	ау
ription	Hummock Grassland Acacia Shrubland	Oth Stra			Average Height (M)	ON Scattered Plants	Sparse	Cover Moderate	Thick	
on Desc	Riverine Woodland	Overstorey	Corymbia calophy gomphocephala, i		15	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Vegetation Description	Other Grassland	Midstorey	Acacia sp., Agoni Banksia grandis, i		10	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
	Low Woodland	Ground Cover	Grass trees, se weeds		<1	0 <5% COVER	1 <20% COVER		3 60-100%	
Scale:	5 Pristine	4 Excellent	3 Very Good		1 Degraded	0 Completely Degraded	0 <1 year	LAS" 1 1 -3 Yr	FIRE 2 4-5 Yr	3 >5 Yr
	(Ca	ittle)	2	3	DISTURBA	NCE 0	1	2	(Other) 3	
	heavy	medium	mild	none	GROUND C	heavy	medium	mild	none	
Bare Ground	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Hummock Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Rock	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Other Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Leaf Litter	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Herbs	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Logs >10cm	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Other:	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
					MICROHAE	NITATS				

Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common	
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common	
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common	
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Prescence	0 none	1 rare	2 moderate	3 common	
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2-5km	2 500m - 2km	3 <500m	
Suitability for Bats	YE	S		NO	Termite Mounds	0 none	1 rare	2 moderate	3 common	
Caves	Absent	Present	Total =		Woody Debris	0 none	1 rare	2 moderate	3 common	
				SPEC	ES					
Black Cockatoo Foraging I	Habitat									
Species:				% cover		Hollows:				
Corymbia calophylla					20	Small (<120mn	1)	/		
Eucalyptus gomphocephala	1				20					
Eucalyptus marginata					20	Large (>120mr	n)	/		
Banksia sp.					10					
Birds			Mammals				Reptiles			
Grey Fantail			Western Grey	/ Kangaroo Scats			Tree Dtella (Ge	ehyra variegata)		
			Western Ring	tail Possum Scat	S					

					(South W	/est)				
Location: Bu	sselton Highw	/ay				Site Number Habit	tat Assessment a	¥4		
Project:										
Date: 17/06,	/2016		Easting: 35515	5			N	NE	SW	NW
Quadrat Size	e: 50 x 50 m		Northing: 6275	926		Aspect	E	SE	w	N/A
Soil Texture	S	sand	sandy	loam	lo	bam	crackir	ig clay	cla	ау
_	Hummock Grassland	Oth	er:		Average Average Height (M)	ION		Cover		
ription	Acacia Shrubland	Stra	tum		Hei	Scattered Plants	Sparse	Moderate	Thick	
on Desc	Riverine Woodland	Overstorey	Eucalyptus rudi	is	16	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Vegetation Description	Other Grassland	Midstorey	Melaleuca sp., flexuosa	Agonis	10	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
	Low Woodland	Ground Cover	Weedy/grassy)N	<0.5	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100% I FIRE	
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1 -3 Yr	2 4-5 Yr	3 >5 Yr
	(Ca	ttle) 1	2	3	DISTURBA	NCE 0	1	2	(Other) 3	
	heavy	medium	mild	none	GROUND C	hea∨y	medium	mild	none	
Bare Ground	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Hummock Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Rock	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Other Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Leaf Litter	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Herbs	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	
Logs >10cm	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Other: MICROHAB	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	

		1	1						
Burrowing Suitability	0 Rock	1 Stony	2 Sandy Loam	3 Sand	Peeling Bark	0 none	1 rare	2 moderate	3 common
Pebbles Stones	0 none	1 0-30%	2 30-70%	3 70-100%	Large Hollows	0 none	1 rare	2 moderate	3 common
Exfoliating Slabs	0 none	1 0-30%	2 30-70%	3 70-100%	Small Hollows	0 none	1 rare	2 moderate	3 common
Rock Crevices	0 none	1 0-30%	2 30-70%	3 70-100%	Water Prescence	0 none	1 rare	2 moderate	3 common
Boulders	0 none	1 0-30%	2 30-70%	3 70-100%	Distance to Water	0 >5km	1 2 5km	2 500m - 2km	3 <500m
Suitability for Bats	YE	S		NO	Termite Mounds	0 none	1 rare	2 moderate	3 common
Caves	Absent	Present	Total =		Woody Debris	0 none	1 rare	2 moderate	3 common
				SPEC	IES				
Black Cockatoo Foraging I	Habitat								
Species:				% cover		Hollows:			
Eucalyptus rudis					10	Small (<120mm	1)		
						Large (>120mm	1)		
Birds			Mammals				Reptiles		
Grey Fantail									
Thornbill									
Rufous Whistler									
Magpie Lark									

					(South	West)								
.ocation: Bu	isselton High	way				Site Number Hab	itat Assessment	#5						
Projecto														
Project: Date: 17/06	/2016		Easting: 3533	83			N	NE	SW	NW				
	/ _0.0		Northing: 627			Aspect								
Quadrat Size	e: 50 x 50 m		Northing: 027	1010			E	SE	W	الالحافة الالحافة الحافة الحافة الحافة </td				
Soil Texture	Ş	sand	sandy-	loam		loam	crackii	ng clay	cla	у				
-	Hummock Grassland	Oth	er:		Average Height (M)	ATION		Cover						
station Desci	Acacia Shrubland	Stra	tum		4 ₽	Scattered Plants		Moderate	Thick					
	Riverine Woodland	Overstorey	Agonis flexuos	а	18	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
	Other Grassland	Midstorey				0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
ž	Low Woodland	Ground Cover	Weedy grass		<0.5	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
Scale:	5 Pristine	4 Excellent	3 Very Good	2 Good	1 Degraded	0 Completely Degraded	0 <1 year	1 1 -3 Yr	2 4-5					
	(Cattle)	1	2	3	DISTURI	BANCE 0	1	2						
	heavy	medium	mild	none	GROUND	heavy	medium	mild	none					
Bare Ground	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Hummock Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
Rock	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%	Other Grass	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
Leaf Litter	0 <5% COVER 0	1 <20% COVER	2 20-60%	3 60-100%	Herbs Other:	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
Logs >10cm	<5% COVER	1 <20% COVER	2 20-60%	3 60-100%	MODOLL	0 <5% COVER	1 <20% COVER	2 20-60%	3 60-100%					
Burrowing	Suitability	0	1 Starry	2 Sandy	MICROH		0	1	2	2				
-	Suitability	Rock 0	1 Stony 1	Loam 2	3 Sand 3	Peeling Bark	none 0	rare 1	moderate					
	s Stones	none 0	0-30% 1	30-70% 2	70-100% 3	Large Hollows Small Hollows	none 0	rare 1	moderate					
	revices	none 0	0-30%	30-70% 2	70-100% 3	Water Prescence	none 0	rare 1	moderate 2	3 common 3 common				
	Iders	none 0	0-30% 1	30-70% 2	70-100% 3	Distance to	none 0	rare 1	moderate 2	3				
		none	0-30%	30-70%	70-100%	Water	>5km 0	2-5km 1	500m - 2km 2	<500m				
Suitability for Bats YES			10	Termite Mounds	none	rare	moderate	3 common						

Caves	Absent	Present	Total =		Woody Debris	0 none	1 rare	2 moderate	3 common
				SPEC	CIES				
Black Cockatoo Foragir	ng Habitat								
Species:				% cove	ər	Hollows:			
						Small (<120mm	ı)	/	
						Large (>120mn	n)	/	
Birds			Mammals				Reptiles		
Golden Whistler			Possum urin	e scent - not	sure which species				
Silvereye			Western Rir	ıgatil Possum	scats at coordinat	es			
Magpie			N: 353287 E	: 6274835					