

Fauna Assessment



Collie-Lake King Road

“Bowelling Curves”

(SLK 64.5 - 71.0)

Shire of West Arthur

DECEMBER 2014

Version 2

On behalf of:

Main Roads Western Australia
Robertson Drive
PO Box 5050
BUNBURY WA 6231

Prepared by:

Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
M: 0402 141 197
T/F: (08) 9725 0982
E: gharewood@iinet.net.au

TABLE OF CONTENTS

SUMMARY

1.	INTRODUCTION	1
2.	SCOPE OF WORKS	2
3.	METHODS.....	3
3.1	POTENTIAL FAUNA INVENTORY - DESKTOP STUDY	3
3.1.1	Database Searches	3
3.1.2	Previous Fauna Surveys in the Area	3
3.1.3	Existing Publications.....	5
3.1.4	Fauna of Conservation Significance	6
3.1.5	Invertebrates of Conservation Significance	8
3.1.6	Taxonomy and Nomenclature	8
3.1.7	Likelihood of Occurrence – Fauna of Conservation Significance.....	8
3.2	SITE SURVEYS	9
3.2.1	Fauna Habitat Assessment	9
3.2.2	Opportunistic Fauna Observations	10
3.2.3	Black Cockatoo Habitat Assessment	10
4.	SURVEY CONSTRAINTS.....	13
5.	RESULTS	15
5.1	POTENTIAL FAUNA INVENTORY - DESKTOP STUDY	15
5.2	SITE SURVEYS	15
5.2.1	Fauna Habitat Assessment	15
5.2.2	Opportunistic Fauna Observations	17
5.2.3	Black Cockatoo Habitat Assessment	18
5.3	FAUNA INVENTORY – SUMMARY	19

5.3.1 Vertebrate Fauna.....	19
5.3.2 Vertebrate Fauna of Conservation Significance	20
5.3.3 Invertebrate Fauna of Conservation Significance.....	22
6. FAUNA VALUES	23
6.1 LOCAL AND REGIONAL CONSERVATION SIGNIFICANCE OF THE STUDY AREA.....	23
6.2 VALUE OF THE STUDY AREA AS AN ECOLOGICAL LINKAGE/WILDLIFE CORRIDOR	23
7. POTENTIAL IMPACTS	24
7.1 POTENTIAL IMPACTS	24
8.1 WILDLIFE CONSERVATION ACT 1950	27
8.2 ENVIRONMENTAL PROTECTION ACT 1986.....	27
8.3 ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT 1999.....	29
8.3.1 Black Cockatoos.....	30
8.3.2 Other Listed Threatened Fauna Species.....	34
8.3.3 Migratory Species.....	37
9. RECOMMENDATIONS.....	39
10. CONCLUSION	41
11. BIBLIOGRAPHY.....	42

FIGURES

- FIGURE 1: Study Area & Surrounds
- FIGURE 2: Study Area - Air Photo
- FIGURE 3: Habitat Trees (DBH >50cm)

TABLES

- TABLE 1: Main Fauna Habitats within the Study Area
- TABLE 2: Summary of potential cockatoo breeding habitat trees (DBH >50cm (>30 cm for wandoo))
- TABLE 3: Summary of Potential Fauna Species (as listed in Appendix B)
- TABLE 4: Likelihood of Occurrence and Possible Impacts – Fauna Species of Conservation Significance
- TABLE 5: Assessment of Significant Impact on Black Cockatoos using Criteria for Vulnerable/Endangered Species (DotE 2013)
- TABLE 6: Assessment of Significant Impact on the Chuditch using Criteria for Vulnerable Species (DotE 2013)

APPENDICES

- APPENDIX A: Conservation Categories
- APPENDIX B: Fauna Observed or Potentially in Study Area
- APPENDIX C: DPaW NatureMap & Protected Matters Search Tool Results
- APPENDIX D: Habitat Tree Details
- APPENDIX E: Significant Species Profiles

Acronyms/Abbreviations:

BA: Birdlife Australia (Formerly RAOU, Birds Australia).

°C: Degrees Celsius.

CALM: Department of Conservation and Land Management (now DPaW), WA Government.

CAMBA: China Australia Migratory Bird Agreement 1998.

CBD: Central Business District.

DEC: Department of Environment and Conservation (now DPaW), WA Government.

DEH: Department of Environment and Heritage (now DotE), Australian Government.

DEP: Department of Environment Protection (now DER), WA Government.

DER: Department of Environment Regulation (formerly DEC, DoE), WA Government.

DEWHA: Department of the Environment, Water, Heritage and the Arts (now DotE), Australian Government

DMP: Department of Mines and Petroleum (formerly DoIR), WA Government.

DoE: Department of Environment (now DER/DPaW), WA Government.

DoIR: Department of Industry and Resources (now DMP), WA Government.

DotE: Department of the Environment (formerly SEWPaC, DWEHA, DEH), Australian Government.

DPaW: Department of Parks and Wildlife (formerly DEC, CALM, DoE), WA Government.

EP Act: *Environmental Protection Act 1986*, WA Government.

EPA: Environmental Protection Authority, WA Government.

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999*, Australian Government.

ha: Hectare (10,000 square metres).

IBRA: Interim Biogeographic Regionalisation for Australia.

IUCN: International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union.

JAMBA: Japan Australia Migratory Bird Agreement 1981.

km: Kilometre.

MRWA: Main Roads Western Australia

m: Metre.

mm: Millimetre.

RAOU: Royal Australia Ornithologist Union.

ROKAMBA: Republic of Korea-Australia Migratory Bird Agreement 2007.

SEWPaC: Department of Sustainability, Environment, Water, Population and Communities (now DotE, formerly DEH, DEWHA), Australian Government.

SLK: Straight Line Kilometres.

SSC: Species Survival Commission, International.

WA: Western Australia.

WAM: Western Australian Museum, WA Government.

WC Act: *Wildlife Conservation Act 1950*, WA Government.

WRP: Western Ringtail Possum

SUMMARY

This report details the results of a fauna assessment of a proposed realignment of the Collie-Lake King Road (Coalfields Highway) between SLK 64.5 and 71.0 near Bowelling, in south west Western Australia (Figure 1). The exact location of the realignment is yet to be finalised but currently two options are being investigated, one north of the existing road and one south of the existing road. When chosen the final alignment will pass through a combination of uncleared native vegetation, cleared farmland, along the existing road alignment and along/over sections of the Collie-Darman rail trail. The study area, which covers all of the potential realignment routes, covers a total of about 83 ha (Figure 2).

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

The scope of works was to conduct a level 1 fauna survey as defined by the Environmental Protection Authority (EPA 2004). Because some listed threatened species (i.e. several species of black cockatoo) are known to occur in the general area, the scope of the survey work was expanded to include a targeted assessment of the site's significance to these particular species.

The assessment has included a desktop study and a series of site surveys. Field survey work at the site was carried out by Greg Harewood (B.Sc. - Zoology) over a period of five days (29 September, 6 October, 6 November, 7 November and 9 November, 2014).

The vegetation communities mapped by EcoEdge (EcoEdge 2014) during the flora and vegetation survey have been used to classify the area into broad habitat types, the main units of which are described below.

- Marri-Wandoo-(Jarrah) Open Forest - Common understorey species: *Acacia pulchella*, *Banksia dallanneyi*, *Bossiaea eriocarpa*, *Hakea lissocarpha*, *Hypocalymma angustifolium*, *Trymalium ledifolium*, *Xanthorrhoea preissii*.
- Jarrah-Marri-(Wandoo) Open Forest - Common understorey species: *Acacia pulchella*, *Bossiaea ornata*, *Craspedia variabilis*, *Hakea lissocarpha*, *Lagenophora huegelii*, *Leucopogon capitellatus*, *Macrozamia riedlei*.
- Jarrah Open Forest - Common understorey species: *Acacia pulchella*, *Banksia grandis*, *Banksia squarrosa*, *Bossiaea ornata*, *Craspedia variabilis*, *Petrophile serruriae*, *Xanthorrhoea preissii*.

- Flooded Gum Low Open Woodland over a *Melaleuca viminea* Shrubland - Other common species: *Diuris insignis*, *Chamaescilla corymbosa*, *Hakea varia*, *Hakea prostrata*, *Hypocalymma angustifolium*, *Sowerbaea laxiflora*, *Tribonanthes longipetala*, *Xanthorrhoea preissii*.
- Flooded Gum-Marri-(Wandoo) Woodland - Small groves of trees within cleared paddock areas - the understorey is predominantly exotic pasture grasses.
- Cleared Pasture - These areas are dominated by introduced pasture grasses with occasional scattered trees and degraded sedgeland.
- Collie River East – Ephemeral stream with variable flows controlled by seasonal conditions.

The quality of the various areas of native remnant vegetation within the study area varies but most areas show signs of various degrees of historical disturbance from logging, frequent fire, gravel extraction and previous road/track making activities. Remnant vegetation within private landholdings has been open to livestock grazing and vegetation structure has been significantly altered with only larger trees persisting.

Opportunistic fauna observations are listed in Appendix B. A total of 51 native fauna species were observed (or positively identified from foraging evidence, scats, tracks, skeletons or calls) within the study area during the day time surveys. The presence of four introduced species was also confirmed.

Evidence of two listed threatened species was observed (Carnaby's black-cockatoo (chewed marri and jarrah fruits) and forest red-tailed black-cockatoo (individuals and chewed marri and jarrah fruits). Several individuals of the listed migratory species, the rainbow bee-eater were also observed foraging onsite. No evidence of any DPaW priority species using the area was found.

The assessment identified a total of 1,348 "habitat trees" within the fauna survey area as a whole. The majority (945, ~70.1%) of the trees were not observed to contain hollows of any size. Three hundred and seventy nine (~28.1%) of the trees contained one or more "small" hollows (less than ~12cm entrance size) considered by the Author not to be suitable for black cockatoos to use for nesting purposes. Twenty four (~1.8%) trees appeared to contain hollows with larger entrances (greater than ~12cm) that appeared big enough to possibly allow the entry of a black cockatoo into a suitably sized and orientated branch/trunk, though none showed any sign of current or previous use for this purpose.

Additional details on each habitat tree observed can be found in Appendix D.

As the final location of the realignment has not been defined at this stage it is not known how many of the identified habitat trees will require removal to allow construction of the road to proceed.

Almost all areas of remnant native vegetation present within the study area can be considered to represent potential black cockatoo foraging habitat as they contain a range of plant species documented as foraging habitat for one or more of the three black cockatoo species, all of which are known to frequent the area. The degree to which any one section of the route would be utilised for foraging purposes would however vary considerably based on species composition and density. Generally, the most dominant and widespread species are marri and jarrah though in some areas other species are also present (e.g. sheoak and banksia)

Foraging evidence left by Carnaby's and the forest red-tailed black-cockatoo was observed during the survey period at several locations and included chewed marri and jarrah fruits. It is not possible at this stage to calculate the extent of foraging habitat that may require clearing for road construction to proceed given that its location is yet to be finalised.

No existing roosting trees (trees used at night by black cockatoos to rest) were identified during the survey period.

While the location and extent of fauna habitat that may require clearing for road construction to proceed is unknown, based on the likely scale of habitat loss and other factors such as the extent of similar vegetation in surrounding areas, its quality and degree of fragmentation, the possible impacts on species of conservation significance previously recorded in the general area has been assessed, a summary of which is provided in the table below. Additional information on specific fauna species is provided in Appendix E.

Likelihood of Occurrence and Possible Impacts – Fauna Species of Conservation Significance (continues on following pages).

Common Name	Genus & Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Possible Impacts/ Significance of Possible Impacts
Unnamed cricket	<i>Pachysaga munggai</i>	P3	Yes?/Marginal?	Possible but unlikely	Loss/modification of small areas of habitat/Very Low
Darling Range Heath Ctenotus	<i>Ctenotus dell</i>	P4	Yes/Marginal.	Possible but could be out of species range?	Loss/modification of small areas of habitat/Very Low
Southern Carpet Python	<i>Morelia spilota imbricata</i>	S4	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Malleefowl	<i>Leipoa ocellata</i>	S1, Mig	No	Unlikely - species locally extinct.	None Identified/Negligible
Great Egret	<i>Ardea alba</i>	S3, Mig	Yes/Marginal	Possible	Loss/modification of very small areas of degraded habitat/Negligible
Cattle Egret	<i>Ardea ibis</i>	S3, Mig	Yes/Marginal	Possible	Loss/modification of very small areas of degraded habitat/Negligible

Common Name	Genus & Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Possible Impacts/ Significance of Possible Impacts
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	S3, Mig	No	Unlikely	None Identified/Negligible
Peregrine Falcon	<i>Falco peregrinus</i>	S4	Yes	Possible	Loss/modification of very small areas of foraging habitat/Negligible
Migratory Shorebirds/Wetland Species	Various	S3, Mig	No/VeryMarginal	Unlikely	None Identified/Negligible
Carnaby's Black Cockatoo	<i>Calyptorhynchus latirostris</i>	S1, EN	Yes	Known to occur	Loss of small areas of habitat/Low
Baudin's Black Cockatoo	<i>Calyptorhynchus baudinii</i>	S1, VU	Yes	Possible	Loss of small areas of habitat/Low
Forest Red-tailed Black Cockatoo	<i>Calyptorhynchus banksii naso</i>	S1, VU	Yes	Known to occur	Loss of small areas of habitat/Low
Barking Owl (SW population)	<i>Ninox connivens connivens</i>	P2	No	Unlikely	None Identified/Negligible
Masked Owl (SW population)	<i>Tyto n. novaehollandiae</i>	P3	Yes	Possible	Loss/modification of small areas of habitat/Low
Fork-tailed Swift	<i>Apus pacificus</i>	S3, Mig	Yes	Unlikely	None Identified/Negligible
Rainbow Bee-eater	<i>Merops ornatus</i>	S3, Mig	Yes	Known to occur	Loss/modification of small areas of habitat/Negligible
Chuditch	<i>Dasyurus geoffroii</i>	S1, VU	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Numbat	<i>Myrmecobius fasciatus</i>	S1, VU	Yes	Unlikely - species locally extinct.	None Identified/Negligible
Southern Brush-tailed Phascogale	<i>Phascogale tapoatafa ssp</i>	S1	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Southern Brown Bandicoot	<i>Isodon obesulus fusciventer</i>	P5	Yes/Marginal	Possible	Loss/modification of small areas of habitat/Very Low
Bilby	<i>Macrotis lagotis</i>	S1, VU	No	Unlikely - species regionally extinct.	None Identified/Negligible
Western Brush Wallaby	<i>Macropus irma</i>	P4	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Woylie	<i>Bettongia penicillata ogiby</i>	S1, EN	No	Unlikely - species locally extinct.	None Identified/Negligible
Tammar	<i>Macropus eugenii</i>	P4	No	Unlikely - species locally extinct.	None Identified/Negligible
Quokka	<i>Setonix brachyurus</i>	S1, VU	No	Unlikely	None Identified/Negligible

Common Name	Genus & Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Possible Impacts/ Significance of Possible Impacts
Western False Pipistrelle	<i>Falsistrellus mackenziei</i>	P4	Yes	Possible	Loss/modification of small areas of habitat/Negligible

With respect to fauna in general, no substantial impacts are anticipated as a consequence of the proposed realignment. In cases where some impact is anticipated, the degree of the impact is only expected to be low and relates to the loss of small areas of habitat, but as most species are common and/or widespread no overall change in their conservation status is anticipated, despite a possible localised reduction in habitat extent.

The assessment does however indicate that any considerations required during ongoing development planning are most likely to be related to the presence of habitat used or potentially used by some threatened fauna species in particular the three *EPBC Act* listed black cockatoo species.

Based on the information provided by MRWA and the results of the fauna assessment, referral of the project to the DotE is recommended for consideration primarily given the presence of black cockatoo habitat within likely clearing areas. This recommendation is consistent with an assessment of DotE's referral guidelines for black cockatoos even though actual "significant impact" may be unlikely.

A series of other recommendations aimed at mitigating and minimising potential impacts on fauna and fauna habitat in general are provided in Section 9. These should be considered for implemented as part of existing or proposed management plans where determined to be reasonable and practicable.

1. INTRODUCTION

This report details the results of a fauna assessment of a proposed realignment of the Collie-Lake King Road (Coalfields Highway) between SLK 64.5 and 71.0 near Bowelling, in south west Western Australia (Figure 1).

The exact location of the realignment is yet to be finalised but currently two options are being investigated, one north of the existing road and one south of the existing road. When chosen the final alignment will pass through a combination of uncleared native vegetation, cleared farmland, along the existing road alignment and along/over sections of the Collie-Darman rail trail. The study area, which covers all of the potential realignment routes, covers a total of about 83 ha (Figure 2).

Information obtained as part of this fauna assessment report will be used in conjunction with other environmental investigations to guide project planning and will also be used in the formulation of management plans, both of which will aim to minimise potential environmental impacts. It is anticipated that the information presented will also be used by regulatory authorities to assess the potential impact of the proposal on fauna and fauna habitats at the site during the project evaluation and approval process.



2. SCOPE OF WORKS

The scope of works was to conduct a level 1 fauna survey as defined by the EPA (EPA 2004). Because some listed threatened species (i.e. several species of black cockatoo) are known to occur in the general area, the scope of the survey work was expanded to include a targeted assessment of the site's significance to these particular species. The fauna assessment has therefore included:

1. Level 1 Fauna Survey (to EPA standard). This includes observations and recordings of fauna species, including any signs of occurrence and/or usage and an assessment of presence and potential occurrence of specially protected fauna species (including but not limited to those the subject of targeted surveys).
2. Targeted searches and recording of black cockatoo foraging, nesting and roosting habitat.
3. Preparation of a report detailing results including a discussion of habitat significance and linkages and potential requirement for federal referral or other clearances.

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



3. METHODS

3.1 POTENTIAL FAUNA INVENTORY - DESKTOP STUDY

3.1.1 Database Searches

Searches of the following databases were undertaken to aid in the compilation of a list of vertebrate fauna potentially occurring within the study area:

- DPaW's NatureMap Database Search (combined data from DPaW, WAM, BA and consultants reports), 20km buffer (DPaW 2014c); and
- Protected matters search tool, 0 km buffer (DotE 2014).

It should be noted that these lists are based on records/documentated distributions from a broader area than the study site and therefore may include species that would only ever occur as vagrants/transients in the actual study area due to a lack of suitable habitat or the presence of only marginal habitat. The databases also often included very old records and in some cases the species in question have become locally or regionally extinct.

Information from these sources should therefore be taken as indicative only and local knowledge and information needs also to be taken into consideration when determining what actual species may be present within the specific area of investigation.

3.1.2 Previous Fauna Surveys in the Area

Fauna surveys, assessments and reviews have been undertaken in nearby areas in the past, though not all are publically available and could not be referenced. The most significant of those available have been used as the primary reference material for compiling the potential fauna assemblage for the general area. Those reports referred to included, but were not limited to:

- Bancroft, W. and Bamford, M. (2006). Fauna Survey of the Muja South Extension Project. Unpublished report for Griffin Coal.
- Bancroft, W.J., Metcalf, B.M. and Bamford, M.J (2006). Fauna survey of Griffin Coal's Ewington II and Buckingham sites, January 2006. Unpublished report prepared for Kellogg Brown and Root (KBR) Pty Ltd on behalf of Griffin Coal Mining Company Pty Ltd.
- Bancroft, W. J. and Bamford, M. J. (2007). Fauna survey of Griffin Coal's Buckingham site, September 2006. Unpublished report to Griffin Coal Mining Co Pty Limited.



- Bancroft, W.J. Metcalf, B.M. and Bamford, M.J (2007). Fauna values of Griffin Coal's proposed Ewington conveyor alignment. Unpublished report prepared for The Griffin Group.
- Bancroft, W.J. and Bamford, M.J (2008). Inspection of Griffin Coal's proposed Ewington powerline clearing zones for Black-Cockatoo nesting activity, August 2008. Unpublished report prepared for The Griffin Group.
- Coffey Environments (2008). Fauna Relocation Program at Ewington Mine Site, Collie. Unpublished letter report prepared for The Griffin Coal Mining Company Pty Ltd by Coffey Environments. May 2008.
- Ecologia (1991). Ewington Consultative Environmental Review: Fauna Survey. Prepared for Halpern Glick Maunsell on behalf of Griffin Coal Mining Company. January 1991.
- GHD (2008). Collie Shotts Industrial Park, Spring Flora, Fauna and Wetland Assessment. Unpublished report for LandCorp.
- GHD (2009). Level 1 Fauna Assessment - Collie Urea Project. Unpublished report for Perdaman Industries.
- Griffin Coal (2008). Ewington Mining Operations Environmental Management Programme - Fauna Management Plan.
- Halpern Glick Maunsell (1994). Notice of Intent for: Ewington II Open-Cut Mine. Prepared on behalf of the Griffin Coal Mining Company Pty Ltd. July 1994.
- Halpern Glick Maunsell (2002). South West Project Strategic Environmental Review. Unpublished report for Griffin Energy.
- Harewood, G. (2010). Fauna Survey (Level 2) - Buckingham Way - Collie - Residential Development. Unpublished report for Strategen.
- Harewood, G. (2013). Fauna Assessment - Coalfields Highway Realignment (15.9 SLK to 26.3 SLK) Allanson. Unpublished report for RPS/MRWA.
- Maunsell (2003). Bluewater's Power Station Flora and Fauna Survey. Unpublished report for Griffin Energy.
- Maunsell (2004). Ewington I Open-Cut Mine: Environmental Management Programme. Prepared for Griffin Coal Mining Company, May 2004.



- Tonga, J. (2008). Ewington Mine Micro Bat Survey. Unpublished report prepared for Griffin Coal Mining Company by Natsync Environmental. May 2008.

As with the databases searches some reports refer to species that would not occur in the study area due to a lack of suitable habitat (extent and/or quality) and this fact was taken into consideration when compiling the potential fauna species list for the study area. It should also be noted that the NatureMap database is likely to include some records from previous fauna surveys in the area including some of those listed above.

3.1.3 Existing Publications

The following represent the main publications used to identify and refine the potential fauna species list for the study area:

- Anstis, M. (2013). Tadpoles and Frogs of Australia. New Holland Publishers, Sydney.
- Barrett, G., Silcocks, A., Barry, S., Cunningham, R. and Poulter, R. (2003). The New Atlas of Australian Birds. Royal Australasian Ornithologists Union, Victoria.
- Bush, B., Maryan, B., Browne-Cooper, R. & Robinson, D. (2007). Reptiles and Frogs in the Bush: Southwestern Australia. UWA Press, Nedlands.
- Churchill, S. (2008). Australian Bats. Second Edition, Allen & Unwin.
- Cogger, H.G. (2014). Reptiles and Amphibians of Australia. 7th Edition. CSIRO Publishing.
- Johnstone, R.E. and Storr, G.M. (1998). Handbook of Western Australian Birds: Volume 1 – Non-passerines (Emu to Dollarbird). Western Australian Museum, Perth Western Australia.
- Johnstone, R.E. and Storr, G.M. (2004). Handbook of Western Australian Birds: Volume 2 – Passerines (Blue-winged Pitta to Goldfinch). Western Australian Museum, Perth Western Australia.
- Menkhorst, P. and Knight, F. (2011). A Field Guide to the Mammals of Australia. Oxford University Press, Melbourne.
- Morgan, D.L., Beatty, S.J., Klunzinger, M.W, Allen, M.G. and Burnham, Q.E (2011). Field Guide to the Freshwater Fishes, Crayfishes and Mussels of South Western Australia. Published by SERCUL.



- Storr, G.M., Smith, L.A. and Johnstone R.E. (1983). Lizards of Western Australia II: Dragons and Monitors. WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (1990). Lizards of Western Australia III: Geckos and Pygopods. WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (1999). Lizards of Western Australia I: Skinks. Revised Edition, WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (2002). Snakes of Western Australia. Revised Edition, WA Museum, Perth.
- Tyler M.J. & Doughty P. (2009). Field Guide to Frogs of Western Australia, Fourth Edition, WA Museum, Perth.
- Van Dyck, S., Gynther, I. & Baker, A. Eds (2013). Field Companion to The Mammals of Australia. Queensland Museum.
- Wilson, S. and Swan, G. (2013). A Complete Guide to Reptiles of Australia. Reed, New Holland, Sydney.

3.1.4 Fauna of Conservation Significance

The conservation significance of fauna species has been assessed using data from the following sources:

- *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. Administered by the Australian Government Department of the Environment (DotE);
- *Wildlife Conservation Act 1950 (WC Act)*. Administered by the Western Australian Department of Parks and Wildlife (DPaW) (Govt. of WA 2014);
- Red List produced by the Species Survival Commission (SSC) of the World Conservation Union (also known as the IUCN Red List - the acronym derived from its former name of the International Union for Conservation of Nature and Natural Resources). The Red List has no legislative power in Australia but is used as a framework for State and Commonwealth categories and criteria; and the
- DPaW Priority Fauna list. A non-statutory list maintained by the DPaW for management purposes (DPaW 2014b).

The *EPBC Act* also requires the compilation of a list of migratory species that are recognised under international treaties including the:



- Japan Australia Migratory Bird Agreement 1981 (JAMBA);
- China Australia Migratory Bird Agreement 1998 (CAMBA);
- Republic of Korea-Australia Migratory Bird Agreement 2007 (ROKAMBA); and
- Bonn Convention 1979 (The Convention on the Conservation of Migratory Species of Wild Animals).

(Note - Species listed under JAMBA/CAMBA/ROKAMBA are also listed under Schedule 3 of the *WC Act*.)

All migratory bird species listed in the annexes to these bilateral agreements are protected in Australia as matters of national environmental significance (MNES) under the *EPBC Act*.

The conservation status of all vertebrate fauna species listed as occurring or possibly occurring in the vicinity of the study area has been assessed using the most recent lists published in accordance with the above-mentioned instruments and is indicated as such in the fauna listings of this report. A full listing of conservation codes are provided in Appendix A.

A number of other species not listed in official lists can also be considered of local or regional conservation significance. These include species that have a restricted range, those that occur in breeding colonies and those at the limit of their range.

While not classified as rare, threatened or vulnerable under any State or Commonwealth legislation, a number of bird species have been listed as of significance on the Swan Coastal portion of the Perth Metropolitan Region (Bush Forever - Government of Western Australia 1998 and 2000). The bird species are often referred to as Bush Forever Decreaser Species. The three categories used for birds within the Bush Forever documents are:

- Habitat specialists with reduced distribution on the Swan Coastal Plain (code Bh);
- Wide ranging species with reduced population's on the Swan Coastal Plain (code Bp); and
- Extinct in the Perth region (code Be).

While the study area is not on the coastal plain, the presence of Bush Forever species should be taken into some consideration when determining the fauna values of an area. Bush Forever decreaser species are indicated as such within the species list held in Appendix B.



3.1.5 Invertebrates of Conservation Significance

It can be difficult to identify what may be significant invertebrate species (e.g. Short Range Endemics (SREs)) as there are uncertainties in determining the range-restrictions of many species due to lack of surveys, lack of taxonomic resolutions within target taxa and problems in identifying certain life stages. Where invertebrates are collected during surveys, a high percentage are likely to be unknown, or for known species there can be limited knowledge or information on their distribution (Harvey 2002).

For this project, the assessment for conservation significant invertebrates has been limited to those listed by the DPaW and *EPBC Act* database searches (which rely on distribution records and known habitat preferences). No assessment of the potential for SREs to be present has been made.

3.1.6 Taxonomy and Nomenclature

Taxonomy and nomenclature for fauna species used in this report is generally taken from the DPaW's WA Fauna Census Database which is assumed to follow Aplin and Smith (2001) for amphibians and reptiles, How *et al.* (2001) for mammals and Johnstone (2001) for birds.

Common names are taken from the Western Australia Museum (WAM) recognised primary common name listings when specified, though where common names are not provided they have been acquired from other publications. Sources include Cogger (2014), Wilson and Swan (2013), Van Dyck & Strahan (2013), Christidis and Boles (2008), Bush *et al.* (2010), Bush *et al.* (2007), Tyler *et al.* (2000), and Glauret (1961). Not all common names are generally accepted.

3.1.7 Likelihood of Occurrence – Fauna of Conservation Significance

For vertebrate fauna of conservation significance identified during the desktop survey as previously being recorded in the general area, each was assessed and ranked for their likelihood of occurrence within the survey area itself. The rankings and criteria used were:

- **Unlikely:** The study area is outside of the currently documented distribution for the species in question or the species is generally accepted as being locally/regionally extinct (supported by a lack of recent records), or no suitable habitat (type, quality and extent) was identified as being likely to be present during the field survey. Individuals of some species may occur occasionally as vagrants/transients especially if suitable habitat is located nearby but the



survey area itself would not support a population or part population of the species.

- Locally Extinct: Populations no longer occur within a small part of the species natural range, in this case within 10 or 20km of the study area. Populations do however persist outside of this area.
- Regionally Extinct: Populations no longer occur in a large part of the species natural range, in this case within the south west region. Populations do however persist outside of this area.
- Possible: Study area is within the known distribution of the species in question and habitat of at least marginal quality was identified as being likely to be present during the field survey, supported in some cases by recent records being documented in literature from within or near the survey area. In some cases, while a species may be classified as possibly being present at times, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.
- Known to Occur: The species in question was positively identified as being present (for sedentary species) or as using the site as habitat for some other purpose (for non-sedentary/mobile species) during the field survey. This information may have been obtained by direct observation of individuals or by way of secondary evidence (e.g. foraging debris, scats). In some cases, while a species may be classified as known to occur, habitat may be marginal (e.g. poor quality, fragmented, limited in extent) and therefore the frequency of occurrence and/or population levels may be low.

3.2 SITE SURVEYS

Field survey work at the site was carried out by Greg Harewood (B.Sc. - Zoology) over a period of five days (29 September, 6 October, 6 November, 7 November and 9 November, 2014).

3.2.1 Fauna Habitat Assessment

The vegetation communities mapped by EcoEdge (EcoEdge 2014) during the flora and vegetation survey have been used to classify the area into broad habitat types. This information has been supplemented by observations made during the field assessment.

The main aim of the habitat assessment was to determine if it was likely that any species of conservation significance would be utilising the areas that may be impacted on as a consequence of development at the site. The habitat



information obtained was also used to aid in finalising the overall potential fauna list.

As part of the desktop literature review, available information on the habitat requirements of the species of conservation significance listed as possibly occurring in the area was researched. During the field survey the habitats within the study area were assessed and specific elements identified, if present, to determine the likelihood of listed threatened species utilising the area and its significance to them.

3.2.2 Opportunistic Fauna Observations

Opportunistic observations of fauna species were made during all field survey work which involved a series of transects across the site during the day while searching microhabitats such as logs, rocks, leaf litter and observations of bird species with binoculars. Secondary evidence of a species presence such as tracks, scats, skeletal remains, foraging evidence or calls were also noted if observed/heard.

3.2.3 Black Cockatoo Habitat Assessment

The following methods were employed to comply with the defined scope of works and are based on guidelines published by the federal Department of the Environment (DotE) (SEWPaC 2012) which state that surveys for Carnaby's, Baudin's and forest red-tailed black cockatoo habitat should:

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

Habitat used by black cockatoos have been placed into three categories by the DotE (SEWPaC 2012) these being:



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

So as to comply with the request scope of works and in line with the published guidelines the following was carried out.

- Breeding Habitat Assessment: The black cockatoo breeding habitat assessment involved the identification of all suitable breeding trees species within the study area that have a Diameter at Breast Height (DBH) of over 50cm (30 cm for wandoo). The DBH of each tree was estimated using a pre-made 50 cm or 30cm “caliper”.

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

Target tree species included wandoo, marri and jarrah or any other *Corymbia/Eucalyptus* species of a suitable size that was observed. Peppermints, *banksia*, sheoak and melaleuca tree species (for example) were not assessed as they typically do not develop hollows that are used by black cockatoos.

For the purposes of this study a tree containing a potential cockatoo nest hollow was defined as:

Generally any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) suitable for occupation by black cockatoo for the purpose of nesting/breeding. Hollows that had an entrance greater than about 12cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk, will be recorded as a “potential nest hollow”.

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches). Trees with possible nest hollows were also scratched and raked with a large stick/pole in attempt to flush any sitting birds from hollows and calls of chicks were listened for (though it should be noted that the survey may be conducted outside of the main breeding season of all three species of black cockatoo).



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

- Foraging Habitat Assessment: The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present will also be documented irrespective of the presence of any actual foraging evidence.

A review of available literature has been carried out to determine the location/extent of any known/likely black cockatoo foraging habitat areas in the vicinity of the study area.

- Night Roosting Habitat Assessment: Direct and indirect evidence of black cockatoos roosting within trees on site were noted if observed (e.g. branch clippings, droppings or moulted feathers). A single dusk survey was also undertaken and involved observing and listening for flocks of cockatoos congregating in roost trees over a period of about one hour either side of sunset.

A review of available literature has been carried out to determine the location/extent of any known/likely black cockatoo roosting habitat areas in the vicinity of the study area.



4. SURVEY CONSTRAINTS

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

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

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

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

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

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

During the black cockatoo habitat survey trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally the full characteristics of any hollow



seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level.

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



5. RESULTS

5.1 POTENTIAL FAUNA INVENTORY - DESKTOP STUDY

A list of fauna species considered most likely to occur in the study area has been compiled from information obtained during the desktop study and is presented in Appendix B. This listing was refined after information gathered during the site reconnaissance survey was assessed. The results of some previous fauna surveys carried out in the general area are summarised in this species listing as are the DPaW NatureMap database search results. The raw database search results from NatureMap (DPaW 2014c) and the Protected Matters Search Tool (DotE 2014) are contained within Appendix C.


The list of potential fauna takes into consideration that firstly the species in question is not known to be locally extinct and secondly that suitable habitat for each species, as identified during the habitat assessment, is present within the study area, though compiling an accurate list has limitations (see Section 4 above) and therefore as discussed the listing is likely to be an overestimation of the fauna species actually present onsite at any one time.

5.2 SITE SURVEYS

5.2.1 Fauna Habitat Assessment

Descriptions of the main broadly defined fauna habitats present within the study area, primarily based on the vegetation units identified by EcoEdge (2014) are provided in Table 1 below.



Table 1: Main Fauna Habitats within the Study Area

No.	Fauna Habitat Description	Example Image
1	<p>Marri-Wandoo-(Jarrah) Open Forest.</p> <p>Common understorey species: <i>Acacia pulchella</i>, <i>Banksia dallanneyi</i>, <i>Bossiaea eriocarpa</i>, <i>Hakea lissocarpha</i>, <i>Hypocalymma angustifolium</i>, <i>Trymalium ledifolium</i>, <i>Xanthorrhoea preissii</i>.</p>	



No.	Fauna Habitat Description	Example Image
2	<p>Jarrah-Marri-(Wandoo) Open Forest.</p> <p>Common understorey species: <i>Acacia pulchella</i>, <i>Bossiaea ornata</i>, <i>Craspedia variabilis</i>, <i>Hakea lissocarpha</i>, <i>Lagenophora huegelii</i>, <i>Leucopogon capitellatus</i>, <i>Macrozamia riedlei</i>.</p>	
3	<p>Jarrah Open Forest.</p> <p>Common understorey species: <i>Acacia pulchella</i>, <i>Banksia grandis</i>, <i>Banksia squarrosa</i>, <i>Bossiaea ornata</i>, <i>Craspedia variabilis</i>, <i>Petrophile serruriae</i>, <i>Xanthorrhoea preissii</i>.</p>	
4	<p>Flooded Gum Low Open Woodland over <i>Melaleuca viminea</i> Shrubland.</p> <p>Other common species: <i>Diuris insignis</i>, <i>Chamaescilla corymbosa</i>, <i>Hakea varia</i>, <i>Hakea prostrata</i>, <i>Hypocalymma angustifolium</i>, <i>Sowerbaea laxiflora</i>, <i>Tribonanthes longipetala</i>, <i>Xanthorrhoea preissii</i>.</p>	
5	<p>Flooded Gum-Marri-(Wandoo) Woodland.</p> <p>Small groves of trees within cleared paddock areas - the understorey is predominantly exotic pasture grasses.</p>	



No.	Fauna Habitat Description	Example Image
6	<p>Cleared Pasture.</p> <p>These areas are dominated by introduced pasture grasses with occasional scattered trees and degraded sedgelands.</p>	
7	<p>Collie River East – Ephemeral stream with variable flows controlled by seasonal conditions.</p>	

The quality of the various areas of native remnant vegetation within the study area varies but most areas show signs of various degrees of historical disturbance from logging, frequent fire, gravel extraction and previous road/track making activities. Remnant vegetation within private landholdings has been open to livestock grazing and vegetation structure has been significantly altered with only larger trees persisting.

5.2.2 Opportunistic Fauna Observations

Opportunistic fauna observations are listed in Appendix B. A total of 51 native fauna species were observed (or positively identified from foraging evidence, scats, tracks, skeletons or calls) within the study area during the day time surveys. The presence of four introduced species was also confirmed.

Evidence of two listed threatened species was observed (Carnaby's black-cockatoo (chewed marri and jarrah fruits) and forest red-tailed black-cockatoo (individuals and chewed marri and jarrah fruits). Several individuals of the listed migratory species, the rainbow bee-eater were also observed foraging onsite. No evidence of any DPaW priority species using the area was found.



5.2.3 Black Cockatoo Habitat Assessment

A summary of the potential black cockatoo breeding trees (using DotE criteria i.e. any suitable tree species with a DBH > 50cm (>30cm for wandoo) (SEWPaC 2012)) observed within the study area is provided in Table 2 below and their location shown in Figure 3.

The assessment identified a total of 1,348 “habitat trees” within the fauna survey area as a whole. The majority (945, ~70.1%) of the trees were not observed to contain hollows of any size. Three hundred and seventy nine (~28.1%) of the trees contained one or more “small” hollows (less than ~12cm entrance size) considered by the Author not to be suitable for black cockatoos to use for nesting purposes. Twenty four (~1.8%) trees appeared to contain hollows with larger entrances (greater than ~12cm) that appeared big enough to possibly allow the entry of a black cockatoo into a suitably sized and orientated branch/trunk, though none showed any sign of current or previous use for this purpose.

Additional details on each habitat tree observed can be found in Appendix D.

As the final location of the realignment has not been defined at this stage it is not known how many of the identified habitat trees will require removal to allow construction of the road to proceed.

Table 2: Summary of potential cockatoo breeding habitat trees (DBH >50cm (>30cm for wandoo))

Area	Number of Trees >50cm DBH (>30cm for wandoo)	Number of Trees with No Hollows Observed	Number of Trees with Hollows Considered Unsuitable for Nesting Black Cockatoos	Number of Trees with Hollows Considered <u>Possibly</u> Suitable for Nesting Black Cockatoos	Tree Species			
					Wandoo	Jarrah	Marri	Unknown (Dead)
Total Study Area	1,348	945	379	24	599	479	198	66

Almost all areas of remnant native vegetation present within the study area can be considered to represent potential black cockatoo foraging habitat as they contain a range of plant species documented as foraging habitat for one or more of the three black cockatoo species, all of which are known to frequent the area. The degree to which any one section of the route would be utilised for foraging purposes would however vary considerably based on species



composition and density. Generally, the most dominant and widespread species are marri and jarrah though in some areas other species are also present (e.g. sheoak and banksia).

Foraging evidence left by Carnaby's and the forest red-tailed black-cokatoos was observed during the survey period at several locations and included chewed marri and jarrah fruits. It is not possible at this stage to calculate the extent of foraging habitat that may require clearing for road construction to proceed given that its location is yet to be finalised.

No existing roosting trees (trees used at night by black cockatoos to rest) were identified during the survey period.

5.3 FAUNA INVENTORY – SUMMARY

5.3.1 Vertebrate Fauna

Table 3 summarises the number of vertebrate fauna species potentially occurring within or utilising at times the study area, based on results from the desktop study and observations made during the field assessment. A complete list of vertebrate fauna possibly inhabiting or frequenting the study area is located in Appendix B.

Table 3: Summary of Potential Fauna Species (as listed in Appendix B)

Group	Total number of potential species	Potential number of specially protected species	Potential number of migratory species	Potential number of priority species	Number of species observed field survey 2014
Fish	4 ¹	0	0	0	1 ¹
Amphibians	12	0	0	0	1
Reptiles	37	1	0	0	3
Birds	104 ¹	4	3	1	46 ¹
Non-Volant Mammals	18 ⁶	2	0	2	4 ²
Volant Mammals (Bats)	9	0	0	1	0
Total	184 ⁸	7	3	4	55 ⁴

Superscript = number of introduced species included in total.



Not all species listed as potentially occurring within the study area in existing databases and publications (i.e. *EPBC Act* Threatened Fauna and Migratory species lists, DPaW's NatureMap database, various reports and publications) are shown in the expected listing in Appendix B. Some species have been excluded from this list based largely on the lack of suitable habitat at the study site and in the general area or known local extinction even if suitable habitat is present.

Despite the omission of some species it should be noted that the list provided is still very likely an over estimation of the fauna species utilising the site (either on a regular or infrequent basis) as a result of the precautionary approach adopted for the assessment. At any one time only a subset of the listed potential species are likely to be present within the bounds of the study area.

5.3.2 Vertebrate Fauna of Conservation Significance

A review of the *EPBC Act* threatened fauna list, DPaW's Threatened Fauna Database and Priority List, unpublished reports and scientific publications identified over 24 specially protected, priority or migratory vertebrate fauna species as potentially occurring in the general vicinity of the study area. Of these species, those that have no potential whatsoever to utilise the study area for any purpose have been omitted from the potential list for the site (Appendix B), principally due to lack of suitable habitat on-site (including extent and/or quality) or known local/regional extinction.

In summary, three vertebrate fauna species of conservation significance (listed as State or Federal threatened/migratory species or DPaW priority species) were positively identified as utilising the study area for some purpose during the survey period, these being:

- *Calyptorhynchus latirostris* Carnaby's Black-Cockatoo – S1 (*WC Act*), Endangered (*EPBC Act*)
Foraging evidence attributed to this species found.
- *Calyptorhynchus banksii naso* Forest Red-tailed Black-Cockatoo – S1 (*WC Act*), Vulnerable (*EPBC Act*)
Sighted several times within the survey area and nearby. Foraging evidence attributed to this species also found.
- *Merops ornatus* Rainbow Bee-eater – S3 (*WC Act*), Migratory (*EPBC Act*)
Several individuals observed within the study area foraging during the survey period.

Based on the habitats present and current documented distributions it is considered possible that 11 additional species may use the survey area for some purpose at times, though as no evidence of presence or use was found at



the time of the field survey, the status of some in the area remains uncertain. Habitat for some of these species on-site, while considered possibly suitable, may be marginal in extent/quality and the species listed may only be present within the survey area in low numbers and/or for short periods.

These species are:

- *Morelia spilota imbricata* Southern Carpet Python - S4 (WC Act)
Status onsite difficult to determine. Typically only occurs in low densities.
- *Ardea alba* Great Egret – S3 (WC Act), Migratory (EPBC Act)
Potentially utilises watercourses, wetlands, drains and paddocks though the quality of most of these habitats are marginal due to historical disturbance such as native vegetation clearing. Would not breed within the study area.
- *Ardea ibis* Cattle Egret – S3 (WC Act), Migratory (EPBC Act)
Potentially utilises watercourses, wetlands, drains and paddocks though the quality of most of these habitats are marginal due to historical disturbance such as native vegetation clearing. Would not breed within the study area.
- *Falco peregrinus* Peregrine Falcon - S4 (WC Act)
Uncommon so unlikely to be resident in area but study site may form part of larger home range. No potential nest sites observed.
- *Calyptorhynchus baudinii* Baudin's Black-Cockatoo - S1 (WC Act), Vulnerable (EPBC Act)
The study area is within the documented distribution of this species and while not observed it may occur on occasions.
- *Tyto novaehollandiae* Masked Owl – P3 (DPaW Priority Species)
Status on the site and in the general area difficult to determine. May occur on rare occasions.
- *Phascogale tapoatafa ssp* Southern Brush-tailed Phascogale - S1 (WC Act)
This species is known to persist in state forest and national park areas surrounding Collie and therefore it may frequent the study site.
- *Dasyurus geoffroii* Chuditch - S1 (WC Act), Vulnerable (EPBC Act)
Actual status on the site difficult to determine. This species is however known to frequent the general area and therefore may utilise sections of the study area at times.



- *Isoodon obesulus fusciventer* Quenda – P5 (DPaW Priority Species)
Most of the study area appears unsuitable for this species due to a lack of dense groundcover but it may persist at locations where native vegetation provides sufficient cover.
- *Macropus irma* Western Brush Wallaby – P4 (DPaW Priority Species)
This species is known to frequent forest areas around Collie in low densities.
- *Falsistrellus mackenziei* Western False Pipistrelle - P4 (DPaW Priority Species)
The current status of this species in general area is difficult to determine but may be utilising woodland areas as roosting and foraging habitat.

A number of other species of conservation significance, while possibly present in the general area, are not listed as potential species due to known localised extinction (and no subsequent recruitment from adjoining areas) and/or lack of suitable habitat and/or the presence of feral predators. Details on these species and reasons for their omission from the potential listing are provided in Appendix E and Table 4.

5.3.3 Invertebrate Fauna of Conservation Significance

A single priority invertebrate species appeared in the DPaW database search (DPaW 2014) this being *Pachysaga munggai*, an unnamed cricket species classified as Priority 3. The status of this species within the study area is difficult to determine however the majority of the study area appears unsuitable as heathland and leaf litter are typically absent/sparse. Even if present it is considered unlikely that any part of the proposed realignment that passes through native forest would represent an area of significance for this species given the extent of similar habitat in surrounding areas. Additional detail on this species is provided in Appendix E and Table 4.



6. FAUNA VALUES

6.1 LOCAL AND REGIONAL CONSERVATION SIGNIFICANCE OF THE STUDY AREA

The conservation significance of the survey area has been assessed by applying site specific criteria such as:

- Fauna species and/or habitat present that is poorly represented in the general study area;
- Fauna habitat within the general study area supporting species of conservation or other significance;
- Fauna habitat in better condition than other similar locations in general study area.

The results of the fauna assessment indicate that the study site hosts or potentially hosts a range of fauna species some of which are of special conservation significance. The extent of habitat suitable for those species identified as utilising the study area does however extend well outside the study area and these fauna habitats are therefore well represented in adjoining state forest areas. No evidence was gathered that suggest habitats within the potential realignment corridor are in a significantly better condition than those found in adjoining areas. These facts suggest that the study area itself does not have any specific local conservation significance above that of adjoining areas.

6.2 VALUE OF THE STUDY AREA AS AN ECOLOGICAL LINKAGE/WILDLIFE CORRIDOR

Linkage with adjacent bushland areas has been identified as a natural attribute of high priority in the assessment of a sites regional significance (EPA 2003b, Molloy *et al.* 2009).

The extent of the clearing required is yet to be exactly defined but will require removal of relatively thin, discontinuous sections of vegetation located at various points along the propose road realignment. The degree of clearing required will not fragment any potential fauna habitat to the extent that it would represent a barrier to fauna a movement above that already present in the area (i.e. the existing road and network of other tracks and powerline easements).



7. POTENTIAL IMPACTS

7.1 POTENTIAL IMPACTS

In general the most significant potential impacts to fauna of any development include:

- Loss of vegetation/fauna habitat that may be used for foraging, breeding, roosting, or dispersal (includes loss of hollow bearing trees);
- Fragmentation of vegetation/fauna habitat which may restrict the movement of some fauna species;
- Modifications to surface hydrology, siltation of creek lines;
- Changes to fire regimes;
- Pollution (e.g. oil spills);
- Noise/Light/Dust;
- Spread of plant pathogens (e.g. dieback) and weeds;
- Potential increase in the number of predatory introduced species (e.g. cats);
- Death or injury of fauna during clearing and construction; and
- An increase in fauna road kills subsequent to development.

The most likely potential impacts on fauna of the proposed construction and use of the road realignment are:

- Loss of vegetation/fauna habitat that may be used for foraging, breeding, roosting, or dispersal (includes loss of hollow bearing trees);
- Death or injury of fauna during clearing, construction and operation (including road kills).

The exact location of the realignment is yet to be finalised but will pass through a combination of uncleared native vegetation, cleared farmland, along the existing road alignment and possibly a section of the Collie-Darman rail trail (Figure 2). While the location and extent of fauna habitat that may require clearing for road construction to proceed is unknown, based on the likely scale of habitat loss and other factors such as the extent of similar vegetation in surrounding areas, its quality and degree of fragmentation, the possible impacts on species of conservation significance previously recorded in the general area



has been assessed, a summary of which is provided in Table 4 below. Additional information on specific fauna species is provided in Appendix E.

Table 4: Likelihood of Occurrence and Possible Impacts – Fauna Species of Conservation Significance (continues on following pages).

Common Name	Genus & Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Possible Impacts/ Significance of Possible Impacts
Unnamed cricket	<i>Pachysaga munggai</i>	P3	Yes?/Marginal?	Possible but unlikely	Loss/modification of small areas of habitat/Very Low
Darling Range Heath Ctenotus	<i>Ctenotus dell</i>	P4	Yes/Marginal.	Possible but could be out of species range?	Loss/modification of small areas of habitat/Very Low
Southern Carpet Python	<i>Morelia spilota imbricata</i>	S4	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Malleefowl	<i>Leipoa ocellata</i>	S1, Mig	No	Unlikely - species locally extinct.	None Identified/Negligible
Great Egret	<i>Ardea alba</i>	S3, Mig	Yes/Marginal	Possible	Loss/modification of very small areas of degraded habitat/Negligible
Cattle Egret	<i>Ardea ibis</i>	S3, Mig	Yes/Marginal	Possible	Loss/modification of very small areas of degraded habitat/Negligible
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	S3, Mig	No	Unlikely	None Identified/Negligible
Peregrine Falcon	<i>Falco peregrinus</i>	S4	Yes	Possible	Loss/modification of very small areas of foraging habitat/Negligible
Migratory Shorebirds/Wetland Species	Various	S3, Mig	No/VeryMarginal	Unlikely	None Identified/Negligible
Carnaby's Black Cockatoo	<i>Calyptorhynchus latirostris</i>	S1, EN	Yes	Known to occur	Loss of small areas of habitat/Low
Baudin's Black Cockatoo	<i>Calyptorhynchus baudinii</i>	S1, VU	Yes	Possible	Loss of small areas of habitat/Low
Forest Red-tailed Black Cockatoo	<i>Calyptorhynchus banksii naso</i>	S1, VU	Yes	Known to occur	Loss of small areas of habitat/Low
Barking Owl (SW population)	<i>Ninox connivens connivens</i>	P2	No	Unlikely	None Identified/Negligible
Masked Owl (SW population)	<i>Tyto n. novaehollandiae</i>	P3	Yes	Possible	Loss/modification of small areas of habitat/Low
Fork-tailed Swift	<i>Apus pacificus</i>	S3, Mig	Yes	Unlikely	None Identified/Negligible



Common Name	Genus & Species	Conservation Status	Habitat Present	Likelihood of Occurrence	Possible Impacts/ Significance of Possible Impacts
Rainbow Bee-eater	<i>Merops ornatus</i>	S3, Mig	Yes	Known to occur	Loss/modification of small areas of habitat/Negligible
Chuditch	<i>Dasyurus geoffroii</i>	S1, VU	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Numbat	<i>Myrmecobius fasciatus</i>	S1, VU	Yes	Unlikely - species locally extinct.	None Identified/Negligible
Southern Brush-tailed Phascogale	<i>Phascogale tapoatafa ssp</i>	S1	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Southern Brown Bandicoot	<i>Isodon obesulus fusciventer</i>	P5	Yes/Marginal	Possible	Loss/modification of small areas of habitat/Very Low
Bilby	<i>Macrotis lagotis</i>	S1, VU	No	Unlikely - species regionally extinct.	None Identified/Negligible
Western Brush Wallaby	<i>Macropus irma</i>	P4	Yes	Possible	Loss/modification of small areas of habitat/Very Low
Woylie	<i>Bettongia penicillata ogiby</i>	S1, EN	No	Unlikely - species locally extinct.	None Identified/Negligible
Tammar	<i>Macropus eugenii</i>	P4	No	Unlikely - species locally extinct.	None Identified/Negligible
Quokka	<i>Setonix brachyurus</i>	S1, VU	No	Unlikely	None Identified/Negligible
Western False Pipistrelle	<i>Falsistrellus mackenziei</i>	P4	Yes	Possible	Loss/modification of small areas of habitat/Negligible

See Appendix A for conservation status codes

Most of the conservation significant species known from the wider area/south west region are unlikely to be impacted on by the proposal due to the fact that the study area does not contain their preferred habitat and therefore they are unlikely to be present. In cases where some habitat is present likely impacts are anticipated to be low primarily due to the relatively small area of clearing likely to be required, the large expanse of adjoining bush land (e.g. state forest areas) and the fact that the relatively small impacts will be spread over several kilometres.



8. LEGISLATIVE OBLIGATIONS

8.1 WILDLIFE CONSERVATION ACT 1950

The objective of the *Wildlife Conservation Act 1950* is to provide for the protection of native wildlife. The *WC Act* is administered by the Executive Director of the Department of Parks and Wildlife, under the direction and control of the Minister for the Environment. Under section 14, “Protection of Fauna”, of this Act, all fauna is wholly protected throughout the State at all times, unless declared by the Minister by notice in the Government Gazette.

Disturbance or destruction of any native fauna over and above that reasonably required for construction works and access is considered an offence under the *WC Act* and the proponent should take the necessary steps to inform all those involved in sites works of this fact. The proponent should therefore, as part of a site works fauna management plan implement procedures that will reduce the chances of wildlife being injured or killed during clearing and construction within the construction site.

8.2 ENVIRONMENTAL PROTECTION ACT 1986

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

The powers of the Environmental Protection Act 1986 are administered by the Department of Environment Regulation (DER), which in relevant cases advises to the Environmental Protection Authority (EPA).

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

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



It is understood that the MRWA have a state-wide purpose permit issued under the Native Vegetation Clearing Regulations 2004. The DER have however made it clear that the use of this permit is only appropriate if any proposed clearing is not at variance to any of the 10 clearing principles, these being:

Native vegetation should not be cleared if

- (a) it comprises a high level of biological diversity;
- (b) it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia;
- (c) it includes, or is necessary for the continued existence of, rare flora;
- (d) it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community;
- (e) it is significant as a remnant of native vegetation in an area that has been extensively cleared;
- (f) it is growing in, or in association with, an environment associated with a watercourse or wetland;
- (g) the clearing of the vegetation is likely to cause appreciable land degradation;
- (h) the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area;
- (i) the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or
- (j) clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

One purpose of the assessment reported on here is to provide information relevant to principle (a) & (b). While the extent and location of clearing is unknown similar habitats are common and widespread in the area. The overall faunal assemblage potentially present is therefore unlikely to be of a higher diversity or different to that found in similar habitats located elsewhere in the immediate vicinity. It could therefore be concluded that the area that may need to be cleared does not contain habitats of high ecological significance from a faunal perspective or contain faunal assemblages that are ecologically significant. Also, the area likely to be cleared will be spread over a distance of



at least ~6 km. The impact of clearing on fauna or fauna habitat in general will therefore be relatively small at any one location.

The DER/DPaW will need to consider all available information relating to all 10 clearing principles including those relating to fauna. The demonstrated use of the study area by several species of conservation significance and the potential presence of several others will influence their decision making process, though it is difficult to predict specific outcomes as some discretion is exercised when assessing applications. Any proposed offsets are also taken into consideration.

8.3 ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT 1999

A number of fauna species known to or potentially present within the study area are listed under the federal *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. The objective of the *EPBC Act* is to provide for the protection of the environment, especially those aspects that are of national significance, promote ecologically sustainable development, the conservation of biodiversity and a cooperative approach to the protection and management of the environment.

EPBC Act listed fauna species (or their habitat) confirmed as being present in the study area were:

- *Calyptorhynchus latirostris* Carnaby's Black-Cockatoo – Endangered;
- *Calyptorhynchus banksii naso* Forest Red-tailed Black-Cockatoo – Vulnerable; and
- *Merops ornatus* Rainbow Bee-eater – Migratory

EPBC Act listed fauna species identified as possibly using the study area were:

- *Ardea alba* Great Egret – Migratory;
- *Ardea ibis* Cattle Egret – Migratory;
- *Calyptorhynchus baudinii* Baudin's Black-Cockatoo – Vulnerable; and
- *Dasyurus geoffroii* Chuditch – Vulnerable

A number of other *EPBC Act* listed threatened/migratory fauna species (or their habitat) were determined during the fauna assessment not to be present in the study area despite appearing in database searches (see Table 4 and Appendix E). Their exclusion from the potential species list is primarily justified by an obvious lack of suitable/important/significant habitat or known local extinction.



Some species are not considered “potential” species despite possibly being present on occasions as their frequency of occurrence would be extremely rare and only temporary. It is also very unlikely that vegetation at the site represents habitat critical for the recovery of the respective threatened species in the area. These species will not be discussed further:

If an action (i.e. the proposed clearing for road works) is deemed to have a potential “significant impact” on listed species a referral to the DotE is required to ensure compliance with the *EPBC Act*. Currently, for the species in question, “significant impact” is defined within one document, this being:

- Department of the Environment (DotE) (2013). Matters of National Environmental Significance. Significant Impact Guidelines 1.1, *EPBC Act 1999*.

The DotE have also released referral guidelines for black cockatoos which detail what scale of actions are likely to constitute “significant impact” and therefore require referral, these being:

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

An assessment of significant impact on federally listed fauna species and the possible need to refer the project to DotE using criteria within the relevant abovementioned documents are provided below.

8.3.1 Black Cockatoos

The DotE guidelines relating to black cockatoos are intended to assist proponents in determining whether an action (e.g. clearing native vegetation) needs to be referred to DotE for more detailed assessment.

The following points provide general guidance on what, in DotE’s view, may be at high and low risk of requiring a referral to ensure compliance with the *EPBC Act* as well as providing some guidance on uncertainty.

Actions that have a high risk of significant impacts

- Clearing of any known nesting tree.
- Clearing or degradation of any part of a vegetation community known to contain breeding habitat.



- Clearing of more than 1 ha of quality foraging habitat.
- Clearing or degradation (including pruning the top canopy) of a known night roosting site.
- Creating a gap of greater than 4 km between patches of black cockatoo habitat (breeding, foraging or roosting).

Actions that have and uncertain risk of significant impacts

- Degradation (such as through altered hydrology or fire regimes) of more than 1 ha of foraging habitat. Significance will depend on the level and extent of degradation and the quality of the habitat.
- Clearing or disturbance in areas surrounding black cockatoo habitat that has the potential to degrade habitat through introduction of invasive species, edge effects, hydrological changes, increased human visitation or fire.
- Actions that do not directly affect the listed species but that have the potential for indirect impacts such as increasing competitors for nest hollows.
- Actions with the potential to introduce known plant diseases such as *Phytophthora* spp. to an area where the pathogen was not previously known.

Actions that have a low risk of significant impacts

- Actions that do not affect black cockatoo habitat or individuals.
- Actions whose impacts occur outside the modelled distribution of the three black cockatoos

The total extent of vegetation clearing required for the proposal to proceed has not been determined at this stage however it will require the removal of trees identified as potential breeding and foraging habitat. The removal of this vegetation is very likely to compromise at least two of the abovementioned criteria (i.e. clearing or degradation of any part of a vegetation community known to contain breeding habitat (any tree with a DBH >50cm (>30cm for wandoo)) and clearing of more than 1 ha of quality foraging habitat) and will therefore be seen by the DotE as being likely to have a “significant impact” on black cockatoos.

The document “Matters of National Environmental Significance. Significant Impact Guidelines 1.1, *EPBC Act 1999*.” (DotE 2013) provides more detailed



criteria related to what actually constitutes “significant impact” in DotE’s view. An assessment of each of the criteria contained within the significant Impact guidelines document with respect to the realignment construction are provided in Table 5 below.

The criteria in the significant impact guidelines refer to ‘populations’ and ‘important populations’. It should be noted that these terms have not been defined for black cockatoos, due to the mobile and widely-distributed nature of these species, and the variation in flock compositions (for example, between breeding and non-breeding seasons). The DotE therefore recommend that for black cockatoos, it is more appropriate to consider significance in terms of impacts on habitat rather than a resident population (SEWPaC 2012).

For this reason the assessment provide below addresses criteria with respect to possible habitat loss and not direct impacts on individual birds or populations of birds, though some criteria maybe considered irrelevant for assessing impact on black cockatoos given their non-sedentary habits.

Table 5: Assessment of Significant Impact on Black Cockatoos using Criteria for Vulnerable/Endangered Species (DotE 2013)

Criteria	Assessment of Impact on Black Cockatoos
Lead to a long-term decrease in the size of an important population/population of a species?	<p>The study area contains foraging and potential breeding habitat for black cockatoos but the extent of the proposed clearing at any one location is likely to be relatively small and very unlikely to lead to a long term decrease in the size of a population (or important population).</p> <p>The proposed works are near large areas of state forest and all three species of black cockatoo will continue to utilise the area as they do now despite the road works proceeding. No evidence has been gathered that suggests that the proposal would lead to a decrease in the size of the Carnaby's, Baudin's or the Forest red-tailed black cockatoo population.</p>
Reduce the area of occupancy of an important population/population of the species?	<p>The area of occupancy of black cockatoos will not change as a consequence of the development proceeding. While some potential/existing habitat may require clearing it is relatively small compared to the total area of remnant native vegetation in the near vicinity and black cockatoos will persist in these nearby areas despite development at the site.</p>



Criteria	Assessment of Impact on Black Cockatoos
Fragment an existing important population/population into two or more populations?	Construction of the realignment will not create a barrier to black cockatoo movement in the area and/or fragment populations.
Adversely affect habitat critical to the survival of a species?	The area of vegetation requiring clearing at any one point is very small and not localised in one area. Substantial nearby areas of potential habitat for all the species in question will remain unaffected by the proposal. Habitat within the study area cannot be regarded as “critical to the survival of a species”.
Disrupt the breeding cycle of an important population/population?	No evidence of black cockatoos breeding within the study area was found. A number of trees were identified in or very near the study area that contained hollows which may possibly be suitable for black cockatoos to utilise for breeding, though no sign of actual use by black cockatoos was seen. It is recommended that clearing, if possible, be undertaken outside of black cockatoo breeding season and/or that all trees be carefully examined prior to removal to reduce the possibility that any actual breeding individuals are affected.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	<p>The study area contains foraging and potential breeding habitat for black cockatoos but the extent of the proposed clearing will be relatively small at any one location and unlikely to lead to a long term decrease in the size of a population (or important population).</p> <p>The proposed works are near large areas of state forest and all three species of black cockatoo will continue to utilise the area as they do now despite the road works proceeding. There is no evidence to suggest that the proposed clearing of a small area of vegetation over such a wide area would modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that would cause any of the black cockatoo species population numbers to decline.</p>
Result in invasive species that are harmful to a vulnerable/endangered species becoming established in the vulnerable/endangered species' habitat?	The proposed works are unlikely to result in introduction of any new harmful invasive species.



Criteria	Assessment of Impact on Black Cockatoos
Introduce disease that may cause the species to decline?	The proposed works are unlikely to introduce a disease that would impact on black cockatoos.
Interfere substantially with the recovery of the species.	<p>The population growth of the black-cockatoos is primarily limited by factors associated with breeding, and consequently priority areas for the recovery of the species are currently focused on known breeding sites (Cale 2003).</p> <p>The survey area does not represent a known breeding site and it is considered highly unlikely that development of the site will interfere substantially with the recovery of any of the black cockatoo species.</p>
Is a Significant Impact Expected?	No. The proposed action (i.e. road works requiring clearing) is not considered as likely to have a significant impact. This conclusion is primarily justified when considering the relatively small area of clearing likely to be required at any one point, the fact that it is spread over a wide area, apparent lack of breeding activity on site and the presence of substantial areas of similar habitat in nearby locations.

The above assessment using DotE guidelines for referral suggests that the proposed road works represent an action that has a high risk of significant impact on black cockatoos because clearing of some potential breeding habitat and foraging habitat is likely to be required. However, the assessment of “significant impact” using DotE criteria suggests that in this case, significant impact is in reality, unlikely.

8.3.2 Other Listed Threatened Fauna Species

Other *EPBC Act* listed species potentially present in the area are:

- *Dasyurus geoffroii* Chuditch – Vulnerable

An assessment of likely significant impact using DotE criteria (DotE 2013) is provided below.



Table 6: Assessment of Significant Impact on the Chuditch using Criteria for Vulnerable Species (DotE 2013)

Criteria	Assessment of Impact on Chuditch
Lead to a long-term decrease in the size of an important population of a species?	<p>The fauna assessment found no direct evidence of chuditch utilising the study area. Chuditch are relatively wide ranging species and assuming populations exist in the area, the clearing along the road alignment is unlikely to significantly alter this species use of the area.</p> <p>The proposed works are near large areas of state forest and any populations of the chuditch present will continue to utilise the area as they do now despite the road works proceeding. No evidence has been gathered that suggests that the proposal would lead to a decrease in the size of the chuditch populations.</p>
Reduce the area of occupancy of an important population of the species?	<p>It is considered unlikely that the clearing required will have any impact whatsoever on populations present in the area and the area of occupancy of the species in question will not in any way be affected.</p> <p>The proposed works are near large areas of state forest and any populations of the chuditch present will continue to utilise the area as they do now despite the road works proceeding. No evidence has been gathered that suggests that the proposal would result in a reduction in the area of occupancy of the chuditch.</p>
Fragment an existing important population into two or more populations?	This degree of clearing could not possibly fragment any potential habitat to the extent that it would represent a barrier to fauna movement above that which already exists.
Adversely affect habitat critical to the survival of a species?	The area of vegetation requiring clearing at any one point is likely to be relatively small and not localised in one area. Substantial nearby areas of similar habitat will remain unaffected by the proposal. Habitat within the study area that will require removal cannot be regarded as “critical to the survival of a species and its removal is not anticipated to have any impact on the status of chuditch in the area.



Criteria	Assessment of Impact on Chuditch
Disrupt the breeding cycle of an important population?	The area of vegetation requiring clearing at any one point is likely to be relatively small and not localised in one area. Substantial nearby areas of similar habitat to that present within the study area will remain unaffected by the proposal. Even if the home range of some breeding individuals overlaps the proposed clearing areas the extent of retained/unaffected vegetation is more than sufficient for individuals to persist unaffected.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline?	<p>The fauna assessment found no direct evidence of chuditch utilising the study area. Chuditch are relatively wide ranging species and assuming populations exist in the area, the clearing along the road alignment is unlikely to significantly alter this species use of the area.</p> <p>The proposed works are near large areas of state forest and any populations of the chuditch present will continue to utilise the area as they do now despite the road works proceeding. No evidence has been gathered that suggests that the proposal would cause the species to decline in numbers</p>
Result in invasive species that are harmful to a vulnerable/endangered species becoming established in the vulnerable species' habitat?	The potential future development of the site is unlikely to result in introduction of any new harmful invasive species.
Introduce disease that may cause the species to decline?	The proposed action is unlikely to introduce a disease that would impact on chuditch.



Criteria	Assessment of Impact on Chuditch
Interfere substantially with the recovery of the species.	<p>The area of vegetation requiring clearing at any one point is likely to be relatively small and not localised in one area. Substantial nearby areas of similar habitat to that present within the study area will remain unaffected by the proposal. Because of these factors it is considered unlikely that the proposed road works will interfere with the recovery of the chuditch.</p> <p>Chuditch will continue to utilise the general area as they do now despite the proposal proceeding. There is no evidence to suggest that the proposed road construction and the removal of areas of vegetation would interfere with the recovery of any of the species in question.</p>
Is a Significant Impact Expected?	No. The proposed action (i.e. road works requiring clearing) is not considered as likely to have a significant impact. This conclusion is primarily justified when considering the relatively small area of clearing likely to be required at any one point, the fact that it is spread over a wide area and the presence of substantial areas of similar habitat in nearby locations.

The above assessment of “significant impact” using DotE criteria suggests that in this case, significant impact on the chuditch is unlikely.

8.3.3 Migratory Species

EPBC Act listed migratory fauna species identified as using or possibly the study area were:

- *Ardea alba* Great Egret – Migratory;
- *Ardea ibis* Cattle Egret – Migratory; and
- *Merops ornatus* Rainbow Bee-eater – Migratory

The document “Matters of National Environmental Significance. Significant Impact Guidelines 1.1, EPBC Act 1999.” (DotE 2013) summarises what scale of actions would be considered likely to have a significant impact on listed migratory species.

Within this document an action has, will have, or is likely to have a significant impact on migratory species if it does, will, or is likely to:



- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat of the migratory species; or
- result in invasive species that is harmful to the migratory species becoming established in an area of important habitat of the migratory species; or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the species.

An area of important habitat is:

- habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species;
- habitat that is of critical importance to the species at particular life-cycle stages;
- habitat utilised by a migratory species which is at the limit of the species range; or
- habitat within an area where the species is declining.

To have a significant impact on a migratory species as defined under the DotE Significant Impact Guidelines (DotE 2013), any proposed development would need to trigger at least one of the abovementioned significant impact criteria thresholds.

It is considered extremely unlikely that any of these thresholds relating to migratory species will be compromised by road works at the site at any scale.

The habitat within the area to be cleared that is likely to be used by migratory species does not represent “important habitat” and the number of individuals utilising this area would not, under any circumstances, represent an ecologically significant proportion of the population of any of the species in question and as such significant impact is extremely unlikely to eventuate.



9. RECOMMENDATIONS

The following recommendations are provided for guidance for the formulation of management plans that should aim to reduce the impact on fauna and fauna habitat as much as reasonable and practicable. This listing is not exhaustive and management plans and possible offsets will need to be finalised after liaison with relevant regulatory authorities. It is recommended that:

- While the extent of clearing is relatively small and significant impact on *EPBC Act* species unlikely, consideration should still be given to referring the project to ensure compliance. This recommendation is primarily based on the presence of a black cockatoo habitat within likely clearing areas.
- Planning for road works should aim to avoid the need to clear as much of the existing vegetation as possible.
- During clearing operations a suitably experienced “fauna spotter” should be employed to inspect logs, trees and hollows (where possible) before clearing to reduce likelihood of injury to fauna. Trees observed to contain hollows should be felled in a manner that reduces the likelihood that fauna present will be injured. Hollows in fallen trees should be inspected for fauna prior to removal from the site. If feasible any fauna encountered should be relocated to suitable retained habitat nearby.
- During site works areas requiring clearing should be clearly marked and access to other areas restricted to prevent accidental clearing of areas to be retained.
- Design additional project infrastructure, including access routes, vehicle and plant storage and turn around areas, borrow pits etc. so that:
 - previously disturbed areas are used where possible; and
 - areas of sensitive vegetation are avoided.
- Fuel and chemical storage facilities should be located appropriate distance away from watercourses.
- No dead, standing or fallen timber should be removed unnecessarily. Logs (hollow or not) and other debris resulting from land clearing should be used to enhance fauna habitat in untouched and rehabilitated areas if possible. Where possible, logs are to be retained either by pushing the logs into the surrounding forest, when significant disturbance to the



forest can be avoided, or the logs cut so that the length of log outside the clearing area remains insitu.

- All staff working on site should be made aware that all native fauna is protected by law.
- Native fauna injured during clearing or normal site operations should be taken to a designated veterinary clinic or a DPaW nominated wildlife carer.
- Any holes, pits or trenches required for services should be kept open for only as long as necessary and suitable escape ramps (45° batter) and bridging provided if the site is to be left unattended for extended periods. Significant sized holes, pits or trenches should be inspected for fauna immediately prior to filling.
- Disruption to surface and sub-surface hydrology should be minimised where possible and levees and drains designed to mimic natural drainage flows where disruptions will occur.
- An erosion and sediment control plan should be developed and implemented. Construction in the vicinity of water courses should, if possible, be done within the drier months of the year. Appropriate rehabilitation or erosion control structures should be in place prior to the first winter rains.
- Any proposed revegetation/rehabilitation at the site should utilise local seed stock that includes cockatoo food plants, specifically *Eucalyptus*, *Corymbia*, *Banksia*, *Hakea*, and *Allocasuarina*. The final selection of suitable species should be carried out after liaison with appropriate experts or local land care groups to ascertain which species are most suitable for the area. Susceptibility to dieback should be taken into consideration.



10. CONCLUSION

The fauna assessment within the study area was undertaken for the purposes of delineating and characterising the fauna habitats and faunal assemblages present and to identify potential impacts of the proposed road works. A targeted assessment of black cockatoo habitat within the study area was also carried out.

With respect to fauna in general, no substantial impacts are anticipated as a consequence of the proposed realignment. In cases where some impact is anticipated, the degree of the impact is only expected to be low and relates to the loss of small areas of habitat, but as most species are common and/or widespread no overall change in their conservation status is anticipated, despite a possible localised reduction in habitat extent.

The assessment does however indicate that any considerations required during ongoing development planning are most likely to be related to the presence of habitat used or potentially used by some threatened fauna species in particular the three *EPBC Act* listed black cockatoo species.

Based on the information provided by MRWA and the results of the fauna assessment, referral of the project to the DotE is recommended for consideration primarily given the presence of black cockatoo habitat within likely clearing areas. This recommendation is consistent with an assessment of DotE's referral guidelines for black cockatoos even though actual "significant impact" may be unlikely.

A series of other recommendations aimed at mitigating and minimising potential impacts on fauna and fauna habitat in general are provided in Section 9. These should be considered for implemented as part of existing or proposed management plans where determined to be reasonable and practicable.



11. BIBLIOGRAPHY

(not necessarily cited)

Allen, G.R., Midgley, S.H. and Allen, M. (2002). Field guide to the freshwater fishes of Australia. Western Australian Museum, Perth, Western Australia.

Allen, G.R., Midgley, S.H., Allen, M. (2003). Freshwater Fishes of Australia. Western Australian Museum, Perth, Western Australia.

Anstis, M. (2013). Tadpoles and Frogs of Australia. New Holland Publishers, Sydney.

Aplin, K.P. and Smith, L.A. (2001). Checklist of the frogs and reptiles of Western Australia, Records of the Western Australian Museum Supplement No. 63, 51-74.

Bancroft, W. and Bamford, M. (2006). Fauna Survey of the Muja South Extension Project. Unpublished report for Griffin Coal.

Bancroft, W.J., Metcalf, B.M. and Bamford, M.J (2006). Fauna survey of Griffin Coal's Ewington II and Buckingham sites, January 2006. Unpublished report prepared for Kellogg Brown and Root (KBR) Pty Ltd on behalf of Griffin Coal Mining Company Pty Ltd.

Bancroft, W. J. and Bamford, M. J. (2007). Fauna survey of Griffin Coal's Buckingham site, September 2006. Unpublished report to Griffin Coal Mining Co Pty Limited.

Bancroft, W.J. Metcalf, B.M. and Bamford, M.J (2007). Fauna values of Griffin Coal's proposed Ewington conveyor alignment. Unpublished report prepared for The Griffin Group.

Bancroft, W.J. and Bamford, M.J (2008). Inspection of Griffin Coal's proposed Ewington powerline clearing zones for Black-Cockatoo nesting activity, August 2008. Unpublished report prepared for The Griffin Group.

Barrett, G., Silcocks, A., Barry, S., Cunningham, R. and Poulter, R. (2003). The New Atlas of Australian Birds. Royal Australasian Ornithologists Union, Victoria.

Burbidge A.A, & de Tores P. (1997). Western Ringtail Possum Interim Recovery Plan 1997-1999. Department of Conservation and Land Management, Perth Western Australia.

Burbidge, A. (1997-98). Endangered: Western Ringtail Possum. LANDSCOPE 13(2): 49.



Bush, B., Maryan, B., Browne-Cooper, R. & Robinson, D. (2002). Reptiles and Frogs of the Perth Region. UWA Press, Nedlands.

Bush, B., Maryan, B., Browne-Cooper, R. & Robinson, D. (2007). Reptiles and Frogs in the Bush: Southwestern Australia. UWA Press, Nedlands.

Bush, B., Maryan, B., Browne-Cooper, R. & Robinson, D. (2010). Reptiles and Frogs of the Perth Region. UWA Press, Nedlands.

Cale, B. (2003). Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan 2002-2012. CALM, Wanneroo.

CALM (2005). Fauna Note No. 05/2005 Carnaby's Cockatoo, Written by Tamra Chapman, Belinda Cale and Marion Massam. CALM, Wanneroo.

Christidis, I. and Boles, W.E. (1994). The Taxonomy and Species of Birds of Australia and its Territories. RAOU, Monograph 2.

Christidis, L. and Boles, W.E. (2008). Systematics and Taxonomy of Australian Birds. CSIRO Publishing, Melbourne.

Churchill, S. (2008). Australian Bats. Second Edition, Allen & Unwin.

Coffey Environments (2008). Fauna Relocation Program at Ewington Mine Site, Collie. Unpublished letter report prepared for The Griffin Coal Mining Company Pty Ltd by Coffey Environments. May 2008.

Cogger, H.G. (2014). Reptiles and Amphibians of Australia. 7th Edition. CSIRO Publishing.

Christensen, P., Annels, A., Liddelow, G. and Skinner, P. (1985). Vertebrate Fauna in The Southern Forests of Western Australia, A Survey. Forest Dept. of Western Australia, Bull. No. 94. Perth.

de Tores, P. (2008). Western Ringtail Possum *Pseudocheirus occidentalis* pp 253-255 in Van Dyck, S. & Strahan R. (eds). (2008). The Mammals of Australia. Queensland Museum / Reed Books.

de Tores, P., Rosier, S. & Paine, G. (1998). Conserving the Western Ringtail Possum. LANDSCOPE 13(4): 28.

de Tores, P., Hayward, M. W. & Rosier, S.M. (2004). The western ringtail possum *Pseudocheirus occidentalis* and the quokka, *Setonix brachyurus*, case studies: Western Shield review- February 2003. Conservation Science W. Aust 5 (2): 235-257.



de Tores, P., Rosier, S. Jackson, J., Clarke, J & Aravidis, L. (2008). Working to Conserve the Western Ringtail Possum. *LANDSCOPE* 25(4): 55-60.

Dell, J. (2000). A draft summary assessment of the fauna values of the Kemerton Bushland. Unpublished report for the Conservation Branch, Policy Division, Department of Environmental Protection.

Dell, J., & Hyder-Griffiths, B. (2002). A Description of the Fauna Values of the Muddy Lakes Area of the South Bunbury to Capel Coastal Corridor. Department of Environmental Protection, Perth.

Department of Conservation and Land Management (CALM (1994). Chuditch Recovery Plan 1992-2001, by Peter Orell and Keith Morris for the Chuditch Recovery Team.

Department of Environment and Conservation (DEC) (2007a). Karrak-watch: A summary of information about the Forest red-tailed black cockatoo, <http://www.dec.wa.gov.au/our-environment/science-and-research/animal-conservation-research/2384-karrak-watch-the-forest-red-tailed-black-cockatoo.html>

Department of Environment and Conservation (DEC) (2007b). Forest Black Cockatoo (Baudin's Cockatoo - *Calyptorhynchus baudinii*) and Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) Recovery Plan. DEC.

Department of Environment and Conservation (DEC) (2012a). Chuditch (*Dasyurus geoffroii*) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia.

Department of Environment and Conservation (DEC) (2012b). Carnaby's cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Department of Environment and Conservation, Perth, Western Australia.

Department of Parks and Wildlife (DPaW) (2014a). Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

Department of Parks and Wildlife (DPaW) (2014b). Threatened and Priority Fauna Rankings. 3 December 2014.

Department of Parks and Wildlife (DPaW) (2014c). NatureMap Database search. "By Circle" 116°27' 35" E, 33°25' 17" S – Study area (plus 20 km buffer). Accessed 20/12/2014.

Department of the Environment (DotE) (2013). Matters of National Environmental Significance. Significant Impact Guidelines 1.1, *EPBC Act 1999*.



Department of the Environment (DotE) (2014). *EPBC Act Protected Matters Report: Point Search -33.42133 116.46005 (0km Buffer)* Available from: <http://www.environment.gov.au>. Accessed 20/12/14 @ 13:32:57.

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2009). Environment Protection and Biodiversity Conservation Act 1999 (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”.

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

Ecologia (1991). Ewington Consultative Environmental Review: Fauna Survey. Prepared for Halpern Glick Maunsell on behalf of Griffin Coal Mining Company. January 1991.

Environmental Protection Authority (EPA) (2002). Terrestrial Biological Surveys As An Element of Biodiversity Protection. Position Statement No. 3. EPA, Perth.

Environmental Protection Authority (EPA) (2004). Guidance for the Assessment of Environmental Factors - Terrestrial fauna surveys for environmental impact assessment in Western Australia. Guidance Statement No 56 EPA, Perth.

Environmental Protection Authority (EPA) and Department of Environment and Conservation (DEC) (2010). Technical Guide – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessments (eds B.M. Hyder, J. Dell and M.A. Cowan), Perth Western Australia.

GHD (2008). Collie Shotts Industrial Park, Spring Flora, Fauna and Wetland Assessment. Unpublished report for LandCorp.

GHD (2009). Level 1 Fauna Assessment - Collie Urea Project. Unpublished report for Perdaman Industries.

Glauret, L. (1961). A Handbook of the Lizards of Western Australia. Handbook 6, Western Australian Naturalists Club, Perth.

Government of Western Australia (1998). Perth Bushplan



Government of Western Australia (2000a). Bush Forever Volume 1. Policies, Principles and Processes. Department of Environmental Protection Perth, Western Australia.

Government of Western Australia (2000b). Bush Forever Volume 2. Directory of Bush Forever Sites. Department of Environmental Protection Perth, Western Australia.

Government of Western Australia (2014). *Wildlife Conservation Act 1950*. Wildlife Conservation (Specially Protected Fauna) Notice 2014. Government Gazette, WA. 2 December 2014.

Griffin Coal (2008). Ewington Mining Operations Environmental Management Programme - Fauna Management Plan.

Halpern Glick Maunsell (1994). Notice of Intent for: Ewington II Open-Cut Mine. Prepared on behalf of the Griffin Coal Mining Company Pty Ltd. July 1994.

Halpern Glick Maunsell (2002). South West Project Strategic Environmental Review. Unpublished report for Griffin Energy.

Harewood, G. (2010). Fauna Survey (Level 2) - Buckingham Way - Collie - Residential Development. Unpublished report for Strategen.

Harewood, G. (2013). Fauna Assessment - Coalfields Highway Realignment (15.9 SLK to 26.3 SLK) Allanson. Unpublished report for RPS/MRWA.

Harvey, M. S. (2002). Short-range endemism among the Australian fauna: some examples from non-marine environments. *Invertebrate Systematics* 16: 555-570.

How, R., Cooper, N.K. and Bannister, J.L. (2001). Checklist of the mammals of Western Australia, Records of the Western Australian Museum Supplement No. 63, 91-98.

How, R.A., Dell, J., and Humphreys, W. F. (1987). The ground vertebrate fauna of coastal areas between Busselton and Albany, Western Australia. Records of the Western Australian Museum 13(4):553-574.

Johnstone, R.E. (2001). Checklist of the birds of Western Australia, Records of the Western Australian Museum Supplement No. 63, 75-90.

Johnstone, R. E. & Kirkby, T. (2008). Distribution, status, social organisation, movements and conservation of Baudin's Cockatoo (*Calyptorhynchus baudinii*) in South-west Western Australia. Records of the WA Museum 25: 107-118 (2008).



Johnstone, R. E. & Kirkby, T. (2011). Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on the Swan Coastal Plain (Lancelin–Dunsborough), Western Australia. Studies on distribution, status, breeding, food, movements and historical changes. Report for the Department of Planning, Western Australia.

Johnstone, R.E. and Storr, G.M. (1998). Handbook of Western Australian Birds: Volume 1 – Non-passerines (Emu to Dollarbird). Western Australian Museum, Perth Western Australia.

Johnstone, R. E. and Storr, G.M. (2004). Handbook of Western Australian Birds: Volume 2 – Passerines (Blue-winged Pitta to Goldfinch). Western Australian Museum, Perth Western Australia.

Jones, B.A., R.A. How & D.J. Kitchener (1994a). A field study of *Pseudocheirus occidentalis* (Marsupialia: Petauridae). II. Distribution and habitat. Population studies in *Wildlife Research* 21: Page(s) 175-187.

Jones, B.A., R.A. How & D.J. Kitchener (1994b). A field study of *Pseudocheirus occidentalis* (Marsupialia: Petauridae). II. Population studies in *Wildlife Research* 21: Page(s) 189-201.

Jones, B. (1995). Western Ringtail Possum. In R. Strahan (Ed.) The Mammals of Australia. Australian Museum and Reed Books. Chatswood, NSW.

Jones, B., Henry, J., and Francesconi, M. (2007). An important local population of the Western Ringtail Possum *Pseudocheirus occidentalis*: a 2006 survey study of the population and habitat in the Busselton localities of Siesta Park and Kealy. Unpublished report for GeoCatch, Busselton, W.A.

Keighery, B. J. (1994). Bushland Plant Survey: a Guide to Plant Community Surveys for the Community. Wildflower Society of Western Australia (Inc.) Nedlands, Western Australia.

Maunsell (2003). Bluewater's Power Station Flora and Fauna Survey. Unpublished report for Griffin Energy.

Maunsell (2004). Ewington I Open-Cut Mine: Environmental Management Programme. Prepared for Griffin Coal Mining Company, May 2004.

Maxwell S., Burbidge A. A & Morris K. (1996). The 1996 Action Plan for Australian Marsupials and Monotremes. Wildlife Australia, Canberra.



McKenzie, N.L., May, J.E. and McKenna, S. (eds) (2002). 2002 Biodiversity Audit of Western Australia. Department of Conservation and Land Management, Perth.

Menkhorst, P. and Knight, F. (2011). A Field Guide to the Mammals of Australia. Oxford University Press, Melbourne.

Morcombe, M. (2004). Field Guide to Australian Birds. Steve Parish Publishing, Archerfield, Queensland.

Morgan, D.L., Beatty, S.J., Klunzinger, M.W, Allen, M.G. and Burnham, Q.E (2011). Field Guide to the Freshwater Fishes, Crayfishes and Mussels of South Western Australia. Published by SERCUL.

Morgan, D.L., Gill, H.S. & Potter, I.C. (1996). Distribution of freshwater fish in the south-western Corner of Australia. Water Resource Technical Series. Water and Rivers Commission Report WRT4 1996.

Morgan, D.L., Gill, H.S. & Potter, I.C. (1998). Distribution, identification and biology of freshwater fishes in south-western Australia. Records of the Western Australian Museum. Supplement No. 56: 97 pp.

Nevill, S (ed) (2005). Guide to the Wildlife of the Perth Region. Simon Nevill Publications, Perth.

Pizzey, G & Knight, F. (2012). The field guide to the birds of Australia. 9th Edition. Harper Collins, Sydney.

Saunders, D. (1980). Food and Movements of the Short-billed Form of the White-tailed Black Cockatoo. Aust. Wildl. Res. 7(1980) pp. 257-269.

Shah, B. (2006). Conservation of Carnaby's Black Cockatoo on the Swan Coastal Plain, Western Australia. Birds Australia, Perth.

Simpson, K. and Day, N. (2010). Field Guide to the Birds of Australia. Penguin Books, Ringwood.

Sorena M. and T. Soderquist (1995). Western Quoll *Dasyurus geoffroyi*. pp 62-64 in Strahan R. (ed). (1995). The Mammals of Australia. Australian Museum / Reed Books.

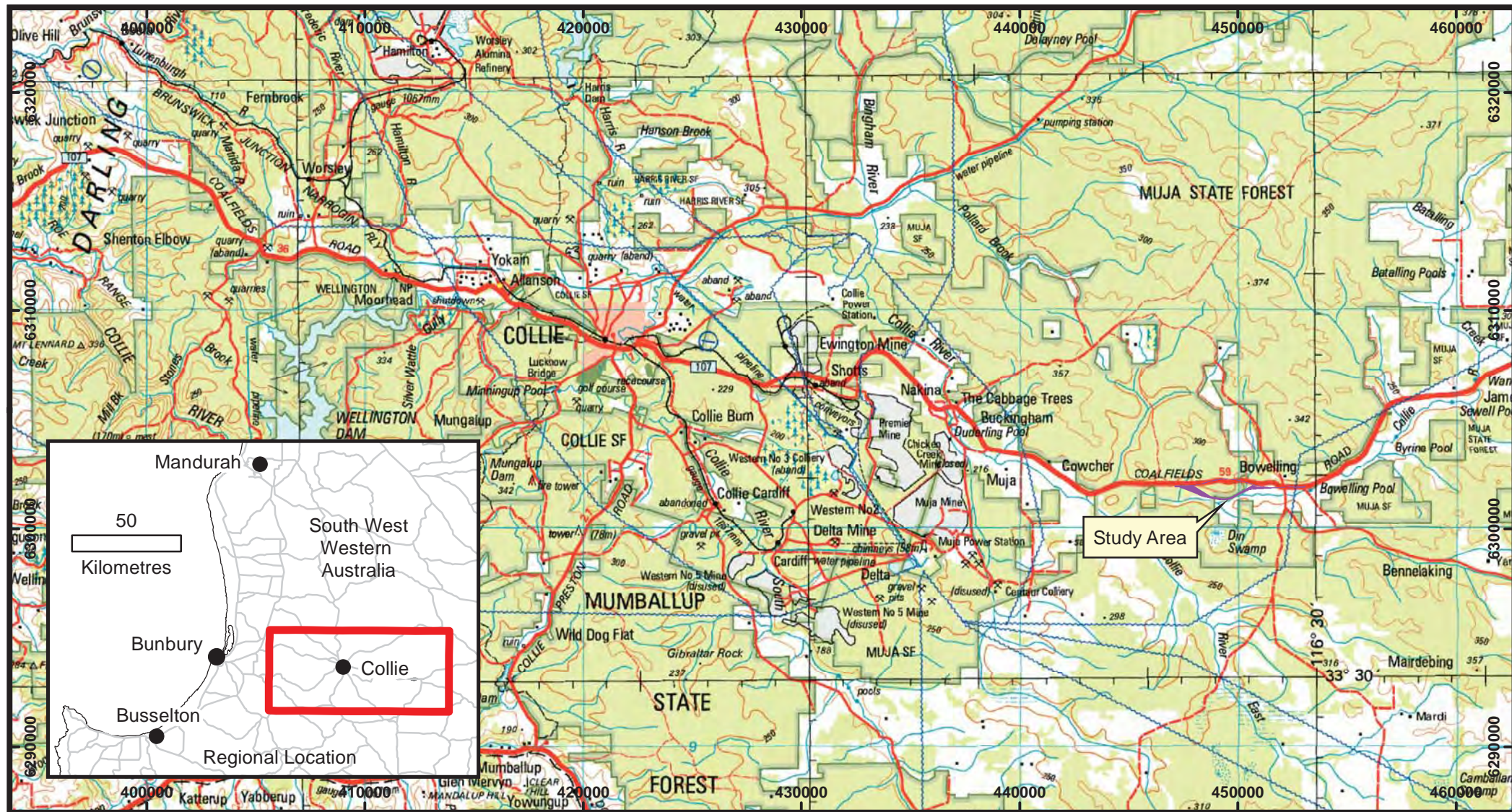
Soderquist T. (1995). Brush-tailed Phascogale *Phascogale tapoatafa*. pp 104-106 in Strahan R. (ed). (1995). The Mammals of Australia. Australian Museum / Reed Books.




- Storr, G.M., Smith, L.A. and Johnstone R.E. (1983). Lizards of Western Australia II: Dragons and Monitors. WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (1990). Lizards of Western Australia III: Geckos and Pygopods. WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (1999). Lizards of Western Australia I: Skinks. Revised Edition, WA Museum, Perth.
- Storr, G.M., Smith, L.A. and Johnstone R.E. (2002). Snakes of Western Australia. Revised Edition, WA Museum, Perth.
- Tonga, J. (2008). Ewington Mine Micro Bat Survey. Unpublished report prepared for Griffin Coal Mining Company by Natsync Environmental. May 2008.
- Tyler M.J. & Doughty P. (2009). Field Guide to Frogs of Western Australia, Fourth Edition, WA Museum, Perth.
- Tyler M.J., Smith L.A. and Johnstone R.E. (2000). Frogs of Western Australia, Revised Edition, WA Museum, Perth.
- Thackway, R. and Cresswell, I.D. (1995). An Interim Biogeographic Regionalisation for Australia. Australian Nature Conservation Agency, Canberra.
- Van Dyck, S., Gynther, I. & Baker, A. Eds (2013). Field Companion to The Mammals of Australia. Queensland Museum.
- Van Dyck, S. & Strahan, R. Eds (2008). The Mammals of Australia. Third edition Queensland Museum.
- Wayne, A.F., Rooney J. F., Ward C. G., Vellios V.C., and Lindenmayer D.B. (2005). The life history of *Pseudocheirus occidentalis* (Pseudocheiridae) in the jarrah forest of south-western Australia. Australian Journal of Zoology 53, 325-337.
- Wilson, S. and Swan, G. (2013). A Complete Guide to Reptiles of Australia. Reed, New Holland, Sydney.
- Woinarski, J., Burbidge, A. & Harrison, P. (2014). The Action Plan for Australian Mammals 2012. CSIRO Publishing.

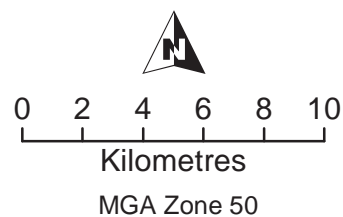


FIGURES



Legend

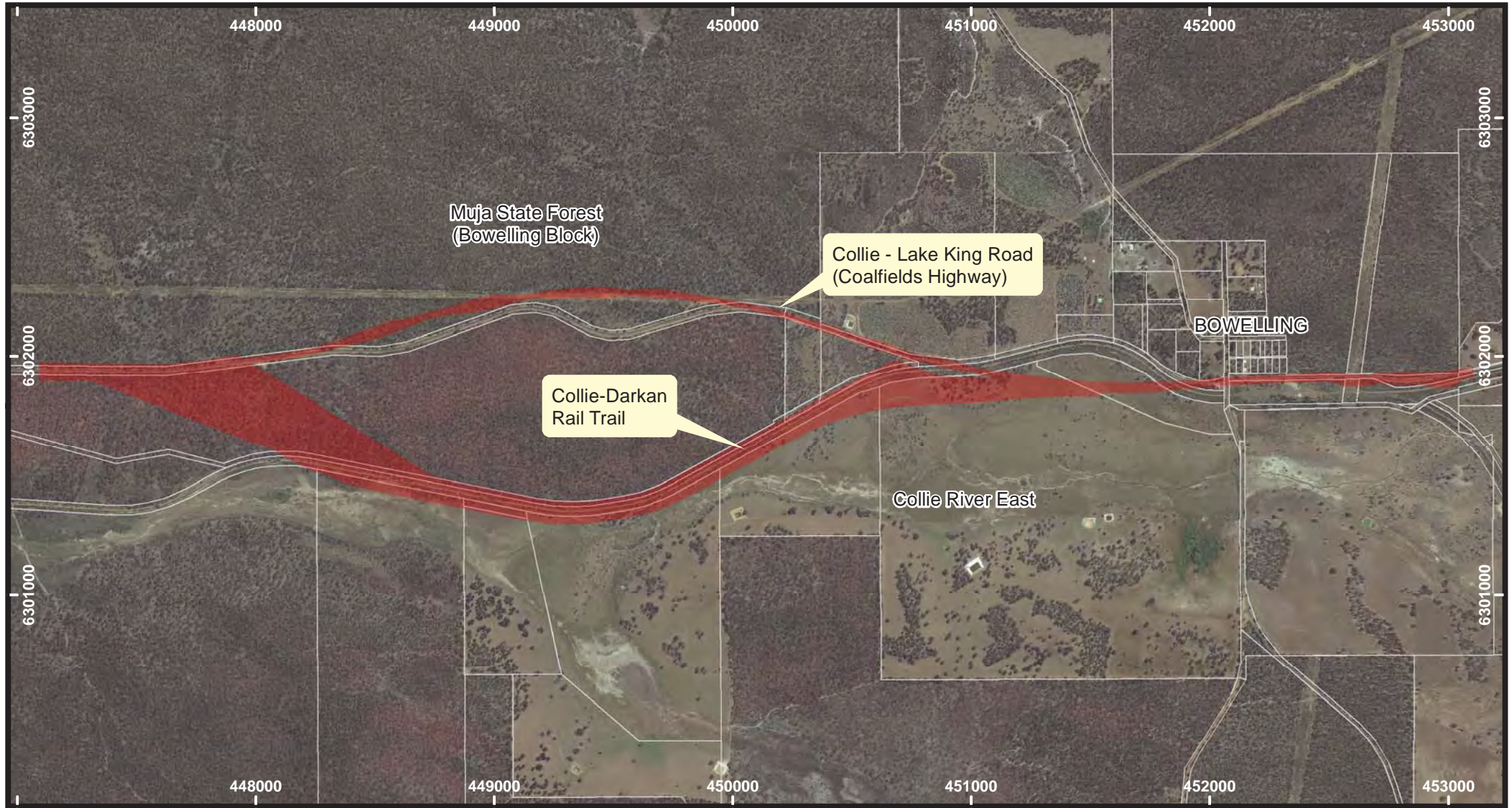
 Study Area



DRAWN: G Harewood
DATE: Dec 2014
SCALE: 1: 250,000

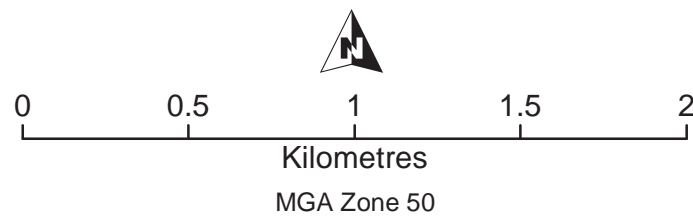
Bowelling Curves
(SLK 64.5-71.0)

Study Area and Surrounds



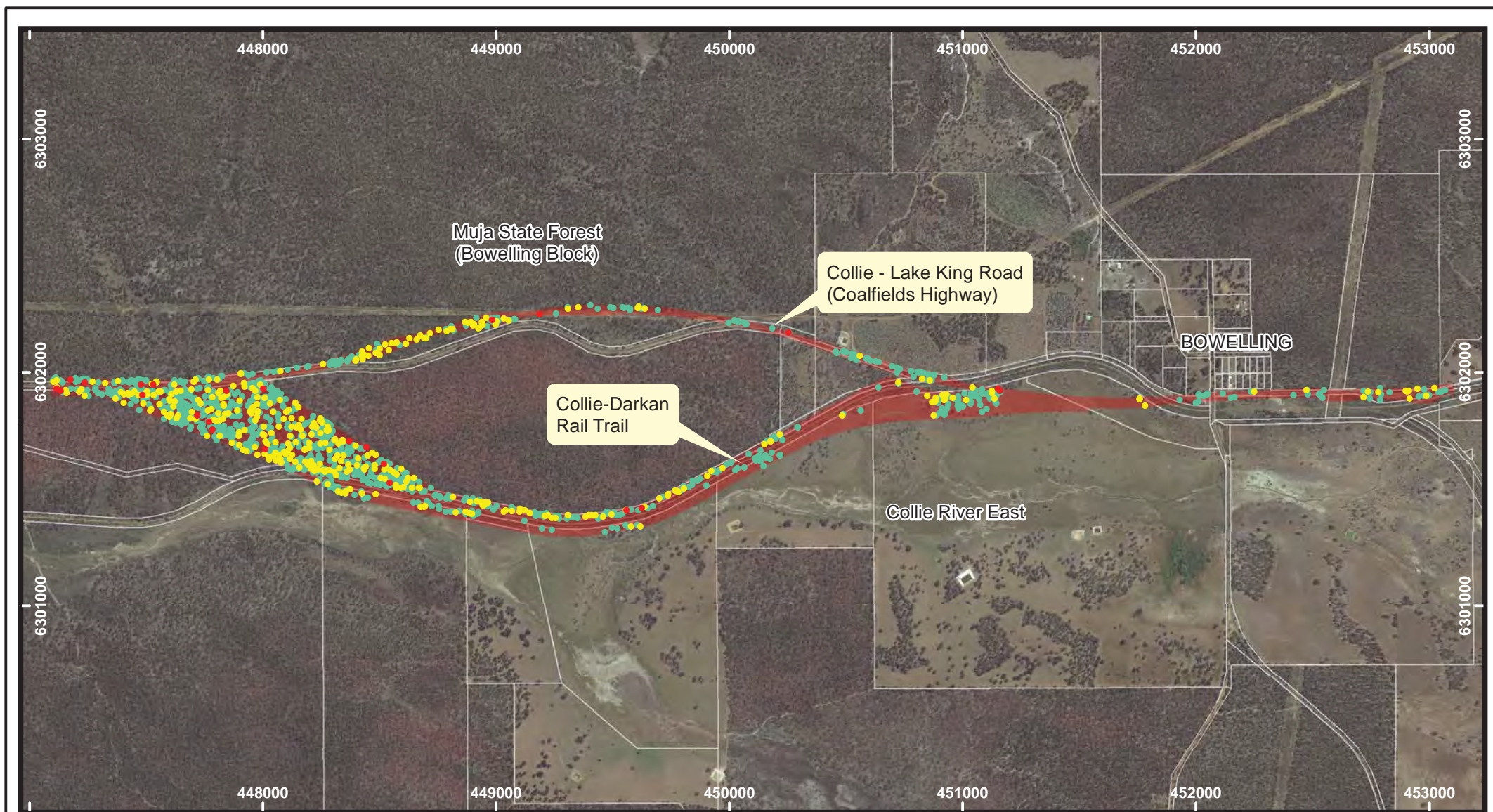
Legend

Study Area



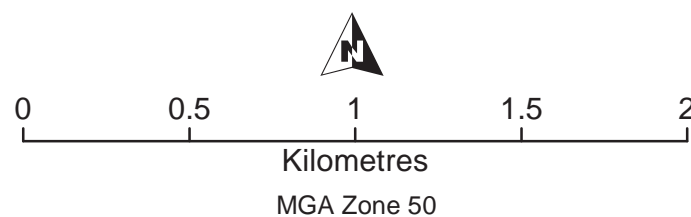
**Bowelling Curves
(SLK 64.5-71.0)**

**Study Area
Air Photo**



Legend

- Study Area
- No Hollows Seen (945)
- One or More Hollows - Unsuitable for Black Cockatoo (379)
- One or More Hollows - Possibly Suitable for Black Cockatoo (24)



Bowelling Curves
(SLK 64.5-71.0)

Habitat Trees
(DBH >50cm)
(>30cm for wandoo)

Figure: 3

APPENDIX A

CONSERVATION CATEGORIES

EPBC Act (1999) Threatened Fauna Categories

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

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

Western Australian Wildlife Conservation Act (1950) Threatened Fauna Categories

Category	Code	Description
Schedule 1	S1	<p>Threatened Fauna (Fauna that is rare or is likely to become extinct). Taxa that have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.</p> <p>Threatened fauna (Schedule 1) are further ranked by the DPaW according to their level of threat using IUCN Red List criteria:</p> <p>CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.</p> <p>EN: Endangered - considered to be facing a very high risk of extinction in the wild.</p> <p>VU: Vulnerable - considered to be facing a high risk of extinction in the wild.</p>
Schedule 2	S2	<p>Fauna that is presumed to be extinct. Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such.</p>
Schedule 3	S3	<p>Migratory birds protected under an international agreement. Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), relating to the protection of migratory birds.</p>
Schedule 4	S4	<p>Other specially protected fauna. Fauna that is in need of special protection, otherwise than for the reasons mentioned in the above schedules.</p>

A list of the current rankings can be downloaded from the Parks and Wildlife Threatened Species and Communities webpage at

<http://dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/>

Western Australian DPaW Priority Fauna Categories

Category	Code	Description
Priority 1	P1	Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2	P2	Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	P3	Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Priority 4	P4	<p>(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>
Priority 5	P5	Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

*Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies, variety or forma).

IUCN Red List Threatened Species Categories

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

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

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

APPENDIX B

FAUNA OBSERVED OR POTENTIALLY IN STUDY AREA

Fauna Observed or Potentially in Study Area

Bowelling Curves" (SLK 64.5-71), Shire of West Arthur, W.A.

Compiled by Greg Harewood - December 2014

Recorded (Trapped/Sighted/Heard/Signs) = X

Approx Centroid -33.421554°S and 116.459834°E

A = Harewood, G. (2013b). Fauna Assessment Collie Lake King Road, Bowelling Curves (SLK 64.5 - 71), Shire of West Arthur. Unpublished report for MRWA.

B = Harewood, G. (2013a). Fauna Assessment Coalfields Highway Realignment (15.9 SLK to 26.3 SLK), Allanson. Unpublished report for RPS.

C = Harewood, G. (2010). Fauna Survey (Level 2) Buckingham Way, Collie. Unpublished report for Stategen.

D = Ecologia (1991). Ewington Consultative Environmental Review: Fauna Survey. Unpublished report for HGM.

HGM (1994). Notice of Intent for: Ewington II Open-Cut Mine. Unpublished report for Griffin Coal Mining Company Pty Ltd.

Bancroft, W. et al. (2006). Fauna survey of Griffin Coal's Ewington II and Buckingham sites. Unpublished report for KBR Pty Ltd.

Bancroft, W. J. and Bamford, M. J. (2007). Fauna survey of Griffin Coal's Buckingham site. Unpublished report to Griffin Coal Mining Co Pty Limited.

Bancroft, W.J. and Bamford, M.J (2008). Inspection of Griffin Coal's proposed Ewington powerline clearing zones for Black-Cockatoo nesting activity. Unpublished report for The Griffin Group.

Coffey Environments (2008). Fauna Relocation Program at Ewington Mine Site, Collie. Unpublished letter report prepared for The Griffin Coal Mining Company Pty Ltd.

Tonga, J. (2008). Ewington Mine Micro Bat Survey. Unpublished report for Griffin Coal Mining Company.

E = GHD (2009). Level 1 Fauna Assessment - Collie Urea Project. Unpublished report for Perdaman Industries.

F = GHD (2008). Collie Shotts Industrial Park, Spring Flora, Fauna and Wetland Assessment. Unpublished report for LandCorp.

G = Bancroft, W. and Bamford, M. (2006). Fauna Survey of the Muja South Extension Project. Unpublished report for Griffin Coal.

H = DPaW (2014). NatureMap Database search. "By Circle" 116°27' 35" E, 33°25' 17" S – Study area (plus 10 km buffer). 20 December 2014.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Fish										
Percichthyidae										
Basses and Cods										
<i>Bostockia porosa</i>	Nightfish									X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Galaxiidae Galaxiids										
<i>Galaxias occidentalis</i>	Western Minnow									X
Nannopercidae Pygmy Perches										
<i>Edelia vittata</i>	Western Pygmy Perch									X
Poeciliidae Livebearers										
<i>Gambusia holbrooki</i>	Mosquito Fish	Introduced	X							

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Amphibians										
Myobatrachidae Ground or Burrowing Frogs										
<i>Crinia georgiana</i>	Quacking Frog	LC				X		X	X	X
<i>Crinia glauerti</i>	Glauert's Froglet	LC				X	X	X	X	X
<i>Crinia pseudinsignifera</i>	Bleating Froglet	LC	X				X	X		X
<i>Geocrinia leai</i>	Lea's Frog	LC					X	X		X
<i>Heleioporus barycragus</i>	Western Marsh Frog	LC							X	X
<i>Heleioporus eyrei</i>	Moaning Frog	LC				X			X	X
<i>Heleioporus inornatus</i>	Whooping Frog	LC				X			X	X
<i>Heleioporus psammophilus</i>	Sand Frog	LC				X	X		X	X
<i>Limnodynastes dorsalis</i>	Banjo Frog	LC				X			X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
<i>Pseudophryne guentheri</i>	Güenther's Toadlet	LC							X	X
Hylidae Tree or Water-Holding Frogs										
<i>Litoria adelaidensis</i>	Slender Tree Frog	LC							X	X
<i>Litoria moorei</i>	Motorbike Frog	LC							X	X
Reptiles										
Gekkonidae Geckoes										
<i>Christinus marmoratus</i>	Marbled Gecko									X
<i>Diplodactylus polyophthalmus</i>	Speckled Stone Gecko					X				X
<i>Underwoodisaurus milii</i>	Barking Gecko									X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Pygopodidae Legless Lizards										
<i>Aprasia pulchella</i>	Pretty Worm Lizard					X			X	X
<i>Aprasia repens</i>	Sand-plain Worm Lizard					X			X	X
<i>Lialis burtonis</i>	Common Snake Lizard					X				X
<i>Pygopus lepidopodus</i>	Southern Scalefoot									X
Agamidae Dragon Lizards										
<i>Pogona minor</i>	Western Bearded Dragon					X			X	
Varanidae Monitor's or Goanna's										
<i>Varanus gouldii</i>	Gould's Sand Monitor					X			X	X
<i>Varanus rosenbergi</i>	Heath Monitor					X			X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Scincidae Skinks										
<i>Acritoscincus trilineatum</i>	South-western Cool Skink					X			X	
<i>Cryptoblepharus buchananii</i>	Fence Skink		X	X		X			X	X
<i>Ctenotus catenifer</i>	Chain-striped Heath Ctenotus									
<i>Ctenotus impar</i>	South-western Odd-striped Ctenotus					X			X	X
<i>Ctenotus labillardieri</i>	Red-legged Skink					X				X
<i>Egernia kingii</i>	King's Skink									
<i>Egernia napoleonis</i>	Salmon-bellied Skink			X		X			X	X
<i>Egernia pulchra</i>	Spectacled Rock Skink									
<i>Hemiergis gracilipes</i>	Southwestern Mulch Skink					X				X
<i>Hemiergis initialis</i>	Five-toed Earless Skink									X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
<i>Hemiergis peronii peronii</i>	Four-toed Mulch Skink									X
<i>Lerista distinguenda</i>	South-western Four-toed Lerista			X		X			X	X
<i>Lerista microtis microtis</i>	Southwestern Five-toed Lerista									
<i>Menetia greyii</i>	Dwarf Skink					X			X	X
<i>Morethia obscura</i>	Dusky Morethia			X		X			X	X
<i>Tiliqua rugosa rugosa</i>	Western Bobtail		X	X	X	X		X	X	
Typhlopidae Blind Snakes										
<i>Ramphotyphlops australis</i>	Southern Blind Snake					X			X	X
<i>Ramphotyphlops pinguis</i>	Stout Blind Snake									X
Boidae Pythons, Boas										
<i>Morelia spilota imbricata</i>	Southern Carpet Python	S4 NT								

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Elapidae Elapid Snakes										
<i>Echiopsis curta</i>	Bardick									
<i>Elapognathus coronatus</i>	Crowned Snake									
<i>Neelaps bimaculatus</i>	Black-naped Snake									
<i>Notechis scutatus</i>	Tiger Snake							X	X	X
<i>Parasuta gouldii</i>	Gould's Hooded Snake						X		X	X
<i>Parasuta nigriceps</i>	Black-backed Snake									X
<i>Pseudonaja affinis</i>	Dugite		X			X		X	X	X
<i>Simoselaps bertholdi</i>	Jan's Banded Snake									X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Birds										
Casuariidae Emus, Cassowaries										
<i>Dromaius novaehollandiae</i>	Emu	Bp LC	X						X	X
Phasianidae Quails, Pheasants										
<i>Coturnix pectoralis</i>	Stubble Quail	LC	X							X
<i>Coturnix ypsilophora</i>	Brown Quail	LC							X	
Anatidae Geese, Swans, Ducks										
<i>Anas gracilis</i>	Grey Teal	LC	X						X	X
<i>Anas superciliosa</i>	Pacific Black Duck	LC				X	X	X	X	X
<i>Chenonetta jubata</i>	Australian Wood Duck	LC				X		X	X	X
<i>Tadorna tadornoides</i>	Australian Shelduck	LC	X						X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Ardeidae Herons, Egrets, Bitterns										
<i>Ardea alba</i>	Great Egret	S3 Mig CA JA								X
<i>Ardea ibis</i>	Cattle Egret	S3 Mig CA JA								
<i>Ardea pacifica</i>	White-necked Heron	LC							X	X
<i>Egretta novaehollandiae</i>	White-faced Heron	LC	X			X			X	

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Accipitridae Kites, Goshawks, Eagles, Harriers										
<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk	Bp LC	X	X					X	X
<i>Accipiter fasciatus</i>	Brown Goshawk	Bp LC				X			X	X
<i>Aquila audax</i>	Wedge-tailed Eagle	Bp LC	X	X		X			X	X
<i>Aquila morphnoides</i>	Little Eagle	Bp LC		X		X			X	
<i>Circus approximans</i>	Swamp Harrier	LC							X	X
<i>Elanus caeruleus</i>	Black-shouldered Kite	LC		X		X				X
<i>Haliastur sphenurus</i>	Whistling Kite	Bp LC								X
<i>Hamirostra isura</i>	Square-tailed Kite	Bp LC								

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Falconidae Falcons										
<i>Falco berigora</i>	Brown Falcon	Bp LC							X	X
<i>Falco cenchroides</i>	Australian Kestrel	LC				X			X	X
<i>Falco longipennis</i>	Australian Hobby	LC								X
<i>Falco peregrinus</i>	Peregrine Falcon	S4 Bp LC								X
Turnicidae Button-quails										
<i>Turnix varia</i>	Painted Button-quail	Bp LC				X				
<i>Turnix velox</i>	Little Button-quail	LC				X				
Charadriidae Lapwings, Plovers, Dotterels										
<i>Charadrius melanops</i>	Black-fronted Dotterel					X			X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Columbidae Pigeons, Doves										
<i>Ocyphaps lophotes</i>	Crested Pigeon	LC							X	X
<i>Phaps chalcoptera</i>	Common Bronzewing	Bh LC	X	X	X	X	X	X	X	X
Cacatuidae Cockatoos, Corellas										
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo	S1 VU Be VU A2c+3c+4c	X	X	X	X	X		X	X
<i>Calyptorhynchus baudinii</i>	Baudin`s Black-Cockatoo	S1 VU Bp VU C2a(ii)		X	X	X	X	X		X
<i>Calyptorhynchus latirostris</i>	Carnaby`s Black-Cockatoo	S1 EN Bp EN A2bcde+3bcd	X	X		X	X		X	X
<i>Eolophus roseicapilla</i>	Galah	LC			X	X				

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Psittacidae Parrots										
<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	LC	X						X	X
<i>Neophema elegans</i>	Elegant Parrot	LC	X			X			X	X
<i>Platycercus icterotis icterotis</i>	Western Rosella (Western ssp)	Bp LC		X		X	X	X		X
<i>Platycercus spurius</i>	Red-capped Parrot	LC	X		X	X	X	X	X	X
<i>Platycercus zonarius</i>	Australian Ringneck Parrot	LC	X	X	X	X	X	X	X	X
<i>Polytelis anthopeplus</i>	Regent Parrot	LC								X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Cuculidae Parasitic Cuckoos										
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	LC	X			X		X	X	X
<i>Chrysococcyx basalis</i>	Horsfield's Bronze Cuckoo	LC				X			X	
<i>Chrysococcyx lucidus</i>	Shining Bronze Cuckoo	LC	X		X	X			X	X
<i>Cuculus pallidus</i>	Pallid Cuckoo	LC				X		X	X	
Strigidae Hawk Owls										
<i>Ninox novaeseelandiae</i>	Boobook Owl	LC		X		X				X
Tytonidae Barn Owls										
<i>Tyto alba</i>	Barn Owl	LC								X
<i>Tyto n. novaehollandiae</i>	Masked Owl (SW population)	P3 Bp								

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Podargidae Frogmouths										
<i>Podargus strigoides</i>	Tawny Frogmouth	LC				X			X	X
Aegothelidae Owlet-nightjars										
<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	LC							X	
Halcyonidae Tree Kingfishers										
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	Introduced	X	X	X	X	X	X	X	X
<i>Todiramphus sanctus</i>	Sacred Kingfisher	LC	X			X		X	X	X
Meropidae Bee-eaters										
<i>Merops ornatus</i>	Rainbow Bee-eater	S3 Mig JA LC		X		X			X	X
Climacteridae Treecreepers										
<i>Climacteris rufa</i>	Rufous Treecreeper	Bh	X	X		X				X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Maluridae Fairy Wrens, GrassWrens										
<i>Malurus elegans</i>	Red-winged Fairy-wren	Be LC		X	X	X				X
<i>Malurus splendens</i>	Splendid Fairy-wren	Bh LC	X	X		X	X	X	X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Pardalotidae Pardalotes, Bristlebirds, Scrubwrens, Gerygones, Thornbills										
<i>Acanthiza apicalis</i>	Broad-tailed Thornbill	Bh LC	X	X	X	X	X		X	X
<i>Acanthiza chrysorrhoa</i>	Yellow-rumped Thornbill	Bh LC	X	X		X		X	X	X
<i>Acanthiza inornata</i>	Western Thornbill	Bh LC	X	X	X	X			X	X
<i>Gerygone fusca</i>	Western Gerygone	LC	X	X	X	X	X	X	X	X
<i>Pardalotus punctatus</i>	Spotted Pardalote	LC			X	X			X	X
<i>Pardalotus striatus</i>	Striated Pardalote	LC	X		X	X			X	X
<i>Sericornis frontalis</i>	White-browed Scrubwren	Bh LC		X		X		X	X	X
<i>Smicrornis brevirostris</i>	Weebill	Bh LC	X		X	X	X	X	X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Meliphagidae Honeyeaters, Chats										
<i>Acanthorhynchus superciliosus</i>	Western Spinebill	LC	X	X	X	X			X	X
<i>Anthochaera carunculata</i>	Red Wattlebird	LC	X	X	X	X	X	X	X	X
<i>Anthochaera lunulata</i>	Western Little Wattlebird	Bp	X						X	X
<i>Lichenostomus ornatus</i>	Yellow-plumed Honeyeater	Bh LC	X							
<i>Lichenostomus virescens</i>	Singing Honeyeater	LC	X			X			X	
<i>Lichmera indistincta</i>	Brown Honeyeater	LC	X	X	X	X	X	X	X	X
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	LC								X
<i>Melithreptus chloropsis</i>	Western White-naped Honeyeater	LC		X						X
<i>Phylidonyris melanops</i>	Tawny-crowned Honeyeater	Bp LC				X		X		
<i>Phylidonyris nigra</i>	White-cheeked Honeyeater	Bp LC								

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	Bp LC	X		X	X		X	X	X
Petroicidae Australian Robins										
<i>Eopsaltria australis</i>	Western Yellow Robin	Bh LC		X			X		X	X
<i>Eopsaltria georgiana</i>	White-breasted Robin	Bh LC		X						X
<i>Microeca fascinans</i>	Jacky Winter	LC					X			X
<i>Petroica cucullata</i>	Hooded Robin	Bh				X				
<i>Petroica goodenovii</i>	Red-capped Robin	LC				X				X
<i>Petroica multicolor</i>	Scarlet Robin	Bh LC	X	X	X	X	X		X	X
Pomatostomidae Babblers										
<i>Pomatostomus superciliosus ashbyi</i>	White-browed Babbler									

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Neosittidae										
Sitellas										
<i>Daphoenositta chrysoptera</i>	Varied Sittella	Bh LC		X	X	X			X	X
Pachycephalidae										
Crested Shrike-tit, Crested Bellbird, Shrike Thrushes, Whistlers										
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	Bh LC	X	X		X	X	X	X	X
<i>Falcunculus frontatus leucogaster</i>	Western Shrike-tit	Be								
<i>Pachycephala pectoralis</i>	Golden Whistler	Bh LC	X	X	X	X	X		X	X
<i>Pachycephala rufiventris</i>	Rufous Whistler	LC			X	X			X	X
Dicruridae										
Monarchs, Magpie Lark, Flycatchers, Fantails, Drongo										
<i>Grallina cyanoleuca</i>	Magpie-lark	LC	X	X	X	X	X		X	X
<i>Rhipidura fuliginosa</i>	Grey Fantail	LC	X	X	X	X	X	X	X	X
<i>Rhipidura leucophrys</i>	Willie Wagtail	LC		X	X	X	X	X	X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Campephagidae Cuckoo-shrikes, Trillers										
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	LC	X	X	X	X	X	X	X	X
<i>Lalage sueurii</i>	White-winged Triller	LC				X				
Artamidae Woodswallows, Butcherbirds, Currawongs										
<i>Artamus cyanopterus</i>	Dusky Woodswallow	Bp LC		X		X		X	X	X
<i>Cracticus nigrogularis</i>	Pied Butcherbird	LC						X		X
<i>Cracticus tibicen</i>	Australian Magpie	LC	X	X	X	X	X	X	X	X
<i>Cracticus torquatus</i>	Grey Butcherbird	LC		X	X	X			X	X
<i>Strepera versicolor</i>	Grey Currawong	Bp LC	X						X	X
Corvidae Ravens, Crows										
<i>Corvus coronoides</i>	Australian Raven	LC	X	X	X	X	X	X	X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Motacillidae Old World Pipits, Wagtails										
<i>Anthus novaeseelandiae</i>	Australian Pipit	LC				X			X	
Passeridae Grass Finches, Mannikins, Sparrows										
<i>Stagonopleura oculata</i>	Red-eared Firetail	LC				X	X			X
Dicaeidae Flowerpeckers										
<i>Dicaeum hirundinaceum</i>	Mistletoebird	LC								X
Hirundinidae Swallows, Martins										
<i>Hirundo ariel</i>	Fairy Martin	LC				X				
<i>Hirundo neoxena</i>	Welcome Swallow	LC	X			X	X	X	X	X
<i>Hirundo nigricans</i>	Tree Martin	LC	X	X		X			X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Sylviidae Old World Warblers										
<i>Cincloramphus cruralis</i>	Brown Songlark	LC								X
<i>Cincloramphus mathewsi</i>	Rufous Songlark	LC	X							X
Zosteropidae White-eyes										
<i>Zosterops lateralis</i>	Grey-breasted White-eye	LC	X	X	X	X	X	X	X	X
Mammals										
Tachyglossidae Echidnas										
<i>Tachyglossus aculeatus</i>	Echidna	LC	X			X	X		X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Dasyuridae Carnivorous Marsupials										
<i>Antechinus flavipes</i>	Yellow-footed Antechinus	LC				X	X		X	X
<i>Dasyurus geoffroii</i>	Chuditch	S1 VU VU C1				X	X		X	X
<i>Phascogale tapoatafa ssp</i>	Southern Brush-tailed Phascogale	S1 NT								X
<i>Sminthopsis gilberti</i>	Gilbert`s Dunnart	LC							X	X
Peramelidae Bandicoots										
<i>Isodon obesulus fusciventer</i>	Southern Brown Bandicoot	P5 LC				X			X	X
Phalangeridae Brushtail Possums, Cuscuses										
<i>Trichosurus vulpecula</i>	Common Brushtail Possum	LC		X	X	X	X	X	X	X
Burramyidae Pygmy Possums										
<i>Cercartetus concinnus</i>	Western Pygmy-possum	LC								X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Tarsipedidae Honey Possum										
<i>Tarsipes rostratus</i>	Honey Possum	LC								
Macropodidae Kangaroos, Wallabies										
<i>Macropus fuliginosus</i>	Western Grey Kangaroo	LC	X	X	X	X	X	X	X	X
<i>Macropus irma</i>	Western Brush Wallaby	P4 NT				X	X	X	X	X
Molossidae Freetail Bats										
<i>Mormopterus planiceps</i>	Western Freetail Bat	LC			X				X	
<i>Tadarida australis</i>	White-striped Freetail-bat	LC			X	X				X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Vespertilionidae Ordinary Bats										
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	LC			X	X			X	X
<i>Chalinolobus morio</i>	Chocolate Wattled Bat	LC			X					X
<i>Falsistrellus mackenziei</i>	Western False Pipistrelle	P4 NT			X					X
<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	LC			X				X	X
<i>Nyctophilus gouldi</i>	Gould's Long-eared Bat	LC								
<i>Nyctophilus timoriensis</i>	Western Long-eared Bat	DD								
<i>Vespadelus regulus</i>	Southern Forest Bat	LC			X				X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Muridae Rats, Mice										
<i>Mus musculus</i>	House Mouse	Introduced				X			X	X
<i>Rattus fuscipes</i>	Western Bush Rat	LC								
<i>Rattus rattus</i>	Black Rat	Introduced								X
Canidae Dogs, Foxes										
<i>Vulpes vulpes</i>	Red Fox	Introduced			X	X	X		X	X
Felidae Cats										
<i>Felis catus</i>	Cat	Introduced	X		X					X
Suidae Pigs										
<i>Sus scrofa</i>	Pig	Introduced				X	X			X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

Class Family Species	Common Name	Conservation Status	A	B	C	D	E	F	G	H
Leporidae Rabbits, Hares										
<i>Oryctolagus cuniculus</i>	Rabbit	Introduced	X	X		X	X	X	X	X

WC Act Status - S1 to S4, EPBC Act Status - EN = Endangered, VU = Vulnerable, EX = Extinct, DEC Priority Status - P1 to P5, Int. Agmts - CA = CAMBA, JA = JAMBA, RK = ROKAMBA, Bush Forever Decreaser Species - Bh = habitat specialists, Bp = wide ranging species, Be = extinct in Perth Coastal Plain Region. IUCN Red List Category Definitions LC = Least Concern - see Appendix A and <http://www.iucnredlist.org/technical-documents/categories-and-criteria/2001-categories-criteria> for others.

APPENDIX C

DPaW NATUREMAP & PROTECTED MATTERS SEARCH TOOL RESULTS

NatureMap - Bowelling

Created By Greg Harewood on 20/12/2014

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 116°27' 35" E, 33°25' 17" S
Buffer 20km
Group By Species Group

Species Group	Species	Records
Amphibian	10	27
Bird	89	524
Invertebrate	462	1384
Mammal	19	127
Reptile	20	63
TOTAL	600	2125

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Amphibian					
1.	25398	<i>Crinia georgiana</i> (Quacking Frog)			
2.	25399	<i>Crinia glauerti</i> (Clicking Frog)			
3.	25401	<i>Crinia pseudinsignifera</i> (Bleating Froglet)			
4.	25404	<i>Geocrinia leai</i> (Ticking Frog)			
5.	25410	<i>Heleioporus eyrei</i> (Moaning Frog)			
6.	25411	<i>Heleioporus inornatus</i> (Whooping Frog)			
7.	25415	<i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
8.	25378	<i>Litoria adelaidensis</i> (Slender Tree Frog)			
9.	25426	<i>Neobatrachus pelobatooides</i> (Humming Frog)			
10.	25433	<i>Pseudophryne guentheri</i> (Crawling Toadlet)			
Bird					
11.	24260	<i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
12.	24261	<i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
13.	24262	<i>Acanthiza inornata</i> (Western Thornbill)			
14.	24560	<i>Acanthorhynchus superciliosus</i> (Western Spinebill)			
15.	25755	<i>Acrocephalus australis</i> (Australian Reed Warbler)			
16.	24312	<i>Anas gracilis</i> (Grey Teal)			
17.	24315	<i>Anas rhynchotis</i> (Australasian Shoveler)			
18.	24316	<i>Anas superciliosa</i> (Pacific Black Duck)			
19.	24561	<i>Anthochaera carunculata</i> (Red Wattlebird)			
20.	24562	<i>Anthochaera lunulata</i> (Western Little Wattlebird)			
21.	24285	<i>Aquila audax</i> (Wedge-tailed Eagle)			
22.	41324	<i>Ardea modesta</i> (Eastern Great Egret)		IA	
23.	24341	<i>Ardea pacifica</i> (White-necked Heron)			
24.	25566	<i>Artamus cinereus</i> (Black-faced Woodswallow)			
25.	24353	<i>Artamus cyanopterus</i> (Dusky Woodswallow)			
26.	24319	<i>Biziura lobata</i> (Musk Duck)			
27.	25598	<i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
28.	24788	<i>Calidris ruficollis</i> (Red-necked Stint)		IA	
29.	25717	<i>Calyptorhynchus banksii</i> (Red-tailed Black-Cockatoo)			
30.	24731	<i>Calyptorhynchus banksii</i> subsp. naso (Forest Red-tailed Black-Cockatoo)		T	
31.	24733	<i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo (long-billed black-cockatoo), Baudin's Cockatoo)		T	
32.	24734	<i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo (short-billed black-cockatoo), Carnaby's Cockatoo)		T	
33.	24377	<i>Charadrius ruficapillus</i> (Red-capped Plover)			
34.	24321	<i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
35.	24834	<i>Cincloramphus mathewsi</i> (Rufous Songlark)			
36.	24288	<i>Circus approximans</i> (Swamp Harrier)			
37.	25675	<i>Colluricincla harmonica</i> (Grey Shrike-thrush)			

	Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
38.	25568	<i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
39.	25592	<i>Corvus coronoides</i> (Australian Raven)			
40.	25595	<i>Cracticus tibicen</i> (Australian Magpie)			
41.	25596	<i>Cracticus torquatus</i> (Grey Butcherbird)			
42.	24322	<i>Cygnus atratus</i> (Black Swan)			
43.	30901	<i>Dacelo novaeguineae</i> (Laughing Kookaburra)	Y		
44.	25673	<i>Daphoenositta chrysoptera</i> (Varied Sittella)			
45.	24470	<i>Dromaius novaehollandiae</i> (Emu)			
46.	25692	<i>Eopsaltria australis</i> (Yellow Robin)			
47.	24651	<i>Eopsaltria australis</i> subsp. <i>griseogularis</i> (Western Yellow Robin)			
48.	24652	<i>Eopsaltria georgiana</i> (White-breasted Robin)			
49.	24567	<i>Epthianura albifrons</i> (White-fronted Chat)			
50.	24368	<i>Eurostopodus argus</i> (Spotted Nightjar)			
51.	25623	<i>Falco longipennis</i> (Australian Hobby)			
52.	25624	<i>Falco peregrinus</i> (Peregrine Falcon)		S	
53.	25530	<i>Gerygone fusca</i> (Western Gerygone)			
54.	24735	<i>Glossopsitta porphyrocephala</i> (Purple-crowned Lorikeet)			
55.	24443	<i>Grallina cyanoleuca</i> (Magpie-lark)			
56.	25734	<i>Himantopus himantopus</i> (Black-winged Stilt)			
57.	24491	<i>Hirundo neoxena</i> (Welcome Swallow)			
58.	25629	<i>Hirundo nigricans</i> (Tree Martin)			
59.	25661	<i>Lichmera indistincta</i> (Brown Honeyeater)			
60.	24326	<i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
61.	25650	<i>Malurus elegans</i> (Red-winged Fairy-wren)			
62.	25654	<i>Malurus splendens</i> (Splendid Fairy-wren)			
63.	25758	<i>Megalurus gramineus</i> (Little Grassbird)			
64.	25663	<i>Melithreptus brevirostris</i> (Brown-headed Honeyeater)			
65.	24587	<i>Melithreptus chloropsis</i> (Western White-naped Honeyeater)			
66.	24598	<i>Merops ornatus</i> (Rainbow Bee-eater)		IA	
67.	25610	<i>Myiagra inquieta</i> (Restless Flycatcher)			
68.	24738	<i>Neophema elegans</i> (Elegant Parrot)			
69.	25748	<i>Ninox novaeseelandiae</i> (Boobook Owl)			
70.	24407	<i>Ocyphaps lophotes</i> (Crested Pigeon)			
71.	25679	<i>Pachycephala pectoralis</i> (Golden Whistler)			
72.	25680	<i>Pachycephala rufiventris</i> (Rufous Whistler)			
73.	25681	<i>Pardalotus punctatus</i> (Spotted Pardalote)			
74.	25682	<i>Pardalotus striatus</i> (Striated Pardalote)			
75.	24648	<i>Pelecanus conspicillatus</i> (Australian Pelican)			
76.	25695	<i>Petroica multicolor</i> (Scarlet Robin)			
77.	24667	<i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
78.	24409	<i>Phaps chalcoptera</i> (Common Bronzewing)			
79.	25587	<i>Phaps elegans</i> (Brush Bronzewing)			
80.	24596	<i>Phylidonyris novaehollandiae</i> (New Holland Honeyeater)			
81.	24841	<i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
82.	25720	<i>Platycercus icterotis</i> (Western Rosella)			
83.	24745	<i>Platycercus icterotis</i> subsp. <i>icterotis</i> (Western Rosella)			
84.	24747	<i>Platycercus spurius</i> (Red-capped Parrot)			
85.	25721	<i>Platycercus zonarius</i> (Australian Ringneck, Ring-necked Parrot)			
86.	25703	<i>Podargus strigoides</i> (Tawny Frogmouth)			
87.	25704	<i>Podiceps cristatus</i> (Great Crested Grebe)			
88.	24681	<i>Poliiocephalus poliocephalus</i> (Hoary-headed Grebe)			
89.	25731	<i>Porphyrio porphyrio</i> (Purple Swamphen)			
90.	25613	<i>Rhipidura fuliginosa</i> (Grey Fantail)			
91.	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
92.	25616	<i>Rhipidura rufiventris</i> (Northern Fantail)			
93.	25534	<i>Sericornis frontalis</i> (White-browed Scrubwren)			
94.	30948	<i>Smicornis brevirostris</i> (Weebill)			
95.	25597	<i>Strepera versicolor</i> (Grey Currawong)			
96.	25705	<i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
97.	24331	<i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
98.	25549	<i>Todiramphus sanctus</i> (Sacred Kingfisher)			
99.	25765	<i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			

Invertebrate

100.	<i>Abantiades hydrographis</i>
101.	<i>Abantiades</i> sp. fc958
102.	<i>Acantholophus</i> sp. fc1486
103.	<i>Adelium</i> sp. fc904
104.	<i>Aedriodes</i> sp. fc1597
105.	<i>Agonocheila</i> sp. fc1059
106.	<i>Agrotis munda</i>

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
107.	<i>Amorbus bispinus</i>			
108.	<i>Anthela ferruginosa</i>			
109.	<i>Anthela</i> sp. fc381			
110.	-12762 <i>Antichiropus variabilis</i>			
111.	<i>Aphanosperma</i> sp. fc1418			Y
112.	<i>Apis mellifera</i>			
113.	-12518 <i>Argiope trifasciata</i>			
114.	<i>Arhodia</i> sp. fc2			
115.	<i>Arhodia</i> sp. fc320			
116.	<i>Arhodia</i> sp. fc79			
117.	-12252 <i>Backobourkia brounii</i>			
118.	<i>Baiami</i> sp. fc732			
119.	<i>Baiami volucripes</i>			
120.	<i>Calliphora</i> sp. fc53			
121.	<i>Calolampra</i> sp. fc147			
122.	<i>Calosoma schayeri</i>			
123.	<i>Camponotus</i> sp. fc423			
124.	<i>Carthaea saturnioides</i>			
125.	<i>Cedarinia</i> sp. fc890			
126.	<i>Chalcopteroides</i> sp. fc930			
127.	<i>Chlorocoma dicloraria</i>			
128.	<i>Chlorocoma</i> sp. fc22			
129.	<i>Chrysopa</i> sp. fc361			
130.	<i>Chrysopa</i> sp. fc822			
131.	<i>Ciampa arietaria</i>			
132.	<i>Coccinella repanda</i>			
133.	<i>Colpochila antennalis</i>			
134.	<i>Colpochila bogaria</i>			
135.	<i>Conoderus</i> sp. fc1062			
136.	<i>Conoderus</i> sp. fc1109			
137.	<i>Conoderus</i> sp. fc135			
138.	<i>Conoderus</i> sp. fc444			
139.	<i>Conoderus</i> sp. fc909			
140.	<i>Coptocercus rubripes</i>			
141.	<i>Coryphistes</i> sp. fc231			
142.	<i>Crypsiphona ocultaria</i>			
143.	<i>Cryptodus</i> sp. fc189			
144.	<i>Dasypodia selenophora</i>			
145.	<i>Destolmia</i> sp. fc4			
146.	<i>Drasterius</i> sp. fc1120			
147.	<i>Edusella</i> sp. fc155			
148.	<i>Entometa</i> sp. fc426			
149.	<i>Epicoma melanostica</i>			
150.	<i>Ethmostigmus</i> sp. fc223			
151.	<i>Eunatalis spinicornis</i>			
152.	<i>Genus fc1022</i> sp. fc1022			
153.	<i>Genus fc1024</i> sp. fc1024			Y
154.	<i>Genus fc1026</i> sp. fc1026			
155.	<i>Genus fc1029</i> sp. fc1029			
156.	<i>Genus fc1031</i> sp. fc1031			
157.	<i>Genus fc1032</i> sp. fc1032			Y
158.	<i>Genus fc1036</i> sp. fc1036			
159.	<i>Genus fc1037</i> sp. fc1037			
160.	<i>Genus fc1038</i> sp. fc1038			
161.	<i>Genus fc104</i> sp. fc104			
162.	<i>Genus fc1046</i> sp. fc1046			
163.	<i>Genus fc1051</i> sp. fc1051			
164.	<i>Genus fc1055</i> sp. fc1055			
165.	<i>Genus fc1056</i> sp. fc1056			
166.	<i>Genus fc1057</i> sp. fc1057			
167.	<i>Genus fc1060</i> sp. fc1060			Y
168.	<i>Genus fc1068</i> sp. fc1068			
169.	<i>Genus fc1070</i> sp. fc1070			Y
170.	<i>Genus fc1071</i> sp. fc1071			
171.	<i>Genus fc1072</i> sp. fc1072			Y
172.	<i>Genus fc1079</i> sp. fc1079			
173.	<i>Genus fc1080</i> sp. fc1080			
174.	<i>Genus fc1081</i> sp. fc1081			
175.	<i>Genus fc1090</i> sp. fc1090			
176.	<i>Genus fc1093</i> sp. fc1093			Y

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
177.	Genus fc1094 sp. fc1094			
178.	Genus fc1098 sp. fc1098			
179.	Genus fc1099 sp. fc1099			Y
180.	Genus fc1101 sp. fc1101			
181.	Genus fc1106 sp. fc1106			
182.	Genus fc1115 sp. fc1115			
183.	Genus fc1118 sp. fc1118			
184.	Genus fc1126 sp. fc1126			
185.	Genus fc1128 sp. fc1128			
186.	Genus fc1135 sp. fc1135			
187.	Genus fc1139 sp. fc1139			
188.	Genus fc1169 sp. fc1169			
189.	Genus fc123 sp. fc123			
190.	Genus fc126 sp. fc126			
191.	Genus fc129 sp. fc129			
192.	Genus fc130 sp. fc130			
193.	Genus fc1302 sp. fc1302			
194.	Genus fc132 sp. fc132			
195.	Genus fc1344 sp. fc1344			
196.	Genus fc1349 sp. fc1349			
197.	Genus fc137 sp. fc137			
198.	Genus fc1372 sp. fc1372			
199.	Genus fc139 sp. fc139			
200.	Genus fc14 sp. fc14			
201.	Genus fc140 sp. fc140			
202.	Genus fc1420 sp. fc1420			Y
203.	Genus fc1421 sp. fc1421			
204.	Genus fc1422 sp. fc1422			
205.	Genus fc1424 sp. fc1424			
206.	Genus fc1425 sp. fc1425			
207.	Genus fc1426 sp. fc1426			
208.	Genus fc1428 sp. fc1428			
209.	Genus fc1429 sp. fc1429			
210.	Genus fc1430 sp. fc1430			
211.	Genus fc1431 sp. fc1431			
212.	Genus fc1432 sp. fc1432			Y
213.	Genus fc1433 sp. fc1433			Y
214.	Genus fc1434 sp. fc1434			Y
215.	Genus fc144 sp. fc144			
216.	Genus fc1449 sp. fc1449			
217.	Genus fc145 sp. fc145			
218.	Genus fc1451 sp. fc1451			
219.	Genus fc1459 sp. fc1459			
220.	Genus fc146 sp. fc146			
221.	Genus fc1476 sp. fc1476			
222.	Genus fc1488 sp. fc1488			
223.	Genus fc1489 sp. fc1489			
224.	Genus fc1490 sp. fc1490			
225.	Genus fc1491 sp. fc1491			
226.	Genus fc1493 sp. fc1493			
227.	Genus fc1497 sp. fc1497			
228.	Genus fc1499 sp. fc1499			Y
229.	Genus fc150 sp. fc150			
230.	Genus fc1501 sp. fc1501			
231.	Genus fc1502 sp. fc1502			
232.	Genus fc1503 sp. fc1503			
233.	Genus fc1504 sp. fc1504			
234.	Genus fc1505 sp. fc1505			Y
235.	Genus fc1506 sp. fc1506			Y
236.	Genus fc1507 sp. fc1507			Y
237.	Genus fc1512 sp. fc1512			
238.	Genus fc1513 sp. fc1513			
239.	Genus fc1516 sp. fc1516			
240.	Genus fc1517 sp. fc1517			
241.	Genus fc1519 sp. fc1519			
242.	Genus fc1526 sp. fc1526			Y
243.	Genus fc1527 sp. fc1527			
244.	Genus fc1528 sp. fc1528			Y
245.	Genus fc1529 sp. fc1529			
246.	Genus fc1530 sp. fc1530			Y

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
247.	Genus fc1537 sp. fc1537			Y
248.	Genus fc1538 sp. fc1538			
249.	Genus fc1539 sp. fc1539			Y
250.	Genus fc1541 sp. fc1541			
251.	Genus fc1542 sp. fc1542			Y
252.	Genus fc1546 sp. fc1546			
253.	Genus fc1557 sp. fc1557			
254.	Genus fc1558 sp. fc1558			Y
255.	Genus fc1560 sp. fc1560			
256.	Genus fc1561 sp. fc1561			
257.	Genus fc1579 sp. fc1579			
258.	Genus fc1588 sp. fc1588			
259.	Genus fc1589 sp. fc1589			
260.	Genus fc1593 sp. fc1593			
261.	Genus fc1595 sp. fc1595			
262.	Genus fc1599 sp. fc1599			Y
263.	Genus fc16 sp. fc16			
264.	Genus fc163 sp. fc163			
265.	Genus fc174 sp. fc174			
266.	Genus fc1771 sp. fc1771			
267.	Genus fc178 sp. fc178			
268.	Genus fc180 sp. fc180			
269.	Genus fc1817 sp. fc1817			
270.	Genus fc1840 sp. fc1840			
271.	Genus fc1875 sp. fc1875			
272.	Genus fc1899 sp. fc1899			
273.	Genus fc1938 sp. fc1938			
274.	Genus fc1944 sp. fc1944			
275.	Genus fc20 sp. fc20			
276.	Genus fc2005 sp. fc2005			
277.	Genus fc2049 sp. fc2049			
278.	Genus fc206 sp. fc206			
279.	Genus fc2128 sp. fc2128			
280.	Genus fc225 sp. fc225			
281.	Genus fc229 sp. fc229			
282.	Genus fc236 sp. fc236			
283.	Genus fc25 sp. fc25			
284.	Genus fc251 sp. fc251			
285.	Genus fc257 sp. fc257			
286.	Genus fc258 sp. fc258			
287.	Genus fc260 sp. fc260			
288.	Genus fc2761 sp. fc2761			Y
289.	Genus fc2889 sp. fc2889			
290.	Genus fc2905 sp. fc2905			
291.	Genus fc2909 sp. fc2909			
292.	Genus fc2910 sp. fc2910			
293.	Genus fc2953 sp. fc2953			
294.	Genus fc3026 sp. fc3026			
295.	Genus fc3108 sp. fc3108			
296.	Genus fc3113 sp. fc3113			
297.	Genus fc312 sp. fc312			
298.	Genus fc313 sp. fc313			
299.	Genus fc3154 sp. fc3154			
300.	Genus fc316 sp. fc316			
301.	Genus fc3162 sp. fc3162			
302.	Genus fc317 sp. fc317			
303.	Genus fc32 sp. fc32			
304.	Genus fc3220 sp. fc3220			
305.	Genus fc323 sp. fc323			
306.	Genus fc324 sp. fc324			
307.	Genus fc326 sp. fc326			
308.	Genus fc33 sp. fc33			
309.	Genus fc333 sp. fc333			
310.	Genus fc336 sp. fc336			
311.	Genus fc3410 sp. fc3410			
312.	Genus fc3439 sp. fc3439			Y
313.	Genus fc344 sp. fc344			
314.	Genus fc3440 sp. fc3440			Y
315.	Genus fc3441 sp. fc3441			Y
316.	Genus fc3442 sp. fc3442			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
317.	Genus fc3445 sp. fc3445			Y
318.	Genus fc3446 sp. fc3446			
319.	Genus fc345 sp. fc345			
320.	Genus fc3453 sp. fc3453			
321.	Genus fc3454 sp. fc3454			Y
322.	Genus fc3455 sp. fc3455			Y
323.	Genus fc3456 sp. fc3456			
324.	Genus fc3461 sp. fc3461			Y
325.	Genus fc350 sp. fc350			
326.	Genus fc3502 sp. fc3502			Y
327.	Genus fc3510 sp. fc3510			Y
328.	Genus fc3512 sp. fc3512			
329.	Genus fc3515 sp. fc3515			
330.	Genus fc3519 sp. fc3519			
331.	Genus fc3532 sp. fc3532			
332.	Genus fc3533 sp. fc3533			Y
333.	Genus fc3534 sp. fc3534			Y
334.	Genus fc3535 sp. fc3535			Y
335.	Genus fc3536 sp. fc3536			Y
336.	Genus fc3537 sp. fc3537			Y
337.	Genus fc3538 sp. fc3538			
338.	Genus fc3549 sp. fc3549			Y
339.	Genus fc3550 sp. fc3550			Y
340.	Genus fc360 sp. fc360			
341.	Genus fc374 sp. fc374			
342.	Genus fc375 sp. fc375			
343.	Genus fc38 sp. fc38			
344.	Genus fc380 sp. fc380			
345.	Genus fc382 sp. fc382			
346.	Genus fc383 sp. fc383			
347.	Genus fc386 sp. fc386			
348.	Genus fc391 sp. fc391			
349.	Genus fc395 sp. fc395			
350.	Genus fc396 sp. fc396			
351.	Genus fc397 sp. fc397			
352.	Genus fc400 sp. fc400			
353.	Genus fc403 sp. fc403			
354.	Genus fc41 sp. fc41			
355.	Genus fc410 sp. fc410			
356.	Genus fc411 sp. fc411			
357.	Genus fc414 sp. fc414			
358.	Genus fc417 sp. fc417			
359.	Genus fc420 sp. fc420			
360.	Genus fc421 sp. fc421			
361.	Genus fc422 sp. fc422			
362.	Genus fc424 sp. fc424			
363.	Genus fc430 sp. fc430			
364.	Genus fc433 sp. fc433			
365.	Genus fc436 sp. fc436			
366.	Genus fc439 sp. fc439			
367.	Genus fc441 sp. fc441			
368.	Genus fc449 sp. fc449			
369.	Genus fc451 sp. fc451			
370.	Genus fc452 sp. fc452			
371.	Genus fc454 sp. fc454			
372.	Genus fc459 sp. fc459			
373.	Genus fc460 sp. fc460			
374.	Genus fc469 sp. fc469			
375.	Genus fc47 sp. fc47			
376.	Genus fc48 sp. fc48			
377.	Genus fc484 sp. fc484			
378.	Genus fc50 sp. fc50			
379.	Genus fc510 sp. fc510			
380.	Genus fc523 sp. fc523			
381.	Genus fc54 sp. fc54			
382.	Genus fc541 sp. fc541			
383.	Genus fc554 sp. fc554			
384.	Genus fc559 sp. fc559			
385.	Genus fc583 sp. fc583			
386.	Genus fc6 sp. fc6			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
387.	Genus fc608 sp. fc608			
388.	Genus fc62 sp. fc62			
389.	Genus fc625 sp. fc625			
390.	Genus fc626 sp. fc626			
391.	Genus fc628 sp. fc628			
392.	Genus fc629 sp. fc629			
393.	Genus fc63 sp. fc63			
394.	Genus fc64 sp. fc64			
395.	Genus fc641 sp. fc641			
396.	Genus fc642 sp. fc642			
397.	Genus fc646 sp. fc646			
398.	Genus fc649 sp. fc649			
399.	Genus fc652 sp. fc652			
400.	Genus fc656 sp. fc656			
401.	Genus fc658 sp. fc658			
402.	Genus fc66 sp. fc66			
403.	Genus fc661 sp. fc661			
404.	Genus fc67 sp. fc67			
405.	Genus fc683 sp. fc683			
406.	Genus fc691 sp. fc691			
407.	Genus fc692 sp. fc692			
408.	Genus fc694 sp. fc694			
409.	Genus fc708 sp. fc708			
410.	Genus fc714 sp. fc714			
411.	Genus fc717 sp. fc717			
412.	Genus fc718 sp. fc718			
413.	Genus fc72 sp. fc72			
414.	Genus fc73 sp. fc73			
415.	Genus fc75 sp. fc75			
416.	Genus fc750 sp. fc750			
417.	Genus fc751 sp. fc751			
418.	Genus fc753 sp. fc753			
419.	Genus fc754 sp. fc754			
420.	Genus fc755 sp. fc755			
421.	Genus fc757 sp. fc757			
422.	Genus fc758 sp. fc758			
423.	Genus fc76 sp. fc76			
424.	Genus fc760 sp. fc760			
425.	Genus fc766 sp. fc766			
426.	Genus fc77 sp. fc77			
427.	Genus fc770 sp. fc770			
428.	Genus fc776 sp. fc776			
429.	Genus fc782 sp. fc782			
430.	Genus fc797 sp. fc797			
431.	Genus fc799 sp. fc799			
432.	Genus fc80 sp. fc80			
433.	Genus fc812 sp. fc812			
434.	Genus fc815 sp. fc815			
435.	Genus fc82 sp. fc82			
436.	Genus fc821 sp. fc821			
437.	Genus fc830 sp. fc830			
438.	Genus fc833 sp. fc833			
439.	Genus fc834 sp. fc834			
440.	Genus fc837 sp. fc837			
441.	Genus fc857 sp. fc857			
442.	Genus fc859 sp. fc859			
443.	Genus fc861 sp. fc861			
444.	Genus fc862 sp. fc862			
445.	Genus fc863 sp. fc863			
446.	Genus fc864 sp. fc864			
447.	Genus fc878 sp. fc878			
448.	Genus fc881 sp. fc881			
449.	Genus fc882 sp. fc882			
450.	Genus fc886 sp. fc886			
451.	Genus fc891 sp. fc891			
452.	Genus fc90 sp. fc90			
453.	Genus fc92 sp. fc92			
454.	Genus fc925 sp. fc925			
455.	Genus fc95 sp. fc95			
456.	Genus fc957 sp. fc957			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
457.	<i>Genus fc978 sp. fc978</i>			
458.	<i>Genus fc986 sp. fc986</i>			
459.	<i>Genus fc988 sp. fc988</i>			
460.	<i>Goniaea sp. fc1547</i>			
461.	<i>Goniaea sp. fc2019</i>			
462.	<i>Goniaea sp. fc235</i>			
463.	<i>Goniaea sp. fc272</i>			
464.	<i>Goniaea sp. fc872</i>			
465.	<i>Harpobittacus phaeoscius</i>			
466.	<i>Harpobittacus similis</i>			
467.	<i>Heliomystis sp. fc663</i>			
468.	<i>Heteronyx sp. fc1073</i>			
469.	<i>Heteronyx sp. fc1820</i>			
470.	<i>Heteronyx sp. fc28</i>			
471.	<i>Heteronyx sp. fc347</i>			
472.	<i>Heteronyx sp. fc363</i>			
473.	<i>Heteronyx sp. fc951</i>			
474.	-13730 <i>Holconia westralia</i>			
475.	<i>Hypobapta barnardi</i>			
476.	<i>Hypobapta sp. fc955</i>			
477.	<i>Iphiherga sp. fc1454</i>			
478.	<i>Lancetes lanceolatus</i>			
479.	<i>Laxta sp. fc119</i>			
480.	<i>Laxta sp. fc27</i>			
481.	-12538 <i>Lycosa gilberta</i>			
482.	<i>Lyncestis melanoschista</i>			
483.	<i>Metistete sp. fc1104</i>			
484.	<i>Metistete sp. fc340</i>			
485.	<i>Moerarchis clathrella</i>			
486.	-12092 <i>Molycris quadricauda</i>			
487.	-12093 <i>Molycris vokes</i>			
488.	-12763 <i>Myandra bicincta</i>			
489.	<i>Myrmecia sp. fc252</i>			
490.	<i>Myrmecia sp. fc281</i>			
491.	<i>Myrmecia sp. fc487</i>			
492.	<i>Myrmecia sp. fc998</i>			
493.	<i>Myrmecia vindex</i>			
494.	<i>Neotemnopteryx sp. fc120</i>			
495.	<i>Nerthra sp. fc1567</i>			
496.	-1806 <i>Nicodamus mainae</i>			
497.	<i>Nyctemera amica</i>			
498.	<i>Ochrogaster sp. fc10</i>			
499.	<i>Ochrogaster sp. fc7</i>			
500.	<i>Oenochroma cerasioplaga</i>			
501.	<i>Oenochroma sp. fc31</i>			
502.	<i>Oenochroma vinaria</i>			
503.	<i>Omorgus sp. fc1097</i>			
504.	<i>Onosandrus sp. fc526</i>			
505.	<i>Onthophagus ferox</i>			
506.	<i>Ophion sp. fc87</i>			
507.	<i>Opodiphthera helena</i>			
508.	<i>Oxyops fasciata</i>			
509.	33988 <i>Pachysaga munggai (cricket)</i>		P3	
510.	<i>Pachysaga sp. fc688</i>			
511.	<i>Pantydia sp. fc329</i>			
512.	<i>Pantydia sp. fc5</i>			
513.	<i>Paraoxyphilus tasmaniensis</i>			
514.	<i>Paropsis sp. fc913</i>			
515.	<i>Paropsisterna sp. fc1092</i>			
516.	<i>Paropsisterna sp. fc112</i>			
517.	<i>Paropsisterna sp. fc1540</i>			
518.	<i>Paropsisterna sp. fc665</i>			
519.	<i>Paropsisterna sp. fc677</i>			
520.	<i>Persectania ewingii</i>			
521.	<i>Phallaria ophiuraria</i>			
522.	<i>Philophloeus eucalypti</i>			
523.	<i>Pholodes sp. fc384</i>			
524.	<i>Phonographa graeffei</i>			
525.	<i>Phoracantha sp. fc1067</i>			Y
526.	<i>Platyzosteria sp. fc1474</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
527.	<i>Platyzosteria</i> sp. fc254			
528.	-12903 <i>Podykipus leptoiuloides</i>			
529.	<i>Pollanisus cupreus</i>			
530.	<i>Pollanisus</i> sp. fc78			
531.	<i>Porela</i> sp. fc749			
532.	<i>Promecoderus</i> sp. fc253			
533.	<i>Proteuxoa pissonephra</i>			
534.	<i>Ptomaphila lacrymosa</i>			
535.	-13393 <i>Raveniella cirrata</i>			
536.	<i>Rebilus</i> sp. fc1427			
537.	<i>Rebilus</i> sp. fc938			
538.	<i>Rhadinomus lacordaire</i>			
539.	<i>Rhantus suturalis</i>			
540.	<i>Rhytidoponera</i> sp. fc543			
541.	<i>Sandava scitisigna</i>			
542.	<i>Sceleocantha</i> sp. fc1082			
543.	<i>Scolecobrotus</i> sp. fc1041			
544.	<i>Semanopterus</i> sp. fc824			
545.	<i>Soroma bicolor</i>			
546.	<i>Spilosoma</i> sp. fc445			
547.	<i>Stibaroma melanotoxa</i>			
548.	<i>Tanychilus</i> sp. fc348			
549.	-12469 <i>Tasmanicosa leuckartii</i>			
550.	-12890 <i>Tetragnatha nitens</i>			
551.	<i>Thalamarchella alveola</i>			
552.	<i>Tranes vigorsii</i>			
553.	<i>Trissodon</i> sp. fc1562			
554.	<i>Uresiphita ornithopteris</i>			
555.	<i>Utetheisa pulchelloides</i>			
556.	<i>Vanessa kershawi</i>			
557.	-12898 <i>Venator immansueta</i>			
558.	<i>Xanthorhoe</i> sp. fc42			
559.	<i>Xanthorhoe</i> sp. fc455			
560.	<i>the dart</i> sp. fc322			
561.	<i>unidentifiable unidentifiable</i>			

Mammal

562.	25449 <i>Antechinus flavipes</i> (Yellow-footed Antechinus)			
563.	24088 <i>Antechinus flavipes</i> subsp. <i>leucogaster</i> (Yellow-footed Antechinus, Mardo)			
564.	24162 <i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)		T	
565.	24086 <i>Cercartetus concinnus</i> (Western Pygmy-possum, Mundarda)			
566.	24092 <i>Dasyurus geoffroii</i> (Chuditch, Western Quoll)		T	
567.	24153 <i>Isodon obesulus</i> subsp. <i>fusciventer</i> (Quenda, Southern Brown Bandicoot)		P5	
568.	24131 <i>Macropus eugenii</i> subsp. <i>derbianus</i> (Tammar Wallaby (WA subsp))		P5	
569.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
570.	24133 <i>Macropus irma</i> (Western Brush Wallaby)		P4	
571.	24168 <i>Macrotis lagotis</i> (Bilby, Dalgyte)		T	
572.	24223 <i>Mus musculus</i> (House Mouse)	Y		
573.	24146 <i>Myrmecobius fasciatus</i> (Numbat, Walpurti)		T	
574.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
575.	34016 <i>Ovis aries</i> (Sheep)			
576.	25508 <i>Phascogale tapoatafa</i> (Brush-tailed Phascogale)			
577.	24099 <i>Phascogale tapoatafa</i> subsp. <i>tapoatafa</i> (Southern Brush-tailed Phascogale, Wambenger)		T	
578.	24245 <i>Rattus rattus</i> (Black Rat)	Y		
579.	24259 <i>Sus scrofa</i> (Pig)	Y		
580.	24207 <i>Tachyglossus aculeatus</i> (Short-beaked Echidna)			

Reptile

581.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
582.	30893 <i>Cryptoblepharus buechananii</i>			
583.	25020 <i>Cryptoblepharus plagiocephalus</i>			
584.	25035 <i>Ctenotus delli</i> (Dell's Ctenotus, Darling Range Heath Ctenotus)		P4	
585.	25047 <i>Ctenotus impar</i>			
586.	25049 <i>Ctenotus labillardieri</i>			
587.	24929 <i>Diplodactylus granariensis</i> subsp. <i>granariensis</i>			
588.	25100 <i>Egernia napoleonis</i>			
589.	25131 <i>Lerista distinguenda</i>			
590.	25005 <i>Lialis burtonis</i>			
591.	25184 <i>Menetia greyii</i>			
592.	25192 <i>Morethia obscura</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
593.	25252 <i>Notechis scutatus</i> (Tiger Snake)			
594.	25253 <i>Parasuta gouldii</i>			
595.	25510 <i>Pogona minor</i> (Dwarf Bearded Dragon)			
596.	25259 <i>Pseudonaja affinis</i> subsp. <i>affinis</i> (Dugite)			
597.	25285 <i>Ramphotyphlops pinguis</i>			
598.	24983 <i>Underwoodisaurus milii</i> (Barking Gecko)			
599.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
600.	25225 <i>Varanus rosenbergi</i> (Heath Monitor)			

Conservation Codes

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

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



EPBC Act Protected Matters Report

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

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

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

Report created: 20/12/14 13:32:57

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

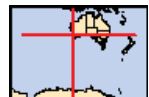
[Acknowledgements](#)



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

[Coordinates](#)

Buffer: 0.0Km



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 [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	10
Listed Migratory Species:	5

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 and the heritage values of a place on the Register of the National Estate.

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.

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	5
Whales and Other Cetaceans:	None
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.

Place on the RNE:	None
State and Territory Reserves:	None
Regional Forest Agreements:	1
Invasive Species:	15
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calyptrorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat may occur within area
Calyptrorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo [769]	Vulnerable	Species or species habitat likely to occur within area
Calyptrorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Myrmecobius fasciatus Numbat [294]	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat may occur within area
Plants		
Commersonia erythrogyna Trigwell's Rulingia [86397]	Endangered	Species or species habitat likely to occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Drakaea confluens		
Late Hammer-orchid [56778]	Endangered	Species or species habitat may occur within area

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

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area

Migratory Wetlands Species

Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

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

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat likely to occur within area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area

Extra Information

Regional Forest Agreements

[[Resource Information](#)]

Note that all areas with completed RFAs have been included.

Name	State
South West WA RFA	Western Australia

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 Resources Audit, 2001.

Name	Status	Type of Presence
Birds		

[Columba livia](#)

Rock Pigeon, Rock Dove, Domestic Pigeon [803]

Species or species habitat likely to occur within area

[Passer domesticus](#)

House Sparrow [405]

Species or species habitat likely to occur within area

[Passer montanus](#)

Eurasian Tree Sparrow [406]

Species or species habitat likely to occur within area

[Streptopelia senegalensis](#)

Laughing Turtle-dove, Laughing Dove [781]

Species or species habitat likely to occur within area

Mammals

[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, Florist's Smilax, Smilax Asparagus [22473]

Species or species habitat likely to occur within area

[Genista sp. X Genista monspessulana](#)

Broom [67538]

Species or species

Name	Status	Type of Presence
Pinus radiata		habitat may occur within area
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate		
Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area

Coordinates

-33.42133 116.46005

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 Heritage and Register of National Estate properties, Wetlands of International 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.

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:

- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment and Natural Resources, South Australia](#)
- [Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [Environmental and Resource Management, Queensland](#)
- [Department of Environment and Conservation, Western Australia](#)
- [Department of the Environment, Climate Change, Energy and Water](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [SA 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](#)
- [State Forests of 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 [Contact Us](#) page.

[© Commonwealth of Australia](#)
[Department of the Environment](#)
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

APPENDIX D

HABITAT TREE DETAILS

Habitat Trees (DBH>50cm)
Datum - GDA 94

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1	wpt001	50H	447141	6301958	Jarrah	15-20	0											No Signs	No Signs	No	
2	wpt002	50H	447199	6301959	Jarrah	15-20	0											No Signs	No Signs	No	
3	wpt003	50H	447205	6301961	Jarrah	15-20	0											No Signs	No Signs	No	
4	wpt004	50H	447236	6301958	Dead Unknown	15-20	5+	Branch	5-12	Branch	5-12	Branch	12-20	Spout Branch	20+	Spout Trunk	20+	No Signs	No Signs	Yes	Depth of hollows unknown
5	wpt005	50H	447295	6301958	Jarrah	15-20	0											No Signs	No Signs	No	
6	wpt006	50H	447387	6301928	Wandoo	15-20	0											No Signs	No Signs	No	
7	wpt007	50H	447324	6301954	Dead Unknown	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
8	wpt008	50H	447365	6301920	Wandoo	15-20	0											No Signs	No Signs	No	
9	wpt009	50H	447370	6301919	Wandoo	15-20	0											No Signs	No Signs	No	
10	wpt010	50H	447345	6301926	Wandoo	15-20	0											No Signs	No Signs	No	
11	wpt011	50H	447339	6301929	Wandoo	15-20	0											No Signs	No Signs	No	
12	wpt012	50H	447281	6301924	Jarrah	15-20	0											No Signs	No Signs	No	
13	wpt013	50H	447282	6301933	Marri	15-20	0											No Signs	No Signs	No	
14	wpt014	50H	447246	6301926	Jarrah	15-20	0											No Signs	No Signs	No	
15	wpt015	50H	447229	6301926	Jarrah	15-20	0											No Signs	No Signs	No	
16	wpt016	50H	447222	6301928	Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
17	wpt017	50H	447387	6301926	Wandoo	15-20	0											No Signs	No Signs	No	
18	wpt018	50H	447177	6301929	Jarrah	15-20	0											No Signs	No Signs	No	
19	wpt019	50H	447154	6301926	Dead Unknown	15-20	5+	Branch	<5	Spout Branch	<5	Spout Branch	5-12	Spout Branch	<5	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
20	wpt020	50H	447118	6301936	Jarrah	20+	1	Knot Hole	<5									No Signs	No Signs	No	Depth of hollows unknown
21	wpt021	50H	447115	6301931	Jarrah	15-20	2	Branch	5-12	Branch	12-20							No Signs	No Signs	Yes	Depth of hollows unknown
22	wpt022	50H	447390	6301916	Wandoo	20+	1	Branch	<5									No Signs	No Signs	No	Depth of hollows unknown
23	wpt023	50H	447394	6301922	Wandoo	15-20	0											No Signs	No Signs	No	
24	wpt024	50H	447938	6301988	Jarrah	15-20	0											No Signs	No Signs	No	
25	wpt025	50H	447420	6301906	Wandoo	20+	0											No Signs	No Signs	No	
26	wpt026	50H	447425	6301906	Wandoo	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
27	wpt027	50H	447422	6301911	Wandoo	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
28	wpt028	50H	447440	6301924	Wandoo	15-20	0											No Signs	No Signs	No	
29	wpt029	50H	447440	6301923	Wandoo	15-20	0											No Signs	No Signs	No	
30	wpt030	50H	447445	6301922	Wandoo	15-20	0											No Signs	No Signs	No	
31	wpt031	50H	447447	6301916	Wandoo	15-20	0											No Signs	No Signs	No	
32	wpt032	50H	447449	6301920	Wandoo	10-15	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
33	wpt033	50H	447455	6301928	Wandoo	15-20	0											No Signs	No Signs	No	
34	wpt034	50H	447459	6301922	Wandoo	15-20	0											No Signs	No Signs	No	
35	wpt035	50H	447466	6301903	Wandoo	20+	5+	Knot Hole	5-12	Branch	<5	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
36	wpt036	50H	447456	6301901	Wandoo	20+	0											No Signs	No Signs	No	
37	wpt037	50H	447452	6301901	Wandoo	20+	0											No Signs	No Signs	No	
38	wpt038	50H	447453	6301898	Wandoo	20+	0											No Signs	No Signs	No	
39	wpt039	50H	447444	6301900	Wandoo	15-20	0											No Signs	No Signs	No	
40	wpt040	50H	447436	6301898	Wandoo	15-20	0											No Signs	No Signs	No	
41	wpt041	50H	447436	6301903	Wandoo	15-20	0											No Signs	No Signs	No	
42	wpt042	50H	447437	6301910	Wandoo	20+	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
43	wpt043	50H	447484	6301927	Wandoo	15-20	0											No Signs	No Signs	No	
44	wpt044	50H	447483	6301917	Wandoo	15-20	0											No Signs	No Signs	No	
45	wpt045	50H	447477	6301906	Dead Wandoo	15-20	0											No Signs	No Signs	No	
46	wpt046	50H	447484	6301904	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	12-20	Branch	<5	Branch	5-12	No Signs	No Signs	Yes	Depth of hollows unknown
47	wpt047	50H	447495	6301906	Wandoo	20+	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
48	wpt048	50H	447503	6301917	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
49	wpt049	50H	447507	6301917	Wandoo	15-20	0											No Signs	No Signs	No	
50	wpt050	50H	447516	6301918	Wandoo	15-20	0											No Signs	No Signs	No	
51	wpt051	50H	447513	6301909	Wandoo	15-20	0											No Signs	No Signs	No	
52	wpt052	50H	447522	6301915	Wandoo	15-20	0											No Signs	No Signs	No	
53	wpt053	50H	447523	6301916	Wandoo	15-20	0											No Signs	No Signs	No	
54	wpt054	50H	447523	6301919	Wandoo	15-20	0											No Signs	No Signs	No	
55	wpt055	50H	447525	6301922	Wandoo	15-20	0											No Signs	No Signs	No	
56	wpt056	50H	447528	6301921	Wandoo	15-20	0											No Signs	No Signs	No	
57	wpt057	50H	447531	6301902	Wandoo	15-20	2	Knot Hole	5-12	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
58	wpt058	50H	447505	6301894	Wandoo	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
59	wpt059	50H	447505	6301905	Wandoo	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
60	wpt060	50H	447541	6301893	Wandoo	15-20	0											No Signs	No Signs	No	
61	wpt061	50H	447552	6301918	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
62	wpt062	50H	447574	6301875	Wandoo	15-20	0											No Signs	No Signs	No	
63	wpt063	50H	447591	6301882	Wandoo	15-20	0											No Signs	No Signs	No	
64	wpt064	50H	447599	6301884	Wandoo	20+	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
65	wpt065	50H	447600	6301879	Wandoo	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
66	wpt066	50H	447610	6301867	Jarrah	15-20	0											No Signs	No Signs	No	
67	wpt067	50H	447604	6301865	Wandoo	15-20	0											No Signs	No Signs	No	
68	wpt068	50H	447616	6301854	Jarrah	15-20	5+	Branch	5-12	Branch	5-12	Branch	5-12	Branch	5-12	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
69	wpt069	50H	447619	6301871	Wandoo	20+	0											No Signs	No Signs	No	
70	wpt070	50H	447623	6301876	Wandoo	20+	5+	Knot Hole	<5	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
71	wpt071	50H	447634	6301897	Wandoo	15-20	0											No Signs	No Signs	No	
72	wpt072	50H	447645	6301883	Wandoo	15-20	0											No Signs	No Signs	No	
73	wpt073	50H	447648	6301886	Wandoo	15-20	0											No Signs	No Signs	No	
74	wpt074	50H	447646	6301889	Wandoo	15-20	0											No Signs	No Signs	No	
75	wpt075	50H	447658	6301871	Jarrah	0-5	0											No Signs	No Signs	No	
76	wpt076	50H	447652	6301865	Jarrah	15-20	0											No Signs	No Signs	No	
77	wpt077	50H	447631	6301858	Jarrah	15-20	0											No Signs	No Signs	No	
78	wpt078	50H	447646	6301843	Wandoo	15-20	0											No Signs	No Signs	No	
79	wpt079	50H	447649	6301846	Jarrah	20+	0											No Signs	No Signs	No	
80	wpt080	50H	447672	6301846	Wandoo	20+	0											No Signs	No Signs	No	
81	wpt081	50H	447672	6301864	Wandoo	20+	0											No Signs	No Signs	No	
82	wpt082	50H	447681	6301853	Jarrah	15-20	0											No Signs	No Signs	No	
83	wpt083	50H	447705	6301862	Jarrah	15-20	0											No Signs	No Signs	No	
84	wpt084	50H	447708	6301863	Jarrah	15-20	0											No Signs	No Signs	No	
85	wpt085	50H	447712	6301852	Jarrah	15-20	0											No Signs	No Signs	No	
86	wpt086	50H	447722	6301850	Jarrah	15-20	0											No Signs	No Signs	No	
87	wpt087	50H	447695	6301832	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
88	wpt088	50H	447718	6301811	Wandoo	20+	0											No Signs	No Signs	No	
89	wpt089	50H	447719	6301816	Dead Unknown	5-10	1	Spout Trunk	20+									No Signs	No Signs	Yes	Depth of hollows unknown
90	wpt090	50H	447738	6301816	Wandoo	20+	0											No Signs	No Signs	No	
91	wpt091	50H	447750	6301819	Wandoo	15-20	0											No Signs	No Signs	No	
92	wpt092	50H	447746	6301836	Jarrah	15-20	0											No Signs	No Signs	No	
93	wpt093	50H	447764	6301836	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
94	wpt094	50H	447779	6301842	Dead Marri	5-10	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
95	wpt095	50H	447775	6301806	Wandoo	20+	0											No Signs	No Signs	No	
96	wpt096	50H	447787	6301798	Jarrah	10-15	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
97	wpt097	50H	447793	6301809	Wandoo	20+	0											No Signs	No Signs	No	
98	wpt098	50H	447795	6301816	Wandoo	15-20	0											No Signs	No Signs	No	
99	wpt099	50H	447808	6301825	Marri	15-20	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
100	wpt100	50H	447807	6301814	Wandoo	15-20	0											No Signs	No Signs	No	
101	wpt101	50H	447814	6301796	Wandoo	20+	2	Knot Hole	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
102	wpt102	50H	447829	6301802	Wandoo	20+	3	Branch	5-12	Branch	5-12	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
103	wpt103	50H	447827	6301810	Wandoo	20+	0											No Signs	No Signs	No	
104	wpt104	50H	447802	6301793	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
105	wpt105	50H	447799	6301774	Wandoo	15-20	0											No Signs	No Signs	No	
106	wpt106	50H	447812	6301763	Wandoo	15-20	0											No Signs	No Signs	No	
107	wpt107	50H	447812	6301769	Wandoo	15-20	0											No Signs	No Signs	No	
108	wpt108	50H	447832	6301770	Jarrah	15-20	0											No Signs	No Signs	No	
109	wpt109	50H	447833	6301755	Wandoo	15-20	0											No Signs	No Signs	No	
110	wpt110	50H	447859	6301758	Marri	20+	0											No Signs	No Signs	No	
111	wpt111	50H	447869	6301748	Wandoo	15-20	0											No Signs	No Signs	No	
112	wpt112	50H	447861	6301745	Dead Jarrah	5-10	0											No Signs	No Signs	No	
113	wpt113	50H	447873	6301735	Wandoo	15-20	0											No Signs	No Signs	No	
114	wpt114	50H	447884	6301732	Jarrah	15-20	0											No Signs	No Signs	No	
115	wpt115	50H	447898	6301732	Jarrah	15-20	0											No Signs	No Signs	No	
116	wpt116	50H	447897	6301744	Wandoo	15-20	1	Spout Branch	12-20									No Signs	No Signs	No	Too low/shallow
117	wpt117	50H	447898	6301759	Jarrah	20+	0											No Signs	No Signs	No	
118	wpt118	50H	447885	6301777	Jarrah	0-5	0											No Signs	No Signs	No	
119	wpt119	50H	447945	6301704	Jarrah	15-20	0											No Signs	No Signs	No	
120	wpt120	50H	447950	6301713	Marri	15-20	0											No Signs	No Signs	No	
121	wpt121	50H	447957	6301717	Jarrah	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
122	wpt122	50H	447965	6301680	Marri	20+	4	Knot Hole	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
123	wpt123	50H	447971	6301693	Jarrah	15-20	0											No Signs	No Signs	No	
124	wpt124	50H	448009	6301673	Marri	15-20	1	Knot Hole	12-20									No Signs	No Signs	Yes	Depth of hollows unknown
125	wpt125	50H	448016	6301668	Jarrah	5-10	0											No Signs	No Signs	No	
126	wpt126	50H	448035	6301671	Marri	15-20	0											No Signs	No Signs	No	
127	wpt127	50H	448018	6301693	Marri	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
128	wpt128	50H	448046	6301684	Dead Unknown	15-20	0											No Signs	No Signs	No	
129	wpt129	50H	448049	6301676	Dead Unknown	20+	0											No Signs	No Signs	No	
130	wpt130	50H	448036	6301653	Dead Unknown	15-20	0											No Signs	No Signs	No	
131	wpt131	50H	448031	6301643	Marri	20+	0											No Signs	No Signs	No	
132	wpt132	50H	448044	6301641	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
133	wpt133	50H	448053	6301656	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
134	wpt134	50H	448058	6301661	Dead Unknown	15-20	0											No Signs	No Signs	No	
135	wpt135	50H	448068	6301661	Marri	20+	0											No Signs	No Signs	No	
136	wpt136	50H	448071	6301646	Dead Unknown	10-15	4	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
137	wpt137	50H	448069	6301641	Dead Unknown	15-20	0											No Signs	No Signs	No	
138	wpt138	50H	448074	6301630	Dead Unknown	10-15	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
139	wpt139	50H	448072	6301628	Wandoo	15-20	0											No Signs	No Signs	No	
140	wpt140	50H	448056	6301624	Dead Unknown	15-20	5+	Spout Trunk	20+	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Too low/shallow
141	wpt141	50H	448077	6301613	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
142	wpt142	50H	448078	6301614	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
143	wpt143	50H	448099	6301632	Wandoo	15-20	0											No Signs	No Signs	No	
144	wpt144	50H	448100	6301629	Wandoo	15-20	0											No Signs	No Signs	No	
145	wpt145	50H	448098	6301618	Wandoo	15-20	0											No Signs	No Signs	No	
146	wpt146	50H	448101	6301609	Wandoo	15-20	0											No Signs	No Signs	No	
147	wpt147	50H	448108	6301586	Wandoo	15-20	0											No Signs	No Signs	No	
148	wpt148	50H	448116	6301582	Wandoo	15-20	0											No Signs	No Signs	No	
149	wpt149	50H	448128	6301585	Wandoo	15-20	0											No Signs	No Signs	No	
150	wpt150	50H	448138	6301597	Wandoo	15-20	0											No Signs	No Signs	No	
151	wpt151	50H	448142	6301604	Wandoo	15-20	0											No Signs	No Signs	No	
152	wpt152	50H	448152	6301587	Wandoo	15-20	0											No Signs	No Signs	No	
153	wpt153	50H	448155	6301594	Dead Unknown	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
154	wpt154	50H	448158	6301600	Wandoo	15-20	0											No Signs	No Signs	No	
155	wpt155	50H	448174	6301590	Wandoo	15-20	0											No Signs	No Signs	No	
156	wpt156	50H	448178	6301585	Wandoo	20+	0											No Signs	No Signs	No	
157	wpt157	50H	448175	6301583	Wandoo	15-20	0											No Signs	No Signs	No	
158	wpt158	50H	448230	6301532	Wandoo	20+	5+	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
159	wpt159	50H	448243	6301542	Wandoo	10-15	0											No Signs	No Signs	No	
160	wpt160	50H	448266	6301521	Wandoo	15-20	0											No Signs	No Signs	No	
161	wpt161	50H	448273	6301529	Wandoo	10-15	0											No Signs	No Signs	No	
162	wpt162	50H	448277	6301521	Dead Wandoo	20+	5+	Branch	<5	Branch		Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
163	wpt163	50H	448286	6301507	Wandoo	10-15	0											No Signs	No Signs	No	
164	wpt164	50H	447956	6301992	Marri	15-20	0											No Signs	No Signs	No	
165	wpt165	50H	448287	6301511	Jarrah	15-20	0											No Signs	No Signs	No	
166	wpt166	50H	448298	6301518	Jarrah	15-20	0											No Signs	No Signs	No	
167	wpt167	50H	448302	6301505	Wandoo	20+	0											No Signs	No Signs	No	
168	wpt168	50H	448314	6301508	Wandoo	15-20	0											No Signs	No Signs	No	
169	wpt169	50H	448312	6301499	Jarrah	15-20	0											No Signs	No Signs	No	
170	wpt170	50H	448323	6301508	Jarrah	20+	0											No Signs	No Signs	No	
171	wpt171	50H	448321	6301490	Wandoo	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
172	wpt172	50H	448337	6301485	Marri	10-15	2	Spout Branch	5-12	Spout Branch	12-20							No Signs	No Signs	No	Too low/shallow
173	wpt173	50H	448346	6301492	Wandoo	15-20	0											No Signs	No Signs	No	
174	wpt174	50H	448355	6301482	Dead Unknown	15-20	3	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
175	wpt175	50H	448356	6301491	Dead Unknown	0-5	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
176	wpt176	50H	448366	6301499	Jarrah	15-20	0											No Signs	No Signs	No	
177	wpt177	50H	448374	6301500	Jarrah	15-20	5+	Branch	5-12	Branch	5-12	Branch	5-12	Spout Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
178	wpt178	50H	448393	6301475	Marri	20+	0											No Signs	No Signs	No	
179	wpt179	50H	448423	6301482	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	5-12	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
180	wpt180	50H	448421	6301490	Marri	20+	0											No Signs	No Signs	No	
181	wpt181	50H	448434	6301460	Dead Marri	10-15	0											No Signs	No Signs	No	
182	wpt182	50H	448451	6301463	Jarrah	15-20	0											No Signs	No Signs	No	
183	wpt183	50H	453022	6301935	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
184	wpt184	50H	448015	6302001	Dead Jarrah	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
185	wpt185	50H	452977	6301928	Jarrah	15-20	0											No Signs	No Signs	No	
186	wpt186	50H	452949	6301930	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
187	wpt187	50H	452912	6301922	Jarrah	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
188	wpt188	50H	452904	6301920	Jarrah	15-20	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
189	wpt189	50H	452899	6301922	Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
190	wpt190	50H	452829	6301916	Jarrah	15-20	0											No Signs	No Signs	No	
191	wpt191	50H	452789	6301933	Jarrah	20+	0											No Signs	No Signs	No	
192	wpt192	50H	452781	6301916	Jarrah	20+	5+	Knot Hole	5-12	Knot Hole	<5	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
193	wpt193	50H	452793	6301905	Jarrah	15-20	0											No Signs	No Signs	No	
194	wpt194	50H	452746	6301915	Marri	15-20	0											No Signs	No Signs	No	
195	wpt195	50H	452737	6301917	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
196	wpt196	50H	452735	6301913	Marri	15-20	0											No Signs	No Signs	No	
197	wpt197	50H	452717	6301922	Jarrah	15-20	0											No Signs	No Signs	No	
198	wpt198	50H	452548	6301924	Jarrah	15-20	0											No Signs	No Signs	No	
199	wpt199	50H	452476	6301924	Jarrah	15-20	0											No Signs	No Signs	No	
200	wpt200	50H	452473	6301926	Dead Marri	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low
201	wpt201	50H	452249	6301919	Wandoo	15-20	3	Branch	5-12	Branch	5-12	Branch	5-12	Branch	5-12	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
202	wpt202	50H	452235	6301918	Jarrah	15-20	0											No Signs	No Signs	No	
203	wpt203	50H	452115	6301910	Marri	15-20	0											No Signs	No Signs	No	
204	wpt204	50H	452048	6301905	Wandoo	20+	0											No Signs	No Signs	No	
205	wpt205	50H	452048	6301907	Wandoo	20+	0											No Signs	No Signs	No	
206	wpt206	50H	452042	6301903	Wandoo	15-20	0											No Signs	No Signs	No	
207	wpt207	50H	452031	6301901	Wandoo	20+	0											No Signs	No Signs	No	
208	wpt208	50H	452010	6301904	Jarrah	15-20	0											No Signs	No Signs	No	
209	wpt209	50H	452010	6301906	Jarrah	15-20	0											No Signs	No Signs	No	
210	wpt210	50H	451929	6301881	Wandoo	15-20	0											No Signs	No Signs	No	
211	wpt211	50H	451999	6301870	Jarrah	15-20	0											No Signs	No Signs	No	
212	wpt212	50H	452011	6301876	Jarrah	15-20	0											No Signs	No Signs	No	
213	wpt213	50H	452150	6301891	Jarrah	15-20	0											No Signs	No Signs	No	
214	wpt214	50H	452164	6301894	Jarrah	15-20	0											No Signs	No Signs	No	
215	wpt215	50H	452416	6301902	Jarrah	15-20	0											No Signs	No Signs	No	
216	wpt216	50H	452479	6301905	Jarrah	20+	0											No Signs	No Signs	No	
217	wpt217	50H	452527	6301905	Jarrah	15-20	0											No Signs	No Signs	No	
218	wpt218	50H	452531	6301909	Wandoo	15-20	0											No Signs	No Signs	No	
219	wpt219	50H	452542	6301890	Wandoo	15-20	0											No Signs	No Signs	No	
220	wpt220	50H	452717	6301894	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
221	wpt221	50H	452744	6301886	Jarrah	20+	0											No Signs	No Signs	No	
222	wpt222	50H	452789	6301881	Jarrah	20+	0											No Signs	No Signs	No	
223	wpt223	50H	452916	6301888	Jarrah	15-20	5+	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
224	wpt224	50H	452955	6301897	Jarrah	15-20	0											No Signs	No Signs	No	
225	wpt225	50H	452976	6301901	Jarrah	15-20	0											No Signs	No Signs	No	
226	wpt226	50H	452984	6301904	Jarrah	15-20	0											No Signs	No Signs	No	
227	wpt227	50H	452988	6301902	Jarrah	15-20	2	Knot Hole	5-12	Knot Hole	5-12							No Signs	No Signs	No	Depth of hollows unknown
228	wpt228	50H	452993	6301901	Jarrah	15-20	0											No Signs	No Signs	No	
229	wpt229	50H	452998	6301904	Jarrah	15-20	0											No Signs	No Signs	No	
230	wpt230	50H	453039	6301915	Jarrah	20+	0											No Signs	No Signs	No	
231	wpt231	50H	453052	6301917	Jarrah	15-20	0											No Signs	No Signs	No	
232	wpt232	50H	453068	6301923	Wandoo	20+	0											No Signs	No Signs	No	
233	wpt233	50H	451782	6301859	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
234	wpt234	50H	451759	6301887	Dead Unknown	0-5	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
235	wpt235	50H	451758	6301888	Dead Unknown	10-15	2	Spout Trunk	<5	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
236	wpt236	50H	451054	6301923	Dead Jarrah	15-20	0											No Signs	No Signs	No	
237	wpt237	50H	451082	6301928	Wandoo	10-15	0											No Signs	No Signs	No	
238	wpt238	50H	451096	6301908	Wandoo	15-20	0											No Signs	No Signs	No	
239	wpt239	50H	451109	6301912	Wandoo	15-20	0											No Signs	No Signs	No	
240	wpt240	50H	451125	6301912	Wandoo	15-20	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
241	wpt241	50H	451125	6301921	Wandoo	20+	3	Knot Hole	<5	Branch	5-12	Branch	5-12					Bees	No Signs	No	Depth of hollows unknown
242	wpt242	50H	451133	6301908	Wandoo	15-20	0											No Signs	No Signs	No	
243	wpt243	50H	451145	6301904	Wandoo	15-20	0											No Signs	No Signs	No	
244	wpt244	50H	451160	6301916	Wandoo	15-20	0											No Signs	No Signs	No	
245	wpt245	50H	451159	6301921	Wandoo	15-20	5+	Branch	5-12	Branch	12-20	Branch	5-12	Branch	5-12	Spout Branch	12-20	No Signs	No Signs	Yes	Depth of hollows unknown
246	wpt246	50H	451152	6301930	Wandoo	15-20	5+	Branch	5-12	Branch	12-20	Branch	5-12	Branch	12-20	Spout Branch	12-20	No Signs	No Signs	Yes	Depth of hollows unknown
247	wpt247	50H	451041	6301936	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
248	wpt248	50H	448046	6302002	Jarrah	15-20	0											No Signs	No Signs	No	
249	wpt249	50H	448061	6302006	Marri	20+	0											No Signs	No Signs	No	
250	wpt250	50H	448075	6302007	Jarrah	15-20	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
251	wpt251	50H	448105	6302011	Marri	15-20	0											No Signs	No Signs	No	
252	wpt252	50H	448147	6302019	Marri	20+	0											No Signs	No Signs	No	
253	wpt253	50H	448188	6302023	Dead Jarrah	15-20	0											No Signs	No Signs	No	
254	wpt254	50H	448195	6302028	Marri	15-20	0											No Signs	No Signs	No	
255	wpt255	50H	448257	6302037	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
256	wpt256	50H	448290	6302044	Jarrah	15-20	0											No Signs	No Signs	No	
257	wpt257	50H	448295	6302035	Jarrah	15-20	0											No Signs	No Signs	No	
258	wpt258	50H	448287	6302033	Marri	20+	0											No Signs	No Signs	No	
259	wpt259	50H	448362	6302049	Jarrah	15-20	0											No Signs	No Signs	No	
260	wpt260	50H	448366	6302056	Jarrah	15-20	0											No Signs	No Signs	No	
261	wpt261	50H	448337	6302055	Jarrah	15-20	0											No Signs	No Signs	No	
262	wpt262	50H	448334	6302050	Marri	15-20	0											No Signs	No Signs	No	
263	wpt263	50H	448321	6302049	Jarrah	15-20	0											No Signs	No Signs	No	
264	wpt264	50H	448323	6302043	Jarrah	15-20	0											No Signs	No Signs	No	
265	wpt265	50H	448327	6302037	Jarrah	15-20	0											No Signs	No Signs	No	
266	wpt266	50H	448321	6302036	Marri	20+	0											No Signs	No Signs	No	
267	wpt267	50H	448311	6302033	Jarrah	15-20	0											No Signs	No Signs	No	
268	wpt268	50H	448298	6302047	Jarrah	15-20	0											No Signs	No Signs	No	
269	wpt269	50H	448305	6302046	Marri	20+	0											No Signs	No Signs	No	
270	wpt270	50H	448382	6302069	Jarrah	20+	0											No Signs	No Signs	No	
271	wpt271	50H	448386	6302063	Jarrah	20+	0											No Signs	No Signs	No	
272	wpt272	50H	448401	6302059	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
273	wpt273	50H	448396	6302051	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
274	wpt274	50H	448411	6302074	Jarrah	20+	0											No Signs	No Signs	No	
275	wpt275	50H	448424	6302074	Jarrah	5-10	1	Knot Hole	5-12									No Signs	No Signs	No	Depth of hollows unknown
276	wpt276	50H	448428	6302058	Marri	20+	1	Spout Branch	20+									No Signs	No Signs	No	Too low/shallow
277	wpt277	50H	448433	6302074	Jarrah	10-15	0											No Signs	No Signs	No	
278	wpt278	50H	448435	6302075	Jarrah	15-20	1	Fissure	5-12									No Signs	No Signs	No	Depth of hollows unknown
279	wpt279	50H	448425	6302091	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
280	wpt280	50H	448452	6302071	Jarrah	10-15	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
281	wpt281	50H	448454	6302105	Jarrah	5-10	1	Spout Trunk	12-20									No Signs	No Signs	No	Depth of hollows unknown
282	wpt282	50H	448485	6302097	Marri	15-20	0											No Signs	No Signs	No	
283	wpt283	50H	448489	6302085	Marri	15-20	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
284	wpt284	50H	448484	6302085	Marri	10-15	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
285	wpt285	50H	448501	6302076	Marri	15-20	1	Knot Hole	5-12									Bees	No Signs	No	Depth of hollows unknown
286	wpt286	50H	448501	6302103	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
287	wpt287	50H	448499	6302108	Marri	20+	0											No Signs	No Signs	No	
288	wpt288	50H	448489	6302121	Jarrah	20+	0											No Signs	No Signs	No	
289	wpt289	50H	448524	6302120	Marri	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
290	wpt290	50H	448539	6302097	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
291	wpt291	50H	448550	6302128	Jarrah	10-15	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
292	wpt292	50H	448569	6302127	Jarrah	15-20	2	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
293	wpt293	50H	448573	6302129	Marri	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
294	wpt294	50H	448586	6302117	Marri	15-20	0											No Signs	No Signs	No	
295	wpt295	50H	448613	6302124	Jarrah	10-15	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
296	wpt296	50H	448627	6302146	Dead Unknown	15-20	2	Spout Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
297	wpt297	50H	448658	6302141	Jarrah	15-20	2	Knot Hole	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
298	wpt298	50H	448673	6302158	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
299	wpt299	50H	448692	6302146	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
300	wpt300	50H	448698	6302149	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
301	wpt301	50H	448700	6302148	Marri	15-20	0											No Signs	No Signs	No	
302	wpt302	50H	448717	6302168	Marri	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
303	wpt303	50H	448753	6302183	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
304	wpt304	50H	448783	6302186	Jarrah	15-20	0											No Signs	No Signs	No	
305	wpt305	50H	448788	6302178	Jarrah	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
306	wpt306	50H	448803	6302188	Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
307	wpt307	50H	448811	6302185	Jarrah	15-20	0											No Signs	No Signs	No	
308	wpt308	50H	448813	6302186	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
309	wpt309	50H	448817	6302179	Jarrah	20+	0											No Signs	No Signs	No	
310	wpt310	50H	448807	6302199	Marri	20+	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
311	wpt311	50H	448870	6302200	Jarrah	15-20	0											No Signs	No Signs	No	
312	wpt312	50H	448866	6302218	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
313	wpt313	50H	448880	6302214	Dead Unknown	0-5	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
314	wpt314	50H	448892	6302216	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
315	wpt315	50H	448902	6302202	Jarrah	15-20	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
316	wpt316	50H	448905	6302209	Marri	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
317	wpt317	50H	448915	6302235	Jarrah	15-20	0											No Signs	No Signs	No	
318	wpt318	50H	448937	6302216	Jarrah	5-10	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
319	wpt319	50H	448936	6302200	Jarrah	15-20	0											No Signs	No Signs	No	
320	wpt320	50H	448928	6302192	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
321	wpt321	50H	448922	6302190	Dead Jarrah	20+	2	Spout Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
322	wpt322	50H	448942	6302205	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
323	wpt323	50H	448957	6302233	Marri	15-20	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
324	wpt324	50H	448973	6302226	Jarrah	15-20	0											No Signs	No Signs	No	
325	wpt325	50H	448979	6302232	Jarrah	15-20	0											No Signs	No Signs	No	
326	wpt326	50H	448983	6302225	Marri	10-15	2	Knot Hole	12-20	Spout Trunk	12-20							No Signs	No Signs	Yes	Depth of hollows unknown
327	wpt327	50H	448985	6302220	Jarrah	20+	0											No Signs	No Signs	No	
328	wpt328	50H	448997	6302205	Jarrah	20+	1	Fissure	5-12									No Signs	No Signs	No	Depth of hollows unknown
329	wpt329	50H	448961	6302198	Jarrah	15-20	0											No Signs	No Signs	No	
330	wpt330	50H	449000	6302209	Jarrah	20+	0											No Signs	No Signs	No	
331	wpt331	50H	449002	6302220	Jarrah	20+	1	Fissure	5-12									No Signs	No Signs	No	Depth of hollows unknown
332	wpt332	50H	449004	6302235	Jarrah	20+	0											No Signs	No Signs	No	
333	wpt333	50H	449002	6302236	Jarrah	20+	0											No Signs	No Signs	No	
334	wpt334	50H	448990	6302235	Jarrah	20+	0											No Signs	No Signs	No	
335	wpt335	50H	449009	6302222	Jarrah	15-20	0											No Signs	No Signs	No	
336	wpt336	50H	449032	6302232	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
337	wpt337	50H	449053	6302224	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
338	wpt338	50H	449056	6302225	Jarrah	15-20	0											No Signs	No Signs	No	
339	wpt339	50H	449077	6302227	Marri	15-20	0											No Signs	No Signs	No	
340	wpt340	50H	449077	6302229	Jarrah	15-20	0											No Signs	No Signs	No	
341	wpt341	50H	449081	6302230	Jarrah	15-20	0											No Signs	No Signs	No	
342	wpt342	50H	449187	6302248	Dead Jarrah	15-20	1	Spout Trunk	20+									No Signs	No Signs	Yes	Depth of hollows unknown
343	wpt343	50H	449256	6302253	Jarrah	20+	0											No Signs	No Signs	No	
344	wpt344	50H	449352	6302280	Jarrah	15-20	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
345	wpt345	50H	449308	6302274	Jarrah	20+	1	Fissure	5-12									No Signs	No Signs	No	Depth of hollows unknown
346	wpt346	50H	449305	6302280	Jarrah	20+	0											No Signs	No Signs	No	
347	wpt347	50H	449404	6302287	Jarrah	15-20	0											No Signs	No Signs	No	
348	wpt348	50H	449434	6302273	Jarrah	15-20	0											No Signs	No Signs	No	
349	wpt349	50H	449489	6302279	Marri	20+	0											No Signs	No Signs	No	
350	wpt350	50H	449500	6302275	Jarrah	15-20	0											No Signs	No Signs	No	
351	wpt351	50H	449503	6302276	Marri	15-20	0											No Signs	No Signs	No	
352	wpt352	50H	449548	6302278	Jarrah	10-15	0											No Signs	No Signs	No	
353	wpt353	50H	449541	6302279	Marri	20+	0											No Signs	No Signs	No	
354	wpt354	50H	449565	6302276	Jarrah	15-20	0											No Signs	No Signs	No	
355	wpt355	50H	449573	6302272	Jarrah	15-20	0											No Signs	No Signs	No	
356	wpt356	50H	449574	6302268	Marri	15-20	0											No Signs	No Signs	No	
357	wpt357	50H	449607	6302278	Marri	20+	2	Knot Hole	5-12	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
358	wpt358	50H	449610	6302282	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
359	wpt359	50H	449621	6302271	Marri	15-20	0											No Signs	No Signs	No	
360	wpt360	50H	449633	6302277	Jarrah	15-20	0											No Signs	No Signs	No	
361	wpt361	50H	449638	6302273	Jarrah	15-20	2	Knot Hole	5-12	Knot Hole	5-12							No Signs	No Signs	No	Depth of hollows unknown
362	wpt362	50H	449693	6302268	Marri	15-20	0											No Signs	No Signs	No	
363	wpt363	50H	449995	6302214	Wandoo	15-20	0											No Signs	No Signs	No	
364	wpt364	50H	450020	6302222	Wandoo	15-20	0											No Signs	No Signs	No	
365	wpt365	50H	450035	6302216	Wandoo	15-20	0											No Signs	No Signs	No	
366	wpt366	50H	450038	6302218	Wandoo	15-20	0											No Signs	No Signs	No	
367	wpt367	50H	450038	6302219	Wandoo	15-20	0											No Signs	No Signs	No	
368	wpt368	50H	450063	6302215	Wandoo	15-20	0											No Signs	No Signs	No	
369	wpt369	50H	450071	6302209	Wandoo	20+	0											No Signs	No Signs	No	
370	wpt370	50H	450073	6302208	Wandoo	15-20	0											No Signs	No Signs	No	
371	wpt371	50H	450182	6302189	Wandoo	20+	0											No Signs	No Signs	No	
372	wpt372	50H	450253	6302172	Wandoo	15-20	3	Spout Branch	5-12	Spout Branch	12-20	Spout Branch	5-12					No Signs	No Signs	Yes	Depth of hollows unknown
373	wpt373	50H	450254	6302171	Marri	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
374	wpt374	50H	450487	6302091	Wandoo	15-20	0											No Signs	No Signs	No	
375	wpt375	50H	450490	6302091	Wandoo	15-20	0											No Signs	No Signs	No	
376	wpt376	50H	450501	6302087	Wandoo	15-20	0											No Signs	No Signs	No	
377	wpt377	50H	450525	6302081	Wandoo	15-20	0											No Signs	No Signs	No	
378	wpt378	50H	450533	6302077	Jarrahd	15-20	0											No Signs	No Signs	No	
379	wpt379	50H	450558	6302071	Jarrahd	20+	2	Knot Hole	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
380	wpt380	50H	450585	6302060	Marri	20+	0											No Signs	No Signs	No	
381	wpt381	50H	450593	6302058	Wandoo	15-20	0											No Signs	No Signs	No	
382	wpt382	50H	450596	6302057	Wandoo	15-20	0											No Signs	No Signs	No	
383	wpt383	50H	450605	6302051	Wandoo	15-20	0											No Signs	No Signs	No	
384	wpt384	50H	450626	6302048	Marri	20+	0											No Signs	No Signs	No	
385	wpt385	50H	450641	6302045	Jarrahd	20+	0											No Signs	No Signs	No	
386	wpt386	50H	450696	6302026	Marri	20+	0											No Signs	No Signs	No	
387	wpt387	50H	450718	6302019	Jarrahd	15-20	0											No Signs	No Signs	No	
388	wpt388	50H	450730	6302013	Marri	15-20	0											No Signs	No Signs	No	
389	wpt389	50H	450778	6302005	Wandoo	20+	0											No Signs	No Signs	No	
390	wpt390	50H	450807	6302002	Jarrahd	15-20	0											No Signs	No Signs	No	
391	wpt391	50H	450809	6301999	Jarrahd	15-20	0											No Signs	No Signs	No	
392	wpt392	50H	450821	6301998	Wandoo	15-20	0											No Signs	No Signs	No	
393	wpt393	50H	450821	6301996	Jarrahd	15-20	0											No Signs	No Signs	No	
394	wpt394	50H	450834	6301997	Jarrahd	15-20	0											No Signs	No Signs	No	
395	wpt395	50H	450854	6301990	Wandoo	20+	0											No Signs	No Signs	No	
396	wpt396	50H	450875	6301988	Marri	20+	0											No Signs	No Signs	No	
397	wpt397	50H	450877	6301991	Marri	15-20	0											No Signs	No Signs	No	
398	wpt398	50H	450920	6301979	Jarrahd	15-20	0											No Signs	No Signs	No	
399	wpt399	50H	450866	6301967	Jarrahd	15-20	0											No Signs	No Signs	No	
400	wpt400	50H	450858	6301966	Jarrahd	15-20	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
401	wpt401	50H	450851	6301969	Jarrahd	15-20	0											No Signs	No Signs	No	
402	wpt402	50H	450853	6301965	Jarrahd	15-20	0											No Signs	No Signs	No	
403	wpt403	50H	450825	6301972	Jarrahd	15-20	1	Knot Hole	<5									No Signs	No Signs	No	Depth of hollows unknown
404	wpt404	50H	450790	6301981	Wandoo	15-20	0											No Signs	No Signs	No	
405	wpt405	50H	450718	6301999	Wandoo	15-20	0											No Signs	No Signs	No	
406	wpt406	50H	450544	6302053	Wandoo	15-20	0											No Signs	No Signs	No	
407	wpt407	50H	450543	6302057	Wandoo	15-20	0											No Signs	No Signs	No	
408	wpt408	50H	450522	6302063	Wandoo	15-20	0											No Signs	No Signs	No	
409	wpt409	50H	450459	6302085	Wandoo	15-20	0											No Signs	No Signs	No	
410	wpt410	50H	450456	6302088	Wandoo	15-20	0											No Signs	No Signs	No	
411	wpt411	50H	450875	6301815	Wandoo	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
412	wpt412	50H	450888	6301816	Wandoo	15-20	0											No Signs	No Signs	No	
413	wpt413	50H	450902	6301828	Wandoo	0-5	0											No Signs	No Signs	No	
414	wpt414	50H	450924	6301826	Wandoo	15-20	0											No Signs	No Signs	No	
415	wpt415	50H	450923	6301825	Wandoo	15-20	0											No Signs	No Signs	No	
416	wpt416	50H	450922	6301824	Wandoo	15-20	0											No Signs	No Signs	No	
417	wpt417	50H	450920	6301820	Wandoo	15-20	0											No Signs	No Signs	No	
418	wpt418	50H	450172	6301628	Wandoo	20+	0											No Signs	No Signs	No	
419	wpt419	50H	450215	6301643	Wandoo	15-20	0											No Signs	No Signs	No	
420	wpt420	50H	450216	6301644	Wandoo	15-20	0											No Signs	No Signs	No	
421	wpt421	50H	450216	6301645	Wandoo	15-20	0											No Signs	No Signs	No	
422	wpt422	50H	450145	6301599	Wandoo	15-20	0											No Signs	No Signs	No	
423	wpt423	50H	450132	6301620	Wandoo	15-20	0											No Signs	No Signs	No	
424	wpt424	50H	450132	6301621	Wandoo	15-20	0											No Signs	No Signs	No	
425	wpt425	50H	450156	6301637	Wandoo	20+	0											No Signs	No Signs	No	
426	wpt426	50H	449618	6301341	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
427	wpt427	50H	449604	6301345	Marri	15-20	0											No Signs	No Signs	No	
428	wpt428	50H	449577	6301339	Dead Unknown	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
429	wpt429	50H	449567	6301336	Jarrahd	15-20	0											No Signs	No Signs	No	
430	wpt430	50H	449554	6301347	Marri	15-20	0											No Signs	No Signs	No	
431	wpt431	50H	449497	6301333	Marri	20+	0											No Signs	No Signs	No	
432	wpt432	50H	449465	6301315	Marri	15-20	0											No Signs	No Signs	No	
433	wpt433	50H	448827	6301400	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
434	wpt434	50H	448869	6301393	Wandoo	15-20	0											No Signs	No Signs	No	
435	wpt435	50H	448888	6301393	Wandoo	15-20	0											No Signs	No Signs	No	
436	wpt436	50H	448902	6301385	Wandoo	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
437	wpt437	50H	448820	6301404	Wandoo	15-20	0											No Signs	No Signs	No	
438	wpt438	50H	448805	6301404	Wandoo	15-20	0											No Signs	No Signs	No	
439	wpt439	50H	448784	6301404	Flooded Gum	15-20	0											No Signs	No Signs	No	
440	wpt440	50H	448754	6301416	Marri	15-20	0											No Signs	No Signs	No	
441	wpt441	50H	448695	6301428	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
442	wpt442	50H	448692	6301427	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
443	wpt443	50H	448675	6301425	Wandoo	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
444	wpt444	50H	450802	6301919	Wandoo	10-15	0											No Signs	No Signs	No	
445	wpt445	50H	450846	6301900	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
446	wpt446	50H	450869	6301873	Dead Unknown	15-20	3	Fissure	<5	Spout Branch	12-20	Fissure	<5					No Signs	No Signs	No	Depth of hollows unknown
447	wpt447	50H	450881	6301877	Dead Unknown	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low
448	wpt448	50H	450883	6301878	Wandoo	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
449	wpt449	50H	450884	6301891	Wandoo	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
450	wpt450	50H	450895	6301879	Wandoo	15-20	0											No Signs	No Signs	No	
451	wpt451	50H	450894	6301869	Wandoo	20+	0											No Signs	No Signs	No	
452	wpt452	50H	450905	6301892	Wandoo	15-20	0											No Signs	No Signs	No	
453	wpt453	50H	450912	6301903	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
454	wpt454	50H	450924	6301886	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
455	wpt455	50H	450921	6301883	Dead Wandoo	15-20	5+	Knot Hole	5-12	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
456	wpt456	50H	450929	6301896	Wandoo	15-20	0											No Signs	No Signs	No	
457	wpt457	50H	450930	6301905	Wandoo	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
458	wpt458	50H	450937	6301899	Wandoo	20+	0											No Signs	No Signs	No	
459	wpt459	50H	450937	6301896	Wandoo	15-20	0											No Signs	No Signs	No	
460	wpt460	50H	450938	6301863	Marri	20+	0											No Signs	No Signs	No	
461	wpt461	50H	450957	6301892	Dead Unknown	15-20	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
462	wpt462	50H	450980	6301899	Wandoo	20+	0											No Signs	No Signs	No	
463	wpt463	50H	450967	6301884	Wandoo	10-15	0											No Signs	No Signs	No	
464	wpt464	50H	450979	6301884	Wandoo	10-15	0											No Signs	No Signs	No	
465	wpt465	50H	450979	6301881	Wandoo	15-20	0											No Signs	No Signs	No	
466	wpt466	50H	450979	6301865	Wandoo	15-20	0											No Signs	No Signs	No	
467	wpt467	50H	450978	6301858	Wandoo	15-20	0											No Signs	No Signs	No	
468	wpt468	50H	450979	6301857	Wandoo	15-20	0											No Signs	No Signs	No	
469	wpt469	50H	450982	6301846	Wandoo	15-20	0											No Signs	No Signs	No	
470	wpt470	50H	450992	6301860	Marri	20+	0											No Signs	No Signs	No	
471	wpt471	50H	451001	6301856	Wandoo	20+	0											No Signs	No Signs	No	
472	wpt472	50H	451015	6301882	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
473	wpt473	50H	451006	6301908	Marri	20+	0											No Signs	No Signs	No	
474	wpt474	50H	451034	6301898	Marri	20+	0											No Signs	No Signs	No	
475	wpt475	50H	451034	6301896	Wandoo	15-20	0											No Signs	No Signs	No	
476	wpt476	50H	451035	6301871	Wandoo	15-20	0											No Signs	No Signs	No	
477	wpt477	50H	451033	6301868	Wandoo	15-20	0											No Signs	No Signs	No	
478	wpt478	50H	451032	6301866	Wandoo	15-20	0											No Signs	No Signs	No	
479	wpt479	50H	451071	6301884	Marri	20+	0											No Signs	No Signs	No	
480	wpt480	50H	451057	6301900	Marri	20+	0											No Signs	No Signs	No	
481	wpt481	50H	451052	6301901	Wandoo	20+	0											No Signs	No Signs	No	
482	wpt482	50H	451035	6301907	Dead Jarrah	15-20	0											No Signs	No Signs	No	
483	wpt483	50H	451075	6301861	Flooded Gum	15-20	0											No Signs	No Signs	No	
484	wpt484	50H	451081	6301908	Wandoo	15-20	0											No Signs	No Signs	No	
485	wpt485	50H	451116	6301888	Wandoo	15-20	0											No Signs	No Signs	No	
486	wpt486	50H	451114	6301898	Wandoo	15-20	0											No Signs	No Signs	No	
487	wpt487	50H	451130	6301896	Wandoo	15-20	0											No Signs	No Signs	No	
488	wpt488	50H	451136	6301889	Dead Unknown	15-20	2	Spout Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
489	wpt489	50H	451140	6301877	Wandoo	20+	0											No Signs	No Signs	No	
490	wpt490	50H	451143	6301868	Flooded Gum	15-20	0											No Signs	No Signs	No	
491	wpt491	50H	451101	6301842	Flooded Gum	15-20	0											No Signs	No Signs	No	
492	wpt492	50H	451082	6301831	Flooded Gum	15-20	0											No Signs	No Signs	No	
493	wpt493	50H	450931	6301846	Wandoo	15-20	0											No Signs	No Signs	No	
494	wpt494	50H	450910	6301847	Wandoo	15-20	0											No Signs	No Signs	No	
495	wpt495	50H	450724	6301958	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
496	wpt496	50H	450723	6301952	Wandoo	15-20	0											No Signs	No Signs	No	
497	wpt497	50H	450638	6301936	Wandoo	15-20	0											No Signs	No Signs	No	
498	wpt498	50H	450486	6301821	Wandoo	10-15	0											No Signs	No Signs	No	
499	wpt499	50H	450482	6301815	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
500	wpt500	50H	450561	6301837	Wandoo	10-15	0											No Signs	No Signs	No	
501	wpt501	50H	450226	6301709	Wandoo	15-20	0											No Signs	No Signs	No	
502	wpt502	50H	450292	6301764	Dead Unknown	20+	0											No Signs	No Signs	No	
503	wpt503	50H	450292	6301764	Wandoo	20+	0											No Signs	No Signs	No	
504	wpt504	50H	450215	6301734	Dead Unknown	20+	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
505	wpt505	50H	450219	6301733	Wandoo	10-15	0											No Signs	No Signs	No	
506	wpt506	50H	450198	6301716	Wandoo	20+	0											No Signs	No Signs	No	
507	wpt507	50H	450189	6301715	Wandoo	20+	0											No Signs	No Signs	No	
508	wpt508	50H	450191	6301727	Wandoo	20+	0											No Signs	No Signs	No	
509	wpt509	50H	450181	6301716	Wandoo	20+	0											No Signs	No Signs	No	
510	wpt510	50H	450174	6301705	Dead Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
511	wpt511	50H	450176	6301703	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
512	wpt512	50H	450159	6301706	Wandoo	15-20	0											No Signs	No Signs	No	
513	wpt513	50H	450149	6301692	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
514	wpt514	50H	450132	6301665	Wandoo	15-20	0											No Signs	No Signs	No	
515	wpt515	50H	450082	6301650	Wandoo	15-20	0											No Signs	No Signs	No	
516	wpt516	50H	450112	6301622	Wandoo	10-15	0											No Signs	No Signs	No	
517	wpt517	50H	450112	6301632	Wandoo	15-20	0											No Signs	No Signs	No	
518	wpt518	50H	450110	6301632	Wandoo	15-20	0											No Signs	No Signs	No	
519	wpt519	50H	450125	6301642	Wandoo	15-20	0											No Signs	No Signs	No	
520	wpt520	50H	450150	6301640	Wandoo	15-20	0											No Signs	No Signs	No	
521	wpt521	50H	450153	6301643	Wandoo	15-20	0											No Signs	No Signs	No	
522	wpt522	50H	450180	6301655	Wandoo	10-15	0											No Signs	No Signs	No	
523	wpt523	50H	450063	6301594	Wandoo	15-20	0											No Signs	No Signs	No	
524	wpt524	50H	450034	6301589	Wandoo	10-15	0											No Signs	No Signs	No	
525	wpt525	50H	450025	6301583	Wandoo	15-20	0											No Signs	No Signs	No	
526	wpt526	50H	449985	6301604	Marri	20+	0											No Signs	No Signs	No	
527	wpt527	50H	450003	6301612	Jarrah	20+	0											No Signs	No Signs	No	
528	wpt528	50H	450007	6301614	Marri	20+	0											No Signs	No Signs	No	
529	wpt529	50H	449971	6301590	Jarrah	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
530	wpt530	50H	449956	6301581	Jarrah	20+	0											No Signs	No Signs	No	
531	wpt531	50H	449954	6301580	Wandoo	20+	0											No Signs	No Signs	No	
532	wpt532	50H	449946	6301571	Jarrah	15-20	0											No Signs	No Signs	No	
533	wpt533	50H	449932	6301574	Wandoo	15-20	0											No Signs	No Signs	No	
534	wpt534	50H	449931	6301574	Wandoo	20+	0											No Signs	No Signs	No	
535	wpt535	50H	449931	6301583	Jarrah	15-20	0											No Signs	No Signs	No	
536	wpt536	50H	449922	6301578	Jarrah	10-15	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
537	wpt537	50H	449905	6301557	Jarrah	20+	5+	Knot Hole	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
538	wpt538	50H	449875	6301543	Wandoo	20+	0											No Signs	No Signs	No	
539	wpt539	50H	449862	6301536	Wandoo	15-20	0											No Signs	No Signs	No	
540	wpt540	50H	449841	6301534	Jarrah	15-20	0											No Signs	No Signs	No	
541	wpt541	50H	449840	6301517	Jarrah	20+	0											No Signs	No Signs	No	
542	wpt542	50H	449823	6301508	Marri	20+	0											No Signs	No Signs	No	
543	wpt543	50H	449805	6301503	Jarrah	5-10	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
544	wpt544	50H	449802	6301511	Marri	15-20	0											No Signs	No Signs	No	
545	wpt545	50H	449791	6301494	Marri	20+	0											No Signs	No Signs	No	
546	wpt546	50H	449782	6301487	Dead Unknown	20+	5+	Fissure	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
547	wpt547	50H	449778	6301490	Jarrah	15-20	5+	Knot Hole	<5	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
548	wpt548	50H	449766	6301496	Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Trunk	12-20					No Signs	No Signs	No	Too low/shallow
549	wpt549	50H	449738	6301481	Jarrah	20+	5+	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	5-12	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
550	wpt550	50H	449736	6301472	Jarrah	10-15	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
551	wpt551	50H	449715	6301466	Jarrah	15-20	0											No Signs	No Signs	No	
552	wpt552	50H	449698	6301460	Dead Jarrah	20+	2	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
553	wpt553	50H	449901	6301514	Wandoo	10-15	0											No Signs	No Signs	No	
554	wpt554	50H	449671	6301428	Marri	20+	0											No Signs	No Signs	No	
555	wpt555	50H	449649	6301419	Marri	20+	0											No Signs	No Signs	No	
556	wpt556	50H	449635	6301427	Marri	15-20	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
557	wpt557	50H	449623	6301420	Marri	10-15	3	Knot Hole	20+	Spout Branch	12-20	Spout Trunk	20+					No Signs	No Signs	Yes	Depth of hollows unknown
558	wpt558	50H	449608	6301409	Marri	20+	0											No Signs	No Signs	No	
559	wpt559	50H	449578	6301412	Marri	15-20	0											No Signs	No Signs	No	
560	wpt560	50H	449559	6301408	Jarrah	20+	3	Knot Hole	5-12	Branch	5-12	Spout Trunk	20+					No Signs	No Signs	Yes	Depth of hollows unknown
561	wpt561	50H	449557	6301409	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
562	wpt562	50H	449541	6301396	Jarrah	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
563	wpt563	50H	449527	6301390	Marri	20+	0											No Signs	No Signs	No	
564	wpt564	50H	449513	6301390	Jarrah	20+	0											No Signs	No Signs	No	
565	wpt565	50H	449505	6301402	Jarrah	15-20	0											No Signs	No Signs	No	
566	wpt566	50H	449501	6301391	Jarrah	20+	0											No Signs	No Signs	No	
567	wpt567	50H	449494	6301391	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
568	wpt568	50H	449478	6301403	Marri	20+	0											No Signs	No Signs	No	
569	wpt569	50H	449472	6301399	Marri	15-20	0											No Signs	No Signs	No	
570	wpt570	50H	449472	6301393	Marri	20+	0											No Signs	No Signs	No	
571	wpt571	50H	449457	6301385	Dead Jarrah	5-10	0											No Signs	No Signs	No	
572	wpt572	50H	449458	6301381	Jarrah	20+	2	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
573	wpt573	50H	449449	6301380	Jarrah	15-20	0											No Signs	No Signs	No	
574	wpt574	50H	449437	6301375	Marri	15-20	0											No Signs	No Signs	No	
575	wpt575	50H	449425	6301387	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
576	wpt576	50H	449409	6301389	Jarrah	15-20	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
577	wpt577	50H	449397	6301388	Marri	20+	5+	Knot Hole	<5	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
578	wpt578	50H	449396	6301389	Jarrah	15-20	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
579	wpt579	50H	449383	6301381	Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
580	wpt580	50H	449347	6301380	Marri	20+	0											No Signs	No Signs	No	
581	wpt581	50H	449349	6301377	Marri	15-20	0											No Signs	No Signs	No	
582	wpt582	50H	449332	6301379	Jarrah	15-20	0											No Signs	No Signs	No	
583	wpt583	50H	449316	6301380	Jarrah	15-20	0											No Signs	No Signs	No	
584	wpt584	50H	449307	6301387	Jarrah	15-20	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
585	wpt585	50H	449302	6301373	Marri	15-20	0											No Signs	No Signs	No	
586	wpt586	50H	449269	6301372	Marri	20+	0											No Signs	No Signs	No	
587	wpt587	50H	449267	6301383	Wandoo	10-15	0											No Signs	No Signs	No	
588	wpt588	50H	448670	6301529	Jarrah	15-20	0											No Signs	No Signs	No	
589	wpt589	50H	449254	6301379	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
590	wpt590	50H	449251	6301385	Jarrah	20+	0											No Signs	No Signs	No	
591	wpt591	50H	449238	6301379	Jarrah	20+	4	Branch	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
592	wpt592	50H	449221	6301387	Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
593	wpt593	50H	449215	6301397	Wandoo	15-20	0											No Signs	No Signs	No	
594	wpt594	50H	449204	6301395	Wandoo	15-20	0											No Signs	No Signs	No	
595	wpt595	50H	449207	6301386	Marri	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
596	wpt596	50H	449204	6301382	Wandoo	10-15	0											No Signs	No Signs	No	
597	wpt597	50H	449190	6301390	Wandoo	20+	0											No Signs	No Signs	No	
598	wpt598	50H	449183	6301391	Jarrah	15-20	0											No Signs	No Signs	No	
599	wpt599	50H	449177	6301396	Wandoo	15-20	0											No Signs	No Signs	No	
600	wpt600	50H	449174	6301390	Wandoo	20+	0											No Signs	No Signs	No	
601	wpt601	50H	449169	6301385	Jarrah	15-20	0											No Signs	No Signs	No	
602	wpt602	50H	449166	6301401	Marri	20+	0											No Signs	No Signs	No	
603	wpt603	50H	449144	6301399	Jarrah	0-5	1	Spout Trunk										No Signs	No Signs	No	Too low/shallow
604	wpt604	50H	449100	6301404	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
605	wpt605	50H	449102	6301415	Wandoo	20+	1	Branch	5-12									No Signs	No Signs	No	BOP Nest/Depth of hollows unknown
606	wpt606	50H	449123	6301409	Marri	20+	5+	Spout Branch	5-12	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
607	wpt607	50H	449121	6301363	Wandoo	10-15	0											No Signs	No Signs	No	
608	wpt608	50H	449196	6301332	Marri	10-15	0											No Signs	No Signs	No	
609	wpt609	50H	449238	6301324	Wandoo	15-20	0											No Signs	No Signs	No	
610	wpt610	50H	449520	6301331	Dead Unknown	20+	0											No Signs	No Signs	No	
611	wpt611	50H	449066	6301406	Wandoo	20+	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
612	wpt612	50H	449066	6301407	Wandoo	15-20	0											No Signs	No Signs	No	
613	wpt613	50H	449062	6301408	Wandoo	10-15	0											No Signs	No Signs	No	
614	wpt614	50H	449071	6301414	Wandoo	20+	0											No Signs	No Signs	No	
615	wpt615	50H	449067	6301421	Wandoo	20+	0											No Signs	No Signs	No	
616	wpt616	50H	449067	6301421	Wandoo	15-20	0											No Signs	No Signs	No	
617	wpt617	50H	449040	6301411	Wandoo	20+	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
618	wpt618	50H	449033	6301403	Wandoo	15-20	5+	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
619	wpt619	50H	449002	6301429	Wandoo	20+	0											No Signs	No Signs	No	
620	wpt620	50H	448988	6301410	Wandoo	15-20	0											No Signs	No Signs	No	
621	wpt621	50H	448968	6301426	Wandoo	15-20	0											No Signs	No Signs	No	
622	wpt622	50H	448966	6301426	Wandoo	15-20	0											No Signs	No Signs	No	
623	wpt623	50H	448959	6301429	Wandoo	15-20	0											No Signs	No Signs	No	
624	wpt624	50H	448965	6301444	Wandoo	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
625	wpt625	50H	448957	6301444	Wandoo	10-15	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
626	wpt626	50H	448955	6301436	Wandoo	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
627	wpt627	50H	448946	6301444	Wandoo	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
628	wpt628	50H	448942	6301432	Wandoo	15-20	3	Branch	<5	Branch	5-12	Branch	<5		5-12			No Signs	No Signs	No	Depth of hollows unknown
629	wpt629	50H	448945	6301431	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	Bees	No Signs	No	Depth of hollows unknown
630	wpt630	50H	448935	6301447	Wandoo	15-20	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
631	wpt631	50H	448928	6301454	Wandoo	15-20	0											No Signs	No Signs	No	
632	wpt632	50H	448916	6301449	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
633	wpt633	50H	448907	6301447	Wandoo	15-20	0											No Signs	No Signs	No	
634	wpt634	50H	448905	6301440	Wandoo	15-20	0											No Signs	No Signs	No	
635	wpt635	50H	448897	6301449	Wandoo	15-20	0											No Signs	No Signs	No	
636	wpt636	50H	448900	6301460	Wandoo	15-20	0											No Signs	No Signs	No	
637	wpt637	50H	448887	6301446	Wandoo	20+	1	Knot Hole	<5									No Signs	No Signs	No	Depth of hollows unknown
638	wpt638	50H	448871	6301463	Wandoo	15-20	0											No Signs	No Signs	No	
639	wpt639	50H	448863	6301452	Wandoo	15-20	0											No Signs	No Signs	No	
640	wpt640	50H	448815	6301466	Wandoo	20+	5+	Knot Hole	5-12	Spout Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
641	wpt641	50H	448803	6301458	Wandoo	15-20	0											No Signs	No Signs	No	
642	wpt642	50H	448796	6301473	Wandoo	20+	0											No Signs	No Signs	No	
643	wpt643	50H	448786	6301460	Wandoo	15-20	0											No Signs	No Signs	No	
644	wpt644	50H	448759	6301465	Marri	15-20	0											No Signs	No Signs	No	
645	wpt645	50H	448756	6301469	Jarrah	15-20	0											No Signs	No Signs	No	
646	wpt646	50H	448738	6301472	Marri	15-20	0											No Signs	No Signs	No	
647	wpt647	50H	448739	6301477	Jarrah	15-20	0											No Signs	No Signs	No	
648	wpt648	50H	448721	6301505	Jarrah	20+	0											No Signs	No Signs	No	
649	wpt649	50H	448693	6301492	Wandoo	15-20	0											No Signs	No Signs	No	
650	wpt650	50H	448679	6301490	Wandoo	15-20	0											No Signs	No Signs	No	
651	wpt651	50H	448668	6301508	Jarrah	15-20	3	Branch	<5	Spout Branch	5-12	Spout Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
652	wpt652	50H	448672	6301508	Jarrah	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
653	wpt653	50H	448640	6301506	Wandoo	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
654	wpt654	50H	448640	6301490	Wandoo	15-20	0											No Signs	No Signs	No	
655	wpt655	50H	448624	6301499	Wandoo	15-20	0											No Signs	No Signs	No	
656	wpt656	50H	448621	6301504	Wandoo	15-20	0											No Signs	No Signs	No	
657	wpt657	50H	448614	6301514	Wandoo	15-20	0											No Signs	No Signs	No	
658	wpt658	50H	448596	6301510	Wandoo	15-20	0											No Signs	No Signs	No	
659	wpt659	50H	448603	6301510	Wandoo	15-20	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
660	wpt660	50H	448597	6301504	Wandoo	15-20	0											No Signs	No Signs	No	
661	wpt661	50H	448592	6301506	Wandoo	20+	1	Knot Hole	5-12									No Signs	No Signs	No	Depth of hollows unknown
662	wpt662	50H	448585	6301518	Wandoo	15-20	0											No Signs	No Signs	No	
663	wpt663	50H	448577	6301519	Wandoo	15-20	0											No Signs	No Signs	No	
664	wpt664	50H	448570	6301519	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
665	wpt665	50H	448572	6301531	Jarrah	15-20	0											No Signs	No Signs	No	
666	wpt666	50H	448563	6301516	Wandoo	20+	0											No Signs	No Signs	No	
667	wpt667	50H	448571	6301507	Wandoo	20+	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
668	wpt668	50H	448544	6301517	Wandoo	10-15	0											No Signs	No Signs	No	
669	wpt669	50H	448543	6301527	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	12-20	Branch	<5	Branch	5-12	No Signs	No Signs	Yes	Depth of hollows unknown
670	wpt670	50H	448539	6301538	Wandoo	20+	0											No Signs	No Signs	No	
671	wpt671	50H	448539	6301534	Wandoo	15-20	0											No Signs	No Signs	No	
672	wpt672	50H	448531	6301513	Wandoo	20+	0											No Signs	No Signs	No	
673	wpt673	50H	448533	6301515	Jarrah	15-20	0											No Signs	No Signs	No	
674	wpt674	50H	448522	6301517	Jarrah	15-20	0											No Signs	No Signs	No	
675	wpt675	50H	448511	6301531	Jarrah	20+	0											No Signs	No Signs	No	
676	wpt676	50H	448502	6301535	Jarrah	15-20	0											No Signs	No Signs	No	
677	wpt677	50H	448500	6301526	Jarrah	20+	0											No Signs	No Signs	No	
678	wpt678	50H	448503	6301518	Wandoo	15-20	0											No Signs	No Signs	No	
679	wpt679	50H	448502	6301519	Wandoo	20+	0											No Signs	No Signs	No	
680	wpt680	50H	448485	6301521	Jarrah	15-20	0											No Signs	No Signs	No	
681	wpt681	50H	448462	6301525	Jarrah	15-20	0											No Signs	No Signs	No	
682	wpt682	50H	448449	6301526	Jarrah	15-20	0											No Signs	No Signs	No	
683	wpt683	50H	448444	6301543	Marri	15-20	0											No Signs	No Signs	No	
684	wpt684	50H	448427	6301540	Marri	20+	0											No Signs	No Signs	No	
685	wpt685	50H	448413	6301559	Jarrah	15-20	0											No Signs	No Signs	No	
686	wpt686	50H	448421	6301561	Jarrah	15-20	0											No Signs	No Signs	No	
687	wpt687	50H	448393	6301559	Jarrah	15-20	0											No Signs	No Signs	No	
688	wpt688	50H	448360	6301562	Marri	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
689	wpt689	50H	448359	6301547	Jarrah	15-20	0											No Signs	No Signs	No	
690	wpt690	50H	448344	6301553	Jarrah	20+	0											No Signs	No Signs	No	
691	wpt691	50H	448337	6301556	Wandoo	15-20	0											No Signs	No Signs	No	
692	wpt692	50H	448335	6301551	Wandoo	15-20	0											No Signs	No Signs	No	
693	wpt693	50H	448325	6301563	Wandoo	15-20	0											No Signs	No Signs	No	
694	wpt694	50H	448310	6301566	Wandoo	20+	0											No Signs	No Signs	No	
695	wpt695	50H	448305	6301576	Jarrah	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
696	wpt696	50H	448306	6301568	Wandoo	15-20	0											No Signs	No Signs	No	
697	wpt697	50H	448301	6301567	Wandoo	15-20	0											No Signs	No Signs	No	
698	wpt698	50H	448307	6301561	Marri	15-20	0											No Signs	No Signs	No	
699	wpt699	50H	448314	6301559	Jarrah	20+	2	Knot Hole	<5	Knot Hole	5-12							No Signs	No Signs	No	Depth of hollows unknown
700	wpt700	50H	448288	6301564	Wandoo	20+	0											No Signs	No Signs	No	
701	wpt701	50H	448287	6301561	Wandoo	10-15	0											No Signs	No Signs	No	
702	wpt702	50H	448284	6301580	Wandoo	20+	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
703	wpt703	50H	448275	6301581	Wandoo	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
704	wpt704	50H	448276	6301567	Jarrah	20+	0											No Signs	No Signs	No	
705	wpt705	50H	448265	6301574	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
706	wpt706	50H	448258	6301572	Wandoo	15-20	0											No Signs	No Signs	No	
707	wpt707	50H	448257	6301581	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
708	wpt708	50H	448252	6301572	Wandoo	15-20	0											No Signs	No Signs	No	
709	wpt709	50H	448255	6301567	Wandoo	15-20	0											No Signs	No Signs	No	
710	wpt710	50H	448237	6301584	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
711	wpt711	50H	448229	6301571	Wandoo	15-20	0											No Signs	No Signs	No	
712	wpt712	50H	448221	6301578	Wandoo	15-20	5+	Branch	<5	Branch	55	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
713	wpt713	50H	448214	6301573	Wandoo	10-15	0											No Signs	No Signs	No	
714	wpt714	50H	448220	6301594	Jarrah	15-20	2	Knot Hole	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
715	wpt715	50H	448209	6301590	Wandoo	10-15	0											No Signs	No Signs	No	
716	wpt716	50H	448208	6301588	Wandoo	15-20	4	Knot Hole	<5	Branch	<5	Branch	5-12	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
717	wpt717	50H	448205	6301592	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
718	wpt718	50H	448204	6301597	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
719	wpt719	50H	448185	6301590	Wandoo	15-20	0											No Signs	No Signs	No	
720	wpt720	50H	448180	6301590	Wandoo	15-20	0											No Signs	No Signs	No	
721	wpt721	50H	448292	6301535	Wandoo	10-15	0											No Signs	No Signs	No	
722	wpt722	50H	448483	6301481	Dead Unknown	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
723	wpt723	50H	448645	6301443	Wandoo	15-20	0											No Signs	No Signs	No	
724	wpt724	50H	448664	6301442	Wandoo	15-20	0											No Signs	No Signs	No	
725	wpt725	50H	448703	6301450	Wandoo	10-15	0											No Signs	No Signs	No	
726	wpt726	50H	448711	6301437	Wandoo	15-20	0											No Signs	No Signs	No	
727	wpt727	50H	448724	6301429	Marri	15-20	0											No Signs	No Signs	No	
728	wpt728	50H	448753	6301426	Marri	15-20	0											No Signs	No Signs	No	
729	wpt729	50H	448841	6301405	Jarrah	15-20	0											No Signs	No Signs	No	
730	wpt730	50H	448869	6301403	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
731	wpt731	50H	448876	6301398	Wandoo	15-20	0											No Signs	No Signs	No	
732	wpt732	50H	448884	6301398	Dead Unknown	15-20	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
733	wpt733	50H	448895	6301396	Dead Unknown	15-20	4	Branch	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
734	wpt734	50H	448895	6301406	Wandoo	10-15	0											No Signs	No Signs	No	
735	wpt735	50H	448918	6301393	Wandoo	10-15	0											No Signs	No Signs	No	
736	wpt736	50H	448922	6301400	Wandoo	10-15	0											No Signs	No Signs	No	
737	wpt737	50H	448651	6301542	Jarrah	15-20	0											No Signs	No Signs	No	
738	wpt738	50H	448647	6301550	Jarrah	15-20	2	Knot Hole	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
739	wpt739	50H	448621	6301549	Wandoo	20+	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
740	wpt740	50H	448615	6301568	Wandoo	15-20	0											No Signs	No Signs	No	
741	wpt741	50H	448603	6301570	Jarrah	15-20	0											No Signs	No Signs	No	
742	wpt742	50H	448593	6301586	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
743	wpt743	50H	448576	6301590	Jarrah	15-20	0											No Signs	No Signs	No	
744	wpt744	50H	448542	6301607	Jarrah	15-20	0											No Signs	No Signs	No	
745	wpt745	50H	448529	6301616	Wandoo	15-20	0											No Signs	No Signs	No	
746	wpt746	50H	448518	6301610	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	Yes	Depth of hollows unknown
747	wpt747	50H	448505	6301620	Jarrah	15-20	0											No Signs	No Signs	No	
748	wpt748	50H	448506	6301624	Jarrah	15-20	0											No Signs	No Signs	No	
749	wpt749	50H	448495	6301613	Jarrah	15-20	0											No Signs	No Signs	No	
750	wpt750	50H	448484	6301647	Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
751	wpt751	50H	448468	6301658	Jarrah	10-15	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
752	wpt752	50H	448442	6301681	Marri	15-20	1	Spout Branch	20+									No Signs	No Signs	Yes	Depth of hollows unknown
753	wpt753	50H	448431	6301673	Jarrah	20+	0											No Signs	No Signs	No	
754	wpt754	50H	448415	6301672	Marri	20+	0											No Signs	No Signs	No	
755	wpt755	50H	448397	6301688	Marri	15-20	2	Branch	<5	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
756	wpt756	50H	448399	6301685	Jarrah	15-20	0											No Signs	No Signs	No	
757	wpt757	50H	448387	6301688	Jarrah	15-20	0											No Signs	No Signs	No	
758	wpt758	50H	448382	6301679	Jarrah	15-20	0											No Signs	No Signs	No	
759	wpt759	50H	448370	6301705	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Spout Branch	5-12	Spout Branch	5-12	Spout Branch	12-20	No Signs	No Signs	Yes	Depth of hollows unknown
760	wpt760	50H	448365	6301693	Jarrah	15-20	0											No Signs	No Signs	No	
761	wpt761	50H	448345	6301705	Jarrah	15-20	2	Spout Branch	5-12	Spout Trunk	12-20							No Signs	No Signs	No	Too shallow
762	wpt762	50H	448341	6301706	Jarrah	15-20	3	Branch	5-12	Branch	<5	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
763	wpt763	50H	448340	6301712	Jarrah	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
764	wpt764	50H	448336	6301694	Jarrah	15-20	0											No Signs	No Signs	No	
765	wpt765	50H	448324	6301698	Jarrah	15-20	0											No Signs	No Signs	No	
766	wpt766	50H	448323	6301695	Jarrah	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
767	wpt767	50H	448310	6301713	Marri	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
768	wpt768	50H	448305	6301711	Jarrah	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
769	wpt769	50H	448301	6301705	Wandoo	15-20	0											No Signs	No Signs	No	
770	wpt770	50H	448294	6301696	Wandoo	15-20	0											No Signs	No Signs	No	
771	wpt771	50H	448291	6301731	Wandoo	15-20	0											No Signs	No Signs	No	
772	wpt772	50H	448289	6301732	Wandoo	20+	0											No Signs	No Signs	No	
773	wpt773	50H	448284	6301731	Wandoo	20+	0											No Signs	No Signs	No	
774	wpt774	50H	448274	6301732	Wandoo	15-20	0											No Signs	No Signs	No	
775	wpt775	50H	448295	6301742	Wandoo	15-20	0											No Signs	No Signs	No	
776	wpt776	50H	448296	6301746	Wandoo	20+	0											No Signs	No Signs	No	
777	wpt777	50H	448298	6301749	Wandoo	20+	0											No Signs	No Signs	No	
778	wpt778	50H	448279	6301748	Wandoo	15-20	0											No Signs	No Signs	No	
779	wpt779	50H	448276	6301750	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
780	wpt780	50H	448273	6301751	Wandoo	20+	2	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
781	wpt781	50H	448281	6301751	Dead Wandoo	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
782	wpt782	50H	448275	6301755	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
783	wpt783	50H	448278	6301767	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
784	wpt784	50H	448291	6301774	Wandoo	15-20	0											No Signs	No Signs	No	
785	wpt785	50H	448279	6301783	Marri	20+	0											No Signs	No Signs	No	
786	wpt786	50H	448270	6301788	Marri	20+	0											No Signs	No Signs	No	
787	wpt787	50H	448254	6301787	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
788	wpt788	50H	448255	6301796	Marri	20+	0											No Signs	No Signs	No	
789	wpt789	50H	448244	6301796	Marri	20+	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
790	wpt790	50H	448246	6301805	Marri	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
791	wpt791	50H	448220	6301784	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	5-12	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
792	wpt792	50H	448207	6301790	Wandoo	15-20	0											No Signs	No Signs	No	
793	wpt793	50H	448216	6301811	Marri	20+	0											No Signs	No Signs	No	
794	wpt794	50H	448165	6301800	Marri	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
795	wpt795	50H	448151	6301854	Jarrah	10-15	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
796	wpt796	50H	448139	6301844	Marri	20+	0											No Signs	No Signs	No	
797	wpt797	50H	448136	6301856	Jarrah	15-20	0											No Signs	No Signs	No	
798	wpt798	50H	448138	6301869	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
799	wpt799	50H	448098	6301884	Jarrah	15-20	0											No Signs	No Signs	No	
800	wpt800	50H	448077	6301909	Jarrah	15-20	0											No Signs	No Signs	No	
801	wpt801	50H	448064	6301920	Jarrah	15-20	0											No Signs	No Signs	No	
802	wpt802	50H	448053	6301920	Wandoo	20+	0											No Signs	No Signs	No	
803	wpt803	50H	448054	6301914	Wandoo	20+	0											No Signs	No Signs	No	
804	wpt804	50H	448041	6301917	Wandoo	20+	0											No Signs	No Signs	No	
805	wpt805	50H	448044	6301923	Wandoo	15-20	0											No Signs	No Signs	No	
806	wpt806	50H	448037	6301936	Wandoo	15-20	0											No Signs	No Signs	No	
807	wpt807	50H	448029	6301929	Wandoo	20+	0											No Signs	No Signs	No	
808	wpt808	50H	448008	6301951	Wandoo	20+	0											No Signs	No Signs	No	
809	wpt809	50H	447988	6301949	Wandoo	20+	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
810	wpt810	50H	447989	6301944	Wandoo	15-20	0											No Signs	No Signs	No	
811	wpt811	50H	448001	6301931	Wandoo	20+	5+	Knot Hole	5-12	Branch	<5	Spout Trunk	12-20	Branch	5-12	Branch	<5	No Signs	No Signs	Yes	Depth of hollows unknown
812	wpt812	50H	447988	6301928	Wandoo	20+	0											No Signs	No Signs	No	
813	wpt813	50H	447982	6301939	Jarrah	15-20	0											No Signs	No Signs	No	
814	wpt814	50H	447962	6301946	Wandoo	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
815	wpt815	50H	447953	6301955	Jarrah	20+	0											No Signs	No Signs	No	
816	wpt816	50H	447953	6301944	Wandoo	15-20	0											No Signs	No Signs	No	
817	wpt817	50H	447950	6301937	Wandoo	20+	0											No Signs	No Signs	No	
818	wpt818	50H	447955	6301935	Wandoo	20+	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
819	wpt819	50H	447961	6301954	Marri	15-20	0											No Signs	No Signs	No	
820	wpt820	50H	447983	6301962	Jarrah	15-20	0											No Signs	No Signs	No	
821	wpt821	50H	447987	6301963	Jarrah	15-20	0											No Signs	No Signs	No	
822	wpt822	50H	447990	6301965	Jarrah	15-20	0											No Signs	No Signs	No	
823	wpt823	50H	447918	6301997	Marri	20+	0											No Signs	No Signs	No	
824	wpt824	50H	447905	6301996	Jarrah	15-20	2	Spout Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
825	wpt825	50H	447905	6301995	Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
826	wpt826	50H	447825	6301982	Marri	15-20	0											No Signs	No Signs	No	
827	wpt827	50H	447821	6301982	Marri	15-20	0											No Signs	No Signs	No	
828	wpt828	50H	447812	6301971	Jarrah	10-15	0											No Signs	No Signs	No	
829	wpt829	50H	447804	6301970	Jarrah	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
830	wpt830	50H	447787	6301975	Marri	20+	0											No Signs	No Signs	No	
831	wpt831	50H	447769	6301969	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Trunk	12-20	Branch	5-12	No Signs	No Signs	No	Too shallow
832	wpt832	50H	447767	6301981	Dead Jarrah	15-20	0											No Signs	No Signs	No	
833	wpt833	50H	447764	6301980	Jarrah	15-20	0											No Signs	No Signs	No	
834	wpt834	50H	447755	6301963	Jarrah	15-20	0											No Signs	No Signs	No	
835	wpt835	50H	447748	6301964	Marri	15-20	0											No Signs	No Signs	No	
836	wpt836	50H	447725	6301974	Marri	15-20	0											No Signs	No Signs	No	
837	wpt837	50H	447723	6301975	Marri	15-20	0											No Signs	No Signs	No	
838	wpt838	50H	447712	6301973	Marri	15-20	0											No Signs	No Signs	No	
839	wpt839	50H	447710	6301970	Jarrah	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
840	wpt840	50H	447703	6301959	Jarrah	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
841	wpt841	50H	447664	6301959	Jarrah	15-20	0											No Signs	No Signs	No	
842	wpt842	50H	447659	6301954	Jarrah	15-20	0											No Signs	No Signs	No	
843	wpt843	50H	447645	6301964	Marri	20+	0											No Signs	No Signs	No	
844	wpt844	50H	447643	6301960	Wandoo	15-20	0											No Signs	No Signs	No	
845	wpt845	50H	447620	6301967	Wandoo	15-20	0											No Signs	No Signs	No	
846	wpt846	50H	447621	6301950	Wandoo	20+	4	Branch	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
847	wpt847	50H	447604	6301947	Wandoo	15-20	0											No Signs	No Signs	No	
848	wpt848	50H	447544	6301960	Wandoo	20+	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
849	wpt849	50H	447544	6301957	Wandoo	20+	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
850	wpt850	50H	447543	6301956	Wandoo	20+	0											No Signs	No Signs	No	
851	wpt851	50H	447541	6301959	Wandoo	15-20	0											No Signs	No Signs	No	
852	wpt852	50H	447530	6301949	Wandoo	15-20	5+	Spout Trunk	12-20	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	Yes	Depth of hollows unknown
853	wpt853	50H	447523	6301953	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
854	wpt854	50H	447498	6301965	Wandoo	20+	0											No Signs	No Signs	No	
855	wpt855	50H	447483	6301965	Wandoo	15-20	0											No Signs	No Signs	No	
856	wpt856	50H	447480	6301960	Wandoo	15-20	0											No Signs	No Signs	No	
857	wpt857	50H	447478	6301951	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	12-20	Branch	<5	Branch	5-12	No Signs	No Signs	Yes	Depth of hollows unknown
858	wpt858	50H	447472	6301967	Wandoo	20+	0											No Signs	No Signs	No	
859	wpt859	50H	447471	6301969	Wandoo	15-20	0											No Signs	No Signs	No	
860	wpt860	50H	447468	6301970	Wandoo	10-15	0											No Signs	No Signs	No	
861	wpt861	50H	447464	6301970	Wandoo	15-20	0											No Signs	No Signs	No	
862	wpt862	50H	447454	6301964	Wandoo	15-20	0											No Signs	No Signs	No	
863	wpt863	50H	447460	6301958	Wandoo	15-20	0											No Signs	No Signs	No	
864	wpt864	50H	447461	6301956	Wandoo	15-20	0											No Signs	No Signs	No	
865	wpt865	50H	447463	6301948	Wandoo	20+	0											No Signs	No Signs	No	
866	wpt866	50H	447456	6301952	Wandoo	20+	0											No Signs	No Signs	No	
867	wpt867	50H	447443	6301959	Dead Wandoo	15-20	0											No Signs	No Signs	No	
868	wpt868	50H	447437	6301967	Wandoo	15-20	0											No Signs	No Signs	No	
869	wpt869	50H	447428	6301957	Wandoo	20+	0											No Signs	No Signs	No	
870	wpt870	50H	447419	6301961	Wandoo	20+	0											No Signs	No Signs	No	
871	wpt871	50H	447396	6301960	Wandoo	20+	0											No Signs	No Signs	No	
872	wpt872	50H	447397	6301967	Wandoo	15-20	0											No Signs	No Signs	No	
873	wpt873	50H	447378	6301963	Wandoo	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
874	wpt874	50H	447363	6301961	Wandoo	15-20	0											No Signs	No Signs	No	
875	wpt875	50H	447363	6301955	Wandoo	15-20	0											No Signs	No Signs	No	
876	wpt876	50H	447270	6301962	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
877	wpt877	50H	447257	6301963	Jarrah	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
878	wpt878	50H	447246	6301970	Jarrah	15-20	0											No Signs	No Signs	No	
879	wpt879	50H	447239	6301971	Jarrah	15-20	0											No Signs	No Signs	No	
880	wpt880	50H	447227	6301973	Jarrah	20+	0											No Signs	No Signs	No	
881	wpt881	50H	447209	6301967	Jarrah	15-20	0											No Signs	No Signs	No	
882	wpt882	50H	447197	6301976	Jarrah	15-20	0											No Signs	No Signs	No	
883	wpt883	50H	447176	6301971	Jarrah	20+	5+	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	<5	Spout Trunk	20+	No Signs	No Signs	Yes	Depth of hollows unknown
884	wpt884	50H	447131	6301968	Jarrah	20+	0											No Signs	No Signs	No	
885	wpt885	50H	447116	6301968	Dead Unknown	15-20	4	Spout Branch	5-12	Spout Branch	5-12	Spout Branch	5-12	Spout Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
886	wpt886	50H	447113	6301970	Jarrah	20+	0											No Signs	No Signs	No	
887	wpt887	50H	447112	6301977	Jarrah	20+	0											No Signs	No Signs	No	
888	wpt888	50H	447108	6301976	Jarrah	15-20	0											No Signs	No Signs	No	
889	wpt889	50H	447100	6301967	Jarrah	15-20	0											No Signs	No Signs	No	
890	wpt890	50H	447101	6301959	Jarrah	15-20	2	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
891	wpt891	50H	447133	6301924	Dead Unknown	15-20	5+	Branch	5-12	Branch	5-12	Branch	12-20	Spout Branch	12-20	Spout Branch	12-20	No Signs	No Signs	Yes	Depth of hollows unknown
892	wpt892	50H	447142	6301916	Jarrah	15-20	0											No Signs	No Signs	No	
893	wpt893	50H	447158	6301911	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
894	wpt894	50H	447202	6301927	Jarrah	15-20	0											No Signs	No Signs	No	
895	wpt895	50H	447212	6301919	Dead Jarrah	15-20	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
896	wpt896	50H	447237	6301915	Jarrah	15-20	0											No Signs	No Signs	No	
897	wpt897	50H	447234	6301902	Jarrah	15-20	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
898	wpt898	50H	447252	6301900	Jarrah	15-20	0											No Signs	No Signs	No	
899	wpt899	50H	447293	6301911	Wandoo	15-20	0											No Signs	No Signs	No	
900	wpt900	50H	447294	6301913	Wandoo	15-20	0											No Signs	No Signs	No	
901	wpt901	50H	447310	6301905	Jarrah	15-20	0											No Signs	No Signs	No	
902	wpt902	50H	447336	6301914	Wandoo	15-20	0											No Signs	No Signs	No	
903	wpt903	50H	447343	6301916	Wandoo	15-20	0											No Signs	No Signs	No	
904	wpt904	50H	447352	6301903	Wandoo	20+	0											No Signs	No Signs	No	
905	wpt905	50H	447371	6301909	Wandoo	20+	0											No Signs	No Signs	No	
906	wpt906	50H	447369	6301903	Wandoo	15-20	0											No Signs	No Signs	No	
907	wpt907	50H	447366	6301899	Wandoo	15-20	0											No Signs	No Signs	No	
908	wpt908	50H	447380	6301893	Wandoo	20+	0											No Signs	No Signs	No	
909	wpt909	50H	447368	6301888	Wandoo	15-20	1	Knot Hole	5-12									No Signs	No Signs	No	Depth of hollows unknown
910	wpt910	50H	447402	6301872	Wandoo	20+	5+	Knot Hole	5-12	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
911	wpt911	50H	447405	6301905	Wandoo	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
912	wpt912	50H	447433	6301866	Wandoo	20+	0											No Signs	No Signs	No	
913	wpt913	50H	447444	6301886	Wandoo	15-20	0											No Signs	No Signs	No	
914	wpt914	50H	447453	6301886	Wandoo	15-20	0											No Signs	No Signs	No	
915	wpt915	50H	447453	6301884	Wandoo	20+	0											No Signs	No Signs	No	
916	wpt916	50H	447456	6301879	Wandoo	15-20	0											No Signs	No Signs	No	
917	wpt917	50H	447469	6301840	Wandoo	20+	0											No Signs	No Signs	No	
918	wpt918	50H	447488	6301867	Wandoo	15-20	5+	Branch	<5	Branch	55	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
919	wpt919	50H	447487	6301880	Wandoo	20+	0											No Signs	No Signs	No	
920	wpt920	50H	447489	6301891	Wandoo	20+	0											No Signs	No Signs	No	
921	wpt921	50H	447510	6301865	Wandoo	15-20	0											No Signs	No Signs	No	
922	wpt922	50H	447518	6301849	Wandoo	10-15	0											No Signs	No Signs	No	
923	wpt923	50H	447517	6301836	Wandoo	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
924	wpt924	50H	447520	6301843	Wandoo	15-20	2	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
925	wpt925	50H	447575	6301833	Wandoo	15-20	4	Branch	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
926	wpt926	50H	447578	6301846	Wandoo	20+	0											No Signs	No Signs	No	
927	wpt927	50H	447588	6301850	Jarrah	15-20	0											No Signs	No Signs	No	
928	wpt928	50H	447576	6301847	Wandoo	15-20	0											No Signs	No Signs	No	
929	wpt929	50H	447574	6301846	Wandoo	15-20	0											No Signs	No Signs	No	
930	wpt930	50H	447571	6301846	Wandoo	15-20	0											No Signs	No Signs	No	
931	wpt931	50H	447565	6301851	Wandoo	15-20	0											No Signs	No Signs	No	
932	wpt932	50H	447557	6301864	Wandoo	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
933	wpt933	50H	447596	6301848	Jarrah	15-20	0											No Signs	No Signs	No	
934	wpt934	50H	447605	6301840	Jarrah	15-20	0											No Signs	No Signs	No	
935	wpt935	50H	447604	6301824	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
936	wpt936	50H	447598	6301811	Wandoo	10-15	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
937	wpt937	50H	447589	6301818	Wandoo	20+	5+	Branch	<5	Branch	<5	Branch	<5	Branch	<5	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
938	wpt938	50H	447576	6301800	Wandoo	20+	0											No Signs	No Signs	No	
939	wpt939	50H	447611	6301799	Wandoo	20+	0											No Signs	No Signs	No	
940	wpt940	50H	447611	6301789	Wandoo	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
941	wpt941	50H	447625	6301787	Wandoo	15-20	0											No Signs	No Signs	No	
942	wpt942	50H	447642	6301784	Wandoo	20+	0											No Signs	No Signs	No	
943	wpt943	50H	447649	6301795	Wandoo	15-20	0											No Signs	No Signs	No	
944	wpt944	50H	447652	6301802	Wandoo	15-20	0											No Signs	No Signs	No	
945	wpt945	50H	447654	6301807	Wandoo	15-20	0											No Signs	No Signs	No	
946	wpt946	50H	447662	6301809	Wandoo	15-20	0											No Signs	No Signs	No	
947	wpt947	50H	447669	6301822	Wandoo	15-20	0											No Signs	No Signs	No	
948	wpt948	50H	447680	6301828	Wandoo	15-20	0											No Signs	No Signs	No	
949	wpt949	50H	447671	6301840	Wandoo	20+	0											No Signs	No Signs	No	
950	wpt950	50H	447665	6301833	Wandoo	15-20	0											No Signs	No Signs	No	
951	wpt951	50H	447646	6301830	Wandoo	10-15	0											No Signs	No Signs	No	
952	wpt952	50H	447635	6301816	Wandoo	20+	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
953	wpt953	50H	447629	6301804	Wandoo	20+	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
954	wpt954	50H	447650	6301776	Wandoo	15-20	0											No Signs	No Signs	No	
955	wpt955	50H	447663	6301788	Wandoo	20+	0											No Signs	No Signs	No	
956	wpt956	50H	447666	6301795	Wandoo	15-20	0											No Signs	No Signs	No	
957	wpt957	50H	447695	6301810	Wandoo	20+	0											No Signs	No Signs	No	
958	wpt958	50H	447688	6301805	Dead Unknown	15-20	2	Branch	5-12	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
959	wpt959	50H	447685	6301802	Wandoo	20+	0											No Signs	No Signs	No	
960	wpt960	50H	447671	6301784	Wandoo	20+	0											No Signs	No Signs	No	
961	wpt961	50H	447688	6301758	Wandoo	20+	0											No Signs	No Signs	No	
962	wpt962	50H	447691	6301769	Marri	20+	0											No Signs	No Signs	No	
963	wpt963	50H	447711	6301800	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
964	wpt964	50H	447717	6301793	Wandoo	15-20	0											No Signs	No Signs	No	
965	wpt965	50H	447736	6301779	Wandoo	10-15	0											No Signs	No Signs	No	
966	wpt966	50H	447741	6301775	Wandoo	15-20	0											No Signs	No Signs	No	
967	wpt967	50H	447740	6301772	Wandoo	20+	0											No Signs	No Signs	No	
968	wpt968	50H	447764	6301788	Wandoo	15-20	0											No Signs	No Signs	No	
969	wpt969	50H	447769	6301788	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	12-20	Branch	5-12	Branch	<5	No Signs	No Signs	Yes	Depth of hollows unknown
970	wpt970	50H	447775	6301767	Jarrah	15-20	0											No Signs	No Signs	No	
971	wpt971	50H	447778	6301762	Wandoo	20+	0											No Signs	No Signs	No	
972	wpt972	50H	447752	6301740	Jarrah	20+	0											No Signs	No Signs	No	
973	wpt973	50H	447746	6301753	Jarrah	20+	0											No Signs	No Signs	No	
974	wpt974	50H	447731	6301763	Wandoo	15-20	0											No Signs	No Signs	No	
975	wpt975	50H	447731	6301764	Wandoo	15-20	0											No Signs	No Signs	No	
976	wpt976	50H	447743	6301742	Marri	20+	0											No Signs	No Signs	No	
977	wpt977	50H	447760	6301729	Dead Marri	15-20	1	Spout Trunk										No Signs	No Signs	No	Too shallow
978	wpt978	50H	447783	6301757	Wandoo	20+	5+	Knot Hole	20+	Branch	<5	Branch	5-12	Spout Trunk	5-12	Branch	<5	No Signs	No Signs	Yes	Depth of hollows unknown
979	wpt979	50H	447794	6301756	Wandoo	10-15	0											No Signs	No Signs	No	
980	wpt980	50H	447796	6301761	Jarrah	15-20	0											No Signs	No Signs	No	
981	wpt981	50H	447814	6301749	Wandoo	15-20	0											No Signs	No Signs	No	
982	wpt982	50H	447826	6301749	Wandoo	15-20	0											No Signs	No Signs	No	
983	wpt983	50H	447832	6301730	Wandoo	15-20	0											No Signs	No Signs	No	
984	wpt984	50H	447827	6301728	Wandoo	15-20	0											No Signs	No Signs	No	
985	wpt985	50H	447814	6301729	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
986	wpt986	50H	447793	6301725	Wandoo	10-15	0											No Signs	No Signs	No	
987	wpt987	50H	447801	6301711	Wandoo	15-20	0											No Signs	No Signs	No	
988	wpt988	50H	447863	6301717	Jarrah	15-20	0											No Signs	No Signs	No	
989	wpt989	50H	447870	6301724	Wandoo	20+	0											No Signs	No Signs	No	
990	wpt990	50H	447867	6301737	Wandoo	15-20	0											No Signs	No Signs	No	
991	wpt991	50H	447856	6301741	Wandoo	15-20	0											No Signs	No Signs	No	
992	wpt992	50H	447846	6301733	Wandoo	15-20	0											No Signs	No Signs	No	
993	wpt993	50H	447867	6301699	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
994	wpt994	50H	447896	6301730	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
995	wpt995	50H	447879	6301695	Jarrah	15-20	0											No Signs	No Signs	No	
996	wpt996	50H	447897	6301691	Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
997	wpt997	50H	447888	6301681	Marri	15-20	0											No Signs	No Signs	No	
998	wpt998	50H	447914	6301668	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
999	wpt999	50H	447925	6301693	Jarrah	15-20	0											No Signs	No Signs	No	
1000	wpt1000	50H	447936	6301679	Jarrah	15-20	0											No Signs	No Signs	No	
1001	wpt1001	50H	447949	6301687	Jarrah	15-20	0											No Signs	No Signs	No	
1002	wpt1002	50H	447951	6301670	Jarrah	15-20	0											No Signs	No Signs	No	
1003	wpt1003	50H	447944	6301665	Marri	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1004	wpt1004	50H	447931	6301663	Jarrah	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
1005	wpt1005	50H	447976	6301647	Jarrah	5-10	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
1006	wpt1006	50H	448008	6301650	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1007	wpt1007	50H	448026	6301627	Dead Unknown	15-20	2	Spout Branch	<5	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1008	wpt1008	50H	448025	6301639	Dead Unknown	15-20	4	Branch	<5	Branch	<5	Branch	<5	Branch	<5			No Signs	No Signs	No	Depth of hollows unknown
1009	wpt1009	50H	448115	6301631	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1010	wpt1010	50H	448162	6301631	Wandoo	15-20	0											No Signs	No Signs	No	
1011	wpt1011	50H	448161	6301633	Wandoo	15-20	0											No Signs	No Signs	No	
1012	wpt1012	50H	448183	6301673	Jarrah	15-20	0											No Signs	No Signs	No	
1013	wpt1013	50H	448178	6301673	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1014	wpt1014	50H	448198	6301679	Dead Marri	15-20	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1015	wpt1015	50H	448206	6301674	Marri	20+	0											No Signs	No Signs	No	
1016	wpt1016	50H	448234	6301670	Jarrah	15-20	0											No Signs	No Signs	No	
1017	wpt1017	50H	448239	6301679	Jarrah	15-20	0											No Signs	No Signs	No	
1018	wpt1018	50H	448255	6301677	Jarrah	15-20	0											No Signs	No Signs	No	
1019	wpt1019	50H	448261	6301687	Marri	20+	0											No Signs	No Signs	No	
1020	wpt1020	50H	448267	6301697	Jarrah	15-20	5+	Spout Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1021	wpt1021	50H	448278	6301686	Jarrah	15-20	0											No Signs	No Signs	No	
1022	wpt1022	50H	448284	6301668	Marri	20+	4	Fissure	5-12	Branch	<5	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1023	wpt1023	50H	448289	6301668	Wandoo	15-20	0											No Signs	No Signs	No	
1024	wpt1024	50H	448312	6301661	Jarrah	15-20	0											No Signs	No Signs	No	
1025	wpt1025	50H	448335	6301677	Marri	20+	0											No Signs	No Signs	No	
1026	wpt1026	50H	448363	6301675	Jarrah	15-20	0											No Signs	No Signs	No	
1027	wpt1027	50H	448379	6301664	Jarrah	15-20	0											No Signs	No Signs	No	
1028	wpt1028	50H	448398	6301638	Jarrah	15-20	0											No Signs	No Signs	No	
1029	wpt1029	50H	448644	6301507	Marri	15-20	0											No Signs	No Signs	No	
1030	wpt1030	50H	448640	6301528	Wandoo	20+	0											No Signs	No Signs	No	
1031	wpt1031	50H	448610	6301550	Marri	15-20	0											No Signs	No Signs	No	
1032	wpt1032	50H	448608	6301557	Jarrah	15-20	0											No Signs	No Signs	No	
1033	wpt1033	50H	448615	6301532	Wandoo	20+	3	Branch	<5	Branch	5-12	Branch	<5					Bees	No Signs	No	Depth of hollows unknown
1034	wpt1034	50H	448591	6301532	Wandoo	15-20	0											No Signs	No Signs	No	
1035	wpt1035	50H	448589	6301546	Wandoo	15-20	0											No Signs	No Signs	No	
1036	wpt1036	50H	448570	6301549	Wandoo	15-20	0											No Signs	No Signs	No	
1037	wpt1037	50H	448571	6301561	Jarrah	15-20	0											No Signs	No Signs	No	
1038	wpt1038	50H	448573	6301565	Jarrah	15-20	2	Branch	<5	Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
1039	wpt1039	50H	448570	6301569	Wandoo	15-20	0											No Signs	No Signs	No	
1040	wpt1040	50H	448566	6301567	Wandoo	15-20	0											No Signs	No Signs	No	
1041	wpt1041	50H	448561	6301572	Dead Marri	15-20	2	Knot Hole	<5	Knot Hole	<5							No Signs	No Signs	No	Depth of hollows unknown
1042	wpt1042	50H	448553	6301564	Wandoo	15-20	0											No Signs	No Signs	No	
1043	wpt1043	50H	448552	6301558	Wandoo	15-20	0											No Signs	No Signs	No	
1044	wpt1044	50H	448553	6301543	Wandoo	20+	0											No Signs	No Signs	No	
1045	wpt1045	50H	448533	6301562	Wandoo	15-20	0											No Signs	No Signs	No	
1046	wpt1046	50H	448522	6301546	Dead Unknown	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1047	wpt1047	50H	448513	6301559	Jarrah	15-20	0											No Signs	No Signs	No	
1048	wpt1048	50H	448504	6301549	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1049	wpt1049	50H	448492	6301548	Jarrah	20+	0											No Signs	No Signs	No	
1050	wpt1050	50H	448480	6301548	Marri	20+	0											No Signs	No Signs	No	
1051	wpt1051	50H	448465	6301559	Wandoo	20+	0											No Signs	No Signs	No	
1052	wpt1052	50H	448462	6301561	Marri	20+	0											No Signs	No Signs	No	
1053	wpt1053	50H	448460	6301557	Marri	20+	0											No Signs	No Signs	No	
1054	wpt1054	50H	448424	6301564	Marri	15-20	0											No Signs	No Signs	No	
1055	wpt1055	50H	448435	6301584	Marri	20+	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1056	wpt1056	50H	448433	6301591	Marri	20+	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1057	wpt1057	50H	448440	6301598	Marri	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1058	wpt1058	50H	448419	6301598	Marri	15-20	0											No Signs	No Signs	No	
1059	wpt1059	50H	448409	6301604	Jarrah	20+	0											No Signs	No Signs	No	
1060	wpt1060	50H	448403	6301602	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1061	wpt1061	50H	448399	6301582	Marri	20+	0											No Signs	No Signs	No	
1062	wpt1062	50H	448414	6301579	Jarrah	15-20	0											No Signs	No Signs	No	
1063	wpt1063	50H	448414	6301585	Jarrah	15-20	0											No Signs	No Signs	No	
1064	wpt1064	50H	448387	6301581	Jarrah	20+	0											No Signs	No Signs	No	
1065	wpt1065	50H	448371	6301587	Jarrah	15-20	1	Branch	<5									No Signs	No Signs	No	Depth of hollows unknown
1066	wpt1066	50H	448366	6301606	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1067	wpt1067	50H	448334	6301620	Marri	15-20	3	Knot Hole	5-12	Branch	<5	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1068	wpt1068	50H	448360	6301584	Jarrah	20+	0											No Signs	No Signs	No	
1069	wpt1069	50H	448356	6301584	Jarrah	15-20	0											No Signs	No Signs	No	
1070	wpt1070	50H	448360	6301575	Dead Unknown	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1071	wpt1071	50H	448332	6301587	Marri	15-20	0											No Signs	No Signs	No	
1072	wpt1072	50H	448327	6301590	Dead Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1073	wpt1073	50H	448304	6301593	Wandoo	20+	0											No Signs	No Signs	No	
1074	wpt1074	50H	448309	6301597	Wandoo	15-20	0											No Signs	No Signs	No	
1075	wpt1075	50H	448304	6301616	Jarrah	15-20	0											No Signs	No Signs	No	
1076	wpt1076	50H	448307	6301628	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Too shallow
1077	wpt1077	50H	448287	6301622	Wandoo	20+	0											No Signs	No Signs	No	
1078	wpt1078	50H	448286	6301649	Marri	20+	0											No Signs	No Signs	No	
1079	wpt1079	50H	448248	6301631	Wandoo	20+	0											No Signs	No Signs	No	
1080	wpt1080	50H	448237	6301626	Marri	20+	0											No Signs	No Signs	No	
1081	wpt1081	50H	448244	6301609	Dead Unknown	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1082	wpt1082	50H	448251	6301594	Jarrah	15-20	0											No Signs	No Signs	No	
1083	wpt1083	50H	448263	6301588	Jarrah	15-20	0											No Signs	No Signs	No	
1084	wpt1084	50H	448235	6301606	Wandoo	20+	0											No Signs	No Signs	No	
1085	wpt1085	50H	448229	6301615	Wandoo	15-20	0											No Signs	No Signs	No	
1086	wpt1086	50H	448218	6301602	Wandoo	20+	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1087	wpt1087	50H	448205	6301621	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1088	wpt1088	50H	448209	6301631	Marri	20+	0											No Signs	No Signs	No	
1089	wpt1089	50H	448203	6301632	Marri	20+	0											No Signs	No Signs	No	
1090	wpt1090	50H	448203	6301646	Jarrah	15-20	0											No Signs	No Signs	No	
1091	wpt1091	50H	448191	6301629	Marri	20+	0											No Signs	No Signs	No	
1092	wpt1092	50H	448192	6301606	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Spout Branch	<5	Spout Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1093	wpt1093	50H	448181	6301618	Wandoo	20+	5+	Knot Hole	5-12	Spout Branch	5-12	Branch	5-12	Branch	<5	Spout Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1094	wpt1094	50H	448157	6301621	Wandoo	15-20	0											No Signs	No Signs	No	
1095	wpt1095	50H	448152	6301624	Wandoo	15-20	0											No Signs	No Signs	No	
1096	wpt1096	50H	448147	6301623	Wandoo	15-20	0											No Signs	No Signs	No	
1097	wpt1097	50H	448138	6301621	Wandoo	15-20	0											No Signs	No Signs	No	
1098	wpt1098	50H	448139	6301619	Wandoo	15-20	2	Spout Branch	<5	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1099	wpt1099	50H	448125	6301647	Marri	20+	5+	Knot Hole	<5	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1100	wpt1100	50H	448153	6301684	Marri	15-20	0											No Signs	No Signs	No	
1101	wpt1101	50H	448179	6301668	Dead Unknown	10-15	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1102	wpt1102	50H	448240	6301643	Jarrah	15-20	0											No Signs	No Signs	No	
1103	wpt1103	50H	448319	6301643	Jarrah	15-20	3	Branch	<5	Spout Branch	5-12	Spout Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1104	wpt1104	50H	448345	6301644	Jarrah	15-20	2	Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1105	wpt1105	50H	448354	6301654	Jarrah	15-20	0											No Signs	No Signs	No	
1106	wpt1106	50H	448338	6301662	Jarrah	15-20	0											No Signs	No Signs	No	
1107	wpt1107	50H	448365	6301650	Marri	20+	0											No Signs	No Signs	No	
1108	wpt1108	50H	448359	6301617	Jarrah	15-20	0											No Signs	No Signs	No	
1109	wpt1109	50H	448385	6301618	Jarrah	20+	0											No Signs	No Signs	No	
1110	wpt1110	50H	448408	6301632	Dead Jarrah	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1111	wpt1111	50H	448410	6301625	Marri	15-20	0											No Signs	No Signs	No	
1112	wpt1112	50H	448410	6301618	Jarrah	20+	0											No Signs	No Signs	No	
1113	wpt1113	50H	448435	6301636	Jarrah	15-20	0											No Signs	No Signs	No	
1114	wpt1114	50H	448446	6301642	Jarrah	15-20	0											No Signs	No Signs	No	
1115	wpt1115	50H	448448	6301646	Dead Jarrah	10-15	2	Spout Branch	5-12	Spout Trunk	12-20							No Signs	No Signs	No	Too shallow
1116	wpt1116	50H	448450	6301610	Jarrah	15-20	0											No Signs	No Signs	No	
1117	wpt1117	50H	448476	6301603	Jarrah	20+	0											No Signs	No Signs	No	
1118	wpt1118	50H	448479	6301601	Dead Jarrah	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1119	wpt1119	50H	448480	6301588	Dead Jarrah	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1120	wpt1120	50H	448467	6301585	Jarrah	20+	0											No Signs	No Signs	No	
1121	wpt1121	50H	448464	6301577	Marri	15-20	0											No Signs	No Signs	No	
1122	wpt1122	50H	448519	6301585	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1123	wpt1123	50H	448526	6301600	Jarrah	10-15	2	Branch	5-12	Spout Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
1124	wpt1124	50H	448531	6301587	Wandoo	20+	0											No Signs	No Signs	No	
1125	wpt1125	50H	448547	6301583	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1126	wpt1126	50H	447941	6301940	Jarrah	20+	0											No Signs	No Signs	No	
1127	wpt1127	50H	447935	6301948	Wandoo	15-20	0											No Signs	No Signs	No	
1128	wpt1128	50H	447920	6301941	Marri	20+	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1129	wpt1129	50H	447919	6301955	Dead Unknown	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1130	wpt1130	50H	447911	6301898	Wandoo	20+	0											No Signs	No Signs	No	
1131	wpt1131	50H	447891	6301916	Wandoo	10-15	0											No Signs	No Signs	No	
1132	wpt1132	50H	447873	6301942	Dead Unknown	15-20	3	Branch	<5	Branch	5-12	Spout Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1133	wpt1133	50H	447861	6301925	Wandoo	15-20	0											No Signs	No Signs	No	
1134	wpt1134	50H	447844	6301924	Marri	15-20	2	Spout Branch	20+	Spout Trunk	20+							No Signs	No Signs	Yes	Depth of hollows unknown
1135	wpt1135	50H	447817	6301921	Marri	20+	5+	Knot Hole	5-12	Knot Hole	<5	Knot Hole	<5	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1136	wpt1136	50H	447787	6301920	Marri	20+	0											No Signs	No Signs	No	
1137	wpt1137	50H	447776	6301916	Jarrah	20+	0											No Signs	No Signs	No	
1138	wpt1138	50H	447765	6301925	Marri	5-10	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1139	wpt1139	50H	447766	6301938	Jarrah	15-20	0											No Signs	No Signs	No	
1140	wpt1140	50H	447758	6301933	Marri	20+	0											No Signs	No Signs	No	
1141	wpt1141	50H	447728	6301932	Marri	20+	0											No Signs	No Signs	No	
1142	wpt1142	50H	447718	6301929	Jarrah	20+	0											No Signs	No Signs	No	
1143	wpt1143	50H	447693	6301927	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1144	wpt1144	50H	447688	6301911	Wandoo	15-20	0											No Signs	No Signs	No	
1145	wpt1145	50H	447685	6301909	Wandoo	15-20	0											No Signs	No Signs	No	
1146	wpt1146	50H	447671	6301900	Wandoo	15-20	0											No Signs	No Signs	No	
1147	wpt1147	50H	447671	6301904	Wandoo	15-20	0											No Signs	No Signs	No	
1148	wpt1148	50H	447655	6301910	Wandoo	15-20	0											No Signs	No Signs	No	
1149	wpt1149	50H	447665	6301927	Wandoo	15-20	0											No Signs	No Signs	No	
1150	wpt1150	50H	447647	6301923	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1151	wpt1151	50H	447646	6301918	Wandoo	15-20	0											No Signs	No Signs	No	
1152	wpt1152	50H	447646	6301913	Wandoo	15-20	0											No Signs	No Signs	No	
1153	wpt1153	50H	447644	6301909	Wandoo	20+	0											No Signs	No Signs	No	
1154	wpt1154	50H	447632	6301911	Wandoo	15-20	0											No Signs	No Signs	No	
1155	wpt1155	50H	447628	6301919	Wandoo	15-20	2	Branch	<5	Spout Branch	<5							No Signs	No Signs	No	Depth of hollows unknown
1156	wpt1156	50H	447624	6301905	Wandoo	20+	0											No Signs	No Signs	No	
1157	wpt1157	50H	447606	6301908	Wandoo	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
1158	wpt1158	50H	447598	6301914	Wandoo	15-20	0											No Signs	No Signs	No	
1159	wpt1159	50H	447607	6301926	Wandoo	15-20	0											No Signs	No Signs	No	
1160	wpt1160	50H	447579	6301923	Wandoo	15-20	0											No Signs	No Signs	No	
1161	wpt1161	50H	447577	6301923	Wandoo	15-20	0											No Signs	No Signs	No	
1162	wpt1162	50H	447562	6301920	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	12-20	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1163	wpt1163	50H	447693	6301892	Wandoo	15-20	0											No Signs	No Signs	No	
1164	wpt1164	50H	447694	6301894	Wandoo	15-20	0											No Signs	No Signs	No	
1165	wpt1165	50H	447704	6301893	Jarrah	15-20	0											No Signs	No Signs	No	
1166	wpt1166	50H	447702	6301886	Jarrah	20+	0											No Signs	No Signs	No	
1167	wpt1167	50H	447723	6301882	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1168	wpt1168	50H	447726	6301873	Wandoo	15-20	0											No Signs	No Signs	No	
1169	wpt1169	50H	447732	6301868	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1170	wpt1170	50H	447750	6301868	Jarrah	20+	0											No Signs	No Signs	No	
1171	wpt1171	50H	447772	6301872	Jarrah	20+	0											No Signs	No Signs	No	
1172	wpt1172	50H	447776	6301869	Jarrah	15-20	0											No Signs	No Signs	No	
1173	wpt1173	50H	447788	6301855	Jarrah	20+	0											No Signs	No Signs	No	
1174	wpt1174	50H	447796	6301880	Jarrah	20+	0											No Signs	No Signs	No	
1175	wpt1175	50H	447800	6301873	Jarrah	20+	0											No Signs	No Signs	No	
1176	wpt1176	50H	447810	6301853	Marri	20+	0											No Signs	No Signs	No	
1177	wpt1177	50H	447812	6301839	Marri	20+	0											No Signs	No Signs	No	
1178	wpt1178	50H	447810	6301834	Marri	20+	0											No Signs	No Signs	No	
1179	wpt1179	50H	447838	6301819	Wandoo	20+	0											No Signs	No Signs	No	
1180	wpt1180	50H	447837	6301816	Wandoo	15-20	0											No Signs	No Signs	No	
1181	wpt1181	50H	447838	6301823	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1182	wpt1182	50H	447851	6301827	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1183	wpt1183	50H	447867	6301814	Marri	20+	0											No Signs	No Signs	No	
1184	wpt1184	50H	447888	6301813	Jarrah	20+	0											No Signs	No Signs	No	
1185	wpt1185	50H	447899	6301815	Marri	15-20	0											No Signs	No Signs	No	
1186	wpt1186	50H	447909	6301775	Jarrah	20+	0											No Signs	No Signs	No	
1187	wpt1187	50H	447948	6301795	Jarrah	20+	0											No Signs	No Signs	No	
1188	wpt1188	50H	447967	6301797	Jarrah	10-15	1	Spout Trunk	20+									No Signs	No Signs	No	Too shallow
1189	wpt1189	50H	447974	6301809	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Spout Branch	<5	Spout Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1190	wpt1190	50H	447962	6301777	Jarrah	15-20	0											No Signs	No Signs	No	
1191	wpt1191	50H	447965	6301768	Wandoo	5-10	0											No Signs	No Signs	No	
1192	wpt1192	50H	447956	6301764	Jarrah	15-20	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1193	wpt1193	50H	447952	6301762	Jarrah	15-20	0											No Signs	No Signs	No	
1194	wpt1194	50H	447948	6301760	Jarrah	15-20	0											No Signs	No Signs	No	
1195	wpt1195	50H	447952	6301754	Jarrah	15-20	0											No Signs	No Signs	No	
1196	wpt1196	50H	447933	6301751	Jarrah	15-20	0											No Signs	No Signs	No	
1197	wpt1197	50H	447920	6301753	Marri	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1198	wpt1198	50H	447957	6301738	Jarrah	15-20	0											No Signs	No Signs	No	
1199	wpt1199	50H	447977	6301734	Jarrah	15-20	0											No Signs	No Signs	No	
1200	wpt1200	50H	447989	6301750	Jarrah	15-20	0											No Signs	No Signs	No	
1201	wpt1201	50H	448000	6301734	Jarrah	15-20	1	Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
1202	wpt1202	50H	448006	6301733	Jarrah	15-20	5+	Knot Hole	5-12	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1203	wpt1203	50H	448012	6301705	Jarrah	20+	3	Knot Hole	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1204	wpt1204	50H	448031	6301707	Marri	20+	0											No Signs	No Signs	No	
1205	wpt1205	50H	448053	6301691	Wandoo	15-20	0											No Signs	No Signs	No	
1206	wpt1206	50H	448054	6301702	Dead Unknown	15-20	2	Spout Branch	5-12	Spout Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1207	wpt1207	50H	448085	6301684	Marri	20+	0											No Signs	No Signs	No	
1208	wpt1208	50H	448083	6301676	Wandoo	20+	0											No Signs	No Signs	No	
1209	wpt1209	50H	448091	6301661	Dead Wandoo	10-15	1	Spout Trunk	5-12									No Signs	No Signs	No	Depth of hollows unknown
1210	wpt1210	50H	448098	6301651	Jarrah	15-20	1	Branch	<5									No Signs	No Signs	No	Depth of hollows unknown
1211	wpt1211	50H	448106	6301664	Dead Unknown	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1212	wpt1212	50H	448116	6301679	Marri	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1213	wpt1213	50H	448124	6301691	Marri	20+	0											No Signs	No Signs	No	
1214	wpt1214	50H	448140	6301702	Marri	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1215	wpt1215	50H	448152	6301706	Jarrah	20+	0											No Signs	No Signs	No	
1216	wpt1216	50H	448164	6301724	Jarrah	5-10	0											No Signs	No Signs	No	
1217	wpt1217	50H	448167	6301726	Jarrah	15-20	0											No Signs	No Signs	No	
1218	wpt1218	50H	448169	6301728	Marri	15-20	3	Knot Hole	12-20	Branch	<5	Branch	5-12					No Signs	No Signs	No	Too low
1219	wpt1219	50H	448175	6301736	Jarrah	20+	0											No Signs	No Signs	No	
1220	wpt1220	50H	448166	6301736	Jarrah	15-20	0											No Signs	No Signs	No	
1221	wpt1221	50H	448183	6301705	Marri	20+	0											No Signs	No Signs	No	
1222	wpt1222	50H	448191	6301703	Jarrah	15-20	0											No Signs	No Signs	No	
1223	wpt1223	50H	448199	6301700	Dead Jarrah	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1224	wpt1224	50H	448208	6301691	Marri	20+	0											No Signs	No Signs	No	
1225	wpt1225	50H	448187	6301691	Jarrah	20+	0											No Signs	No Signs	No	
1226	wpt1226	50H	448219	6301685	Jarrah	15-20	0											No Signs	No Signs	No	
1227	wpt1227	50H	448233	6301693	Marri	20+	0											No Signs	No Signs	No	
1228	wpt1228	50H	448247	6301696	Jarrah	15-20	1	Spout Branch	5-12									No Signs	No Signs	No	Depth of hollows unknown
1229	wpt1229	50H	448270	6301714	Marri	20+	0											No Signs	No Signs	No	
1230	wpt1230	50H	448277	6301724	Wandoo	15-20	0											No Signs	No Signs	No	
1231	wpt1231	50H	448256	6301725	Wandoo	20+	0											No Signs	No Signs	No	
1232	wpt1232	50H	448255	6301719	Wandoo	15-20	0											No Signs	No Signs	No	
1233	wpt1233	50H	448248	6301726	Wandoo	20+	0											No Signs	No Signs	No	
1234	wpt1234	50H	448247	6301742	Wandoo	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1235	wpt1235	50H	448249	6301752	Wandoo	15-20	0											No Signs	No Signs	No	
1236	wpt1236	50H	448256	6301751	Wandoo	15-20	0											No Signs	No Signs	No	
1237	wpt1237	50H	448263	6301769	Wandoo	15-20	0											No Signs	No Signs	No	
1238	wpt1238	50H	448258	6301775	Wandoo	15-20	0											No Signs	No Signs	No	
1239	wpt1239	50H	448229	6301766	Wandoo	20+	2	Branch	<5	Branch	5-12							No Signs	No Signs	No	Depth of hollows unknown
1240	wpt1240	50H	448211	6301770	Dead Jarrah	20+	3	Branch	<5	Branch	<5	Branch						No Signs	No Signs	No	Depth of hollows unknown
1241	wpt1241	50H	448186	6301782	Wandoo	20+	0											No Signs	No Signs	No	
1242	wpt1242	50H	448179	6301776	Wandoo	15-20	0											No Signs	No Signs	No	
1243	wpt1243	50H	448153	6301774	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1244	wpt1244	50H	448161	6301756	Marri	20+	2	Branch	5-12	Spout Trunk	20+							No Signs	No Signs	No	Too low/shallow
1245	wpt1245	50H	448208	6301734	Wandoo	20+	5+	Fissure	5-12	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Depth of hollows unknown
1246	wpt1246	50H	448216	6301747	Wandoo	15-20	0											No Signs	No Signs	No	
1247	wpt1247	50H	448231	6301737	Wandoo	15-20	0											No Signs	No Signs	No	
1248	wpt1248	50H	448235	6301737	Wandoo	15-20	0											No Signs	No Signs	No	
1249	wpt1249	50H	448224	6301737	Wandoo	15-20	0											No Signs	No Signs	No	
1250	wpt1250	50H	448122	6301722	Marri	20+	0											No Signs	No Signs	No	
1251	wpt1251	50H	448117	6301730	Dead Unknown	20+	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1252	wpt1252	50H	448115	6301759	Marri	20+	0											No Signs	No Signs	No	
1253	wpt1253	50H	448122	6301769	Dead Unknown	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
1254	wpt1254	50H	448136	6301777	Wandoo	15-20	0											No Signs	No Signs	No	
1255	wpt1255	50H	448145	6301765	Jarrah	15-20	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1256	wpt1256	50H	448107	6301696	Dead Unknown	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
1257	wpt1257	50H	448041	6301727	Jarrah	15-20	0											No Signs	No Signs	No	
1258	wpt1258	50H	448036	6301741	Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
1259	wpt1259	50H	448034	6301762	Jarrah	20+	0											No Signs	No Signs	No	
1260	wpt1260	50H	448026	6301759	Wandoo	15-20	0											No Signs	No Signs	No	
1261	wpt1261	50H	448025	6301769	Wandoo	15-20	0											No Signs	No Signs	No	
1262	wpt1262	50H	448004	6301769	Flooded Gum	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1263	wpt1263	50H	447997	6301769	Jarrah	20+	0											No Signs	No Signs	No	
1264	wpt1264	50H	448015	6301809	Jarrah	15-20	0											No Signs	No Signs	No	
1265	wpt1265	50H	448043	6301832	Wandoo	20+	1	Knot Hole	<5									No Signs	No Signs	No	Depth of hollows unknown
1266	wpt1266	50H	448044	6301835	Wandoo	15-20	0											No Signs	No Signs	No	
1267	wpt1267	50H	448064	6301813	Jarrah	15-20	0											No Signs	No Signs	No	
1268	wpt1268	50H	448066	6301821	Jarrah	20+	0											No Signs	No Signs	No	
1269	wpt1269	50H	448063	6301824	Jarrah	20+	0											No Signs	No Signs	No	
1270	wpt1270	50H	448016	6301855	Jarrah	20+	0											No Signs	No Signs	No	
1271	wpt1271	50H	448015	6301861	Jarrah	20+	0											No Signs	No Signs	No	
1272	wpt1272	50H	448016	6301864	Jarrah	20+	0											No Signs	No Signs	No	
1273	wpt1273	50H	448030	6301868	Wandoo	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1274	wpt1274	50H	448046	6301875	Jarrah	20+	0											No Signs	No Signs	No	
1275	wpt1275	50H	448072	6301883	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1276	wpt1276	50H	448076	6301889	Jarrah	20+	0											No Signs	No Signs	No	
1277	wpt1277	50H	448080	6301877	Jarrah	20+	0											No Signs	No Signs	No	
1278	wpt1278	50H	448110	6301841	Jarrah	20+	3	Fissure	5-12	Branch	<5	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1279	wpt1279	50H	448111	6301831	Jarrah	0-5	0											No Signs	No Signs	No	
1280	wpt1280	50H	448100	6301830	Marri	15-20	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1281	wpt1281	50H	448122	6301834	Marri	20+	0											No Signs	No Signs	No	
1282	wpt1282	50H	448123	6301804	Dead Jarrah	10-15	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1283	wpt1283	50H	448108	6301773	Marri	20+	0											No Signs	No Signs	No	
1284	wpt1284	50H	448106	6301781	Wandoo	15-20	0											No Signs	No Signs	No	
1285	wpt1285	50H	448106	6301766	Wandoo	15-20	0											No Signs	No Signs	No	
1286	wpt1286	50H	448103	6301766	Wandoo	15-20	0											No Signs	No Signs	No	
1287	wpt1287	50H	448068	6301767	Dead Jarrah	5-10	1	Spout Trunk	12-20									No Signs	No Signs	No	Too shallow
1288	wpt1288	50H	448032	6301795	Wandoo	15-20	0											No Signs	No Signs	No	
1289	wpt1289	50H	448068	6301792	Wandoo	15-20	0											No Signs	No Signs	No	
1290	wpt1290	50H	448088	6301801	Dead Jarrah	0-5	2	Spout Trunk	12-20	Spout Branch	5-12							No Signs	No Signs	No	Too low/shallow
1291	wpt1291	50H	448086	6301853	Jarrah	15-20	0											No Signs	No Signs	No	
1292	wpt1292	50H	448033	6301889	Wandoo	20+	0											No Signs	No Signs	No	
1293	wpt1293	50H	448043	6301894	Wandoo	15-20	0											No Signs	No Signs	No	
1294	wpt1294	50H	448052	6301898	Wandoo	20+	0											No Signs	No Signs	No	
1295	wpt1295	50H	448056	6301901	Wandoo	15-20	0											No Signs	No Signs	No	
1296	wpt1296	50H	448064	6301895	Jarrah	15-20	0											No Signs	No Signs	No	
1297	wpt1297	50H	448035	6301903	Jarrah	15-20	0											No Signs	No Signs	No	
1298	wpt1298	50H	448017	6301884	Wandoo	20+	0											No Signs	No Signs	No	
1299	wpt1299	50H	448014	6301894	Wandoo	15-20	0											No Signs	No Signs	No	
1300	wpt1300	50H	448008	6301894	Wandoo	10-15	0											No Signs	No Signs	No	
1301	wpt1301	50H	448008	6301892	Jarrah	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1302	wpt1302	50H	447999	6301890	Wandoo	20+	0											No Signs	No Signs	No	
1303	wpt1303	50H	447999	6301872	Wandoo	15-20	0											No Signs	No Signs	No	
1304	wpt1304	50H	448006	6301861	Wandoo	15-20	0											No Signs	No Signs	No	
1305	wpt1305	50H	448004	6301858	Jarrah	15-20	0											No Signs	No Signs	No	
1306	wpt1306	50H	447996	6301858	Jarrah	15-20	0											No Signs	No Signs	No	
1307	wpt1307	50H	447975	6301866	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1308	wpt1308	50H	447978	6301834	Dead Jarrah	15-20	5+	Spout Trunk	12-20	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Too low/shallow
1309	wpt1309	50H	447977	6301832	Dead Jarrah	15-20	5+	Spout Trunk	12-20	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	No Signs	No Signs	No	Too low/shallow
1310	wpt1310	50H	447986	6301828	Marri	15-20	0											No Signs	No Signs	No	
1311	wpt1311	50H	447962	6301851	Marri	15-20	0											No Signs	No Signs	No	
1312	wpt1312	50H	447957	6301853	Dead Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
1313	wpt1313	50H	447956	6301846	Marri	20+	1	Knot Hole	5-12									Bees	No Signs	No	Depth of hollows unknown
1314	wpt1314	50H	447956	6301842	Jarrah	15-20	0											No Signs	No Signs	No	
1315	wpt1315	50H	447950	6301827	Jarrah	15-20	2	Spout Branch	12-20	Spout Branch	12-20							No Signs	No Signs	No	Too low/shallow
1316	wpt1316	50H	447944	6301834	Dead Jarrah	0-5	2	Spout Trunk	12-20	Spout Trunk	12-20							No Signs	No Signs	No	Too low/shallow
1317	wpt1317	50H	447935	6301859	Jarrah	20+	0											No Signs	No Signs	No	
1318	wpt1318	50H	447937	6301860	Jarrah	20+	0											No Signs	No Signs	No	

ID	Waypoint Number	Zone	mE	mN	Tree Species	Tree Height (m)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
1319	wpt1319	50H	447943	6301875	Marri	20+	0											No Signs	No Signs	No	
1320	wpt1320	50H	447900	6301864	Jarrah	15-20	0											No Signs	No Signs	No	
1321	wpt1321	50H	447882	6301857	Jarrah	20+	0											No Signs	No Signs	No	
1322	wpt1322	50H	447889	6301836	Jarrah	0-5	1	Spout Trunk	20+									No Signs	No Signs	No	Too low/shallow
1323	wpt1323	50H	447895	6301837	Jarrah	15-20	0											No Signs	No Signs	No	
1324	wpt1324	50H	447856	6301845	Jarrah	20+	0											No Signs	No Signs	No	
1325	wpt1325	50H	447847	6301840	Jarrah	15-20	0											No Signs	No Signs	No	
1326	wpt1326	50H	447837	6301849	Jarrah	20+	0											No Signs	No Signs	No	
1327	wpt1327	50H	447832	6301860	Jarrah	10-15	3	Branch	<5	Branch	5-12	Branch	5-12					No Signs	No Signs	No	Depth of hollows unknown
1328	wpt1328	50H	447830	6301866	Jarrah	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1329	wpt1329	50H	447784	6301895	Jarrah	20+	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1330	wpt1330	50H	447774	6301899	Marri	20+	0											No Signs	No Signs	No	
1331	wpt1331	50H	447752	6301896	Jarrah	20+	0											No Signs	No Signs	No	
1332	wpt1332	50H	447811	6301901	Jarrah	15-20	0											No Signs	No Signs	No	
1333	wpt1333	50H	447808	6301911	Dead Unknown	0-5	1	Spout Trunk	12-20									No Signs	No Signs	No	Too low/shallow
1334	wpt1334	50H	447821	6301893	Jarrah	15-20	3	Branch	<5	Branch	<5	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown
1335	wpt1335	50H	447832	6301896	Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1336	wpt1336	50H	447828	6301906	Jarrah	15-20	0											No Signs	No Signs	No	
1337	wpt1337	50H	447845	6301906	Dead Jarrah	15-20	5+	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12	Branch	<5	No Signs	No Signs	No	Depth of hollows unknown
1338	wpt1338	50H	447852	6301904	Wandoo	15-20	0											No Signs	No Signs	No	
1339	wpt1339	50H	447848	6301894	Marri	15-20	0											No Signs	No Signs	No	
1340	wpt1340	50H	447867	6301874	Jarrah	15-20	0											No Signs	No Signs	No	
1341	wpt1341	50H	447861	6301861	Jarrah	15-20	0											No Signs	No Signs	No	
1342	wpt1342	50H	447899	6301880	Jarrah	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1343	wpt1343	50H	447880	6301908	Jarrah	0-5	0											No Signs	No Signs	No	
1344	wpt1344	50H	447956	6301883	Jarrah	15-20	0											No Signs	No Signs	No	
1345	wpt1345	50H	447961	6301897	Jarrah	15-20	0											No Signs	No Signs	No	
1346	wpt1346	50H	447967	6301921	Jarrah	15-20	4	Branch	<5	Branch	5-12	Branch	<5	Branch	5-12			No Signs	No Signs	No	Depth of hollows unknown
1347	wpt1347	50H	447974	6301914	Wandoo	15-20	0											No Signs	No Signs	No	
1348	wpt1348	50H	447977	6301894	Wandoo	15-20	3	Branch	<5	Branch	5-12	Branch	<5					No Signs	No Signs	No	Depth of hollows unknown

APPENDIX E

SIGNIFICANT SPECIES PROFILES

Unnamed cricket *Pachysaga munggai*

Status and Distribution: Listed as Priority 3 by the DPaW. Distribution is poorly documented. NatureMap database contains only five records, the closest one being over 18km west of the study area (DPaW 2014).

Habitat: Heathland habitat with occasional eucalypts and abundant leaf litter. Vegetation and leaf litter must be sufficient to provide this ground dwelling species with cover. Most NatureMap records are in the Jarrah forest belt.

Likely presence in study area: Status in the study area difficult to determine. The majority of the study area appears unsuitable for this species as heathland and leaf litter are typically absent/sparse.

Potential impacts: Loss of a small area of potential habitat. It is however unlikely that any part of the proposed realignment that passes through native forest would represent an area of significance for this species given the extent of similar habitat in surrounding areas.

Darling Range Heath Ctenotus *Ctenotus delli*

Status and Distribution: Listed as Priority 4 by DPaW. Main distribution is in the Darling Range from the Darlington/Mundaring area to near Collie (Storr *et al* 1999).

Habitat: Humid zone, mainly laterite and clays (Storr *et al.* 1999) supporting jarrah/marri woodland with a shrub dominated understorey, sheltering in dense vegetation, inside grass trees and beneath rocks, sometimes in burrows (Nevill 2005). Occasionally found on granite outcrops (Bush 2002).

Likely presence in study area: Actual status onsite is difficult to determine. Study area is near the eastern and southern limit of this species main documented range. Closest NatureMap records are just east of Collie. Not listed as a potential species.

Potential impacts: If this species is actually present then development may result in the loss of some habitat though it is unlikely to alter the species overall status given the relatively small area involved and the extent of similar habitat in surrounding areas.

Southern Carpet Python *Morelia spilota imbricata*

Status and Distribution: The south western population is listed in Schedule 4 under the *WC Act*. This subspecies has wide distribution within the south west but is uncommon. Occurs north to Geraldton and Yalgoo and east to Pinjin, Kalgoorlie, Fraser Range and Eyre (Storr *et al.* 2002).

Habitat: This species has been recorded from semi-arid coastal and inland habitats, *banksia* woodland, eucalypt woodlands, and grasslands. Most often

found utilising hollow logs in addition the burrows of other animals for shelter. Often arboreal and will also use tree hollows for refuge.

Likely presence in study area: Status onsite difficult to determine. Very few records near Collie. Most habitats looks marginal due to sparse nature of groundcover. Typically only occurs in low densities.

Potential impacts: Loss of an area of potential habitat. Low probability but the potential for individuals to be killed or injured during clearing.

Malleefowl *Leipoa ocellata*

Status and Distribution: This species is listed as Schedule 1 under the *WC Act*, Vulnerable under the *EPBC Act* and as Vulnerable (A2bce) by the IUCN. Originally common, but now generally rare to uncommon and patchily distributed.

Current distribution mainly southern arid and semi-arid zones, north to Shark Bay, Jingemarra, Colga Downs and Yeelirrie, east to Earnest Giles Range, Yeo Lake, lower Ponton Creek and to Eucla and west and south to Cockleshell Gully, the Wongan Hills, Stirling Range, Beaufort Inlet, Hatters Hill, Mt Ragged and Point Malcolm (Johnstone and Storr 1998).

Habitat: Mainly scrubs and thickets of mallee *Eucalyptus* spp., boree *Melaleuca lanceolata* and bowgada *Acacia linophylla*, also dense litter forming shrublands.

Likely presence in study area: This species is locally extinct and would not under normal circumstance occur in the area.

Potential impacts: No impact on this species or its preferred habitat will occur as a consequence of this project proceeding.

Great Egret *Ardea alba/Ardea modesta*

Status and Distribution: This species is listed as Schedule 3 under the *WC Act* and as Migratory under the *EPBC Act* and under international agreements to which Australia is a signatory. The great egret is common and very widespread in any suitable permanent or temporary habitat (Morcombe 2004).

Habitat: Wetlands, flooded pasture, dams, estuarine mudflats, mangroves and reefs (Morcombe 2004).

Likely presence in study area: Potentially utilises watercourses, wetlands, drains and paddocks though the quality of most of these habitats are marginal due to historical disturbance such as native vegetation clearing. Would not breed within the study area.

Potential impacts: Some potential for the loss areas of marginal habitat possibly utilised by this species though this would not be significant enough to

affect the overall status of this species in the area given the extent of similar habitat (i.e. cleared paddocks and degraded wetlands) in the vicinity.

Cattle Egret *Ardea ibis*

Status and Distribution: This species is listed as Schedule 3 under the *WC Act* and as Migratory under the *EPBC Act* and under international agreements to which Australia is a signatory. The cattle egret is common in the north sections of its range but is an irregular visitor to the better watered parts of the state (Johnstone and Storr 1998). The population is expanding (Morcombe 2004).

Habitat: Moist pastures with tall grasses, shallow open wetlands and margins, mudflats (Morcombe 2004).

Likely presence in study area: Potentially utilises watercourses, wetlands, drains and paddocks though the quality of most of these habitats are marginal due to historical disturbance such as native vegetation clearing. Would not breed within the study area.

Potential impacts: Some potential for the loss areas of marginal habitat possibly utilised by this species though this would not be significant enough to affect the overall status of this species in the area given the extent of similar habitat (i.e. cleared paddocks and degraded wetlands) in the vicinity.

White-bellied Sea Eagle *Haliaeetus leucogaster*

Status and Distribution: This species is listed as Schedule 3 under the *WC Act* and as Migratory under the *EPBC Act* and under international agreements to which Australia is a signatory. White-bellied sea eagles are moderately common to common on Kimberley and Pilbara islands, coasts and estuaries, on Bernier, Dorre and Dirk Hartog Is., in Houtman Abrolhos and in the Archipelago of the Recherche; rare to uncommon elsewhere (Johnstone and Storr 1998). Also found in New Guinea, Indonesia, China, southeast Asia and India. Scarce near major coastal cities (Morcombe 2004).

Habitat: They nest and forage usually near the coast over islands, reefs, headlands, beaches, bays, estuaries, mangroves, but will also live near seasonally flooded inland swamps, lagoons and floodplains, often far inland on large pools of major rivers. Established pairs usually sedentary, immatures dispersive (Morcombe 2004). White-bellied Sea-Eagles build a large stick nest, which is used for many seasons in succession.

Likely presence in study area: No suitable habitat.

Potential impacts: No impact on this species or its preferred habitat will occur as a consequence of this project proceeding.

Peregrine Falcon *Falco perigrinus*

Status and Distribution: This species is listed as Schedule 4 under the *WC Act*. Individuals of this species are uncommon/rare but wide ranging across Australia. Moderately common at higher levels of the Stirling Range, uncommon in hilly, north west Kimberley, Hamersley and Darling Ranges; rare or scarce elsewhere (Johnstone and Storr 1998).

Habitat: Diverse from rainforest to arid shrublands, from coastal heath to alpine (Morcombe 2004). Mainly about cliffs along coasts, rivers and ranges and about wooded watercourses and lakes (Johnstone and Storr 1998). The species utilises the ledges, cliff faces and large hollows/broken spouts of trees for nesting. It will also occasionally use the abandoned nests of other birds of prey.

Likely presence in study area: Individuals of this species potentially utilise some sections of the study area as part of a much larger home range but would only occur rarely. No potential nest sites observed.

Potential impact of proposed development: Modification of potential foraging habitat and potential for the loss of potential breeding sites (i.e. tall trees with broken spouts).

Migratory Shorebirds/Wetland Species

A number of species of migratory shorebirds and wetland species are listed within various databases and publications as potential inhabitants or visitors to the general area.

Status and Distribution: All the listed species are listed as Migratory under the *EPBC Act* and under international agreements to which Australia is a signatory. Some are also listed under Schedule 3 of the *WC Act*. All species are either widespread summer migrants to Australia or residents. Actual conservation status varies between species.

Habitat: Varies between species but includes beaches and permanent/temporary wetlands varying from billabongs, swamps, lakes, floodplains, sewerage farms, saltwork ponds, estuaries, lagoons, mudflats, sandbars, pastures, airfields, sports fields and lawns.

Likely presence in study area: Most of the habitats present are unsuitable for migratory shorebirds to utilise. Some species (e.g. common sandpiper) may very occasionally utilise the degraded rivers and dams but the frequency of occurrence and degree of utilisation would be very low and hence none are listed as potential species.

Potential impacts: No impact on migratory shorebirds/wetland species or their preferred habitat will occur as a consequence of this project proceeding.



Forest Red-tailed Black Cockatoo *Calyptrorhynchus banksii naso*

Status and Distribution: Listed as Scheduled 1 under the *WC Act* and as Vulnerable under the *EPBC Act*. Found in the humid and subhumid south west, mainly hilly interior, north to Gingin and east to Mt Helena, Christmas Tree Well, North Bannister, Mt Saddleback, Rock Gully and the upper King River (Johnstone and Storr 1998).

Habitat: Eucalypt forests, feeds on marri, jarrah, blackbutt, karri, sheoak and snottygobble. The forest red-tailed black cockatoo nests in the large hollows of marri, jarrah and karri (Johnstone and Kirkby 1999). In marri, the nest hollows of the forest red-tailed black cockatoo range from 8-14m above ground, the entrance is 12 – 41cm in diameter and the depth is one to five metres (Johnstone and Storr 1998).

Breeding commences in winter/spring. There are few records of breeding in the forest red-tailed black cockatoo (Johnstone and Storr 1998), but eggs are laid in October and November (Johnstone 1997; Johnstone and Storr 1998). Recent data however indicates that breeding in all months of the year occurs with peaks in spring and autumn–winter (Ron Johnstone pers comms). Incubation period 29 – 31 days. Young fledge at 8 to 9 weeks (Simpson and Day 2010).

J	F	M	A	M	J	J	A	S	O	N	D

 Period in which breeding is most likely to commence
 Period in which fledging/weening could extend through

Likely presence in study area: Sighted several times within the survey area and nearby. Foraging evidence (chewed marri and jarrah fruits) observed. Remnant vegetation containing jarrah and marri within the study area represents potential foraging habitat for this species.

The larger trees (>50cm DBH) identified during the habitat tree survey are also considered by the DotE as potential breeding habitat, though no actual evidence of breeding seen. This species may also roost on site on occasions, though no evidence of this was found.

Potential impacts: Loss of foraging, breeding and roosting opportunities.

Baudin's Black-Cockatoo *Calyptrorhynchus baudinii*

Status and Distribution: Listed as Scheduled 1 under the *WC Act* and as Vulnerable under the *EPBC Act*. Confined to the south-west of Western Australia, north to Giddegannup, east to Mt Helena, Wandering, Quindanning, Kojonup, Frankland and King River and west to the eastern strip of the Swan Coastal Plain including West Midland, Byford, Nth Dandalup, Yarloop, Wokalup and Bunbury (Johnstone and Storr 1998). On the southern Swan Coastal Plain this cockatoo is in some areas resident but mainly a migrant

moving from the deep south-west to the central and northern Darling Range. Between March and September most flocks move north and are concentrated in the northern parts of the Darling Range. During this period birds forage well out onto the southern Swan Coastal Plain to areas such as Harvey, Myalup, Bunbury, Capel, Dunsborough and Meelup. While generally more common in the Darling Range this species can also be common on parts of the southern Swan Coastal Plain especially in mid-August – September when flocks begin to return to their breeding quarters (Johnstone 2008).

Habitat: Mainly eucalypt forests where it feeds primarily on the marri seeds, (Morcombe 2004), Banksia, Hakeas and *Erodium* sp. Also strips bark from trees in search of beetle larvae (Johnstone and Storr 1998). This species of cockatoo nests in large tree hollows, 30–40 cm in diameter and more than 30 cm deep (Saunders 1974).

Baudin's Black-Cockatoo breeds in late winter and spring, from August to November or December (Gould 1972; Johnstone 1997; Saunders 1974; Saunders *et al.* 1985). Eggs laid in October (Johnstone and Storr 1998). Based on observations at currently known nest sites breeding mainly occurs within the October-December period (Ron Johnstone pers comms). Incubation is 28 – 30 days. Young fledge at 8 to 9 weeks (Simpson and Day 2010).

J	F	M	A	M	J	J	A	S	O	N	D



Period in which breeding is most likely to commence
Period in which fledging/weening could extend through

Likely presence in study area: The study area is within the documented distribution of this species and while not observed it may occur on occasions. Remnant vegetation containing marri within the study area represents potential foraging habitat for this species.

The larger trees (>50cm DBH) identified during the habitat tree survey are also considered by the DotE as potential breeding habitat, though no actual evidence of breeding seen. This species may also roost on site on occasions, though no evidence of this was found.

Potential impacts: Loss of foraging, breeding and roosting opportunities.

Carnaby's Black-Cockatoo *Calyptorhynchus latirostris*

Status and Distribution: Carnaby's Black Cockatoo is listed as Scheduled 1 under the *WC Act* and as Endangered under the *EPBC Act*. Confined to the south-west of Western Australia, north to the lower Murchison River and east to Nabawa, Wilroy, Waddi Forest, Nugadong, Manmanning, Durokoppin, Noongar (Moorine Rock), Lake Cronin, Ravensthorpe Range, head of Oldfield River, 20 km ESE of Condingup and Cape Arid; also casual on Rottnest Island (Johnstone and Storr 1998).

Habitat: Forests, woodlands, heathlands, farms; feeds on Banksia, Hakeas and Marri. Carnaby's Cockatoo has specific nesting site requirements. Nests are mostly in smoothed-barked eucalypts with the nest hollows ranging from 2.5 to 12m above the ground, an entrance from 23-30cm diameter and a depth of 0.1-2.5m (Johnstone and Storr, 1998).

Breeding occurs in winter/spring mainly in eastern forest and wheatbelt where they can find mature hollow bearing trees to nest in (Morcombe 2004). Judging from records in the Storr-Johnstone Bird Data Bank, this species is currently expanding its breeding range westward and south into the Jarrah – Marri forest of the Darling Scarp and into the Tuart forests of the Swan Coastal Plain including the region between Mandurah and Bunbury. Carnaby's Black Cockatoo has been known to breed close to the town of Mandurah, as well as at Dawesville, Lake Clifton and Baldivis (pers. comm., Ron Johnstone, WA Museum) and there are small resident populations on the southern Swan Coastal Plain near Mandurah, Lake Clifton and near Bunbury. At each of these sites the birds forage in remnant vegetation and adjacent pine plantations (Johnstone 2008).

Carnaby's Black-Cockatoo lays eggs from July or August to October or November, with most clutches being laid in August and September (Saunders 1986). Birds in inland regions may begin laying up to three weeks earlier than those in coastal areas (Saunders 1977). The female incubates the eggs over a period of 28-29 days. The young depart the nest 10–12 weeks after hatching (Saunders 1977; Smith & Saunders 1986).

J	F	M	A	M	J	J	A	S	O	N	D



Period in which breeding is most likely to commence
Period in which fledging/weening could extend through

Likely presence in study area: A small amount of foraging evidence attributed to this species was found during the site survey (chewed marri fruits). Remnant vegetation containing marri and jarrah within the study area represents potential foraging habitat for this species.

The larger trees (>50cm DBH) identified during the habitat tree survey are also considered by the DotE as potential breeding habitat, though no actual evidence of breeding seen. This species may also roost on site on occasions, though no evidence of this was found.

Potential impacts: Loss of foraging, breeding and roosting opportunities.

Barking Owl *Ninox connivens connivens*

Status and Distribution: Listed as Priority 2 by DPaW. Found north to Perth (formerly) and east to Northam, Katanning and nearly to Bremer Bay. Declining in south west (Johnstone and Storr 1998).

Habitat: Dense vegetation, especially forest and thickets of waterside vegetation such as melaleucas (Johnstone and Storr 1998). Roosts in tree hollows.

Likely presence in study area: No suitable habitat.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Masked Owl *Tyto novaehollandae novaehollandae*

Status and Distribution: Listed as Priority 3 by DPaW. Found north to Yanchep and east to Yealering, Gnowangerup and Albany, casual further north. Locally common in south west but generally uncommon (Johnstone and Storr 1998).

Habitat: Roosts and nests in heavy forest, hunts over open woodlands and farmlands (Morcombe 2004). Probably breeding in forested deep south west with some autumn–winter wanderings northwards (Johnstone and Storr 1998).

Likely presence in study area: Status in the general area is difficult to determine. May utilise forest and woodland areas within and near the survey area for roosting and therefore may forage in more open areas at night. Probably only present rarely.

Potential impacts: Loss/modification of small areas of habitat.

Fork-tailed Swift *Apus pacificus*

Status and Distribution: The fork-tailed swift is listed as Schedule 3 under the *WC Act* and as migratory under the *EPBC Act* as migratory under the *EPBC Act 1999* and under international agreements to which Australia is a signatory. It is a summer migrant (Oct-Apr) to Australia (Morcombe 2004).

Habitat: Low to very high airspace over varied habitat from rainforest to semi desert (Morcombe 2004).

Likely presence in study area: Very uncommon in south west and rarely utilises terrestrial habitats (i.e. almost entirely aerial). May occur very occasionally but not listed as a potential species.

Potential impacts: No impact on this species will occur.

Rainbow Bee-eater *Merops ornatus*

Status and Distribution: This species is listed as Schedule 3 under the *WC Act* and as migratory under the *EPBC Act* and under international agreements to which Australia is a signatory. The rainbow bee-eater is a common

summer migrant to southern Australia but in the north they are resident (Morcombe 2004).

Habitat: Open Country, of woodlands, open forest, semi arid scrub, grasslands, clearings in heavier forest, farmlands (Morcombe 2004). Breeds underground in areas of suitable soft soil firm enough to support tunnel building.

Likely presence in study area: Observed foraging and roosting within some sections of the study area. Common seasonal visitor to south west. Possibly breeds where ground conditions permit though most areas appear unsuitable.

Potential impacts: Modification and/or loss of some habitat but impact will not be significant. This species can be expected to continue to utilise the area, as it does now, despite any future development.

Chuditch *Dasyurus geoffroii*

Status and Distribution: Listed as Scheduled 1 under the *WC Act* and as Vulnerable under the *EPBC Act*. Formerly occurred over nearly 70 per cent of Australia. The chuditch now has a patchy distribution throughout the Jarrah forest and mixed karri/marri/jarrah forest of southwest Western Australia. Also occurs in very low numbers in the Midwest, Wheatbelt and South Coast Regions with records from Moora to the north, Yellowdine to the east and south to Hopetoun.

Habitat: Chuditch are known to have occupied a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts. Riparian vegetation appears to support higher densities of chuditch, possibly because food supply is better or more reliable and better cover is offered by dense vegetation. Chuditch appear to utilise native vegetation along road sides in the wheatbelt (CALM 1994). The estimated home range of a male chuditch is over 15 km² whilst that for females is 3-4 km² (Sorena and Soderquist 1995).

Likely presence in study area: Actual status on the site difficult to determine. This species is however known to frequent the general area and therefore may utilise sections of the study area at times.

Potential impacts: Loss of some potential habitat. Some possibility that individuals maybe killed or injured during clearing operations.

Numbat *Myrmecobius fasciatus*

Status and Distribution: Listed as Scheduled 1 under the *WC Act* (1950) and as Vulnerable under the *EPBC Act* (1999). Once occurred across much of arid and semi arid southern Australia, now restricted to a few remnant forests of Wandoo, Powderbark Wandoo or jarrah in South west WA (Menkhorst &

Knight 2001). Rare, scattered. Found only at Dryandra, Perup and six other translocation sites (Van Dyck & Strahan 2008).

Habitat: Generally dominated by eucalypts that provide hollow logs and branches for shelter and termites for food (Van Dyck & Strahan 2008).

Likely presence in study area: Available evidence suggests this species is locally and regionally extinct.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Southern Brush-tailed Phascogale *Phascogale tapoatafa* ssp.

Status and Distribution: Listed as Scheduled 1 under the *WC Act*. Present distribution is believed to have been reduced to approximately 50 per cent of its former range. Now known from Perth and south to Albany, west of Albany Highway. Occurs at low densities in the northern Jarrah forest. Highest densities occur in the Perup/Kingston area, Collie River valley, and near Margaret River and Busselton (DEC information pamphlet). Records are less common from wetter forests.

Habitat: This subspecies has been observed in dry sclerophyll forests and open woodlands that contain hollow-bearing trees but a sparse ground cover. A nocturnal carnivore relying on tree hollows as nest sites. The home range for a female Brush-tailed Phascogale is estimated at between 20 and 70 ha, whilst that for males is given as twice that of females. In addition, they tend to utilise a large number (approximately 20) of different nest sites throughout their range (Soderquist 1995).

Likely presence in study area: This species is known to persist in state forest and national park areas surrounding Collie and therefore it may frequent the study site.

Potential impacts: Loss of some potential habitat. Some possibility that individuals maybe killed or injured during clearing operations.

Southern Brown Bandicoot (Quenda) *Isodon obesulus fusciventer*

Status and Distribution: Listed as Priority 5 by DPaW. Widely distributed in the south west from near Cervantes north of Perth to east of Esperance, patchy distribution through the jarrah and karri forest and on the Swan Coastal Plain, and inland as far as Hyden. Has been translocated to Julimar State Forest, Hills Forest Mundaring, Tutanning Nature Reserve, Boyagin Nature Reserve, Dongolocking Nature Reserve, Leschenault Conservation Park, and Karakamia and Paruna Sanctuaries and Nambung National Park (DPaW information pamphlet).

Habitat: Dense scrubby, often swampy, vegetation with dense cover up to one metre high, often 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. Populations inhabiting jarrah and wandoo forests are usually associated with watercourses. Quendas can thrive in more open habitat subject to exotic predator control (DPaW information pamphlet).

Likely presence in study area: Most of the study area appears unsuitable for this species due to a lack of dense groundcover but it may persist at locations where native vegetation provides sufficient cover.

Potential impacts: Loss of some potential habitat. Some possibility that individuals maybe killed or injured during clearing operations.

Bilby *Macrotis lagotis*

Status and Distribution: The Bilby is listed as Schedule 1 under the *WC Act* and as Vulnerable under the *EPBC Act*. Current distribution in suitable habitat from Tanami Desert west to near Broome and south to Warburton. Former distribution extended south to Margaret River, though apparently absent from the coastal plain (Burbidge 2004).

Habitat: Current habitat included Acacia shrublands, spinifex and hummock grassland (Menkhorst *et al.* 2011).

Likely presence in study area: Regionally extinct.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Woylie *Bettongia penicillata ogibyi*

Status and Distribution: Listed as Schedule 1 under the *WC Act* and as Endangered under the *EPBC Act*. Restricted to remnant habitat patches in south west WA where populations are managed by way of fox control and reintroduction programs (e.g. Batalling State forest, Avon Valley, Walyunga National Park and Paruna Sanctuary). Woylie populations have declined by about 80% since 2001. The declines of affected populations in Western Australia and South Australia have been rapid, substantial (>90% lost) and apparently biased toward the largest and most important populations. The declines are continuing in some areas and as yet there have been no clear signs of a sustained post decline recovery. Most of the remaining unaffected populations are small (<300 individuals), isolated and inherently vulnerable (DEC 2009).

Habitat: Open forest and woodland with a low, dense, understorey of tussock grasses or woody scrub. Formerly occurred in a wider range of habitats including spinifex hummock grasslands.

Likely presence in study area: Most of the study area appears to lack sufficient understory required for this species to persist. Not listed as a potential species.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Tammar *Macropus eugenii derbianus*

Status and Distribution: Listed as Priority 5 by DEC. Formerly widespread in SW WA and Eyre Peninsula SA, now reduced to tiny populations on the mainland and some offshore islands. The Tammar Wallaby is currently known to inhabit three islands in the Houtman Abrolhos group, Garden Island near Perth, Middle and North Twin Peak Islands in the Archipelago of the Recherche, and at least nine sites on the mainland — including, Dryandra, Boyagin, Tutanning, Batalling (reintroduced), Perup, private property near Pingelly, Jaloran Road timber reserve near Wagin, Hopetoun, Stirling Range National Park, and Fitzgerald River National Park. The species remains relatively abundant at these sites which are subject to fox control. They have also been reintroduced to the Darling scarp near Dwellingup, Julimar Forest near Bindoon, Avon Valley National Park and to Karakamia and Paruna Sanctuaries (DPaW information pamphlet, nd)

Habitat: Inhabits dense coastal heath and scrub and some dry sclerophyll forest with dense patches of cover.

Likely presence in study area: Very few records from the area suggest a population of this species does not persist in or near the study area. Suitable habitat appears absent. Not listed as a potential species.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Western Brush Wallaby *Macropus irma*

Status and Distribution: Listed as Priority 4 by DPaW. The western brush wallaby is distributed across the south-west of Western Australia from north of Kalbarri to Cape Arid (DPaW information pamphlet).

Habitat: The species optimum habitat is open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. It is also found in some areas of mallee and heathland, and is uncommon in karri forest (DPaW information pamphlet).

Likely presence in study area: This species is relatively common in the Collie area and is likely to frequent sections of the study area at times.

Potential impacts: Loss of small areas of potential habitat.

Quokka *Setonix brachyurus*

Status and Distribution: Listed as Scheduled 1 under the *WC Act* and as Vulnerable under the *EPBC Act*. Rare and restricted in south west W.A. from south of Perth to Two Peoples Bay. The distribution of the Quokka includes

Rottneest and Bald Islands, and at least 25 known sites on the mainland, including Two Peoples Bay Nature Reserve, Torndirrup National Park, Mt Manypeaks National Park, Walpole-Nornalup National Park, and various swamp areas through the south-west forests from Jarrahdale to Walpole. As of 2008 there were nine known quokka populations in the Wellington National Park area (DEC 2008). One population, north of the Collie River, is considered to be the largest in the northern jarrah forest, although numbers appear to be declining (DEC 2008).

Habitat: Mainland populations of this species are currently restricted to densely vegetated coastal heaths, swamps, riverine habitats including tea-tree thickets on sandy soils along creek systems where they are less vulnerable to predation. The species is nocturnal.

Likely presence in study area: There is no suitable habitat for this species within the study area.

Potential impacts: No impact on this species or its preferred habitat is considered likely.

Western False Pipistrelle *Falsistrellus mackenziei*

Status and Distribution: Listed as Priority 4 by DPaW and as near threatened by the ICUN. Confined to south west W.A. south of Perth and east to the wheat belt. Most records from karri forests but also recorded in wetter stands of jarrah and tuart and woodlands on the Swan Coastal Plain (Menkhorst and Knight 2011). Range appears to be contracting southwards, presumably due to drying climate.

Habitat: This species of bat occurs in high forest and coastal woodlands. It roosts in small colonies in tree hollows and forages at canopy level and in the cathedral-like spaces between trees.

Likely presence in study area: Potentially present with the study area when it is likely to forage and possibly roost given presence of suitable tree hollows.

Potential impacts: Loss/modification of foraging habitat and loss of potential roosting habitat.

DISCLAIMER

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

The conclusions are based upon field data and the environmental monitoring and/or testing carried out over a limited period of time and are therefore merely indicative of the environmental condition of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

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

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

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

The Author will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.