Shire of
Donnybrook Balingup

Desktop Assessment for Native Vegetation Clearing Application

Spring Gully Road Upgrade Project

CPS 7693/2

2023-2024

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1.Introduction

Clearing Permit Application: CPS - 7693/2

Applicant: Shire of Donnybrook Balingup

Property: Spring Gully Road, Southampton Western Australia

LGA: Shire of Donnybrook Balingup

Proposed Clearing:

- *Purpose*: Road Upgrade Project, road widening and sealing to increase road safety
- *Proposed dates of clearing:* 9-13TH November 2024
- *Land Tenure*: Local Government- Shire of Donnybrook Balingup
- *Buffer Distance*: 10 km

Notes

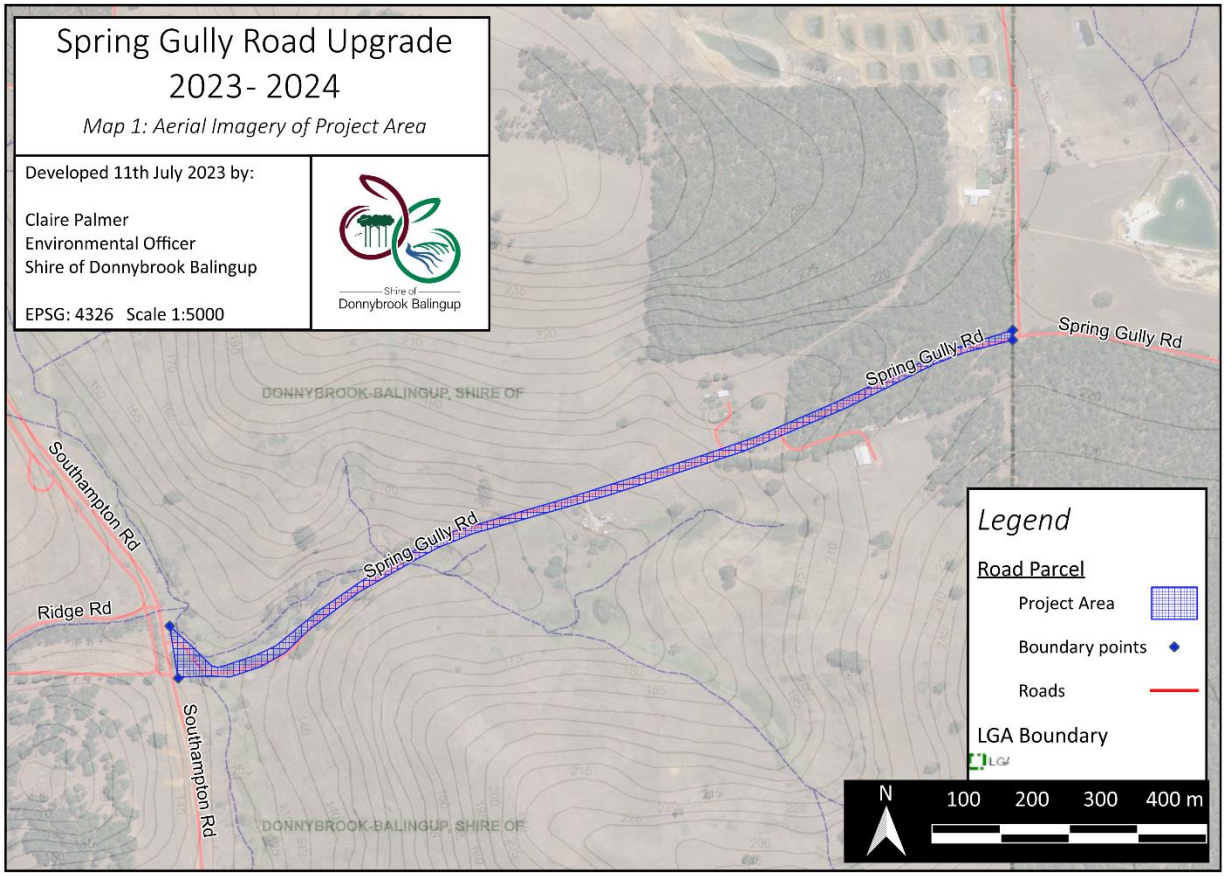
- This desktop assessment is to investigate potential environmental impacts in relation to a proposed clearing activity for the purpose of a road upgrade for the Shire of Donnybrook Balingup, in accordance with *Part II Management Conditions (Section 8) "Assessment of clearing Impacts"* of Clearing Permit 7693/2. Sections 7 ("*Avoid, minimise and reduce impacts and extent of Clearing")* and 9 *("Dieback and Weed Control")* will also be addressed for clarity. Section 10 (*"Revegetation and Rehabilitation"*) is not applicable to this Project and will therefore be omitted from this report.
- This report is a desktop study and does not replace a site assessment; information generated in this report is correct to the best of Shire of Donnybrook Balingup's knowledge (the Shire).
- Datasets to used to obtain this information were downloaded from data.wa.gov.au in the month of July 2023 and further analysed using QGIS software (Appendix 1).
- Further information about the clearing principles is available from the Department of Water and Environment Regulation (DWER) *"A guide to the assessment of applications to clear native vegetation"*.
- Distance and area calculations are performed using the following map projection: GDA20 unless indicated otherwise.

2.Background details

2.1.Site Details

Property:	SPRING GULLY ROAD, SOUTHAMPTON
Local Government Authority:	DONNYBROOK-BALINGUP, SHIRE OF
DER Region:	SOUTH WEST
DBCA District:	BLACKWOOD
LCDC:	DONNYBROOK -BALLINGUP
ILUA:	SOUTH WEST BOOJARAH
Aboriginal Cultural Heritage Area Inquiry	None found in project area Nearest ID <1km (ID 20434- Blackwood River)
Aboriginal Cultural Heritage Survey Inquiry	The following Survey Report ID's intersect the project area: 102073; 102074; 104000; 10479; 10468. No reports indicated the project area will impact Aboriginal Cultural Heritage, however confirmation sought from SWALSC. No response was recieved
GPS coordinates lat/long:	115.988574, -33.857775
Environmentally Sensitive Area:	No
EPA Red Book Area:	No
Country Areas Water Supply Act 1947 - Clearing Control Catchment:	No
Rights in Water and Irrigation Act 1914 Surface Water area:	None
Rights in Water and Irrigation Act 1914 Groundwater area:	None
Proximity to nearest RIWI Act River	>10km
Project Area (ha):	= 2.27
Potential Clearing Area (ha):	.287
Potential Trees	22
Vegetation Association	Bridgetown_3 : Medium forest; jarrah-marri Description: Mainly jarrah and marri Eucalyptus marginata, Corymbia calophylla Percent Remaining in Shire : 66% (61614ha remaining)

2.2 Aerial Imagery



2.3 Soil Parameters

Soil Association

Project Area:

Land Use Zone 255- Western Darling Range.
Description: Moderately dissected lateritic plateau on granite with deeply incised valleys, includes the Darling Scarp on the western margin. Soils are formed in laterite, lateritic colluvium and weathered in-situ granite and gneiss.

Within 10kmn Buffer:

Land Use Zone 254- Warren- Denmark Southland Zone
Description: Rises in a series of broad benches from the Southern Ocean north to the Blackwood Valley. Deeply weathered granite and gneiss overlain by
Tertiary and Quaternary sediments in the south. Swampy in places.

Land Use Zone 255- Western Darling Range.
Description: Moderately dissected lateritic plateau on granite with deeply incised valleys, includes the Darling Scarp on the western margin. Soils are formed in laterite, lateritic colluvium and weathered in-situ granite and gneiss.

Soil Systems

Project Area:

Lowden Valley System.

Description: Deep gneissic valleys, in the south of the Western Darling Range. Loamy earth, loamy duplex, gravel and stony soils. Jarrah-marri forest.

Within 10km Buffer:

See Table 1 Below

TABLE 1 SOIL SYSTEMS IN 10KM BUFFER

Id	System #	Id#	System name	Description	Ag Zone
167321	255Dp	218	Darling Plateau System	Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland.	255
167365	255Lv	219	Lowden Valleys System	Deep gneissic valleys, in the south of the Western Darling Range. Loamy earth, loamy duplex, gravel and stony soils. Jarrah-marri forest.	255
167405	254Dw	6803	Dwalganup System	Undulating terrain with plateau, moderately incised and shallow minor valleys. Deeply weathered metasediments and granitic rocks. Loamy gravels, duplex sandy gravels, and friable red/brown loamy earths. Marri-jarrah-karri forest & woodland.	254
167460	255Dp	218	Darling Plateau System	Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland.	255
167461	255Dp	218	Darling Plateau System	Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland.	255
167467	255Dp	218	Darling Plateau System	Lateritic plateau. Duplex sandy gravels, loamy gravels and wet soils. Jarrah-marri-wandoo forest and woodland.	255

Salinity, Acidity and Phosphorus transport Risk: L1

3.Assessment of Clearing Principles against proposed works

3.1 The Principles for clearing native vegetation under the Environmental Protection Act 1986 (Schedule 5) states that –

Native Vegetation should not be cleared if -

a) It comprises a high level of biological diversity
b) It comprises the whole or 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 associated 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
j) The clearing of the vegetation is likely to cause or exacerbate, the incidence or intensity of Flooding

3.2 Permit 7693/2; Section 7 Avoid, minimise and reduce impacts and extent of clearing

The road upgrade project requires the road be widened to increase safety for road users. Unfortunately there are a number of mature and post mature Marri and Jarrah trees growing within the road reserve, and 30 of them are found within the proposed area that needs to be cleared to allow for a wider and safer road.

As part of the design process, the following was negotiated:

- The road design was altered to install kerbing and subsoil drainage as opposed to open drainage, in order to narrow the area to be cleared, facilitating the retention of 4 post mature marri trees.
- The road design was altered to faciliate the retention of all possible native vegetation, including purchasing land from neighbouring properties
- Although no hollows were observed as part of this assessment, a fauna specialist was engaged to investigate the trees to be cleared to identify any potential use as habitat for native fauna.
- The works will only be undertaken during dry conditions, minimising impact to the temporary water sources on site and reducing the spread of any potential dieback (dieback is not known in this area)
- Shire machinery and staff will follow dieback and weed management procedures (arrive clean, leave clean).

3.3 Permit 7693/2; Section 8 Assessment of Clearing Impacts

In order to quantify the level of variance the road upgrade may pose to these clearing principles, the Shire of Donnybrook carried out a desktop assessment in July and August 2023, to investigate available data and identify the levels of environmental significance of this project. An overview of the results are as follows (Table 2).

TABLE 2 CLEARING PRINCIPLES-SUMMARY OF RESULTS

Clearing Principle	At Variance ?	Shire Comments
a) It comprises a high level of biological diversity	Unlikely to be at variance	Vegetation to be cleared is isolated roadside vegetation containing mature trees and pastural grass/weed understory. There are no recorded significant biological diversity values in association with this vegetation
b) It comprises the whole or part of, or is neessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia	Unlikely to be at variance	Some tree Species to be cleared are identified as potential habitat for protected fauna. To reduce the impact on the vegetation, the road design was amended by adding kerb and subsoil drainage to avoid clearing as many mature Marris as possible. Unfortuately the remaining significant trees could not remain in situ due to their proximity to the existing road, causing a hazard for road users. A fauna survey was undertaken, noting that it is unlikely these trees contain hollows suitable for protected fauna (Appendix 4)
c) It includes, or is necessary for the continued existence of, rare flora	Not at variance	No rare flora identified in the project area; 2 within the 10km Buffer.
d) It comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community	Not at variance	Project area and buffer is not associated with any threatened ecological communities
e) It is significant as a remnant of native vegetation in an area that has been extensively cleared	Not at variance	Project area is located within the Intensive Land Use Zone (DPIRD) and trees are of Jarrah and Marri (Jarrah 2 Vegetation Type) , however trees are mostly isolated and unlikely to add value as remnant vegetation. Vegetatation Association Bridgetown 3. Over 30% remaining.
f) It is growing in, or in associated with an environment associated with a	Not at Variance	Project intersects two unnamed watercourses (creek running through agricultural land). Works include extending the existing pipework on two culverts to allow for the wider road. No vegetation will

watercourse or wetland		be removed; currently bare gravel/pasture. Impact to the bed of the watercourse will be minimal as only .5m of pipe will be added in length on either side of the road. Works will be undertaken under dry conditions to avoid temporarily altering water flow or quality. The structure, soils and flow regime of the watercourses will not be altered in any other way. All outdoor workers abide by arrive clean/leave clean procedures to avoid contamination of weeds and other organisms.
g) The clearing of the vegetation is likely to cause appreciable land degradation	Not at variance	Clearing is small in size and constrained to within 1.5m of existing road surface. All outdoor workers abide by arrive clean/leave clean procedures to avoid contamination. Soils will not be subjected to any increases in erosion, salinity or acidity. Dieback has not been identified in the project area or within the 10km buffer.
h) The clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area	Not at variance	No conservation areas within the Project Area or 10km buffer
i) The clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water	Not at variance	No water quality parameters will be impacted as part of this project.
j) The clearing of the vegetation is likely to cause or exacerbate, the incidence or intensity of Flooding	Not at variance	Minimal additional overflow, will be managed via subsoil drainage.

4.Detailed Analysis of Environmental Values

4.1 Principle A

Vegetation Association:

Bridgetown_3

Medium forest; Jarrah-Marri

Description: Mainly jarrah and marri Eucalyptus marginata, Corymbia calophylla

Bridgetown Association- Pre European Extent:

Statewide: 700920.83ha

LGA Donnybrook Balingup: 93291ha

Percent Remaining in Shire : 66 % (61,614ha remaining)

Vegetation Complexes:

The trees to be cleared are mostly outside of recognised vegetation complexes; however the project area intersects Grimwade and Balingup Complexes. 4 mature trees (2 Jarrah, 2 Marri) and are from the Grimwade Complex and 1 Marri is from the Balingup Complex. 17 Vegetation Complexes were found in 10km Buffer Zone (Table 1).

Table 3. Vegetation Complexes : 10km Buffer

		Area in Ha		
Feature ID	*Complex name*	*Buffer 10km*	*Shire*	*State wide*
43	Balingup - BL	1,525.25	13,341.68	177,357.18
44	Balingup - BLf	55.49	185.46	2,912.60
49	Bevan 1 - BE1	642.42	1,868.22	628,001.17
66	Boonarie - BO	15.25	2,531.38	34,644.46
70	Bridgetown - BT	1,699.71	2,076.49	46,690.42
71	Bridgetown - BTf	125.67	276.65	6,346.34
82	Catterick - CC1	1,037.42	11,285.16	167,943.76
136	Dwellingup - D1	4,279.14	9,862.31	1,807,333.26
157	Goonaping - G	197.25	508.72	218,334.50
176	Grimwade - GR	1,130.30	8,206.79	111,484.64
181	Hester - HR	951.72	13,783.79	237,998.71
199	Kirup - KR	39.21	2,037.03	20,424.25
237	Mumballup - ML	89.55	346.05	3,460.47
267	Queenwood - QW	1.47	542.71	5,427.14
285	Southampton - SP	94.89	127.46	3,484.09
304	Wheatley - WH1	24.94	158.80	162,783.06
326	Yanmah - YN1	28.30	421.43	192,111.58

Priority Fauna/Flora:

Flora:

No Threatened or Priority Flora was identified in the Project area.

Two Priority Flora were identified in the 10km buffer:

Object ID	Protected Fauna ID	WA Ranking	Conservation Code	Distance to project Area (m)
4605	91235	VU	T	4219
11380	85751		4	3384

Fauna:

No Threatened or Priority Fauna was identified in the Project area: closest distance to listed fauna is 2.21km :

Object ID: 13792: BIRD, Threatened – Endangered.

342 other listings within the 10km buffer (see Appendix 1)

Ecological Linkages:

Closest Southwest Regional Ecological Linkage line to project area : >1.5km

Other Recognised Conservation Values:

Bush Forever Sites: None in LGA

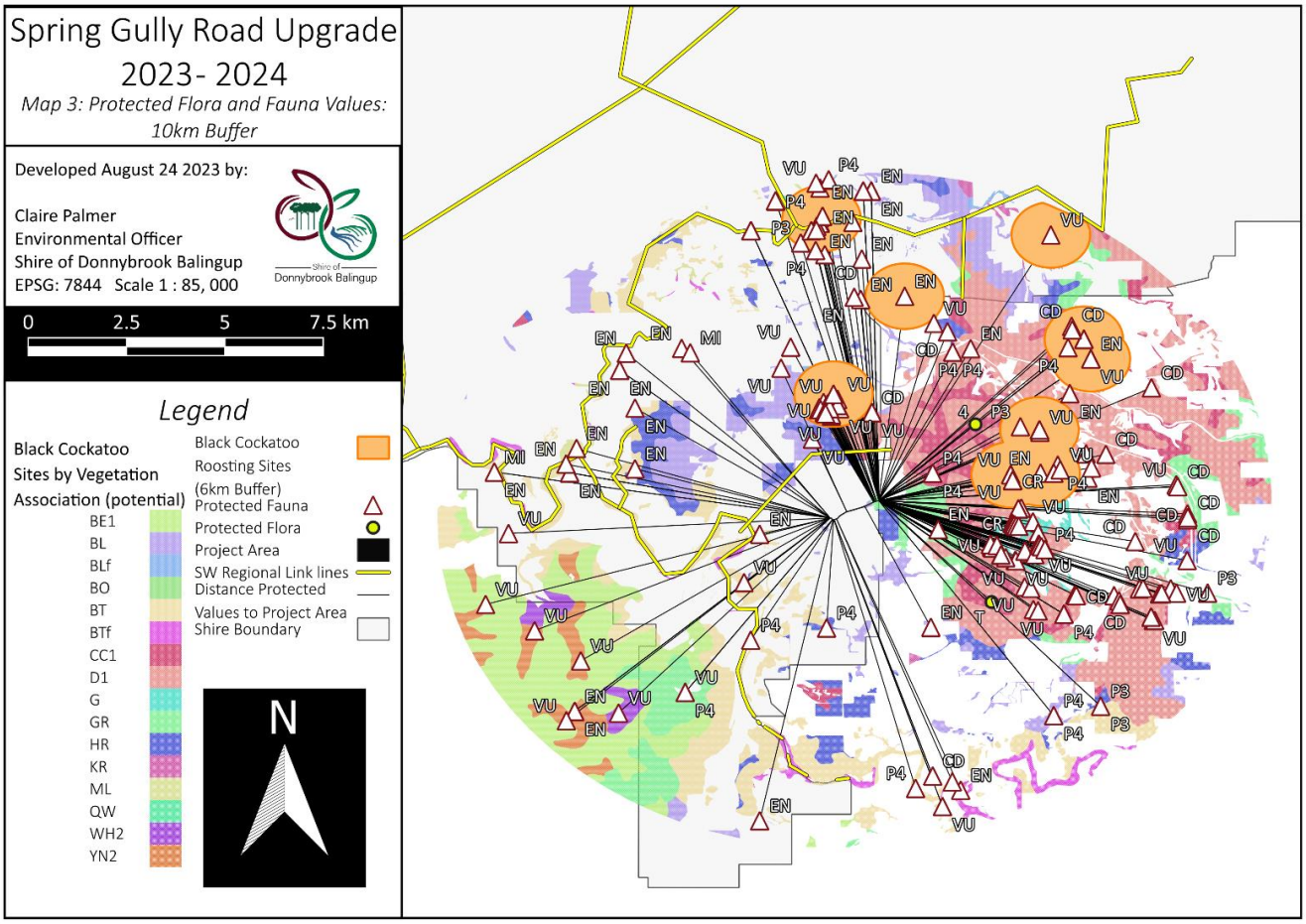
Conservation Category Wetlands: None in LGA

4.2 Principle B

Potential Fauna Habitat:

26 Trees within the clearing parcel are recognised as potential habitat for protected species, being of either E.Marginata or C.Calophylla, the remaining three trees are E.Rudis. (Table 3). No hollows or evidence of activity were observed during site visit on the 25th July 2023, however it can be assumed these trees would provide a source of food to local native fauna. A suitably qualified fauna specialist was engaged to confirm that no protected fauna are likely to use these trees as habitat. Should these trees be found be inhabited by protected fauna during the clearing works, work will cease until the fauna is no longer using the vegetation.

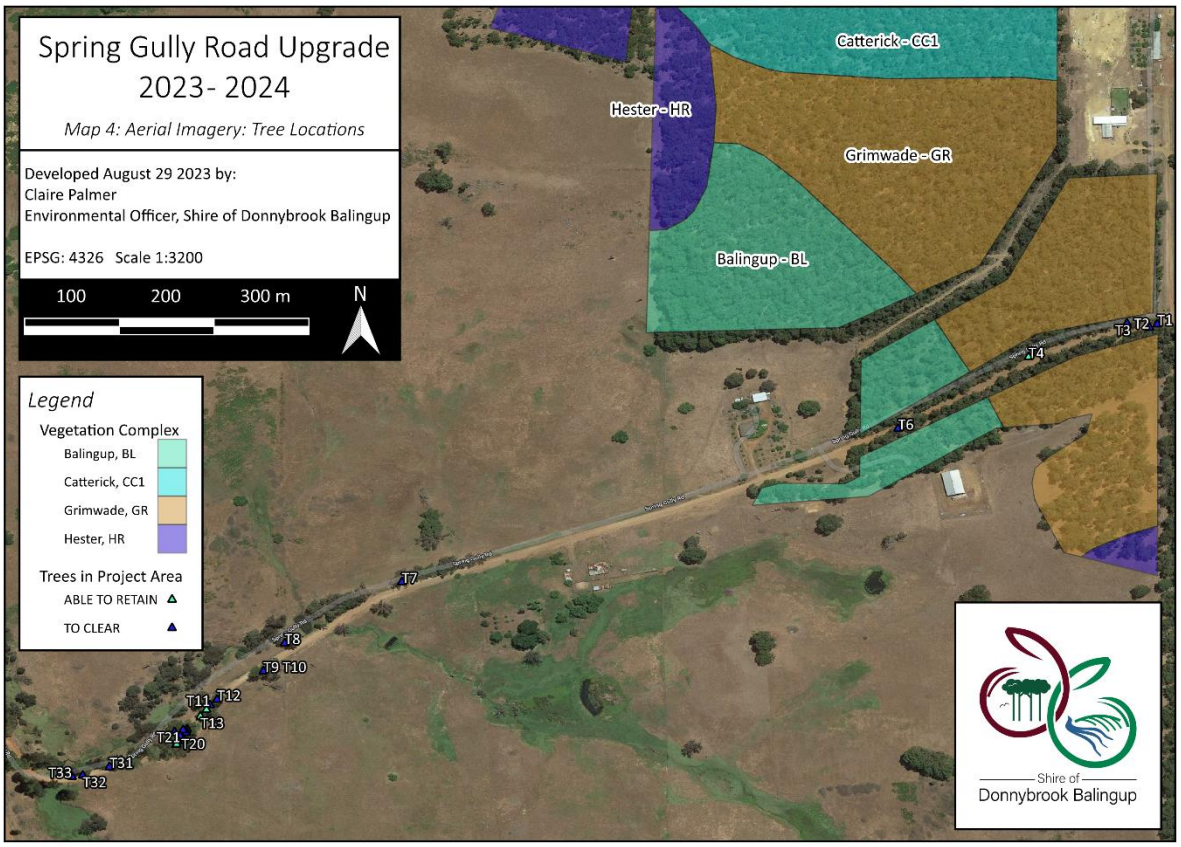
Map 3 Indicates distance of protected fauna and flora to project area, and potential black cockatoo interactions within the 10km Buffer zone.



Further Information: Trees to be cleared

Locations and impacts:

Map 4 Indicates the location of the trees to be cleared, and the trees that were able to be retained due to road design changes. There is minimal native understory that will be removed as part of the clearing activity, as indicated in the photos (Appendix 4).



Observed Tree data

Appendix 3 outlines tree information gathered by the Shire's Environmental Officer (BSc Science, Environmental Science) during a site visit on July 25, 2023.

All trees considered necessary to be cleared were in poor to excellent condition, with the exception of one dead jarrah tree. All trees were larger than 50cm diameter at breast height, and therefore are considered potential habitat for fauna, particularly black cockatoos. Native understory was limited to the eastern section of the project area and observed to be minimal (hibbertia, accacia and melaleuca groundcover of degraded condition, with mutliple pastoral weed species); midstory of marri and jarrah saplings approximately 2-4m in height, approximately 20 in total.

The photos that follow were taken on site on July 25, 2023 by the Shire's Environmental Officer, to indicate the site conditions, tree health and size and proximity of the trees to the road that is required to be widened in order to facilitate appropriate safety on Spring Gully Road, Southampton. As previously indicated, the initial amount of trees to be cleared was 33, however this was reduced to 22, due to redesigning the road structure. Unfortunately, the slopes and width of existing road reserve would not allow for sufficient realigning of the road to retain the remaining 22 trees during the road upgrade.

Site Photos

FIGURE 1 :
ROADSIDE CONDITION- AGRICULTURAL AREA

FIGURE 2: ROADSIDE CONDITION- NATURAL AREA

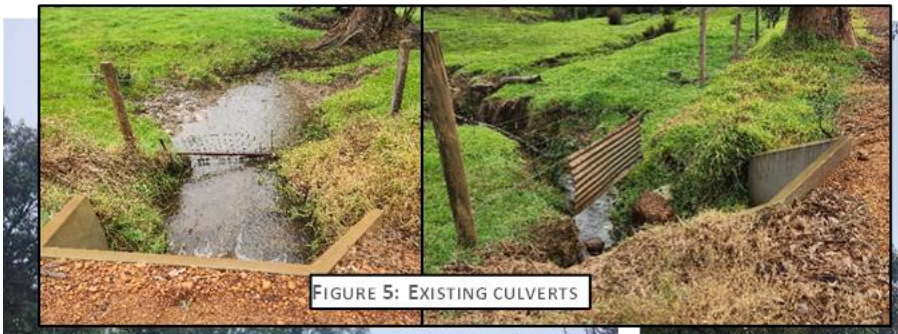
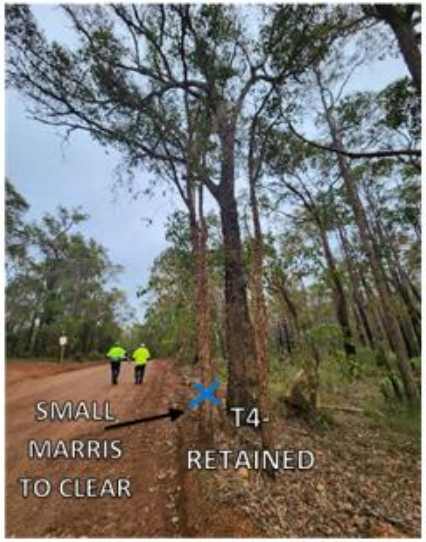


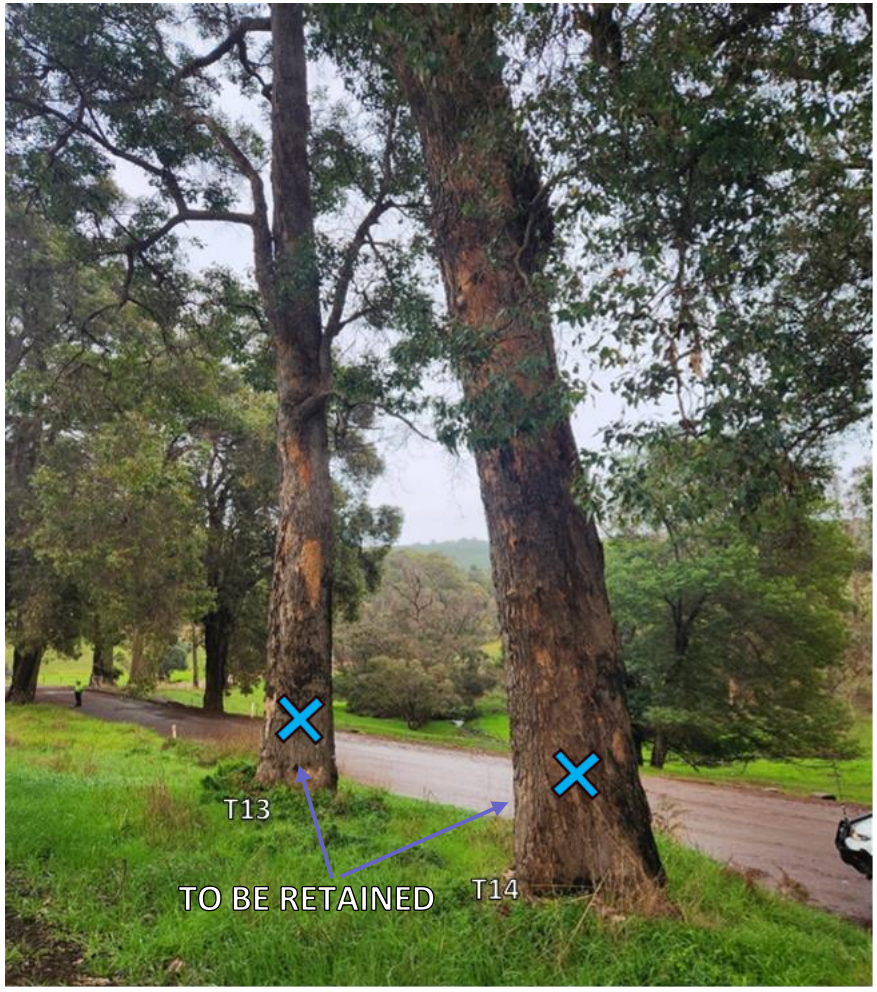
FIGURE 5: EXISTING CULVERTS

FIGURE 3: ROAD ALIGNMENT LOWER CONTOUR (ALL TREES IN THIS PHOTO WILL BE RETAINED)

FIGURE 4: ROAD ALIGNMENT MID CONTOUR

Tree Photos




T13
TO BE RETAINED
T14


T11
T12

Trees to be retained:

T13, T14, T15,T18,T19, T22,T23,T27, T28,T29.

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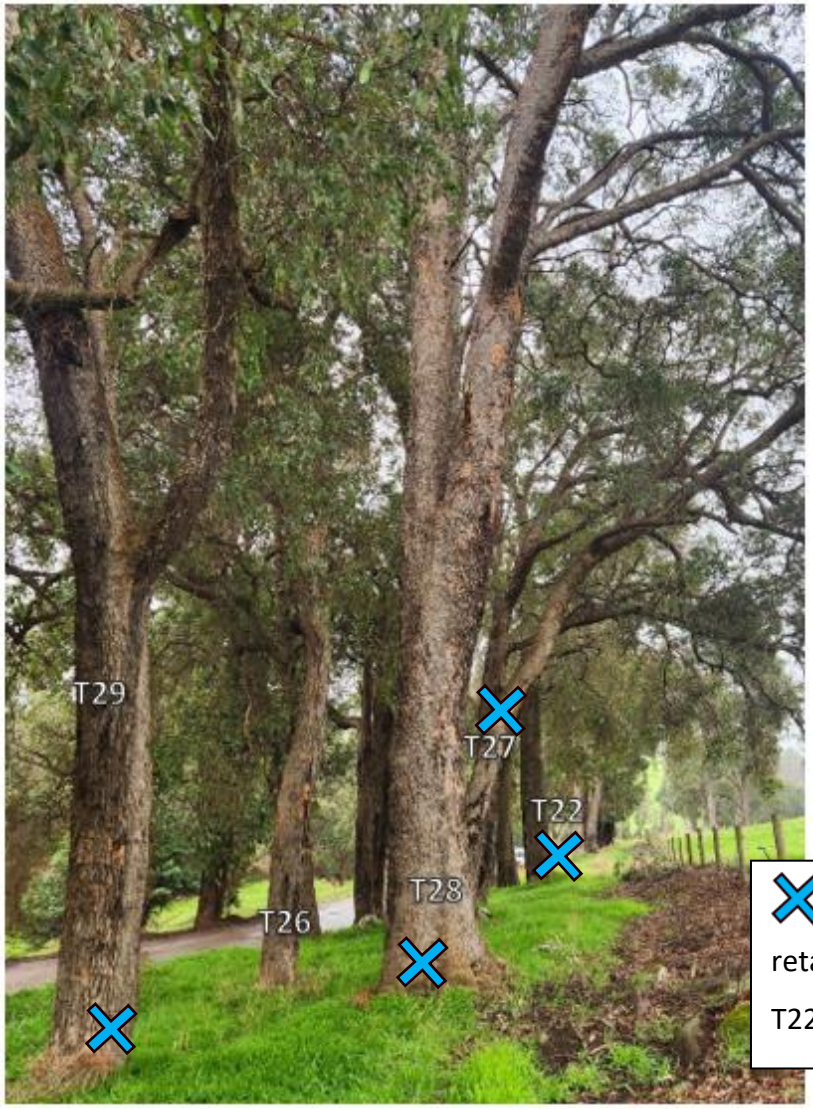

Trees to be retained:

T22,T27,T28,T29.


Southampton Road
T31
T32
T33
Spring Gully Road


Southampton Road
T33
Spring Gully Road
T33

References

DER.*A guide to the assessment of applications to Clear Native Vegetation*.2014.https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf

Datasets Accessed during July and August of 2023

Dataset	Data Provider	Dataset	Data Provider
DWER 004	DWER	NRInfo for flood and soil data	DPIRD
Aboriginal Cultural Heritage Enquiry System	DPLH	2020 Vegetation Retention Status for Beard Associations and by IBRA Region	DPIRD, WALGA
LGATE-067	DPLH	DBCA 047	DBCA
DWER-046	DWER	DPLH-001	DPLH
DBCA-029	DBCA	DWER-034	DWER
Danju	DBCA	DPIRD-037	DPIRD
Redbook Reserves	DBCA	Bush Forever Sites	DBCA

APPENDIX 1

Vegetation Complexes found in Buffer Zone- Table of Descriptions (if available).

SWFor_ID	VEG_CLASS	COMPLEX_NAME	SW_SUBREG	SUBCATEGORY	DESCRIPTION
43	CB	Carbunup	Darling Plateau	Valleys	Woodland of Eucalyptus marginata subsp. marginata-Corymbia calophylla and low woodland of Melaleuca preissiana-Banksia littoralis on slopes in the subhumid zone.
44	CC1	Catterick	Darling Plateau	Valleys	Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla mixed with Eucalyptus patens on slopes, Eucalyptus rudis and Banksia littoralis on valley floors in the humid zone.
49	CF	Cardiff	Collie Plain	Uplands	Open woodland of Allocasuarina fraseriana-Banksia spp.-Xylomelum occidentale-Nuytsia floribunda on sandy soils on valley slopes in the subhumid zone.
66	CP2	Condinup	Darling Plateau	Valley Floors and Swamps	Woodland to low open forest of Eucalyptus rudis-Melaleuca rhaphiophylla on valley floors in the semiarid zone.
70	CRy	Crowea	Darling Plateau	Uplands	Tall open forest of Corymbia calophylla with mixture of Eucalyptus marginata subsp. marginata and Eucalyptus diversicolor on uplands in hyperhumid and perhumid zones.
82	D5	D'Entrecasteaux	Southern Coastal Dune System		Mosaic of low woodland of Agonis flexuosa and closed heath of Olearia axillaris-Spyridium globulosum-Acacia littorea on steep dunes on calcareous deep sands in the perhumid zone.
136	Hd	Glenarty Hills	Margaret River Plateau	Uplands	Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on undulating uplands in hyperhumid and perhumid zones.
157	KP	Kapalarup	Darling Plateau	Depressions and Swamps on Uplands	Mosaic of woodland of Eucalyptus marginata subsp. marginata-Banksia ilicifolia-Banksia grandis on low undulating rises and sedgeland of Cyperaceae spp. on broad flats in the humid zone.

SWFor_ID	VEG_CLASS	COMPLEX_NAME	SW_SUBREG	SUBCATEGORY	DESCRIPTION
181	Mc	Meerup	Southern Coastal Dune System		Coastal complex and closed heath of Olearia axillaris-Spyridium globulosum-Pimelea ferruginea-Rhagodia baccata and sedgeland of Lepidosperma spp. on recently developed coastal dunes in the hyperhumid zone.
199	MTp1	Mattaband 1	Darling Plateau	Uplands	Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on low hills with scattered granite with open forest of Eucalyptus megacarpa on slopes in hyperhumid and perhumid zones.
267	t	Valley Terrace	Redmond Siltstone Plain	Valley Floors and Swamps	Tall shrubland and closed heath of Agonis spp. on valley floors in hyperhumid to humid zones.
285	Vh2	Granite Valleys	Darling Plateau	Valleys	Tall open forest of Eucalyptus diversicolor-Eucalyptus patens on slopes with Agonis flexuosa-Allocasuarina decussata -Callistachys lanceolata on valley floors in hyperhumid and perhumid zones.
304	Wp	Walpole	Southern Plain		Low woodland of Allocasuarina fraseriana-Banksia attenuata-Banksia ilicifolia with stunted Eucalyptus marginata subsp. marginata on flats in the hyperhumid zone.

APPENDIX 2

Threatened and Priority Fauna : 10km buffer

Table : Threatened or Priority Fauna identified within 10km buffer of Project area

object ID	Classification	Priority Listing	Ranking	Distance from project area (m)
312542	MAMMAL	Threatened - Vulnerable	VU	8346.7
312543	MAMMAL	Threatened - Vulnerable	VU	8935.4
20331	BIRD	Threatened - Endangered	EN	7033.5
20330	BIRD	Threatened - Endangered	EN	7033.5
247646	MAMMAL	Priority Fauna	P4	7033.5
312531	MAMMAL	Threatened - Vulnerable	VU	8623.1
312533	MAMMAL	Threatened - Vulnerable	VU	9748.2
16530	BIRD	Threatened - Endangered	EN	7665.2
15804	BIRD	Threatened - Endangered	EN	9739.7
15803	BIRD	Threatened - Endangered	EN	9739.7
15801	BIRD	Threatened - Endangered	EN	9739.7
15802	BIRD	Threatened - Endangered	EN	9739.7
17108	BIRD	Threatened - Endangered	EN	9739.7
269847	MAMMAL	Priority Fauna	P4	8926.5
270304	MAMMAL	Priority Fauna	P4	8926.5
268469	MAMMAL	Priority Fauna	P4	8926.5
267893	MAMMAL	Priority Fauna	P4	8926.5
262526	MAMMAL	Priority Fauna	P4	9650.9
261496	MAMMAL	Priority Fauna	P4	9650.9
255053	MAMMAL	Priority Fauna	P4	9638.0
262986	MAMMAL	Priority Fauna	P4	8594.4
250802	MAMMAL	Priority Fauna	P4	9865.0
36888	BIRD	Threatened - Endangered	EN	9004.8
36887	BIRD	Threatened - Endangered	EN	9004.8
36889	BIRD	Threatened - Endangered	EN	9004.8
262195	MAMMAL	Priority Fauna	P4	10101.3
255094	MAMMAL	Priority Fauna	P4	10091.2
265518	MAMMAL	Priority Fauna	P4	7985.7
311802	MAMMAL	Threatened - Vulnerable	VU	8782.5
314727	MAMMAL	Threatened - Vulnerable	VU	10023.8
314627	MAMMAL	Threatened - Vulnerable	VU	3011.8
314572	MAMMAL	Threatened - Vulnerable	VU	3011.8
265916	MAMMAL	Priority Fauna	P4	3011.8
265866	MAMMAL	Priority Fauna	P4	3011.8
314561	MAMMAL	Threatened - Vulnerable	VU	3011.8
23246	BIRD	Threatened - Endangered	EN	2522.5
20111	BIRD	Threatened - Endangered	EN	5729.0
17449	BIRD	Threatened - Endangered	EN	7479.9
20110	BIRD	Threatened - Endangered	EN	6398.2

23570	BIRD	Threatened - Endangered	EN	3199.6
16528	BIRD	Threatened - Endangered	EN	7345.4
16527	BIRD	Threatened - Endangered	EN	7345.4
23571	BIRD	Threatened - Endangered	EN	3152.4
23805	BIRD	Threatened - Endangered	EN	6614.7
112966	BIRD	Specially Protected - migratory	MI	6367.3
183079	INVERTEBRATE	Threatened - Vulnerable	VU	8836.3
197586	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
197814	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
197220	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
198103	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
269300	MAMMAL	Priority Fauna	P4	5197.1
270987	MAMMAL	Priority Fauna	P4	5197.1
260838	MAMMAL	Priority Fauna	P4	5355.2
311017	MAMMAL	Threatened - Vulnerable	VU	5381.1
252053	MAMMAL	Priority Fauna	P4	4128.1
252054	MAMMAL	Priority Fauna	P4	4128.1
252055	MAMMAL	Priority Fauna	P4	4128.1
252056	MAMMAL	Priority Fauna	P4	4128.1
252057	MAMMAL	Priority Fauna	P4	4128.1
252058	MAMMAL	Priority Fauna	P4	4128.1
252059	MAMMAL	Priority Fauna	P4	4128.1
252046	MAMMAL	Priority Fauna	P4	4128.1
252047	MAMMAL	Priority Fauna	P4	4128.1
252048	MAMMAL	Priority Fauna	P4	4128.1
252049	MAMMAL	Priority Fauna	P4	4128.1
252050	MAMMAL	Priority Fauna	P4	4128.1
252051	MAMMAL	Priority Fauna	P4	4128.1
252052	MAMMAL	Priority Fauna	P4	4128.1
252039	MAMMAL	Priority Fauna	P4	4128.1
252040	MAMMAL	Priority Fauna	P4	4128.1
252041	MAMMAL	Priority Fauna	P4	4128.1
252042	MAMMAL	Priority Fauna	P4	4128.1
252043	MAMMAL	Priority Fauna	P4	4128.1
252044	MAMMAL	Priority Fauna	P4	4128.1
252045	MAMMAL	Priority Fauna	P4	4128.1
207524	MAMMAL	Threatened - Critically endangered	CR	4128.1
252035	MAMMAL	Priority Fauna	P4	4128.1
252031	MAMMAL	Priority Fauna	P4	4128.1
252032	MAMMAL	Priority Fauna	P4	4128.1
252036	MAMMAL	Priority Fauna	P4	4128.1
252037	MAMMAL	Priority Fauna	P4	4128.1

252038	MAMMAL	Priority Fauna	P4	4128.1
39671	BIRD	Threatened - Endangered	EN	5307.7
42035	BIRD	Threatened - Endangered	EN	5310.9
41937	BIRD	Threatened - Endangered	EN	4872.4
196761	MAMMAL	Specially Protected - conservation dependent	CD	3011.8
196738	MAMMAL	Specially Protected - conservation dependent	CD	3011.8
42022	BIRD	Threatened - Endangered	EN	3577.1
268032	MAMMAL	Priority Fauna	P4	5433.1
269935	MAMMAL	Priority Fauna	P4	5433.1
193977	MAMMAL	Specially Protected - conservation dependent	CD	5936.1
239561	MAMMAL	Threatened - Endangered	EN	5748.2
266080	MAMMAL	Priority Fauna	P4	7358.3
311016	MAMMAL	Threatened - Vulnerable	VU	6046.9
197855	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
197269	MAMMAL	Specially Protected - conservation dependent	CD	5197.1
165801	BIRD	Threatened - Vulnerable	VU	5197.1
165468	BIRD	Threatened - Vulnerable	VU	5197.1
271241	MAMMAL	Priority Fauna	P4	2289.4
269591	MAMMAL	Priority Fauna	P4	2289.4
207525	MAMMAL	Threatened - Critically endangered	CR	4128.1
252034	MAMMAL	Priority Fauna	P4	4128.1
252033	MAMMAL	Priority Fauna	P4	4128.1
190122	MAMMAL	Specially Protected - conservation dependent	CD	4128.1
252060	MAMMAL	Priority Fauna	P4	4128.1
45249	BIRD	Priority Fauna	P3	8268.5
114750	BIRD	Specially Protected - other specially protected	OS	8714.4
39941	BIRD	Threatened - Endangered	EN	6650.3
193577	MAMMAL	Specially Protected - conservation dependent	CD	7832.7
197263	MAMMAL	Specially Protected - conservation dependent	CD	8926.5
197645	MAMMAL	Specially Protected - conservation dependent	CD	8598.8
197852	MAMMAL	Specially Protected - conservation dependent	CD	8926.5
198148	MAMMAL	Specially Protected - conservation dependent	CD	8598.8
14508	BIRD	Threatened - Endangered	EN	9746.5
13987	BIRD	Threatened - Endangered	EN	9746.5
13986	BIRD	Threatened - Endangered	EN	9746.5

14506	BIRD	Threatened - Endangered	EN	9746.5
14507	BIRD	Threatened - Endangered	EN	9746.5
14510	BIRD	Threatened - Endangered	EN	9746.5
14509	BIRD	Threatened - Endangered	EN	9746.5
13988	BIRD	Threatened - Endangered	EN	9746.5
10289	BIRD	Threatened - Endangered	EN	7531.0
13218	BIRD	Threatened - Endangered	EN	6433.7
13871	BIRD	Threatened - Endangered	EN	6498.3
14152	BIRD	Threatened - Endangered	EN	8714.4
13691	BIRD	Threatened - Endangered	EN	8714.4
14332	BIRD	Threatened - Endangered	EN	8714.4
10288	BIRD	Threatened - Endangered	EN	8794.8
10005	BIRD	Threatened - Endangered	EN	8804.0
39346	BIRD	Threatened - Endangered	EN	7837.3
39389	BIRD	Threatened - Endangered	EN	7828.6
13792	BIRD	Threatened - Endangered	EN	2209.8
13904	BIRD	Threatened - Endangered	EN	2209.8
8329	BIRD	Threatened - Endangered	EN	9242.8
13875	BIRD	Threatened - Endangered	EN	7324.7
855	BIRD	Priority Fauna	P3	4933.8
13983	BIRD	Threatened - Endangered	EN	7342.9
13984	BIRD	Threatened - Endangered	EN	7342.9
14347	BIRD	Threatened - Endangered	EN	7342.9
14348	BIRD	Threatened - Endangered	EN	7342.9
23458	BIRD	Threatened - Endangered	EN	6023.3
11957	BIRD	Threatened - Endangered	EN	9399.9
11600	BIRD	Threatened - Endangered	EN	9399.9
10174	BIRD	Threatened - Endangered	EN	8959.7
827	BIRD	Priority Fauna	P3	8659.0
799	BIRD	Priority Fauna	P3	8659.0
12283	BIRD	Threatened - Endangered	EN	9399.9
12625	BIRD	Threatened - Endangered	EN	9399.9
13277	BIRD	Threatened - Endangered	EN	8653.2
771	BIRD	Priority Fauna	P3	9337.4
191798	MAMMAL	Specially Protected - conservation dependent	CD	8173.1
191800	MAMMAL	Specially Protected - conservation dependent	CD	8222.4
198401	MAMMAL	Specially Protected - conservation dependent	CD	8222.4
191801	MAMMAL	Specially Protected - conservation dependent	CD	8222.4
191799	MAMMAL	Specially Protected - conservation dependent	CD	8222.4
165854	BIRD	Threatened - Vulnerable	VU	7725.7
196778	MAMMAL	Specially Protected - conservation dependent	CD	7212.5

253427	MAMMAL	Priority Fauna	P4	6204.0
253433	MAMMAL	Priority Fauna	P4	6204.0
253429	MAMMAL	Priority Fauna	P4	6204.0
253430	MAMMAL	Priority Fauna	P4	6204.0
253431	MAMMAL	Priority Fauna	P4	6204.0
165853	BIRD	Threatened - Vulnerable	VU	6175.9
191806	MAMMAL	Specially Protected - conservation dependent	CD	6218.8
272840	MAMMAL	Priority Fauna	P4	6204.0
198399	MAMMAL	Specially Protected - conservation dependent	CD	7350.2
191805	MAMMAL	Specially Protected - conservation dependent	CD	7350.2
191794	MAMMAL	Specially Protected - conservation dependent	CD	8225.8
191793	MAMMAL	Specially Protected - conservation dependent	CD	8225.8
191795	MAMMAL	Specially Protected - conservation dependent	CD	8225.8
198400	MAMMAL	Specially Protected - conservation dependent	CD	8225.8
191796	MAMMAL	Specially Protected - conservation dependent	CD	8350.5
253428	MAMMAL	Priority Fauna	P4	6204.0
253432	MAMMAL	Priority Fauna	P4	6204.0
253426	MAMMAL	Priority Fauna	P4	6204.0
253425	MAMMAL	Priority Fauna	P4	6204.0
253434	MAMMAL	Priority Fauna	P4	6204.0
269696	MAMMAL	Priority Fauna	P4	8062.7
271289	MAMMAL	Priority Fauna	P4	8062.7
165851	BIRD	Threatened - Vulnerable	VU	5594.1
191792	MAMMAL	Specially Protected - conservation dependent	CD	4996.2
253439	MAMMAL	Priority Fauna	P4	4996.2
165852	BIRD	Threatened - Vulnerable	VU	4827.6
253437	MAMMAL	Priority Fauna	P4	4885.5
253436	MAMMAL	Priority Fauna	P4	4832.9
272898	MAMMAL	Priority Fauna	P4	4832.9
272899	MAMMAL	Priority Fauna	P4	4885.5
272900	MAMMAL	Priority Fauna	P4	4996.2
265757	MAMMAL	Priority Fauna	P4	8628.3
197044	MAMMAL	Specially Protected - conservation dependent	CD	8350.5
197664	MAMMAL	Specially Protected - conservation dependent	CD	8350.5
265810	MAMMAL	Priority Fauna	P4	3665.0
265829	MAMMAL	Priority Fauna	P4	4764.8
16922	BIRD	Threatened - Endangered	EN	4067.9

23245	BIRD	Threatened - Endangered	EN	9777.5
318757	MAMMAL	Threatened - Vulnerable	VU	9314.9
320165	MAMMAL	Threatened - Vulnerable	VU	9314.9
253438	MAMMAL	Priority Fauna	P4	4805.2
272897	MAMMAL	Priority Fauna	P4	4805.2
209218	MAMMAL	Threatened - Critically endangered	CR	4726.6
230243	MAMMAL	Threatened - Critically endangered	CR	4726.6
165848	BIRD	Threatened - Vulnerable	VU	3616.2
165849	BIRD	Threatened - Vulnerable	VU	3785.3
198397	MAMMAL	Specially Protected - conservation dependent	CD	3972.6
191788	MAMMAL	Specially Protected - conservation dependent	CD	3972.6
191789	MAMMAL	Specially Protected - conservation dependent	CD	4112.4
191790	MAMMAL	Specially Protected - conservation dependent	CD	4112.4
165850	BIRD	Threatened - Vulnerable	VU	4390.0
272896	MAMMAL	Priority Fauna	P4	4786.7
253435	MAMMAL	Priority Fauna	P4	4786.7
198398	MAMMAL	Specially Protected - conservation dependent	CD	4515.8
191787	MAMMAL	Specially Protected - conservation dependent	CD	4515.8
300824	MAMMAL	Threatened - Vulnerable	VU	4212.6
191791	MAMMAL	Specially Protected - conservation dependent	CD	4212.6
300827	MAMMAL	Threatened - Vulnerable	VU	4212.6
300828	MAMMAL	Threatened - Vulnerable	VU	4212.6
300829	MAMMAL	Threatened - Vulnerable	VU	4212.6
323349	MAMMAL	Threatened - Vulnerable	VU	4212.6
300836	MAMMAL	Threatened - Vulnerable	VU	4027.1
209217	MAMMAL	Threatened - Critically endangered	CR	4044.5
230242	MAMMAL	Threatened - Critically endangered	CR	4044.5
253422	MAMMAL	Priority Fauna	P4	4175.1
253423	MAMMAL	Priority Fauna	P4	4175.1
253424	MAMMAL	Priority Fauna	P4	4175.1
272839	MAMMAL	Priority Fauna	P4	4175.1
253419	MAMMAL	Priority Fauna	P4	4175.1
253420	MAMMAL	Priority Fauna	P4	4175.1
300826	MAMMAL	Threatened - Vulnerable	VU	4212.6
300822	MAMMAL	Threatened - Vulnerable	VU	4212.6
300823	MAMMAL	Threatened - Vulnerable	VU	4212.6
300825	MAMMAL	Threatened - Vulnerable	VU	4212.6

300817	MAMMAL	Threatened - Vulnerable	VU	4146.9
300821	MAMMAL	Threatened - Vulnerable	VU	4146.9
300818	MAMMAL	Threatened - Vulnerable	VU	4146.9
300819	MAMMAL	Threatened - Vulnerable	VU	4146.9
300820	MAMMAL	Threatened - Vulnerable	VU	4146.9
300816	MAMMAL	Threatened - Vulnerable	VU	4146.9
323348	MAMMAL	Threatened - Vulnerable	VU	4146.9
253416	MAMMAL	Priority Fauna	P4	4175.1
253417	MAMMAL	Priority Fauna	P4	4175.1
253418	MAMMAL	Priority Fauna	P4	4175.1
253421	MAMMAL	Priority Fauna	P4	4175.1
191804	MAMMAL	Specially Protected - conservation dependent	CD	8482.6
191802	MAMMAL	Specially Protected - conservation dependent	CD	8489.9
191803	MAMMAL	Specially Protected - conservation dependent	CD	8489.9
191797	MAMMAL	Specially Protected - conservation dependent	CD	8478.5
198403	MAMMAL	Specially Protected - conservation dependent	CD	8489.9
253440	MAMMAL	Priority Fauna	P4	4097.2
272895	MAMMAL	Priority Fauna	P4	4097.2
300835	MAMMAL	Threatened - Vulnerable	VU	4097.2
300834	MAMMAL	Threatened - Vulnerable	VU	4097.2
300832	MAMMAL	Threatened - Vulnerable	VU	4097.2
300833	MAMMAL	Threatened - Vulnerable	VU	4097.2
300831	MAMMAL	Threatened - Vulnerable	VU	4058.1
300830	MAMMAL	Threatened - Vulnerable	VU	4058.1
323346	MAMMAL	Threatened - Vulnerable	VU	4058.1
323347	MAMMAL	Threatened - Vulnerable	VU	4097.2
40345	BIRD	Threatened - Endangered	EN	6141.7
193736	MAMMAL	Specially Protected - conservation dependent	CD	6171.2
196691	MAMMAL	Specially Protected - conservation dependent	CD	6623.7
191786	MAMMAL	Specially Protected - conservation dependent	CD	8259.6
198402	MAMMAL	Specially Protected - conservation dependent	CD	8259.6
41257	BIRD	Threatened - Endangered	EN	6533.7
193743	MAMMAL	Specially Protected - conservation dependent	CD	7876.7
196698	MAMMAL	Specially Protected - conservation dependent	CD	7811.4
39667	BIRD	Threatened - Endangered	EN	7828.6
42115	BIRD	Threatened - Endangered	EN	7582.3
39665	BIRD	Threatened - Endangered	EN	7587.2

41133	BIRD	Threatened - Endangered	EN	7587.3
196795	MAMMAL	Specially Protected - conservation dependent	CD	8432.6
41256	BIRD	Threatened - Endangered	EN	6534.0
135506	BIRD	Threatened - Vulnerable	VU	3368.5
135514	BIRD	Threatened - Vulnerable	VU	3364.0
140907	BIRD	Threatened - Vulnerable	VU	3577.1
139875	BIRD	Threatened - Vulnerable	VU	3580.6
135496	BIRD	Threatened - Vulnerable	VU	3238.2
135497	BIRD	Threatened - Vulnerable	VU	3406.4
135516	BIRD	Threatened - Vulnerable	VU	3222.9
132105	BIRD	Threatened - Vulnerable	VU	3702.4
132096	BIRD	Threatened - Vulnerable	VU	3665.8
132097	BIRD	Threatened - Vulnerable	VU	3785.3
132104	BIRD	Threatened - Vulnerable	VU	3616.2
139813	BIRD	Threatened - Vulnerable	VU	4123.7
136670	BIRD	Threatened - Vulnerable	VU	4123.8
136484	BIRD	Threatened - Vulnerable	VU	4127.3
130546	BIRD	Threatened - Vulnerable	VU	7033.5
132094	BIRD	Threatened - Vulnerable	VU	4390.0
132101	BIRD	Threatened - Vulnerable	VU	4368.8
132113	BIRD	Threatened - Vulnerable	VU	3963.9
135495	BIRD	Threatened - Vulnerable	VU	3574.5
139471	BIRD	Threatened - Vulnerable	VU	9819.6
135492	BIRD	Threatened - Vulnerable	VU	4721.2
135504	BIRD	Threatened - Vulnerable	VU	3204.9
134826	BIRD	Threatened - Vulnerable	VU	2417.7
135515	BIRD	Threatened - Vulnerable	VU	3257.1
135517	BIRD	Threatened - Vulnerable	VU	3190.2
135502	BIRD	Threatened - Vulnerable	VU	3249.8
135491	BIRD	Threatened - Vulnerable	VU	5233.4
48157	BIRD	Specially Protected - migratory	MI	9242.8
135513	BIRD	Threatened - Vulnerable	VU	3116.7
135499	BIRD	Threatened - Vulnerable	VU	3173.6
135519	BIRD	Threatened - Vulnerable	VU	3165.5
135500	BIRD	Threatened - Vulnerable	VU	3165.7
135508	BIRD	Threatened - Vulnerable	VU	3155.9
135507	BIRD	Threatened - Vulnerable	VU	3176.6
135510	BIRD	Threatened - Vulnerable	VU	3201.3
135501	BIRD	Threatened - Vulnerable	VU	2937.7
135512	BIRD	Threatened - Vulnerable	VU	2975.0
135518	BIRD	Threatened - Vulnerable	VU	3075.1
135509	BIRD	Threatened - Vulnerable	VU	3104.5
135520	BIRD	Threatened - Vulnerable	VU	3037.9
135503	BIRD	Threatened - Vulnerable	VU	3380.1
135505	BIRD	Threatened - Vulnerable	VU	3272.3

135511	BIRD	Threatened - Vulnerable	VU	3316.4
135498	BIRD	Threatened - Vulnerable	VU	3269.0
136667	BIRD	Threatened - Vulnerable	VU	9772.0
136257	BIRD	Threatened - Vulnerable	VU	9004.8
136665	BIRD	Threatened - Vulnerable	VU	7587.2
140939	BIRD	Threatened - Vulnerable	VU	7582.3
132098	BIRD	Threatened - Vulnerable	VU	8259.6
132106	BIRD	Threatened - Vulnerable	VU	8227.8
140524	BIRD	Threatened - Vulnerable	VU	5287.4
140911	BIRD	Threatened - Vulnerable	VU	5310.9
136669	BIRD	Threatened - Vulnerable	VU	5307.7
139812	BIRD	Threatened - Vulnerable	VU	5307.8
132092	BIRD	Threatened - Vulnerable	VU	4525.7
132100	BIRD	Threatened - Vulnerable	VU	4827.6
132109	BIRD	Threatened - Vulnerable	VU	4960.1
132116	BIRD	Threatened - Vulnerable	VU	4558.9
132115	BIRD	Threatened - Vulnerable	VU	4249.4
132102	BIRD	Threatened - Vulnerable	VU	5083.8
132114	BIRD	Threatened - Vulnerable	VU	5469.3
132093	BIRD	Threatened - Vulnerable	VU	5594.1
132099	BIRD	Threatened - Vulnerable	VU	6175.9
132095	BIRD	Threatened - Vulnerable	VU	4924.2
132091	BIRD	Threatened - Vulnerable	VU	7103.8
132112	BIRD	Threatened - Vulnerable	VU	7281.9
132111	BIRD	Threatened - Vulnerable	VU	7641.2
132090	BIRD	Threatened - Vulnerable	VU	7725.7
132110	BIRD	Threatened - Vulnerable	VU	8316.6
132103	BIRD	Threatened - Vulnerable	VU	8400.5
132108	BIRD	Threatened - Vulnerable	VU	8580.7
132107	BIRD	Threatened - Vulnerable	VU	8605.4

APPENDIX 3

Tree Observation Data

GPS Information was gathered using EPSG 4326: WGS 84.

ID #	Name	xcoord	ycoord	SPECIES	CONDITION	NOTES
1	T1	116.0018503	-33.85760363	JARRAH	AVERAGE	TO CLEAR
2	T2	116.0017636	-33.85764334	JARRAH	DEAD	TO CLEAR
3	T3	116.0015047	-33.85759493	MARRI	SMALL GOOD	TO CLEAR
4	T4	116.0003822	-33.85797792	MARRI	GOOD	ABLE TO RETAIN
5	T6	115.9988933	-33.85879449	MARRI	GOOD	TO CLEAR
6	T8	115.9918951	-33.86123997	MARRI	EXCELLENT	TO CLEAR
8	T9 T10	115.9916525	-33.8615598	MARRI	GOOD	TO CLEAR
9	T11	115.9910449	-33.86194471	MARRI	GOOD	TO CLEAR
10	T13	115.9909343	-33.86207451	MARRI	GOOD	ABLE TO RETAIN
11	T12	115.9911246	-33.86188318	MARRI	GOOD	TO CLEAR
12	T14	115.9910034	-33.86199804	MARRI	GOOD	ABLE TO RETAIN
13	T15	115.9907819	-33.86222084	MARRI	GOOD	ABLE TO RETAIN
14	T19	115.9907671	-33.86224217	MARRI	GOOD	ABLE TO RETAIN
15	T18	115.9907688	-33.86226141	MARRI	GOOD	ABLE TO RETAIN
16	T21	115.9907363	-33.86223077	MARRI	GOOD	TO CLEAR
17	T20	115.9907157	-33.86231085	MARRI	GOOD	TO CLEAR
18	T21	115.9907056	-33.86230182	MARRI	GOOD	TO CLEAR
19	T22	115.9907443	-33.86235373	MARRI	GOOD	ABLE TO RETAIN
20	T23 & T24 &T25	115.9906757	-33.86234262	MARRI	GOOD	RETAIN T23 ONLY
21	T29 & T30	115.9906575	-33.86239634	MARRI	GOOD	RETAIN T29 ONLY
22	T27 & T28	115.9906638	-33.86239091	MARRI	GOOD	ABLE TO RETAIN
23	T17	115.9906399	-33.86225326	MARRI	GOOD	TO CLEAR
24	T32	115.9895919	-33.86274793	MARRI	GOOD	TO CLEAR
26	T7	115.9932313	-33.86054375	E.RUDIS	AVERAGE	TO CLEAR
27	T33	115.9894699	-33.86276235	E.RUDIS	AVERAGE	TO CLEAR
29	T31	115.9898972	-33.86265125	MARRI	GOOD	TO CLEAR

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APPENDIX 4

Fauna Specialist Report

Tree Assessment
Spring Gully Road
Upgrade Project

Southampton

Shire of Donnybrook - Balingup

June 2024
Version 1

On behalf of:
Shire of Donnybrook - Balingup PO Box 94
DONNYBROOK WA 6227

Prepared by:
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SUMMARY

This report details the results of a tree assessment carried out along a section of the Spring Gully Road, Southampton in the Shire of Donnybrook - Balingup (the Shire) (Figure 1).

The Shire is proposing to apply for a permit to clear up to 31 trees along the road verge to allow for road widening and upgrades. It is anticipated that the Department of Water and Environmental Regulation (DWER) will request a survey for potential black cockatoo breeding habitat within the areas to be cleared and therefore this survey has been undertaken to provide the required information so as to allow for the application to proceed in a timely manner when submitted.

The field component of tree assessment was carried out on 1 June 2024 by Greg Harewood (Zoologist).

Primary Findings

Based on the observations made, all the trees in question have been assessed as not having any characteristics that would make them suitable refuge or breeding habitat for any fauna species of conservation significance known to frequent the general area.

1. INTRODUCTION

This report details the results of a tree assessment carried out along a section of the Spring Gully Road, Southampton in the Shire of Donnybrook - Balingup (the Shire) (Figure 1).

The Shire is proposing to apply for a permit to clear up to 31 trees along the road verge to allow for road widening and upgrades. It is anticipated that the Department of Water and Environmental Regulation (DWER) will request a survey for potential black cockatoo breeding habitat within the areas to be cleared and therefore this survey has been undertaken to provide the required information so as to allow for the application to proceed in a timely manner when submitted.

It should be noted that most of the trees in question were the subject of previously granted clearing permits (CPS 7693/1 and 7693/2). These permits expired prior to works being commenced, hence the requirement for a new permit application.

Prior to the survey being undertaken the Shire identified the trees within the permit area that may require removal and therefore required assessment. It should be noted that not all the trees assessed may necessarily require removal.

2. SCOPE OF WORKS

The Shire have defined the scope of works as

- Undertake a fauna assessment on 31 trees along Spring Gully Road in Southampton to support a clearing permit application.

3. METHODS

The field component of tree assessment was carried out on 1 June 2024 by Greg Harewood (Zoologist).

The previously identified trees (marked by the Shire with paint) were located in the field and examined from ground level using binoculars for hollows. A drone (DJI Mavic Mini) was also available to examined and photographed any observed hollow (or possible hollow) whenever considered warranted and feasible. Details on location, tree species and other relevant details were recorded in each instance.

If and when located, an assessment of each hollow's suitability for use by fauna species of conservation significance (e.g. black cockatoos, phascogales and western ringtail possums) was to be determined where possible and noted.

Other evidence of use or suitability as habitat for other fauna species of conservation significance was also noted if observed (e.g. possum dreys, dense canopy)

All survey data has been provided along with this report in a format in accordance with the EPA's Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA).

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 also be recognised that site conditions can change with time.

During the 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, though to a certain extent some of these limitations can be overcome by using a drone or pole camera to examine possible hollows in more detail (where considered warranted and feasible).

5. RESULTS

None of the trees assessed contain hollows of a size/orientation suitable for black cockatoos to use for nesting purposes.

Two trees contained what appeared to be possible very small hollows in some dead branched but in the authors opinion these where not of a size or orientation that would be favoured by other fauna of significance such as phascogales and/or western ringtail possums.

Because of this and other factors the trees in question have been assessed as unlikely to represent suitable refuge/breeding habitat for any conservation significant fauna species likely to frequent the general area (e.g. black cockatoos, phascogales and western ringtail possums).

A summary of observations made are provided in Table 1 below.

Additional details of each tree can be found in Appendix A.

Table 1: Summary of Tree Observations

ID	Side of Road	Number of Possible Hollows	Status	Comments
T1	North	0	No hollows observed	Medium sized (DBH >50cm) jarrah tree.
T2	North	0	No hollows observed	Large sized (DBH >50cm) jarrah tree. Dead
T3	North	1	One possible very small hollow.	Small sized (DBH <50cm) jarrah tree. One possible, very small spout like hollow in dead branch. Not significant.
T4	North	0	No hollows observed	Small sized (DBH <50cm) marri tree.
T6	South	0	No hollows observed	Large sized (DBH <50cm) marri tree. Main trunk snapped off. Examined with drone - no hollow.
T7	North	0	No hollows observed	Medium sized (DBH >50cm) flooded gum.
TS	North	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T9	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T10	South	0	No hollows observed	Small sized (DBH <50cm) marri tree.
T11	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T12	South	2+	No hollows observed	Large sized (DBH >50cm) marri tree. Several possible, very small spout like hollows in dead branches. Not significant.
T13	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T14	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T15	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T16	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T17	North	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T1S	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T19	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T20	South	0	No hollows observed	Small sized (DBH <50cm) marri tree.
T21	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T22	South	0	No hollows observed	Large sized (DBH >50cm) karri tree.
T23	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.

T24	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.

ID	Side of Road	Number of Possible Hollows	Status	Comments
T25	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T26	South	0	No hollows observed	Small sized (DBH <50cm) marri tree.
T27	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T2S	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T29	South	0	No hollows observed	Medium sized (DBH >50cm) marri tree.
T30	South	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T31	North	0	No hollows observed	Large sized (DBH >50cm) marri tree.
T32	North	0	No hollows observed	Large sized (DBH >50cm) marri tree.

6. CONCLUSION

The assessment reported on here was undertaken to identify any trees with hollows or possible hollows likely to be suitable for use by conservation significant species such as black cockatoos and phascogales.

Based on the observations made, all the trees in question have been assessed as not having any characteristics that would make them suitable refuge or breeding habitat for any fauna species of conservation significance known to frequent the general area.

APPENDIX A

Details of Trees Inspected

Tree Details

Datum: Australian Geocentric 1994 (GDA94)

ID	Lat	Long	Zone	mE	mN	Species
T1	-33.S576036	116.001S51	50H	407667	62531S4	Jarrah
T2	-33.S576433	116.001764	50H	407659	6253179	Jarrah
T3	-33.S575949	116.001505	50H	407635	62531S5	Marri
T4	-33.S579779	116.0003S2	50H	407515	6253133	Marri
T6	-33.S5S7945	115.99SS93	50H	407439	6253076	Marri
T7	-33.S60543S	115.993231	50H	406937	6252S72	Flooded Gum
T8	-33.S6124	115.991S95	50H	406750	6252772	Marri
T9	-33.S61559S	115.991653	50H	40672S	6252736	Marri
T10	-33.S61559S	115.991653	50H	40672S	6252736	Marri
T11	-33.S619447	115.991045	50H	406672	6252693	Marri
T12	-33.S61SS32	115.991125	50H	4066S0	6252700	Marri
T13	-33.S620745	115.990934	50H	406662	625267S	Marri
T14	-33.S6199S	115.991003	50H	406669	62526S7	Marri
T15	-33.S62220S	115.9907S2	50H	40664S	6252662	Marri
T16	-33.S62230S	115.990736	50H	406644	6252661	Marri
T17	-33.S622533	115.99064	50H	406635	625265S	Marri
T1S	-33.S622614	115.990769	50H	406647	6252657	Marri
T19	-33.S622422	115.990767	50H	406647	6252660	Marri
T20	-33.S623109	115.990716	50H	406642	6252652	Marri
T21	-33.S62301S	115.990706	50H	406641	6252653	Marri
T22	-33.S623537	115.990744	50H	406645	6252647	Marri
T23	-33.S623426	115.990676	50H	406639	625264S	Marri
T24	-33.S623426	115.990676	50H	406639	625264S	Marri
T25	-33.S623426	115.990676	50H	406639	625264S	Marri
T26	-33.S623963	115.99065S	50H	406637	6252642	Marri
T27	-33.S623909	115.990664	50H	40663S	6252643	Marri
T2S	-33.S623909	115.990664	50H	40663S	6252643	Marri
T29	-33.S623963	115.99065S	50H	406637	6252642	Marri
T30	-33.S623963	115.99065S	50H	406637	6252642	Marri
T31	-33.S626513	115.9S9S97	50H	406567	6252613	Marri
T32	-33.S627479	115.9S9592	50H	406539	6252602	Marri

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

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