

Habitat Tree Assessment of Proposed Clearing Areas (CPS 8151/1)



Wandering-Narrogin Road (~SLK 25.16 to 27.23)

Shire of Cuballing

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Version 1

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SUMMARY

The Shire of Cuballing (the Shire) has applied for a clearing permit from the Department of Water and Environmental Regulation (DWER reference CPS 8151/1) so as to allow for road widening to be undertaken (Figure 1). The habitat tree survey reported on here has been carried out to obtain additional information required by DWER (2018) to progress the application.

It should be noted that the Shire has only applied to remove up to 50 trees from the Permit area, however as the works footprint was not marked at the time of the survey, all trees within the area surveyed have been included.

The survey identified 109 “habitat trees” within the permit area which had a Diameter at Breast Height (DBH) of ≥ 30 cm. (Figure 2).

One hundred and two (102) of the trees (including one tree with a possible large hollow) are about eight (8) to 12 metres from the road centreline. These are considered the least likely trees to require removal, though some may have to be removed depending on their position relative to proposed road works.

The remaining seven (7) trees are about seven (7) metres from the existing road centreline. These also may or may not require removal depending on their actual position in relation to proposed road works. One of these closer trees contains some possible small/medium sized hollows.

Two of the trees within the Permit area appear to contain hollows. One of these trees (a dead specimen at wpt 24 - SLK ~25.83) was assessed as having possible small to medium sized hollows unsuitable for black cockatoos, but possibly phascogales. No evidence of red-tailed phascogales using hollows within this tree was observed though this was based on external examination of hollows with binoculars only, as hollows could not be examined internally. It is however considered highly unlikely this particular tree would be inhabited by red-tailed phascogales given its isolation from other trees and distance from the larger, more favourable remnant making up the Fourteen Mile Brook Nature Reserve.

One tree was found to contain a possible large spout style hollow which has been assessed as possibly suitable for black cockatoos (wpt 4 – SLK ~25.39). This hollow may also be suitable for red-tailed phascogales but the highly fragmented and isolated nature of the vegetation along this section of the road reserve make this unlikely. The hollow showed no signs of use by any fauna. This tree is also about 10 metres from the road centre line and is therefore unlikely to require removal in any event. Pictures of this tree and the hollow are provided in Plate 1.

Camera traps, set up for a period of one month, did not detect any evidence of phascogale activity with the only fauna detected being Australian ravens and a red fox.

As indicated, only one of the habitat trees located near the potential works footprint appears to contain a hollow suitable for Carnaby’s cockatoos. This tree is located about 10 metres from

the existing road centreline and therefore it is very likely to be retained and the proposed road works are therefore not likely to directly impact on this species.

The presence/absence of red-tailed phascogales from within the Permit area is difficult to positively determine given they leave little secondary evidence of use around hollows and the hollows themselves, in this instance at least, could not be inspected internally to assess if they were occupied. It is however considered highly unlikely that the particular trees with hollows would be in use by phascogales given the degraded/fragmented nature of the vegetation present in the immediate vicinity and their isolation well away from any larger expanses of better quality native vegetation likely to provide a source of individuals (e.g. Fourteen Mile Brook Nature Reserve).

Given the uncertainty regarding which trees may require removal it is recommended that the trees actually within the works footprint are specifically marked. If any of these trees are represented by those identified during the survey reported on here as containing hollows, consideration should be given to employing a zoologist/suitably qualified fauna spotter during clearing works to supervise their felling.

The task of the zoologist will be to ensure works are carried out in a manner that minimises the risk of death or injuring to any fauna that may be occupying hollows and in the unlikely event fauna are encountered, to facilitate their relocation into nearby, retained bushland, unharmed. It is also recommended that clearing, if possible, be undertaken outside of the documented breeding season of phascogales (~June to October).

This proposed course of action is consistent with clearing protocols employed for other clearing projects in the south west and wheatbelt where similar fauna species (e.g. phascogales) may be encountered.

This report should be forwarded to DWER for their consideration

1. INTRODUCTION

This report details the results of a fauna habitat assessment carried out along a two kilometre section of the Stratherne Road (~SLK 25.16 to ~SLK 27.23) in the Shire of Cuballing (the Shire).

It is understood that the Shire have applied for a clearing permit from the Department of Water and Environmental Regulation (DWER reference CPS 8151/1) so as to allow for road widening to be undertaken (Figure 1).

The habitat tree survey reported on here has been carried out to obtain addition information required by DWER (2018) to progress the application.

2. SCOPE OF WORKS

The scope of works is to comply with request for additional information by DWER (2018) this being:

Information requirements

A habitat tree survey is required for the application area (i.e. the width of the road reserve).

Specifications

The survey is required to identify:

- All trees of the *Eucalyptus* genus that contain a hollow(s) that may be suitable to be used by red-tailed phascogale (*Phascogale calura*); and
- All trees of the *Eucalyptus* genus that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater (or 30 centimetres or greater for salmon gum and wandoo) that contain a hollow(s) that may be suitable for breeding by Carnaby's cockatoo (*Calyptorhynchus latirostris*).

The survey must also identify any evidence of use of any recorded hollows by red-tailed phascogale or Carnaby's cockatoo.

The survey must document:

- the date(s) of the survey;
- the GPS locations (i.e. eastings and northings or decimal degrees) of all trees identified as containing hollows which may be suitable for red-tailed phascogale or Carnaby's cockatoo; and

- the methodology for determining the evidence of use of each hollow and a description/photo of the evidence.

3. METHODS

An inspection of the application area was carried out by Greg Harewood (Zoologist - 16 years' experience) with the assistance of Kristopher Harewood (field assistant) on the 24 March 2019.

The area surveyed is contained within the permit application area shown in Figure 1. This extends from approximately SLK 25.16 to SLK 27.23. The trees that will require removal for the proposed road works (50 in number) were at the time of the survey, not marked and so could not be specifically identified.

For the purpose of the assessment the survey area was therefore defined by the total width of the road reserve as marked by fence lines along the boundary of bordering farmland or where fence lines were absent, the survey boundary was taken as being about 10 metres from the existing road edge. The distance of trees from the road centre line was measured and recorded using a hand-held laser range finder (accuracy +/- 1m).

3.1 Fauna Habitats

Descriptions of broad scale fauna habitats present within the Permit area are provided. These are based on the vegetation communities, soils and landforms observed during the site reconnaissance survey.

3.2 Habitat Tree Assessment

The habitat tree assessment has involved the identification of all suitable tree species within the Permit area that have a Diameter at Breast Height (DBH) of equal to or over 30cm and/or those containing hollows or apparent hollows possibly suitable for black cockatoos and/or phascogales. In the case of black cockatoo breeding trees the DBH was estimated using a pre-made 30 cm "caliper". Borderline trees (i.e. those of which the DBH was uncertain) were measured with a DBH tape.

Target tree species included wandoo, salmon gum, jarrah or any other *Corymbia/Eucalyptus* species of a suitable size that was present.

The location of each tree identified fitting the required criteria were recorded with a GPS and details on tree species, number and size of hollows (if any) noted. Trees observed to contain possible hollows (of any size/type) were marked with "H" using spray paint.

Identified hollows have initially been placed into one of three categories based on the type of hollow entry:

- Chimney: the hollow entry faces directly upwards in the end of the trunk;
- Spout: hollow entry which is at the end of a broken branch; or
- Side: the entry is directly into the side of the trunk or a branch with no protrusions.

Hollows were then categorised, based on the size of the apparent hollow entrance, these being:

- Small = $\sim < 5$ cm diameter (i.e. entrance appears too small for a black cockatoo but possibly suitable for phascogales);
- Medium = ~ 5 cm-10cm diameter (i.e. entrance appears too small for a black cockatoo but possibly suitable for phascogales);
- Large = $\sim > 10$ cm diameter (entrance appears large enough for a black cockatoo, but possible hollow appears to be unsuitable for nesting i.e. wrong orientation, too small, too low or too shallow but possibly suitable for phascogales); or
- Large (cockatoo) = $\sim > 10$ cm diameter (entrance appears big enough to provide access to a possible hollow that maybe suitable for a black cockatoo to use for nesting and possibly suitable for phascogales).

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

- Tree < 30 cm DBH or an unsuitable species (not assessed/recorded);
- Tree ≥ 30 cm DBH, no hollows seen;
- Tree ≥ 30 cm DBH, one or more potential hollows seen, none of which were considered suitable for black cockatoos to use for nesting but possibly suitable for phascogales; or
- Tree ≥ 30 cm DBH, one or more potential hollows seen, with at least one considered possibly suitable for black cockatoos to use for nesting and also possibly suitable for phascogales.

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) and phascogales.

As indicated above any tree with a hollow or possible hollow was assumed to represent a potential “red-tailed phascogale habitat tree” as defined by DWER. It is however generally impossible to identify if any one hollow is in current use by phascogales as little, if any external

evidence of use will exist and many hollows will be very high up trees and impossible to examine internally.

It was planned to examine lower hollows (<~10m) with a small camera on a pole however this was not possible as at the time of the survey as no hollows were observed where this method was considered viable or safe to carry out.

Given the difficulties in identifying actual habitat trees in use by phascogales and to assist in determining if any red-tailed phascogale were actually present in the area in the first instance two motion sensing “camera traps” were deployed. These were placed at the base of or near what were considered to be potential phascogale habitat trees to help determine if they were present in the area. These were left in place for one month and then retrieved.

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 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/possible 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. It is also generally impossible to determine if hollows high in trees (for example) are in current use by fauna as it is not possible to look inside them.

5. RESULTS


5.1 Fauna Habitats



This section of the Wandering-Narrogin Road passes through cleared farmland and also borders the Fourteen Mile Brook Nature Reserve along part of its length (Figure 1). The composition and density of vegetation bordering the existing road varies between an open grassland with widely scattered trees to areas where tree density increases. Native ground cover and low shrubs are generally absent with most areas consisting of a mosaic of bare ground and introduced grasses. The majority of the trees within the permit area are represented by relatively small wandoo (*Eucalyptus wandoo*). There are small localised concentrations of rock sheoak (*Allocasuarina huegeliana*) and parrot bush (*Banksia sessilis*)

within the nature reserve. Jam (*Acacia acuminata*) is present in select areas, mainly in the north.

Example images of vegetation bordering the existing road are shown in Table 1.

Table 1: Example Images of Vegetation within the Permit Area

Vegetation Description	Example Images
<p>Grassland with occasional wandoo (<i>Eucalyptus wandoo</i>) over grassland (eastern side of road). Jam (<i>Acacia acuminata</i>) and scattered wandoo (western side of road). SLK ~25.52</p>	
<p>Sedgeland within seasonal creekline. SLK ~25.92</p>	
<p>Wandoo (<i>Eucalyptus wandoo</i>) low open woodland over grassland (western side of road - Fourteen Mile Brook Nature Reserve). SLK ~25.98.</p>	

Vegetation Description	Example Images
<p>Wandoo (<i>Eucalyptus wandoo</i>) low open woodland over open grassland (eastern side of road). SLK ~26.22.</p>	
<p>Wandoo (<i>Eucalyptus wandoo</i>) low open woodland over rock sheoak (<i>Allocasuarina huegeliana</i>) over open grassland (western side of road - Fourteen Mile Brook Nature Reserve). SLK ~26.49.</p>	
<p>Wandoo (<i>Eucalyptus wandoo</i>) low open woodland over parrot bush (<i>Banksia sessilis</i>) over open grassland (western side of road - Fourteen Mile Brook Nature Reserve). SLK ~26.86.</p>	

5.2 Habitat Tree Assessment

A summary of the black cockatoo “habitat trees” observed within the permit area is provided in Table 2 below. The location of the trees recorded are shown in Figure 2.

Table 2: Summary of Habitat Trees (DBH \geq 30cm) within the Permit Area

Total Number of Habitat Trees (i.e. DBH \geq 30cm)	Number of Habitat Trees <u>without hollows or apparent hollows</u>	Number of Habitat Trees <u>with hollows or apparent hollows</u>	Number of Habitat Trees with <u>possible hollows</u> considered <u>potentially suitable for black cockatoos</u>	Number of Habitat Trees with <u>possible hollows</u> considered <u>potentially suitable for phascogales</u>
109	107	2	1	2

The survey identified 109 “habitat trees” within the permit area which had a DBH of \geq 30cm.

It should be noted that not all these trees are likely to require removal but as the works footprint was not marked they have been included.



One hundred and two (102) of the trees (including one tree with a possible large hollow) are about eight (8) to twelve (12) metres from the road centreline. These are considered the least likely trees to require removal, though some may have to be removed depending on their position relative to proposed road works. The remaining seven (7) trees are about seven (7) metres from the existing road centreline. These also may or may not require removal depending on their actual position in relation to proposed road works. One of these closer trees contains some possible small/medium sized hollows.

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

As indicated only two of the trees within the Permit area appear to contain hollows. One of these trees (a dead specimen at wpt 24 - SLK ~25.83) was assessed as having possible small to medium sized hollows unsuitable for black cockatoos, but possibly phascogales. No evidence of red-tailed phascogales using hollows within this tree was observed though this was based on external examination of hollows with binoculars only, as hollows could not be examined internally. It is however considered highly unlikely this particular tree would be inhabited by red-tailed phascogales given its isolation from other trees and distance from the larger, more favourable remnant making up the Fourteen Mile Brook Nature Reserve.

One tree was found to contain a possible large spout style hollow which has been assessed as possibly suitable for black cockatoos (wpt 4 – SLK ~25.39). The hollow may also be suitable for red-tailed phascogales but the highly fragmented and isolated nature of the vegetation along this section of the road reserve make this unlikely to occur. The hollow showed no signs of use by any fauna. This tree is also about 10 metres from the road centre line and is therefore unlikely to require removal in any event. Pictures of this tree and the hollow are provided in Plate 1.

Plate 1: Habitat Tree 4

	Species: Wandoo DBH: >30cm
	Wpt: 4 Coords: 508247 mE 6368131 mN (MGA Z50)
	Primary Hollow/s: One large spout type hollow in broken branch.
	Comments: Observations made in the field indicate that this tree is possibly suitable for black cockatoos to use for nesting purposes, though no evidence of use was recorded. It is considered unlikely that red-tailed phascogales would use this tree due to the highly fragmented and isolated nature of the vegetation along this section of the road reserve.
	<p>This tree is about 10 metres from the road centre line and is therefore unlikely to require removal in any event.</p>
	

The two camera traps did not detect any evidence of phascogale activity with the only fauna detected being Australian ravens and a red fox.

6. CONCLUSION

The assessment reported on here was undertaken to identify if any trees in or near proposed road works are in current use by Carnaby's cockatoos or red-tailed phascogales.

No evidence of hollows being used by either of these species was found. One of the habitat trees located near the potential works footprint appears to contain a hollow suitable for Carnaby's cockatoos. This tree is located about 10 metres from the existing road centreline and it is very likely to be retained and therefore the proposed road works are not likely to directly impact on this species.

The presence/absence of red-tailed phascogales from within the Permit area is difficult to positively determine given they leave little secondary evidence of use around hollows and the hollows themselves, in this instance at least, could not be inspected internally to assess if they were occupied. It is however considered highly unlikely that the particular trees with hollows would be in use by phascogales given the degraded/fragmented nature of the vegetation present in the immediate vicinity and their isolation well away from any larger expanses of better quality native vegetation likely to provide a source of individuals (e.g. Fourteen Mile Brook Nature Reserve).

Given the uncertainty regarding which trees may require removal it is recommended that the trees actually within the works footprint are specifically marked. If any of these trees are represented by those identified during the survey reported on here as containing hollows, consideration should be given to employing a zoologist/suitably qualified fauna spotter during clearing works to supervise their felling.

The task of the zoologist will be to ensure works are carried out in a manner that minimises the risk of death or injuring to any fauna that may be occupying hollows and in the unlikely event fauna are encountered, to facilitate their relocation into nearby, retained bushland, unharmed. It is also recommended that clearing, if possible, be undertaken outside of the documented breeding season of phascogales (~June to October).

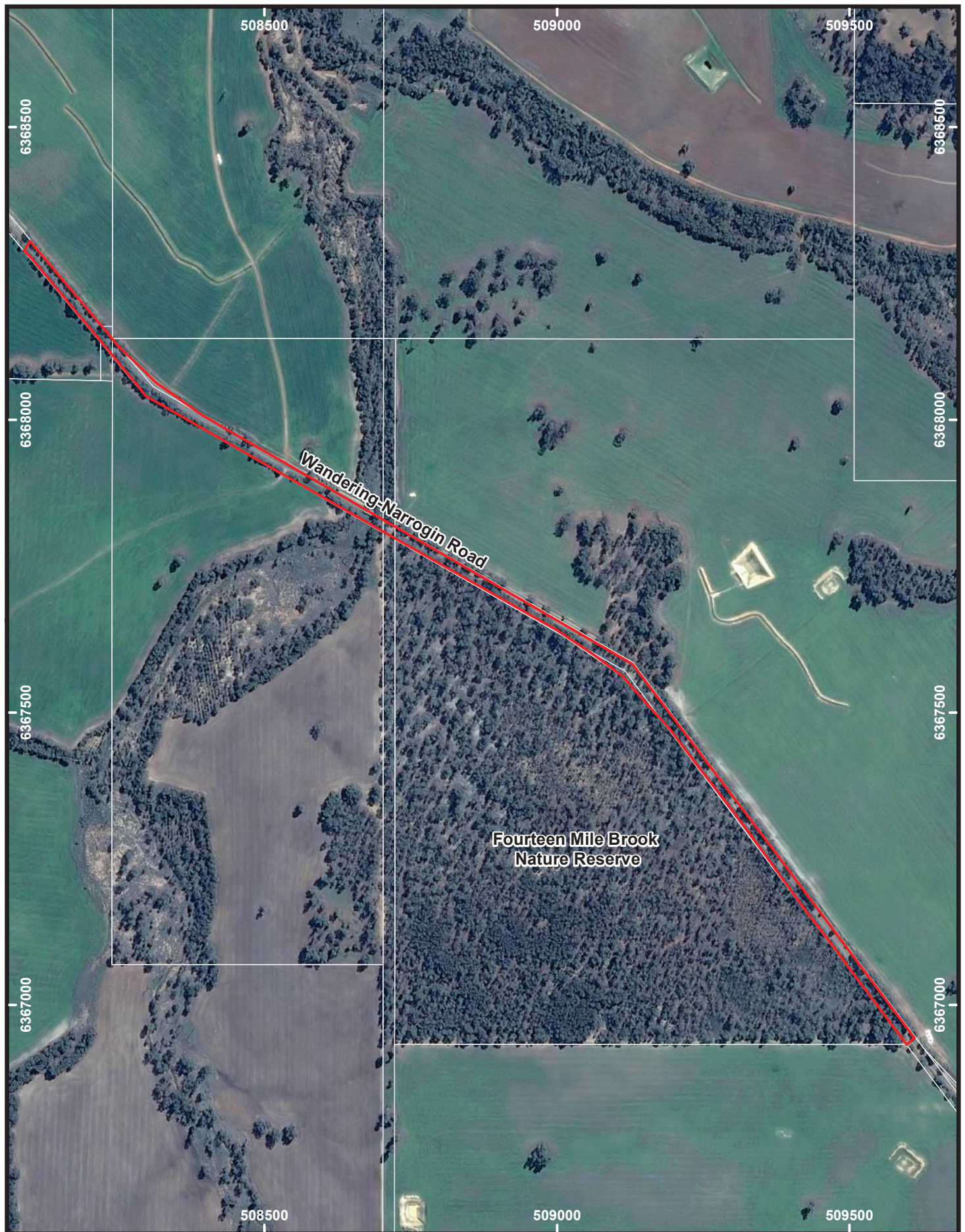
This proposed course of action is consistent with clearing protocols employed for other clearing projects in the south west and wheatbelt where similar fauna species (e.g. phascogales) may be encountered.

This report should be forwarded to DWER for their consideration.


7. REFERENCES

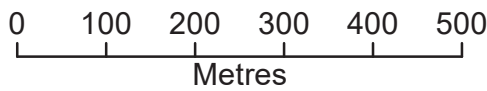
Department of Water and Environmental and Regulation (DWER) (2018). Letter to Mr Gary Sherry, Chief Executive Officer, Shire of Cuballing – Application to Clear Native Vegetation under the *Environmental Protection Act 1986* – Request for information. Ref: CPS 7894/1 8150/1 8151/1. Dated 5 October 2018.

FIGURES



Legend

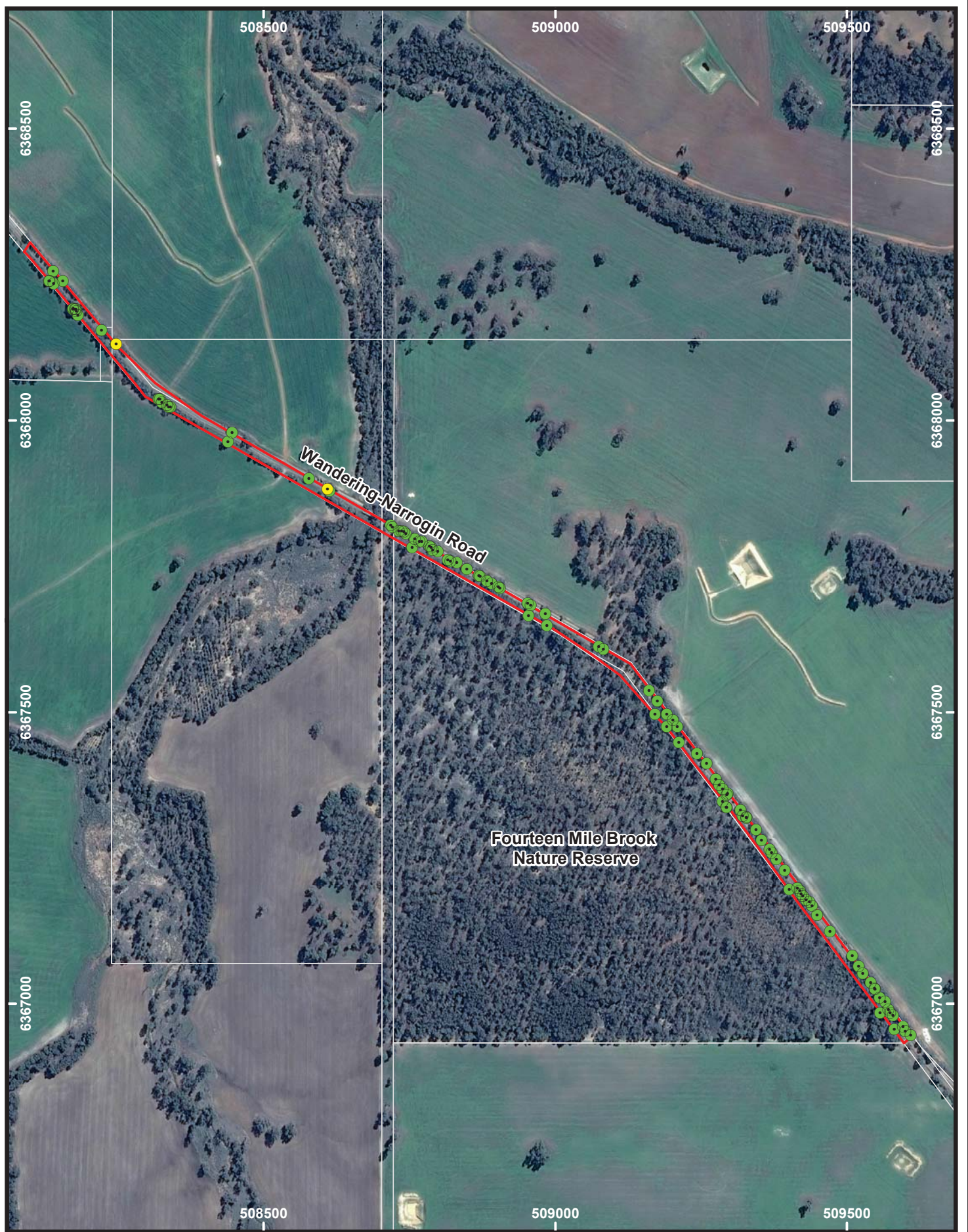
 CPS 8151-1 Boundary



Drawn: G Harewood
Date: April 2019
Scale: 1: 50,000

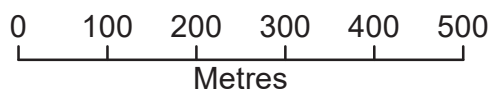
CPS 8151/1
Wandering-Narrogin Road
Shire of Cuballing

Air Photo



Legend

- CPS 8151-1 Boundary
- Habitat Tree - One or more possible hollows
- Habitat Tree - No hollows seen



Drawn: G Harewood
Date: April 2019
Scale: 1: 50,000

CPS 8151/1
Wandering-Narrogin Road
Shire of Cuballing

**Habitat Tree
Survey Results**

Projection/Coordinate System: UTM/MGA Zone 50

Figure: 2

APPENDIX A

HABITAT TREE DETAILS

Habitat Trees

DBH >30cm

Datum - GDA94

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

Waypoint Number	Zone	mE	mN	Side of Road	Distance from Centre Line (m)	Tree Species	Tree Height (m)	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt001	50H	508139	6368256	E	7	Wandoo	5-10	>30	0				
wpt002	50H	508156	6368240	E	7	Wandoo	5-10	>30	0				
wpt003	50H	508222	6368155	E	8	Flooded Gum	15-20	>30	0				
wpt004	50H	508247	6368131	E	10	Wandoo	15-20	>30	2+	Small, Medium & Large (Cockatoo)	Yes	Yes	Large branch forming spout
wpt005	50H	508340	6368023	W	10	Wandoo	15-20	>30	0				
wpt006	50H	508337	6368023	W	9	Wandoo	5-10	>30	0				
wpt007	50H	508334	6368027	W	10	Wandoo	5-10	>30	0				
wpt008	50H	508326	6368031	W	7	Wandoo	10-15	>30	0				
wpt009	50H	508322	6368037	W	8	Wandoo	10-15	>30	0				
wpt010	50H	508320	6368037	W	8	Wandoo	5-10	>30	0				
wpt011	50H	508182	6368181	W	11	Wandoo	10-15	>30	0				
wpt012	50H	508179	6368187	W	11	Wandoo	15-20	>30	0				
wpt013	50H	508178	6368191	W	10	Wandoo	10-15	>30	0				
wpt014	50H	508177	6368191	W	8	Wandoo	15-20	>30	0				
wpt015	50H	508174	6368192	W	9	Wandoo	10-15	>30	0				
wpt016	50H	508173	6368191	W	11	Wandoo	10-15	>30	0				
wpt017	50H	508140	6368235	W	10	Wandoo	15-20	>30	0				
wpt018	50H	508133	6368240	W	10	Wandoo	15-20	>30	0				
wpt019	50H	508132	6368240	W	10	Wandoo	10-15	>30	0				
wpt021	50H	508446	6367979	E	12	Wandoo	15-20	>30	0				
wpt022	50H	508439	6367963	W	9	Wandoo	15-20	>30	0				
wpt023	50H	508578	6367901	E	8	Wandoo	10-15	>30	0				
wpt024	50H	508609	6367883	E	7	Dead Unknown	15-20	>30	2+	Small & Medium	No	Yes	Spouts in small branches
wpt025	50H	508613	6367879	E	8	Wandoo	15-20	>30	0				
wpt026	50H	508718	6367820	E	8	Wandoo	10-15	>30	0				
wpt027	50H	508721	6367817	E	10	Wandoo	10-15	>30	0				
wpt028	50H	508732	6367810	E	10	Wandoo	10-15	>30	0				
wpt029	50H	508737	6367811	E	8	Wandoo	10-15	>30	0				
wpt030	50H	508740	6367809	E	10	Wandoo	10-15	>30	0				
wpt031	50H	508744	6367806	E	9	Wandoo	10-15	>30	0				

Waypoint Number	Zone	mE	mN	Side of Road	Distance from Centre Line (m)	Tree Species	Tree Height (m)	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt032	50H	508759	6367797	E	9	Wandoo	10-15	>30	0				
wpt033	50H	508767	6367793	E	9	Wandoo	10-15	>30	0				
wpt034	50H	508771	6367793	E	9	Wandoo	15-20	>30	0				
wpt035	50H	508784	6367784	E	9	Wandoo	10-15	>30	0				
wpt036	50H	508787	6367782	E	9	Wandoo	10-15	>30	0				
wpt037	50H	508790	6367778	E	9	Wandoo	10-15	>30	0				
wpt038	50H	508799	6367776	E	8	Wandoo	10-15	>30	0				
wpt039	50H	508816	6367761	E	9	Wandoo	10-15	>30	0				
wpt040	50H	508820	6367759	E	9	Wandoo	15-20	>30	0				
wpt041	50H	508831	6367756	E	9	Wandoo	15-20	>30	0				
wpt042	50H	508848	6367745	E	8	Wandoo	15-20	>30	0				
wpt043	50H	508869	6367734	E	9	Wandoo	15-20	>30	0				
wpt044	50H	508871	6367733	E	9	Wandoo	10-15	>30	0				
wpt045	50H	508883	6367725	E	8	Wandoo	15-20	>30	0				
wpt046	50H	508891	6367720	E	8	Wandoo	15-20	>30	0				
wpt047	50H	508902	6367715	E	9	Wandoo	5-10	>30	0				
wpt048	50H	508905	6367712	E	8	Wandoo	15-20	>30	0				
wpt049	50H	508755	6367782	W	9	Wandoo	15-20	>30	0				
wpt050	50H	508953	6367687	E	8	Wandoo	15-20	>30	0				
wpt051	50H	508958	6367683	E	7	Wandoo	15-20	>30	0				
wpt052	50H	508983	6367668	E	9	Wandoo	10-15	>30	0				
wpt053	50H	508986	6367648	W	10	Wandoo	15-20	>30	0				
wpt054	50H	508954	6367665	W	11	Wandoo	15-20	>30	0				
wpt055	50H	509074	6367613	E	9	Wandoo	15-20	>30	0				
wpt056	50H	509082	6367608	E	10	Wandoo	15-20	>30	0				
wpt057	50H	509161	6367537	E	11	Wandoo	15-20	>30	0				
wpt058	50H	509175	6367519	E	12	Wandoo	15-20	>30	0				
wpt059	50H	509191	6367496	E	10	Wandoo	15-20	>30	0				
wpt060	50H	509202	6367486	E	10	Wandoo	15-20	>30	0				
wpt061	50H	509209	6367475	E	10	Wandoo	15-20	>30	0				
wpt062	50H	509212	6367448	W	9	Wandoo	15-20	>30	0				
wpt063	50H	509191	6367475	W	10	Wandoo	15-20	>30	0				
wpt064	50H	509171	6367496	W	10	Wandoo	15-20	>30	0				
wpt065	50H	509243	6367429	E	10	Wandoo	15-20	>30	0				

Waypoint Number	Zone	mE	mN	Side of Road	Distance from Centre Line (m)	Tree Species	Tree Height (m)	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt066	50H	509259	6367412	E	10	Wandoo	10-15	>30	0				
wpt067	50H	509275	6367385	E	9	Wandoo	15-20	>30	0				
wpt068	50H	509281	6367375	E	9	Wandoo	15-20	>30	0				
wpt069	50H	509287	6367368	E	9	Wandoo	15-20	>30	0				
wpt070	50H	509295	6367361	E	9	Wandoo	15-20	>30	0				
wpt071	50H	509294	6367359	E	10	Wandoo	15-20	>30	0				
wpt072	50H	509293	6367337	W	10	Wandoo	15-20	>30	0				
wpt073	50H	509294	6367337	E	9	Wandoo	10-15	>30	0				
wpt074	50H	509287	6367347	W	9	Wandoo	10-15	>30	0				
wpt075	50H	509318	6367332	E	10	Wandoo	10-15	>30	0				
wpt076	50H	509321	6367323	E	10	Wandoo	10-15	>30	0				
wpt077	50H	509328	6367318	E	10	Wandoo	10-15	>30	0				
wpt078	50H	509328	6367320	E	9	Wandoo	10-15	>30	0				
wpt079	50H	509344	6367298	E	10	Wandoo	15-20	>30	0				
wpt080	50H	509354	6367281	E	9	Wandoo	10-15	>30	0				
wpt081	50H	509367	6367265	E	9	Wandoo	10-15	>30	0				
wpt082	50H	509371	6367259	E	9	Wandoo	10-15	>30	0				
wpt083	50H	509379	6367248	E	8	Wandoo	15-20	>30	0				
wpt084	50H	509393	6367229	E	9	Wandoo	10-15	>30	0				
wpt085	50H	509401	6367197	W	8	Wandoo	15-20	>30	0				
wpt086	50H	509415	6367198	E	8	Wandoo	15-20	>30	0				
wpt087	50H	509419	6367194	E	9	Wandoo	10-15	>30	0				
wpt088	50H	509421	6367188	E	9	Wandoo	15-20	>30	0				
wpt089	50H	509424	6367185	E	8	Wandoo	10-15	>30	0				
wpt090	50H	509430	6367179	E	8	Wandoo	10-15	>30	0				
wpt091	50H	509436	6367175	E	7	Wandoo	10-15	>30	0				
wpt092	50H	509440	6367168	E	8	Wandoo	10-15	>30	0				
wpt093	50H	509449	6367152	E	8	Wandoo	10-15	>30	0				
wpt094	50H	509471	6367124	E	9	Wandoo	10-15	>30	0				
wpt095	50H	509581	6366957	W	10	Wandoo	10-15	>30	0				
wpt096	50H	509557	6366985	W	10	Wandoo	10-15	>30	0				
wpt097	50H	509509	6367082	E	10	Wandoo	10-15	>30	0				
wpt098	50H	509520	6367064	E	9	Wandoo	15-20	>30	0				
wpt099	50H	509527	6367052	E	8	Wandoo	10-15	>30	0				

Waypoint Number	Zone	mE	mN	Side of Road	Distance from Centre Line (m)	Tree Species	Tree Height (m)	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt100	50H	509541	6367036	E	8	Wandoo	10-15	>30	0				
wpt101	50H	509548	6367025	E	7	Wandoo	10-15	>30	0				
wpt102	50H	509547	6367026	E	10	Wandoo	10-15	>30	0				
wpt103	50H	509556	6367010	E	8	Wandoo	10-15	>30	0				
wpt104	50H	509565	6367004	E	10	Wandoo	15-20	>30	0				
wpt105	50H	509571	6366990	E	8	Wandoo	15-20	>30	0				
wpt106	50H	509574	6366984	E	10	Wandoo	15-20	>30	0				
wpt107	50H	509579	6366980	E	9	Wandoo	10-15	>30	0				
wpt108	50H	509596	6366961	E	9	Wandoo	10-15	>30	0				
wpt109	50H	509600	6366953	E	10	Wandoo	10-15	>30	0				
wpt110	50H	509609	6366946	E	9	Wandoo	10-15	>30	0				

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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.

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