

# Habitat Tree Assessment of Proposed Clearing Areas (CPS 8150/1)



## Stratherne Road (~SLK 2.94 to 3.94)

## Shire of Cuballing

April 2019

Version 1

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## SUMMARY

The Shire of Cuballing has applied for a clearing permit from the Department of Water and Environmental Regulation (DWER reference CPS 8150/1) 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.

The survey identified 53 “habitat trees” within the permit area which had a DBH of >30cm. (Figure 2).

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.

Forty six (46) of the trees (including all trees with apparent hollows) are about eight (8) to ten (10) 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 six (6) or 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. None of these closer trees contain hollows or apparent hollows.

None of the “habitat trees” were identified as containing hollows suitable for, or in use by Carnaby’s cockatoos.

This conclusion was based largely on the fact that most of the hollows or apparent hollows appeared to only have small (<10cm) entrances into hollows unlikely to accommodate a cockatoo and no evidence of use was apparent (e.g. chew marks).

One tree was found to contain a large chimney style hollow but it has been deemed unsuitable for black cockatoos given its position at about 2m from ground level making it unfavourable for nesting. The hollow showed no signs of use by any fauna. This tree is also about nine 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.

No evidence of red-tailed phascogales using hollows was found though this was based on external examination of hollows with binoculars only, as hollows could not be examined internally.

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 magpies.

As none of the habitat trees located in or near the potential works footprint appeared to contain hollows suitable for Carnaby’s cockatoos and it is therefore concluded that works can proceed without any likely impact on this species.

The evidence gathered regarding the presence of absence of red-tailed phascogales was less conclusive 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 determine if they were occupied. It is however considered unlikely that the particular trees would be in use by phascogales given the degraded/fragmented nature of the vegetation present and its isolation well away from nay larger expanses of better quality native vegetation likely to provide a source of individuals.

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 1.0 kilometre section of the Stratherne Road (~SLK 2.94 to ~SLK 3.94) 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 8150/1) 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.

## 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 27 February 2019.

The area surveyed is contained within the permit application area shown in Figure 1. This extends from approximately SLK 2.94 to SLK 3.94. The specific trees that will require removal for the proposed road works (20 in number) were at the time of the survey, not marked and so could not be identified.

For the purpose of the assessment the survey area was therefore defined by the total width of the road reserve as defined by fence lines along the boundary of bordering farmland. 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 = ~<5cm diameter (i.e. entrance appears too small for a black cockatoo but possibly suitable for phascogales);
- Medium = ~5cm-10cm diameter (i.e. entrance appears too small for a black cockatoo but possibly suitable for phascogales);
- Large = ~>10cm 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) = ~>10cm 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 <30cm DBH or an unsuitable species (not assessed/recorded);
- Tree >30cm DBH, no hollows seen;
- Tree  $\geq$ 30cm 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  $\geq$ 30cm 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 Stratherne Road passes through cleared farmland (Figure 1). The composition and density of vegetation bordering the existing road varies but is generally comprised of an open grassland with widely scattered trees and 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 introduces grasses. The majority of the trees with the permit area are represented by relatively small wandoo with only a small number of rock sheoak being present. Some smaller trees appear to have been planted.



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 wandoos (<i>Eucalyptus wandoos</i>) over grassland (eastern end of Permit area).</p>	
<p>Grassland with occasional wandoos (<i>Eucalyptus wandoos</i>) over grassland (western end of Permit area).</p>	
<p>Wandoo (<i>Eucalyptus wandoos</i>) and rock sheoak (<i>Allocasuarina huegeliana</i>) low open woodland over grassland (Central sections of Permit area).</p>	
<p>Scattered rock sheoak (<i>Allocasuarina huegeliana</i>) over grassland (Central sections of Permit area).</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>
53	43	10	0	10

The survey identified 53 “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.**

Fourty six (46) of the trees (including all trees with apparent hollows) are about eight (8) to ten (10) metres from the road centreline. These are considered the least likely trees to require removal, though some may have to removed depending on their position relative to proposed road works. The remaining seven (7) trees are about six (6) or 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. None of these closer trees contain hollows or apparent hollows.




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

None of the other “habitat trees” were identified as containing hollows suitable for, or in use by Carnaby’s cockatoos. This conclusion was based largely on the fact that most hollows or apparent hollows appeared to only have small (<10cm) entrances into hollows unlikely to accommodate a cockatoo and no evidence of use was apparent (e.g. chew marks).

One tree was found to contain a large chimney style hollow but it has been deemed unsuitable for black cockatoos given its position at about 2m from ground level making it unfavourable for nesting. The hollow showed no signs of use by any fauna. This tree is also about nine 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.

Two of the hollow bearing trees did however show evidence of use by galahs which leave characteristic scaring on trees cause by chewing of the bark.

**Plate 1: Habitat Tree 32**

	<b>Species:</b> Wandoo <b>DBH:</b> >30cm
	<b>Wpt:</b> 32 <b>Coords:</b> 519818 mE 6372547 mN (MGA Z50)
	<b>Primary Hollow/s:</b> One large chimney type hollow in sawn off trunk.
	<b>Comments:</b> While this hollow is relatively large and potentially big enough for a black cockatoo it is positioned very low (~2m) and internally appears restricted as it narrows down to the base. No evidence of use. This tree is also about nine metres from the road centre line and is therefore unlikely to require removal in any event.  Observations made in the field indicate that this tree is unlikely to be suitable for black cockatoos to use for nesting purposes.
	
	

No evidence of red-tailed phascogales using hollows was found though this was based on external examination of hollows with binoculars only, as hollows could not be examined internally. The Permit area was found to contain 10 trees with hollows or potential hollows but it considered highly unlikely this area would be inhabited by phascogales given the fragmented nature of the vegetation and its isolation from larger more suitable remnants.

The camera traps did not detect any evidence of phascogale activity with the only fauna detected being Australian magpies on several occasions.

## 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. None of the habitat trees located in or near the potential works footprint appeared to contain hollows suitable for Carnaby's cockatoos and it is therefore concluded that works can proceed without any likely impact on this species.

The evidence gathered regarding the presence of absence of red-tailed phascogales was less conclusive 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 determine if they were occupied. It is however considered unlikely that the particular trees would be in use by phascogales given the degraded/fragmented nature of the vegetation present and its isolation well away from nay larger expanses of better quality native vegetation likely to provide a source of individuals.

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 8150/1. Dated 5 October 2018.

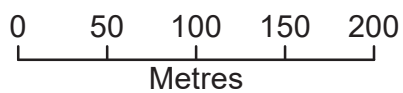
# FIGURES





**Legend**

 CPS 8150/1 Boundary



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

**CPS 8150/1  
Stratherne Road  
Shire of Cuballing**

**Air Photo**




Projection/Coordinate System: UTM/MGA Zone 50

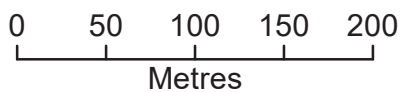
Figure: 1





**Legend**

-  CPS 8150/1 Boundary
-  Habitat Tree - One or more possible hollows
-  Habitat Tree - No hollows seen



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

CPS 8150/1  
 Stratherne 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 &gt;30cm

Datum - GDA94

Entrance Size Ranges - Small = &gt;5cm, Medium = 5 to 10cm, Large = &gt;10cm

Waypoint Number	Zone	mE	mN	Tree Height (m)	Side of Road	Distance from Centre Line (m)	Tree Species	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt001	50H	520186	6372889	10-15	S	13	Wandoo	>30	0						
wpt002	50H	520122	6372828	20+	S	9	Wandoo	>30	2+	Small & Medium	No Signs	Galahs	No	Yes	Scaring on tree trunk from Galahs
wpt003	50H	520075	6372783	10-15	S	10	Wandoo	>30	0						
wpt004	50H	520073	6372782	10-15	S	9	Wandoo	>30	2+	Small	No Signs	No Signs	No	Yes	
wpt005	50H	520073	6372782	0-5	S	9	Wandoo	>30	1	Medium	No Signs	No Signs	No	Yes	
wpt006	50H	520072	6372780	10-15	S	9	Wandoo	>30	0						
wpt007	50H	520071	6372778	15-20	S	10	Wandoo	>30	0						
wpt008	50H	520072	6372802	10-15	N	10	Wandoo	>30	0						
wpt009	50H	520052	6372781	15-20	S	9	Wandoo	>30	0						
wpt010	50H	520001	6372737	20+	N	10	Wandoo	>30	2+	Small & Medium	No Signs	Galahs	No	Yes	Scaring on tree trunk from Galahs
wpt011	50H	519976	6372712	15-20	N	8	Wandoo	>30	0						
wpt012	50H	519970	6372704	10-15	N	7	Wandoo	>30	0						
wpt013	50H	519958	6372694	5-10	N	7	Wandoo	>30	0						
wpt014	50H	519954	6372690	10-15	N	7	Wandoo	>30	0						
wpt015	50H	519945	6372685	10-15	N	8	Wandoo	>30	0						
wpt016	50H	519946	6372685	10-15	N	7	Wandoo	>30	0						
wpt017	50H	519944	6372684	10-15	N	7	Wandoo	>30	0						
wpt018	50H	519926	6372667	15-20	N	9	Wandoo	>30	0						
wpt019	50H	519926	6372668	10-15	N	9	Wandoo	>30	0						
wpt020	50H	519925	6372666	15-20	N	9	Wandoo	>30	0						
wpt021	50H	519910	6372635	15-20	S	6	Wandoo	>30	0						
wpt022	50H	519913	6372636	10-15	S	9	Wandoo	>30	0						
wpt023	50H	519948	6372670	10-15	S	8	Wandoo	>30	0						
wpt024	50H	519883	6372629	5-10	N	8	Wandoo	>30	0						
wpt025	50H	519873	6372621	10-15	N	10	Wandoo	>30	0						
wpt026	50H	519830	6372582	10-15	N	9	Wandoo	>30	0						
wpt027	50H	519829	6372578	15-20	N	9	Wandoo	>30	0						
wpt028	50H	519829	6372577	10-15	N	8	Wandoo	>30	0						
wpt029	50H	519825	6372576	15-20	N	8	Wandoo	>30	0						
wpt030	50H	519820	6372571	10-15	N	8	Wandoo	>30	0						
wpt031	50H	519809	6372562	15-20	N	9	Wandoo	>30	0						
wpt032	50H	519818	6372547	5-10	S	9	Wandoo	>30	1	Large	No Signs	No Signs	No	Yes	Large open chimney - too low (~2m)
wpt033	50H	519773	6372527	10-15	N	8	Wandoo	>30	0						
wpt034	50H	519758	6372493	5-10	S	9	Wandoo	>30	2+	Small & Medium	No Signs	No Signs	No		
wpt035	50H	519732	6372491	5-10	N	8	Wandoo	>30	2+	Small & Medium	No Signs	No Signs	No		

Waypoint Number	Zone	mE	mN	Tree Height (m)	Side of Road	Distance from Centre Line (m)	Tree Species	DBH (cm)	Number of Possible Hollows	Estimated Hollow Entrance Size Range	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Potential Phaschogale Hollow	Comments
wpt036	50H	519719	6372462	10-15	S	10	Wandoo	>30	0						
wpt037	50H	519717	6372460	10-15	S	10	Wandoo	>30	0						
wpt038	50H	519692	6372436	10-15	S	8	Wandoo	>30	0						
wpt039	50H	519690	6372433	15-20	S	9	Wandoo	>30	2+	Small & Medium	No Signs	No Signs	No	Yes	
wpt040	50H	519669	6372415	10-15	S	10	Wandoo	>30	0						
wpt041	50H	519650	6372400	10-15	S	7	Wandoo	>30	0						
wpt042	50H	519682	6372445	10-15	N	9	Wandoo	>30	0						
wpt043	50H	519686	6372451	5-10	N	10	Wandoo	>30	0						
wpt044	50H	519686	6372450	10-15	N	8	Wandoo	>30	0						
wpt045	50H	519690	6372453	5-10	N	9	Wandoo	>30	0						
wpt046	50H	519691	6372455	5-10	N	10	Wandoo	>30	0						
wpt047	50H	519578	6372354	10-15	N	10	Wandoo	>30	0						
wpt048	50H	519577	6372351	15-20	N	9	Wandoo	>30	0						
wpt049	50H	519593	6372345	0-5	S	9	Wandoo	>30	2+	Small	No Signs	No Signs	No	Yes	
wpt050	50H	519573	6372328	15-20	S	8	Wandoo	>30	0						
wpt051	50H	519573	6372328	15-20	S	8	Wandoo	>30	0						
wpt052	50H	519571	6372326	15-20	S	8	Wandoo	>30	1	Medium	No Signs	No Signs	No	Yes	
wpt053	50H	519549	6372304	15-20	S	10	Wandoo	>30	0						

## **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 Ecoedge (“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.

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