

# Black Cockatoo Habitat Assessment



**CPS 9741/1**

**Cuballing East Road**

(0.01 to 2.92 SLK)

**Shire of Wickepin**

May 2023

*Version 1*

***On behalf of:***

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## SUMMARY

This report details the results of a black cockatoo habitat assessment carried out over a section of the Cuballing East Road in the Shire of Wickepin (the Shire).

The Shire have applied for a permit to clear selected vegetation along a section of the road between 0.01 and 2.92 SLK (CPS 9784/1 – the Permit area – Figure 1). Upon review the Department of Water and Environmental Regulation (DWER) have advised the Shire that in order to determine the impacts to conservation significant fauna a Carnaby's cockatoo habitat assessment/survey is required of the proposed clearing area

This report details the results of an assessment carried out to satisfy this request.

The survey area was defined as the Permit area (i.e. CPS 9784/1) which has a total extent of about 6.83 hectares (ha). It should be noted that only a small proportion of the remnant vegetation within this total area will require removal for proposed works to proceed.

This report details the results of an assessment carried out to satisfy this request.

The assessment was carried out on 30 April 2023 by Greg Harewood (Zoologist).

### **Key Findings**

- Two broad remnant native vegetation types were identified within the survey area by Ecoedge (2022), and these have been used to define the broad scale fauna habitats. The majority of the 6.83 ha survey area contains the existing road surface or contains no remnant native vegetation and has therefore been defined as cleared (3.75 ha).

About 2.87 ha of the survey contains a low woodland/tall very open shrubland dominated by jam with very scattered, generally isolated eucalypts (York gum or wandoo). The balance of the survey area (0.24 ha) contains a York gum medium woodland associated with a seasonal drainage line.

- The breeding habitat assessment identified 44 trees within the survey area with a DBH of >50 centimetres (cm) (>30cm for wandoo). Most of these trees (32) appeared not to contain hollows of any size. Twelve (12) trees contained apparent or obvious hollows, all of which were assessed as being unlikely to be suitable for black cockatoos to currently use for nesting purposes, due to the hollows apparent small size, unsuitable orientation and/or low height above ground level.

No trees contained hollows (or possible hollows) that were assessed as being suitable (or possibly suitable) for black cockatoos to use for nesting purposes.

- Three of the identified habitat trees were located within the proposed clearing footprint. None of these trees appeared to contain hollows of any size.

- It is not possible to carry out an assessment of the value of the foraging habitat present using the current Commonwealth referral guidelines given the limited extent of what can be considered foraging habitat of some type.

Irrespective of this the vegetation within the survey area can nonetheless be regarded as being of low foraging value to Carnaby's cockatoo. The low foraging value can largely be attributed to the limited extent of native vegetation present (<0.1% of the vegetation within 12 kilometres), the paucity/absence of preferred foraging species and the absence of any obvious foraging evidence.

No evidence of black cockatoos roosting within trees located within the survey area was observed during the survey period. It is difficult to determine if trees or groves of trees within the survey area represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees may be suitable for roosting but as indicated no actual evidence of use was seen.

## 1. INTRODUCTION

This report details the results of a black cockatoo habitat assessment carried out over a section of the Cuballing East Road in the Shire of Wickepin (the Shire).

The Shire have applied for a permit to clear selected vegetation along a section of the road between 0.01 and 2.92 SLK (CPS 9784/1 – the Permit area – Figure 1). Upon review the Department of Water and Environmental Regulation (DWER) have advised the Shire that in order to determine the impacts to conservation significant fauna a Carnaby's cockatoo habitat assessment/survey is required of the proposed clearing area (Caitlin Conway (DWER), email to Debbie Brace (Ecoedge), April 21, 2023).

This report details the results of an assessment carried out to satisfy this request.

The survey area was defined as the Permit area (i.e. CPS 9784/1) which has a total extent of about 6.83 hectares (ha). It should be noted that only a small proportion of the remnant vegetation within this total area will require removal for proposed works to proceed.

## 2. SCOPE OF WORKS

The request for additional information from DWER states:

- The black cockatoo habitat assessment/survey should document and determine Carnaby's cockatoo foraging, roosting and/or breeding habitat within the application area.
- The assessment/survey is to be carried out by a fauna specialist (see below for relevant definitions) and the survey is required to:
  - map and quantify the extend and quality of Carnaby's cockatoo foraging habitat within the application area, including the documentation of any evidence of foraging within the application area (feeding signs or feeding debris, sightings of the birds and observations of their behaviour, the presence of black cockatoo droppings and feathers, or 'chewed' *Banksia* or pine cones or marri nuts, as well as broken or scattered flowers). It is recommended to use the foraging quality scoring tool within Appendix A of the Referral guideline for 3 WA threatened black cockatoo species (*Commonwealth of Australia*, 2022) to ascertain and quantify the quality of the foraging habitat.
  - identify all trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater that contain a hollow(s) that may be suitable for breeding by 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 black cockatoos;
  - the methodology for determining the evidence of use of each hollow; and
  - a description/photo of the evidence of use.
- The survey should also document any evidence of and the presence of roosting habitat within the application area.

NOTE: DWER defines a “fauna specialist” as a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of two years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016* (WA).

### **3. METHODS**

An inspection of the survey area was carried out by Greg Harewood (Zoologist - 20 years' experience) on the 30 April 2023 and to fulfil the requested scope of works, the following methods were employed.

#### **3.1 FAUNA HABITAT ASSESSMENT**

Vegetation units recorded by Ecoedge (2022) during a flora survey of the survey area have been used to define the broad fauna habitat types present.

#### **3.2 BLACK COCKATOO HABITAT ASSESSMENT**

The following methods were employed to comply with the defined scope of works and are based on Commonwealth of Australia (2012 and 2022) guidelines which state that surveys for Carnaby's, Baudin's and forest red-tailed black cockatoo habitat should:

- be done by a suitably qualified person with experience in vegetation or cockatoo surveys, depending on the type of survey being undertaken;
- maximise the chance of detecting the species' habitat and/or signs of use;

- determine the context of the site within the broader landscape - for example, the amount and quality of habitat nearby and in the local region (for example, within 12 km);
- account for uncertainty and error (false presence and absences); and
- include collation of existing data on known locations of breeding and feeding birds and night roost locations.

The Commonwealth of Australia (2012) places habitats used by black cockatoos into the following three categories:

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

### 3.2.1 Breeding Habitat Assessment

The black cockatoo breeding habitat assessment identified all suitable breeding tree species within the survey area that have a diameter at breast height (DBH) equal to or greater than 50 centimetres (cm) (30 cm for wandoo). The DBH of each tree was estimated using a pre-made “caliper”.

Target tree species included York gum, wandoo, flooded gum and any other *Corymbia/Eucalyptus* species of a suitable size that was present. Peppermints, *Banksia*, sheoak and *Melaleuca* tree species (for example) were not assessed as they typically do not develop hollows used by black cockatoos.

The Shire provided a list of 95 trees/large shrubs that had been previously identified as requiring removal for the proposed road works to proceed (Appendix A). These and all other trees within the defined survey area were assessed for their “habitat tree” status and for the presence of potential breeding hollows.

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

Hollow/potential hollows were placed into one of four categories, based on the size of the apparent hollow entrance, these being:

- Small = ~<5cm diameter (i.e. entrance too small for a black cockatoo);
- Medium = ~5cm-10cm diameter (i.e. entrance too small for a black cockatoo);



- Large = ~>10cm diameter (entrance large enough for a black cockatoo but hollow appears unsuitable for nesting i.e. wrong orientation, appears too small, too low or too shallow); or
- Large (cockatoo) = ~>10cm diameter (entrance and apparent hollow appears big enough and suitably sized/orientated for a black cockatoo to use for nesting).

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

- Tree <50cm DBH (<30 cm for wandoo) or an unsuitable species (these were not assessed/recorded);
- Tree  $\geq$ 50cm DBH ( $\geq$ 30cm for wandoo), no hollows seen;
- Tree  $\geq$ 50cm DBH (>30cm for wandoo), one or more hollows seen, none of which were considered suitable for black cockatoos to use for nesting; or
- Tree  $\geq$ 50cm DBH (>30cm for wandoo), one or more hollows seen, with at least one considered suitable for black cockatoos to use for nesting.

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

*Generally, any tree which is alive or dead that contains one or more visible hollows (cavities within the trunk or branches) or possible hollows suitable for occupation by black cockatoo for the purpose of nesting/breeding. Hollows that had an entrance greater than about 10cm in diameter and would allow the entry of a black cockatoo into a suitably orientated and sized branch/trunk, were recorded as a “potential nest hollow”.*

Identified hollows were examined using binoculars for evidence of actual use by black cockatoos (e.g. chewing around hollow entrance, scarring and scratch marks on trunks and branches). Details recorded included hollow size, height, type, orientation, comments on suitability and any evidence of use.

Where this assessment was inconclusive, and if possible, trees identified as having potential nest hollows would be subsequently examined and photographed using a drone (DJI Mavic Air).

The identified habitat trees were then cross referenced with the data provided by the Shire to determine which trees were located within the proposed clearing footprint and would require removal.

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

### **3.2.2 Foraging Habitat Assessment**

The location and nature of black cockatoo foraging evidence (e.g. chewed fruits around base of trees) observed during the field survey was recorded. The nature and extent of potential foraging habitat present was also documented irrespective of the presence of any actual foraging evidence. Foraging habitat is represented by plant species that are known to provide a food source for black cockatoos. This can be in the form of seeds, flowers and also boring grubs that are extracted from some plant species.

An assessment of the value of the foraging habitat present was undertaken using the foraging quality scoring tool within Appendix A of the Referral guideline for 3 WA threatened black cockatoo species (Commonwealth of Australia, 2022) to ascertain and quantify the quality of the foraging habitat.

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

### **3.2.3 Night Roosting Habitat Assessment**

Direct and indirect evidence of black cockatoos roosting within trees on site was noted where observed (e.g. branch clippings, droppings or moulted feathers).

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

## **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 black cockatoo habitat survey trees with hollows were searched for. It should be noted that identifying hollows suitable for fauna species from ground level has limitations. Generally, the full characteristics of any hollow seen are not fully evident (e.g. internal dimensions). It is also difficult to locate all hollows within all trees as some are not observable from ground level, 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


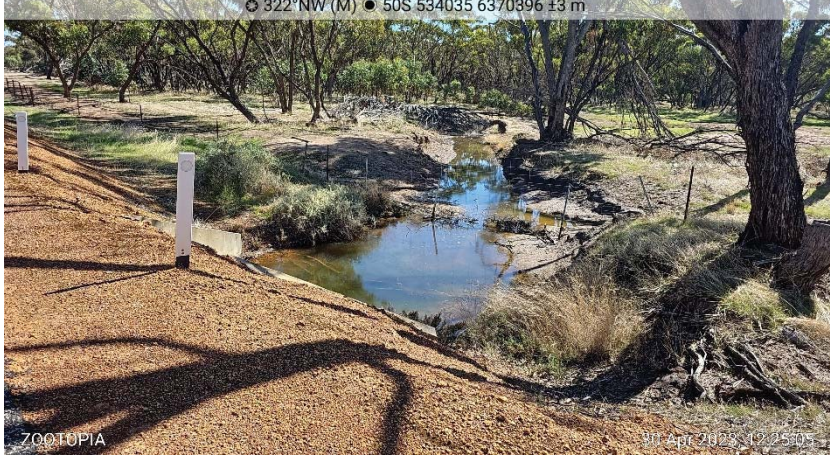
### 5.1 FAUNA HABITAT ASSESSMENT

Two broad remnant native vegetation types were identified by Ecoedge (2022), and these have been used to define the broad scale fauna habitats. The majority of the 6.83 ha survey area contains the existing road surface or contains no remnant native vegetation and has therefore been defined as cleared (3.75 ha).

About 2.87 ha of the survey contains a low woodland/tall very open shrubland dominated by jam (*Acacia acuminata*) with very scattered, generally isolated eucalypts (York gum (*Eucalyptus loxophleba*) or wandoo (*E. wandoo*)). The balance of the survey area (0.24 ha) contains a York gum (*E. loxophleba*) medium woodland associated with a seasonal drainage line.

Example images of the vegetation present within the survey area are provided in Table 1.

**Table 1: Example images of the vegetation present within the survey area**

Vegetation Description	Example Image
<p>Jam (<i>Acacia acuminata</i>) low woodland/tall very open shrubland with isolated emergent York gum (<i>Eucalyptus loxophleba</i>) or wandoo (<i>E. wandoo</i>) over grassland and open forbland on red-brown sandy loam.</p> <p>Area = 2.9 ha</p>	 <p>106°E (M) 50S 534882 6370408 ±4 m</p> <p>30 Apr 2023 12:48:35</p>
<p>York gum (<i>Eucalyptus loxophleba</i>) medium woodland over low open shrubland over grassland on red-brown clay in drainage line.</p> <p>Area = 0.2 ha</p>	 <p>322°NW (M) 50S 534035 6370396 ±3 m</p> <p>30 Apr 2023 12:45:05</p>

## 5.2 BLACK COCKATOO HABITAT ASSESSMENT

### 5.2.1 Breeding Habitat Assessment

Trees considered potentially suitable for black cockatoos to use as nesting habitat (subject to a suitable hollow being present and other factors) found within the survey area comprised the following species:

- York Gum – *Eucalyptus loxophleba*;
- Wandoo – *Eucalyptus wandoo*; and
- Dead Unidentified - *Eucalyptus* spp.

A summary of the habitat trees observed is provided in Table 2. The locations of habitat trees are shown in Figure 2.

**Table 2: Summary of potential habitat trees within the survey area**

Total Number of Habitat Trees	Number of Habitat Trees with <u>No Hollows Observed</u>	Number of Habitat Trees with <u>Possible Hollows</u> considered <u>Unsuitable</u> for Black Cockatoos)	Number of Habitat Trees with <u>Possible Hollows</u> considered <u>Potentially suitable</u> for Black Cockatoos	Tree Species		
				York Gum	Wandoo	Dead Unidentified
44	32	12	0	26	15	3

The assessment identified 44 trees within the survey area with a DBH of  $\geq 50$ cm ( $>30$ cm for wandoo). Most of these trees (32) appeared to not contain hollows of any size. Twelve (12) trees contained apparent or obvious hollows, all of which were assessed as being unlikely to be suitable for black cockatoos to currently use for nesting purposes, due to the hollows apparent small size, unsuitable orientation and/or low height above ground level. No trees contained hollows (or possible hollows) that were assessed as being suitable (or possibly suitable) for black cockatoos to use for nesting purposes.

**Three of the identified habitat trees were located within the proposed clearing footprint (based data provided by the Shire and markings (a painted “X”) on trees observed in the field). None of these trees appeared to contain hollows of any size.**

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



Based on available mapping, there is approximately 8,900 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2023). Much of this is likely to contain “potential” breeding habitat (i.e. suitable tree species with a DBH  $\geq 50$ cm ( $>30$ cm for wandoo)).

### 5.2.2 Foraging Habitat Assessment

The following flora species are known to be or are potentially used as a direct food source (e.g. seeds, flowers, nectar, bark or grubs) by one or more species of black cockatoo were recorded within the survey area:

- York Gum – *Eucalyptus loxophleba*;
- Wandoo – *Eucalyptus wandoo*;
- Rock Sheoak - *Allocasuarina huegeliana* (not documented as used, but possible);
- Common Stork's-bill - *Erodium cicutarium* (common introduced weed); and
- Onion Grass - *Romulea rosea* (common introduced weed).

It should be noted that all of the above-mentioned species, while foraged upon on occasions would make up only a small proportion of any one bird's diet relative to more favoured plant species such as marri/jarrah/banksia, which are all absent from the survey area. For example, York gum and wandoo (the dominant eucalypts present) are both small fruited species and as a consequence have a low foraging value relative to other plant species.

No evidence of black cockatoos foraging within the survey area was found during the survey period.

It is not possible to carry out an assessment of the value of the foraging habitat present using the current referral guideline scoring tool as the identified eucalypt woodland present within the survey area has an extent of only 0.2 ha, considerably less than the required threshold of 1 ha (Commonwealth of Australia, 2022).

The balance of the remnant vegetation present (2.9 ha of Jam low woodland/tall very open shrubland with isolated, emergent York gum or wandoo) would also not contain a combined canopy coverage of eucalypts above the 1 ha threshold.

Irrespective of this the vegetation within the survey area can nonetheless be regarded as being of low foraging value to Carnaby's cockatoo. The low foraging value can largely be attributed to the limited extent of native vegetation present ( $<0.1\%$  of the vegetation within 12km), the paucity/absence of preferred foraging species and the absence of any obvious foraging evidence.

Based on available mapping there is about 8,900 ha of remnant native vegetation within 12 km of the survey area (DPIRD 2023). Much of this is likely to represent black cockatoo foraging habitat of some type.

### 5.2.3 Night Roosting Habitat Assessment

No evidence of black cockatoos roosting within trees located within the survey area was observed during the survey period. It is difficult to determine if trees or groves of trees within the survey area represent potential roosting habitat as a range of factors, not all of which can be observed, determine suitability. Some of the larger trees may be suitable for roosting but as indicated no actual evidence of use was seen.

A review of the 2019 Great Cocky Count database shows no documented roost sites within 12 km of the survey area (Peck *et al.* 2019).

## 6. CONCLUSION

The assessment reported on here was undertaken to document and determine Carnaby's cockatoo foraging, roosting and/or breeding habitat within the defined survey area.

The vast majority of the trees present within the survey area were relatively small and do not appear to contain hollows of any size. The hollow bearing trees present were assessed as only containing possible small/medium sized hollows unsuitable for black cockatoos to use for nesting due to being of an insufficient size.

Three of the identified habitat trees were located within the proposed clearing footprint. None of these trees appeared to contain hollows of any size.

It is not possible to carry out an assessment of the value of the foraging habitat present using the current Commonwealth referral guidelines given the limited extent of what can be considered foraging habitat of some type.

Irrespective of this the vegetation within the survey area can nonetheless be regarded as being of low foraging value to Carnaby's cockatoo. The low foraging value can largely be attributed to the limited extent of native vegetation present (<0.1% of the vegetation within 12km), the paucity/absence of preferred foraging species and the absence of any obvious foraging evidence.

No evidence of black cockatoos foraging within the survey area was observed and overall, the quality and extent of foraging habitat present can be regarded as being low. No evidence of black cockatoos roosting within trees located within the survey area was observed during the survey period.

This report should be forwarded to DWER for their consideration.

## 7. REFERENCES

Commonwealth of Australia (2012). *EPBC Act* Referral guidelines for three threatened Black Cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest Red-tailed Black Cockatoo (vulnerable) *Calyptorhynchus banksii naso*.

Commonwealth of Australia (2022). Referral guideline for 3 threatened WA threatened black cockatoo species: Carnaby's cockatoo (*Zanda latirostris*), Baudin's cockatoo (*Zanda baudinii*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*). Department of Agriculture, Water and the Environment, Canberra.

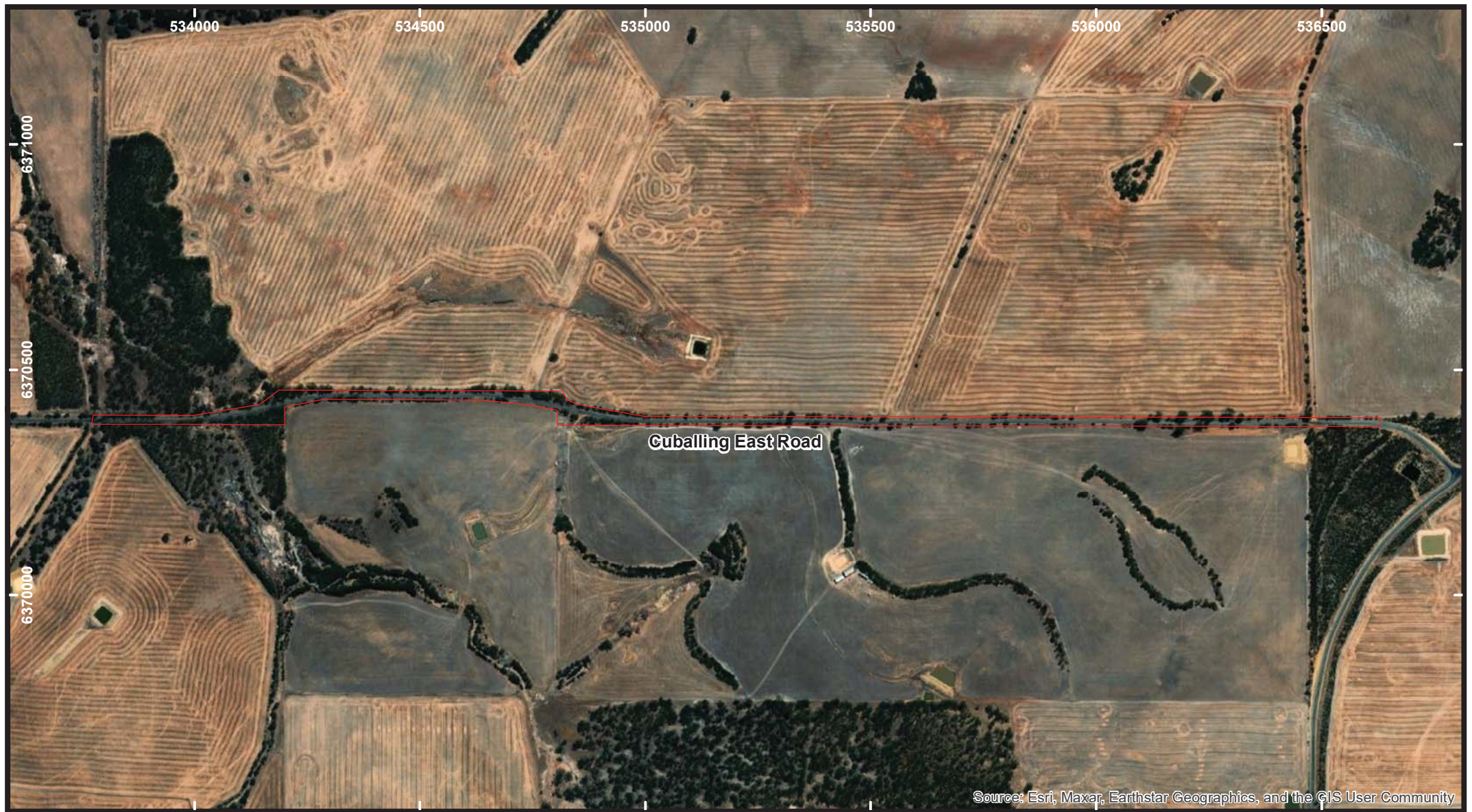
Department of Water and Environmental and Regulation (DWER) (2023). Caitlin Conway (DWER), email to Debbie Brace (Ecoedge), April 21. 2023.

Department of Primary Industries and Regional Development (DPIRD) Geographic Information Services (2023). Native Vegetation Extent (DPIRD-005) (Western Australia) Shapefile - <https://catalogue.data.wa.gov.au/dataset/native-vegetation-extent>.

Ecoedge (2022). Reconnaissance and Targeted Flora and Vegetation Survey - Cuballing East Road 0.01 to 2.92 SLK. Unpublished report prepared for the Shire of Wickepin. April 2022.

# FIGURES





## Legend

Survey Area



0 0.5 1  
Kilometres



Drawn: G Harewood  
Date: 17-May-23  
Scale: 1:11,500

CPS 9741/1  
Cuballing East Road  
Shire of Wickpin

## Aerial Photograph

Projection/Coordinate System: UTM/MGA Zone 50







Figure: 1

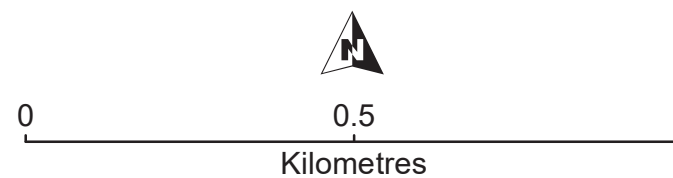




Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

## Legend

- |  |   |   |   |
|--|---|---|---|
|  | Survey Area                               |  | Habitat Tree<br>In clearing footprint     |
|  | Jam low woodland/tall very open shrubland |  | Habitat Tree<br>Not in clearing footprint |
|  | York gum medium woodland                  |   |   |
|  | Cleared                                   |   |   |



Drawn: G Harewood  
Date: 17-May-23  
Scale: 1:11,500

CPS 9741/1  
Cuballing East Road  
Shire of Wickpin

## Fauna Habitats and Habitat Trees

Projection/Coordinate System: UTM/MGA Zone 50

Figure: 2

# **APPENDIX A**

Details of trees/large shrubs to be removed from survey area

**Trees to be removed**

**Datum - GDA94**

**Habitat Tree = DBH >50cm (>30cm for Wandoo)**

ID	mE	mN	Habitat Tree	Waypoint Number
1	536439	6370376	No	
2	536378	6370375	No	
3	536368	6370375	No	
4	536364	6370375	No	
5	536217	6370376	No	
6	536083	6370391	No	
7	536138	6370390	No	
8	536160	6370390	Yes	30
9	536167	6370390	Yes	31
10	536173	6370390	No	
11	536215	6370390	No	
12	536320	6370390	No	
13	536339	6370390	No	
14	536358	6370390	No	
15	536688	6370365	No	
16	535845	6370376	No	
17	535927	6370376	No	
18	535941	6370376	No	
19	535992	6370376	No	
20	535943	6370390	No	
21	535945	6370391	No	
22	535905	6370391	No	
23	535881	6370391	No	
24	535874	6370391	No	
25	535862	6370391	No	
26	535830	6370390	No	
27	535800	6370391	No	
28	535481	6370391	No	
29	535419	6370392	No	
30	535387	6370392	No	
31	535276	6370391	No	
32	535034	6370392	No	
33	535007	6370393	No	
34	535003	6370392	No	
35	534828	6370422	No	
36	534812	6370426	No	
37	534804	6370428	No	
38	534793	6370431	No	
39	534785	6370432	No	
40	534784	6370433	No	
41	534772	6370436	No	
42	534877	6370394	No	
43	534908	6370387	No	
44	534912	6370387	No	
45	535265	6370378	No	
46	535315	6370378	No	
47	535486	6370377	No	
48	535687	6370377	No	

ID	mE	mN	Habitat Tree	Waypoint Number
49	535737	6370377	No	
50	535786	6370391	No	
51	534632	6370448	No	
52	534580	6370448	No	
53	534556	6370448	No	
54	534554	6370448	No	
55	534547	6370447	No	
56	534534	6370447	No	
57	534514	6370447	No	
58	534508	6370448	No	
59	534495	6370448	No	
60	534487	6370448	No	
61	534473	6370448	No	
62	534467	6370448	No	
63	534449	6370448	No	
64	534353	6370449	No	
65	534283	6370447	No	
66	534217	6370436	No	
67	534178	6370427	No	
68	533870	6370396	No	
69	533847	6370396	No	
70	533823	6370396	No	
71	533801	6370396	No	
72	533884	6370381	No	
73	533896	6370381	No	
74	533899	6370381	No	
75	533911	6370381	No	
76	533921	6370381	No	
77	533965	6370381	No	
78	533966	6370381	No	
79	533969	6370381	No	
80	533976	6370381	No	
81	533982	6370381	No	
82	533983	6370381	No	
83	534001	6370383	No	
84	534008	6370383	No	
85	534099	6370393	No	
86	534315	6370434	No	
87	534322	6370434	No	
88	534329	6370434	No	
89	534360	6370434	No	
90	534366	6370434	No	
91	534587	6370434	Yes	12
92	534687	6370433	No	
94	535685	6370390	No	
95	535720	6370376	No	
93	535528	6370391	No	

## **APPENDIX B**

Details of habitat trees within survey area

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

Datum GDA 94

Estimated Hollow Entrance Size: Small+ <5cm, Medium = 5 to<10cm, Large = 10cm+

Waypoint Number	Zone	mE	mN	Side of Road	SLK	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
wpt001	50H	533781	6370399	N	2.92	York Gum	15-20	>50	2+	Small & Medium			No	Not in clearing footprint
wpt002	50H	533880	6370380	S	2.84	Dead Unknown	10-15	>50	2+	Small & Medium			No	Not in clearing footprint
wpt003	50H	533886	6370384	S	2.83	Dead Unknown	15-20	>50	2+	Small & Medium			No	Not in clearing footprint
wpt004	50H	534010	6370381	S	2.71	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt005	50H	534011	6370381	S	2.71	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt006	50H	534036	6370402	N	2.69	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt007	50H	534075	6370409	N	2.65	Dead York Gum	10-15	>50	2+	Small & Medium			No	Not in clearing footprint
wpt008	50H	534125	6370417	N	2.60	York Gum	10-15	>50	1	Small	Bees		No	Not in clearing footprint
wpt009	50H	534286	6370452	N	2.44	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt010	50H	534370	6370450	N	2.30	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt011	50H	534429	6370452	N	2.31	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt012	50H	534589	6370437	S	2.16	York Gum	15-20	>50	0				No	In clearing footprint
wpt013	50H	534653	6370450	N	2.09	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt014	50H	534664	6370451	N	2.09	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt015	50H	534696	6370449	N	2.05	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt016	50H	534709	6370448	N	2.04	York Gum	15-20	>50	1	Medium	Bees		No	Not in clearing footprint
wpt017	50H	534726	6370450	N	2.02	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt018	50H	534759	6370444	N	1.99	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt019	50H	535072	6370397	N	1.69	Dead Unknown	15-20	>50	2+	Small			No	Not in clearing footprint
wpt020	50H	535091	6370394	N	1.67	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt021	50H	535303	6370395	N	1.47	Wandoo	15-20	>30	0				No	Not in clearing footprint
wpt022	50H	535324	6370396	N	1.45	Wandoo	15-20	>30	0				No	Not in clearing footprint
wpt023	50H	535319	6370379	S	1.45	Wandoo	15-20	>30	0				No	Not in clearing footprint
wpt024	50H	535301	6370379	S	1.47	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt025	50H	535495	6370395	N	1.28	Wandoo	15-20	>30	2+	Small & Medium			No	Not in clearing footprint
wpt026	50H	535526	6370393	N	1.25	Wandoo	15-20	>30	2+	Small & Medium			No	Not in clearing footprint
wpt027	50H	536118	6370394	N	0.69	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt028	50H	536131	6370392	N	0.68	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt029	50H	536139	6370391	N	0.67	York Gum	20+	>50	0				No	Not in clearing footprint
wpt030	50H	536162	6370391	N	0.65	Wandoo	10-15	>30	0				No	In clearing footprint
wpt031	50H	536169	6370391	N	0.64	Wandoo	10-15	>30	0				No	In clearing footprint
wpt032	50H	536190	6370391	N	0.62	York Gum	20+	>50	0				No	Not in clearing footprint
wpt033	50H	536164	6370376	S	0.64	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt034	50H	536106	6370377	S	0.70	Wandoo	20+	>30	1	Small			No	Not in clearing footprint
wpt035	50H	536090	6370378	S	0.72	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt036	50H	536241	6370393	N	0.57	York Gum	20+	>50	1	Large	Bees		No	Not in clearing footprint

Waypoint Number	Zone	mE	mN	Side of Road	SLK	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Estimated Hollow Entrance Size	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
wpt037	50H	536244	6370392	N	0.57	York Gum	20+	>50	0				No	Not in clearing footprint
wpt038	50H	536279	6370390	N	0.53	Wandoo	10-15	>30	0				No	Not in clearing footprint
wpt039	50H	536287	6370391	N	0.53	York Gum	10-15	>50	0				No	Not in clearing footprint
wpt040	50H	536290	6370392	N	0.52	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt041	50H	536293	6370393	N	0.52	York Gum	20+	>50	1	Medium	Galahs	Galahs	No	Not in clearing footprint
wpt042	50H	536301	6370393	N	0.51	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt043	50H	536323	6370390	N	0.49	York Gum	15-20	>50	0				No	Not in clearing footprint
wpt044	50H	536472	6370392	N	0.33	York Gum	15-20	>50	0				No	Not in clearing footprint

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