Our Ref: 3863AA_Rev1

9 December 2020

Kris Kennedy
Director - Planning
Aigle Royal Developments
Level 8, 225 St Georges Terrace
Perth WA 6000
Via Email: kkennedy@aigleroyal.com.au

Dear Kris

Banjup Black Cockatoo Tree Hollow Assessment: Lots 11 and 74 Beenyup Road Banjup

1 Introduction

360 Environmental Pty Ltd (360 Environmental) has been engaged by Aigle Royal Developments Pty Ltd (Aigle Royal) to prepare additional preliminary documentation as requested by the Department of the Environment and Energy (DotEE) (now known as the Department of Agriculture, Water and the Environment [DAWE]) in response to the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) referral (2017/7923) of Lots 11 and 74 Beenyup Road, Banjup ('the Site').

Further to the black cockatoo habitat tree assessment completed for the site by 360 Environmental in 2017. The DAWE requested further information via email (dated 31 March 2020) to provide assessment of the potential suitable hollows of black cockatoo nesting trees within the project area (including the proposed development and conservation area). The instruction was:

"The Department notes the Carnaby's Black Cockatoo nesting hollow assessment was undertaken in 2017, Given the timeframes since the survey could we please request the hollows onsite are resurveyed with a drone (or similar) to confirm the status of them."

1.1 Scope of Works

The scope of works for this survey was to assess the suitability of the previously identified hollows (within the 360 Environmental [2017] assessment) for black cockatoo breeding and to provide a brief memo report based on the findings of the site visit.

2 Methods

The black cockatoo Tree (internal) Hollow Assessment was undertaken by Ecologist Lukas Geidans on 25 November 2020. The survey was conducted in accordance with the EPBC Ac) *Referral Guidelines for Three Threatened Black Cockatoo Species* (Department of Sustainability Environment Water Population and Communities, 2012) and with due regard for the revised draft referral guideline for Three Threatened Black Cockatoo Species (Department of the Environment and Energy, 2017).

Six previously identified trees containing 22 hollows were inspected. All hollows were visually assessed from the ground to determine the hollows that were obviously unsuitable (wrong orientation or obviously too small). All other hollows were inspected via a live streaming video from a DJI Mini 2 drone to a mobile device. Hollows inspected via drone were assessed as suitable or unsuitable for black cockatoo breeding and still photographs of each hollow were taken for record-keeping purposes.

3 Results

Of the 22 hollows inspected, five were identified as potentially suitable for use by black cockatoos (i.e. hollow entrance ≥ 12 cm diameter, hollow depth and orientation etc). A summary of these hollows and their information is detailed in Table 1.

There was no evidence of recent hollow activity with chew marks or scats present within the identified five suitable hollows. No black cockatoos were heard or directly observed during the field assessment.

Table 1: Summary of Black Cockatoo Hollows

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
2	0393384	6441087	Jarrah	Boundary of Development Envelope and Conservation Area	3	1		Unsuitable. Hollow too small (<10cm).
2	0393384	6441087	Jarrah	Boundary of Development Envelope and Conservation Area	3	2		Unsuitable, downwards facing.

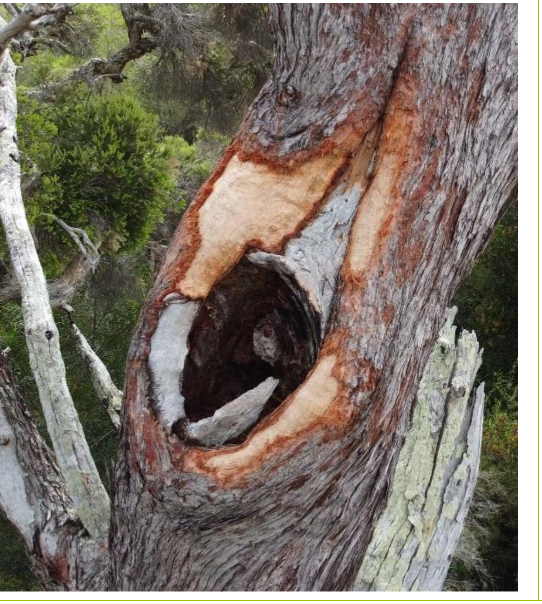
Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
2	0393384	6441087	Jarrah	Boundary of Development Envelope and Conservation Area	3	3		Currently unsuitable. Hollow too small (<10cm). Has the potential to form larger hollow.
5	0393475	6441027	Jarrah	Conservation Area	5	1		Suitable.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
5	0393475	6441027	Jarrah	Conservation Area	5	2		Suitable.
5	0393475	6441027	Jarrah	Conservation Area	5	3		Suitable.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
5	0393475	6441027	Jarrah	Conservation Area	5	4		Unsuitable. Hollow entrance too small (<10cm).
5	0393475	6441027	Jarrah	Conservation Area	5	5		Unsuitable. Hollow entrance too small (<10cm).

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
6	0393480	6441035	Jarrah	Conservation Area	3	1		Unsuitable. Hollow entrance suitable (≥ 12 cm) however the depth of the hollow not sufficient.
6	0393480	6441035	Jarrah	Conservation Area	3	2		Unsuitable. Not a hollow.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
6	0393480	6441035	Jarrah	Conservation Area	3	3		Unsuitable. Contains bees.
7	0393500	6441001	Jarrah	Conservation Area	4	1		Unsuitable. Contains bees.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
7	0393500	6441001	Jarrah	Conservation Area	4	2		Potentially Suitable.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
7	0393500	6441001	Jarrah	Conservation Area	4	3		Unsuitable. Not a hollow.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
7	0393500	6441001	Jarrah	Conservation Area	4	4		Unsuitable. Not a hollow.
18	0393465	6441272	Jarrah	Development Envelope	3	1		Unsuitable. Not a hollow.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
18	0393465	6441272	Jarrah	Development Envelope	3	2		Unsuitable. Hollow entrance too small and hollow depth shallow and not sufficient for Black cockatoo utilization.
18	0393465	6441272	Jarrah	Development Envelope	3	3		Unsuitable. Hollow entrance too small.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
20	0393384	6441081	Jarrah	Conservation Area	4	1		Potentially Suitable.
20	0393384	6441081	Jarrah	Conservation Area	4	2		Unsuitable. Hollow entrance too small and incorrect orientation.

Tree ID	Easting	Northing	Tree Species	Location	Number of Hollows	Hollow Number	Photo	Suitability
20	0393384	6441081	Jarrah	Conservation Area	4	3		Unsuitable. Hollow entrance too small and incorrect orientation.
20	0393384	6441081	Jarrah	Conservation Area	4	4		Unsuitable. Hollow entrance too small.

4 Discussion and Conclusion

The Site occurs within the modelled breeding distribution of the Forest Red-tailed Black Cockatoo and on the margin of the known breeding range for Carnaby's Black Cockatoo, however, lies outside the predicted breeding range of the Baudin's Black Cockatoo. The field survey was undertaken within the breeding season for all three species (Department of Sustainability Environment Water Population and Communities, 2012; Department of the Environment and Energy, 2017).

The Site contains trees that meet the criteria for potential black cockatoo breeding habitat, with three trees bearing a total of five hollows that were considered suitable for black cockatoo breeding.

The key findings from the black cockatoo Habitat Assessment are summarised below:

- The Survey was undertaken by Ecologist Lukas Geidans on 25 November 2020 within the breeding season
- Six hollow bearing trees containing a total of 22 hollows were assessed and photographed
- Of the 22 total hollows, five hollows contained within three trees were assessed as suitable for black cockatoo breeding. There were no signs/evidence that these hollows had been or are currently been utilized by black cockatoos. The remaining 17 hollows were unsuitable
- The trees with potential suitable hollows (Tree ID No. 5, 7 and 20) are within the current Conservation Area proposed within the EPBC Preliminary Documentation (2017/7923)
- No Baudin's, Carnaby's or Forest Red-tailed Black Cockatoos were observed during the field assessment.

5 Closing

We trust this meets your requirements at this time. Should you have any questions or require further action please do not hesitate to contact Lukas Geidans or the undersigned on (08) 9388 8360. We look forward to hearing from you.

For and on behalf of 360 Environmental Pty Ltd

Scott Walker – Ecology Group Leader

6 References

Department of Sustainability Environment Water Population and Communities. (2012). *EPBC Act Referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo, Baudin's cockatoo and Forest red-tailed black cockatoo*. www.environment.gov.au

Department of the Environment and Energy. (2017). *Draft revised referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo, Forest Red-tailed Black Cockatoo*.