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3 May 2023

Attn: Rachel Fitzgerald
Environmental Officer
City of Gosnells

Dear Rachel,

Please find below a memo summarising a targeted black cockatoo hollow assessment completed by Biologic Environmental Survey Pty Ltd (Biologic) on the 11th of April 2023. The assessment was completed within the proposed Native Vegetation Clearing Permit area (NVCP) at the Station St Bridge, Gosnells, for the City of Gosnells (CoG).

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Reviewed by: Chris Knuckey (Principal Zoologist | General Manager)

1 Introduction

1.1 Background

The City of Gosnells (CoG) is seeking to obtain a Native Vegetation Clearing Permit (NVCP), for proposed works at the Station St Bridge, Gosnells. This vegetation clearing will support development of the infrastructure at Station St Bridge. The proposed NVCP area (herein the Study Area) is associated with potentially suitable breeding habitat for Carnaby's cockatoo (*Zanda latirostris* – Endangered), Baudin's cockatoo (*Zanda baudinii* – Endangered), and the forest red-tailed black cockatoo (*Calyptorhynchus banksii naso* – Vulnerable).

To support the NVCP application, ecologia Environment (2022) completed a Level 1 biological assessment survey within the Study Area, for WSP Golder on behalf of CoG. The survey identified 27 potential black cockatoo breeding trees within the Study Area, with 11 potentially suitable hollows recorded within seven trees (ecologia Environment, 2022) (Appendix A).

Due to the presence of these hollows within the proposed NVCP area, CoG is required to further evaluate the suitability of these hollows for black cockatoo breeding and identify any evidence of breeding activity by significant black cockatoo species. If any of the hollows are deemed suitable for breeding or evidence of breeding by black cockatoos is observed CoG will be required to submit an additional section 40 application prior to clearance of the trees.

Biologic Environmental Survey Pty Ltd (Biologic) was commissioned by CoG to complete a hollow assessment of these seven potential breeding trees, to further evaluate hollow suitability, identify any evidence of nesting or usage of the tree by significant black cockatoo species and record any hollow occupancy by other competing fauna (i.e. introduced honeybees (*Apis mellifera*) or rainbow lorikeets (*Trichoglossus moluccanus*)). This memorandum presents the findings from this assessment.

2 Methods

2.1 Field Survey Methods

2.1.1 Hollow Assessment

The hollow assessment was completed by Zoologist's Robert Audcent and Aimee Carpenter on the 11th of April 2023. Verification of results was completed by Principal Zoologist Chris Knuckey.

A total of 11 potential hollows were assessed from 7 trees (ecologia Environment, 2022). Each hollow was assessed with a camera mounted on a telescopic pole to assess suitability for

black cockatoos. The suitability was assessed based on the several attributes, including size, orientation, location, signs of use and/or occupation by other species (Table 2.1). Signs of use by black cockatoos can be identified by wear and chew marks around the hollow entrance. Where possible, hollow usage by fauna was also assessed, including use by introduced honeybees or rainbow lorikeets. Potentially suitable nest hollows were considered to be those that appeared to be deep enough with an opening diameter large enough to be used by black cockatoos (>100 mm diameter), of both natural and artificial origin (Table 2.1).

Table 2.1: Hollow suitability criteria for potential breeding use by black cockatoo species

Overall hollow suitability	Hollow present?	Suitable diameter? (>100 mm and unobstructed)	Suitable depth? (>250 mm)	Evidence of chewing around hollow rim?	Other factors to alter suitability?
Active (currently in use)	Yes	Yes	Yes	Yes	<ul style="list-style-type: none"> • Orientation (vertical is preferred) • Diameter at base (>30 cm) • Evidence of bees • Common breeding tree species • Height above ground (> 2m)
Suitable (no evidence of use)	Yes	Yes	Yes	No	
Possible (potential to support black cockatoos but cannot confirm)	Yes	Yes	Potential	No	
Not suitable	Yes	No	No	No	

2.1.2 Opportunistic Black Cockatoo Records

Any opportunistic records of black cockatoos encountered during the survey were documented, including direct observation, species-specific call recognition, or secondary evidence (i.e. feathers, nests, and chewed nuts).

3 Results

3.1 Hollow Assessment






A total of 11 potential breeding hollows from 7 trees were recorded and assessed during the field assessment (Table 3.1; Table 3.2; Appendix A). All hollows were in live flooded gum (*Eucalyptus rudis*) trees. Of the 11 hollows assessed, only 3 were found to be actual hollows, with the remaining 8 identified as false hollows (i.e. broken limbs that have not yet formed a hollow) (Table 3.1; Table 3.2; Appendix A).

Following further consideration of attributes (Table 2.1), none of the three recorded hollows were considered to have potential to support black cockatoo breeding. No occupancy by black cockatoos or any competing fauna species, was observed within any of the hollows identified during the survey. No hollows were observed to have chew marks around the perimeter of the hollow from prospecting birds (i.e. investigation of a hollow for breeding suitability by black cockatoos).




Table 3.1: Summary of hollow suitability within the Study Area

Overall Suitability	Tree ID	Hollow type	Tree condition	Number of hollows
Not suitable	TCOG-1002	End of branch leading into main trunk	Live	1
	TCOG-1006	End of branch leading into main trunk	Live	1
	TCOG-1020	Side entry in main trunk	Live	1
Total				3
False hollows	TCOG-1006	End of branch leading into main trunk	Live	1
	TCOG-1014	End of branch leading into main trunk	Live	1
	TCOG-1020	End of branch leading into main trunk	Live	2
	TCOG-1026	End of branch leading into main trunk	Live	1
	TCOG-1028	End of branch leading into main trunk	Live	1
	TCOG-2029	End of branch leading into main trunk	Live	2
Total				8
Combined total				11

Table 3.2: Summary of the hollows recorded within the Study Area

Tree ID	Latitude	Longitude	Species	Condition	DBH (mm)	Height (m)	Hollow count	Hollow type	Hollow diameter (mm)	Hollow depth (cm)	Chew marks?	Occupancy?	Photo	Overall Suitability
TCOG-1002	-32.0712	116.0053	Flooded Gum (<i>Eucalyptus rudis</i>)	Live	1170	16	1	End of branch leading into main trunk	200	>100	No	Unknown/None		Not Suitable Hollow walls are significantly cracked. Too exposed and fragile to be suitable.
TCOG-1006	-32.0708	116.0057	Flooded Gum (<i>Eucalyptus rudis</i>)	Live	1680	18	1	End of branch leading into main trunk	200	20	No	Unknown/None		Not Suitable Hollow depth not suitable (< 1 m)
								End of branch leading into main trunk	-	-	-	-		
TCOG-1014	-32.0704	116.0062	Flooded Gum (<i>Eucalyptus rudis</i>)	Live	540	7	0	End of branch leading into main trunk	-	-	-	-		Not a Hollow
TCOG-1014	-32.0704	116.0062	Flooded Gum (<i>Eucalyptus rudis</i>)	Live	540	7	0	End of branch leading into main trunk	-	-	-	-		Not a Hollow

Tree ID	Latitude	Longitude	Species	Condition	DBH (mm)	Height (m)	Hollow count	Hollow type	Hollow diameter (mm)	Hollow depth (cm)	Chew marks?	Occupancy?	Photo	Overall Suitability
TCOG-1020	-32.0699	116.0066	Flooded Gum (<i>Eucalyptus rudis</i>)	Live	940	14	1	End of branch leading into main trunk	50	35	No	Unknown/None		Not Suitable Hollow depth not suitable (< 1 m) and internal diameter too small (< 100 mm).
								End of branch leading into main trunk	-	-	-	-		Not a Hollow
								End of branch leading into main trunk	-	-	-	-		Not a Hollow

Tree ID	Latitude	Longitude	Species	Condition	DBH (mm)	Height (m)	Hollow count	Hollow type	Hollow diameter (mm)	Hollow depth (cm)	Chew marks?	Occupancy?	Photo	Overall Suitability
TCOG-1026	-32.0701	116.0065	Flooded Gum (Eucalyptus rudis)	Live	1030	18	0	End of branch leading into main trunk	-	-	-	-		Not a Hollow
TCOG-1028	-32.0700	116.0063	Flooded Gum (Eucalyptus rudis)	Live	810	5	0	End of branch leading into main trunk	-	-	-	-		Not a Hollow
TCOG-1029	-32.0700	116.0062	Flooded Gum (Eucalyptus rudis)	Live	1160	21	0	End of branch leading into main trunk	-	-	-	-		Not a Hollow

4 References

ecologia Environment. (2022). *City of Gosnells Station Street Bridge Flora and Fauna Assessment*.

Appendix A: Figure of potential black cockatoo
breeding trees, taken from ecologia Environment
(2022)

