Memorandum

09 April 2020

To	Aurizon Operations Limited		
Copy to			
From	Erin Lynch	Tel	+61 8 62228316
Subject	Hollow survey	Job no.	12528279

1 Introduction

1.1 Project background

Aurizon is planning to clear 0.4 ha of native vegetation on an isolated 'island' of land within the Kwinana Rail Yard. The clearing intends to increase visibility across the rail yard to improve safety. A Reconnaissance Flora and Vegetation Survey and Black Cockatoo Habitat Assessment was undertaken in 2019, which covered the current survey area (Strategen Environmental 2019). The survey and assessment were completed to support a Native Vegetation Clearing Permit (NVCP). The island vegetation met the criteria for classification as a Priority and Threatened Ecological Community (PEC and TEC) - Tuart Woodlands and Forests of the Swan Coastal Plain. The area contains both living and dead tuart trees and the vegetation condition was described as degraded. A NVCP was submitted to the Department of Water, Environment and Regulation (DWER) in December 2019 and subsequently sent to the Commonwealth Department of Agriculture, Water and the Environment (DAWE) for a pre-referral review as a potential controlled action. From the DAWE correspondence:

To complete the review DAWE have requested more detailed information on the hollows in the tuart trees on the island. To finalise our consideration of the information, can you please let us know whether the tree in the small patch that contains hollows have had those hollows inspected? The consultant's report indicates that they were looked at from ground level. What we would like to know is whether there is any evidence of use of the hollows in that tree, including whether there are scratch/chew marks on the outside of the hollows, feathers and shell remnants inside it. What is also important is the depth of the hollows and direction to indicate if black cockatoos would be likely to use it.

The survey and habitat assessment identified seven tuart trees on the 'island' with only one tree having hollows present.

1.2 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by Aurizon to undertake a targeted Black Cockatoo hollow inspection of tuart trees with the survey area using a pole-mounted remote control camera by an appropriately qualified and experienced consultant. By using this camera to obtain the data requested

GHD Pty Ltd ABN 39 008 488 373
Level 10 999 Hay Street Perth WA 6000 Australia
T +61 8 6222 8222 **F** +61 8 9463 6012 **E** permail@ghd.com.au **W** www.ghd.com

above by DAWE, potential hollows can be thoroughly investigated and evidence of use by Black Cockatoo species can be identified.

The outcome of the scope of works will be used to inform and support the NVCP and pre-referral assessment.

1.3 Memorandum limitations and assumptions

This memorandum has been prepared by GHD for Aurizon and may only be used and relied on by Aurizon for the purpose agreed between GHD and the Aurizon as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Aurizon arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the memorandum.

The opinions, conclusions and any recommendations in this memorandum are based on conditions encountered and information reviewed at the date of preparation of the report (including species listings). GHD has no responsibility or obligation to update this memorandum to account for events or changes occurring subsequent to the date that the memorandum was prepared.

Site conditions may change after the date of the field survey. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this memorandum if the site conditions change.

1.4 Survey area

The survey area (proposed clearing area) consists of an isolated ‘island’ of land within the Kwinana Rail Yard, and is a total of 0.4 hectares (ha). A previous survey undertaken by Strategen Environmental (2019) identified seven tuart trees on the ‘island’ with only one tree (dead) having hollows present.

2 Methodology

GHD Ecologists Erin Lynch and Madi Roberts undertook the Black Cockatoo hollow inspection of the dead Tuart tree containing a potential hollow identified previously by Strategen Environmental (2019) as well as additional potential hollows identified during the assessment. Erin Lynch has over 10 years’ experience and Madison Roberts has over three years’ experience in undertaking black cockatoo assessments. GHD undertook the assessment using a pole-mounted remote control camera. The telescopic shaft allows the pole camera to investigate hollows up to 10 meters above ground. This greatly increases the accessibility of hollows for examination and assessment.

The camera can be set to record video and still frame evidence of hollow characteristics, and fauna species present. The camera orientation is adjusted via the remote control unit to give a clear view of hollow characteristics, such as depth and direction. This capability increases the confidence level of habitat assessments because it allows many potential hollows to be thoroughly investigated. This often provides justification to rule out hollows on the basis of lacking sufficient depth for Black Cockatoo nesting. Additionally evidence of scratch/chew marks on the outside of the hollows and feathers and shell remnants inside the hollows were investigated.

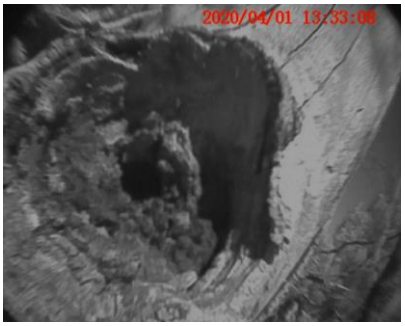
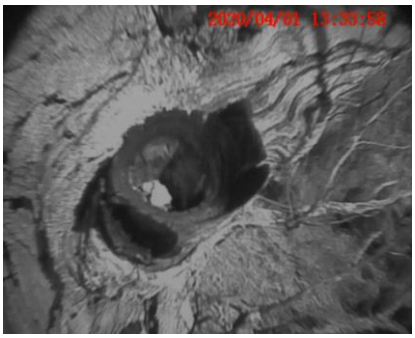
The assessment was conducted with consideration to the *Environment Protection and Biodiversity Act 1999* referral guidelines for three threatened Black Cockatoo species: Carnaby’s Black Cockatoo (Endangered) *Calyptorhynchus latirostris*, Baudin’s Cockatoo (Vulnerable) *Calyptorhynchus baudinii*,

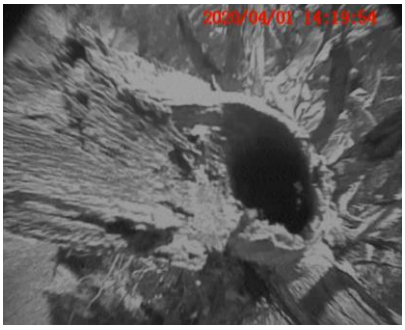
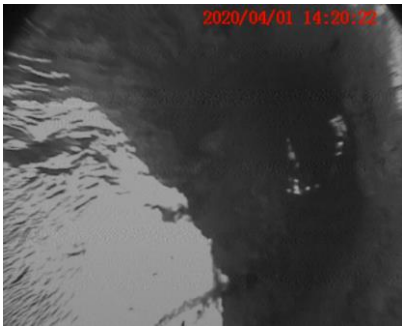
Forest Red-tailed Black Cockatoo (Vulnerable) *Calyptorhynchus banksii naso*, (Department of Sustainability, Environment, Water, Populations, and Communities (DSEWPaC 2012).

3 Results

Results of the assessment are presented in Table 1. In summary, no potential hollows for Black Cockatoos are present within the survey area.

Table 1 Results of the hollow assessment

Tree	Easting	Northing	Comments	Photographs
1	385545.14	6432927	Tree identified by Strategen Environmental (2019) as having a potential hollow. Not hollow, solid wood (broken branch).	 
2	385534	6432979	Small hollow, 6 cm diameter and 10 cm deep. 7 m high from the ground. Solid wood inside. Not suitable for black cockatoo breeding.	
3	385547.8	6432889.3	Small hollow, 10 m from the ground, 5 cm diameter and 5 cm deep. Solid inside.	

Tree	Easting	Northing	Comments	Photographs
4	385543.3	6432889.3	Hollow 5 m from the ground, 10 cm diameter, less than 70 cm deep. Cracks exposing sunlight. No signs of chew marks or use.	 

4 Conclusions

None of the potential hollows identified by Strategen Environmental (2019) or by GHD during this assessment are considered suitable hollows for Black Cockatoo's. Furthermore, no evidence of Black Cockatoo use was observed within the survey area.

5 References

Strategen Environmental 2019, *Lots 511 and 512 Rockingham Road, Kwinana Beach, Reconnaissance flora and vegetation survey and black cockatoo habitat assessment*, prepared for Aurizon Operations Ltd by Strategen August 2019.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) 2012, *Environment Protection and Biodiversity Act 1999 referral guidelines for three threatened Black Cockatoo species: Carnaby's Black Cockatoo (endangered) Calyptorhynchus latirostris, Baudin's Black Cockatoo (vulnerable) Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo (vulnerable) Calyptorhynchus banksia naso*, Australian Government Canberra.

Regards

Erin Lynch
Ecologist