

**Black Cockatoo
Habitat Tree Assessment
CPS 5377/3**



Lots 10914 and 10920

Smith Brook

August 2020

August 2020

Version 1

On behalf of:

Peter John Marsh



Prepared by:

Greg Harewood

Zoologist



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SUMMARY

This report details the results of a black cockatoo habitat tree assessment carried out over various sections of Lots 10914 and 10920 Smith Brook Road, Smith Brook.

The landowner has applied to clear 38 hectares of native vegetation from within the Lots to the Department of Water and Environmental Regulation (DWER) (CPS 5377/3) (Figure 1).

An initial inspection of the area by DWER identified the presence of potential black cockatoo breeding habitat and as a consequence they have requested a black cockatoo habitat tree survey be undertaken (DWER 2020). The results of this survey are presented here.

An inspection of the permit area was carried out by Greg Harewood (Zoologist - 17 years' experience) on the 17 and 23 August 2020. The assessment involved a series of transects across the permit area while searching for trees which contained or potentially contained one or more hollows that appeared suitable or potentially suitable for black cockatoos to use for nesting purposes.

The vast majority of the trees present within the permit area were relatively young and as a consequence most do not contain hollows, or if present, what appeared to be only small hollows that would be unsuitable for black cockatoos to use for nesting.

No conclusive evidence of black cockatoo nesting activity was observed in any tree within the permit area. Eight trees were identified within the permit area as containing one or more possible hollows potentially suitable for black cockatoos to use for nesting purposes. Upon closer inspection with a drone five of the eight trees were assessed as not having hollows suitable for black cockatoos to use for nesting.

Two trees (ID 12 & 15) appeared to have a suitably sized chimney type hollows but no conclusive evidence of use by black cockatoos was evident in either case.

Tree 10 contains a large side entry hollow which also appears to have some depth and therefore it must also be considered potentially suitable for black cockatoos though no conclusive evidence of use for this purpose was evident.

Given that only at this stage only thinning of trees within the permit area is proposed these three trees can be retained. If at a later stage permission to remove the trees is sought, they should be re-assessed for use/occupancy by black cockatoos so that appropriate actions can be employed.

This report should be forwarded to DWER for their review and comment.

1. INTRODUCTION

This report details the results of a black cockatoo habitat tree assessment carried out over various sections of Lots 10914 and 10920 Smith Brook Road, Smith Brook.

The landowner (Peter John Marsh) has applied to clear 38 hectares of native vegetation from within the Lots to the Department of Water and Environmental Regulation (DWER) (CPS 5377/3) (Figure 1). It should be noted that the areas shown in Figure 1 cover about 115.6 hectares from which up to 38 hectares is proposed to be removed as part of a Native Forest Management Plan (Bradshaw 2006).

An initial inspection of the area by DWER identified the presence of potential black cockatoo breeding habitat within the permit area and as a consequence they have requested a black cockatoo habitat tree survey be undertaken (DWER 2020). The results of this survey are presented here.

2. SCOPE OF WORKS

The scope of works are based on specifications provided in DWER's request for additional information (DWER 2020) which states:

Information Requirements

- A black cockatoo habitat tree assessment / survey is required for the entire application area.

Specifications

- The assessment/survey is to be carried out by a *fauna specialist* and the survey is required to 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 Carnaby's cockatoo, Baudin's cockatoo, and forest red-tailed black 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.
- All surveys must be submitted in accordance with the EPA’s Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA), and submitted via [DWER’s IBSA Submissions Portal](#). The proponent is also required to provide the corresponding IBSA Submissions Reference Number to the assessing officer, using the contact details provided (DWER 2020).

NOTE: DWER considers “*fauna specialist*” to mean 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 permit area was carried out by Greg Harewood (Zoologist - 17 years’ experience) on the 17 and 23 August 2020.

The assessment involved a series of transects across the permit area while searching for trees which contained or potentially contained one or more hollows that appeared suitable or potentially suitable for black cockatoos to use for nesting purposes.

Details on each tree were recorded including species, location, number and type of hollows observed. Potential hollows were initially 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.

For the purpose of this review, hollows have then been placed into one of five categories based on the observable characteristics of each hollow. The categories used were:

- Confirmed Hollow: Black cockatoos observed utilising the hollow for breeding purposes;
- Chewed Hollow: The hollow shows signs of chewing (“chipping” around or near entrance and/or internally) attributed to black cockatoo activity (in most cases

indicating nesting activity, but in some cases possibly marks left by black cockatoos investigating (“prospecting”) hollows);

- **Unused Hollow:** The hollow appears to be of a suitable size for black cockatoos to use for nesting, but no conclusive evidence of this activity seen. It should be noted that chew marks/chipping are not always evident or present on some hollows that have been used for nesting. Hollows classified as “unused” may therefore have been used for nesting but cannot be specifically classified as such. Alternatively, some “unused” hollows may not be suitable for black cockatoos as a range of characteristics, not all of which can be seen or measured, ultimately determined if a hollow will ever actually be used;
- **Unsuitable Hollow:** The hollow has been assessed, based on information obtained, as being unlikely to be suitable for black cockatoos (generally because of the entrance appearing to be too small or because the actual hollow or accommodating branch/tree trunk appears to be too small or as having an unfavourable orientation);
- **No Hollow:** A possible hollow was found upon closer inspection to not be present.

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). Where possible each potential hollow was also inspected and photographed with a drone.

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

The permit area was found to contain patches of open forest/woodland mostly comprised of karri (*Eucalyptus diversicolor*) with very occasional marri (*Corymbia calophylla*) trees. Understorey is generally absent/very sparse. The vast majority of the trees present are relatively young and represent regrowth from historical clearing events 50 to 60 years ago (Bradshaw 2006). Because of their relatively young age most trees do not contain hollows, or if present, what appeared to be only small hollows that would be unsuitable for black cockatoos to use for nesting.

During the survey eight trees were identified within the permit area as containing one or more possible hollows potentially suitable for black cockatoos to use for nesting purposes. The location of these trees is shown in Figure 1. Details of each tree and the hollows they contain can be found in Appendix A.

A summary of observations made are provided in Table 1 below.

Table 1: Summary of Observations

Tree ID	Number of Hollows	Status	Justification
10	1	Unused Hollow.	This tree contains a large side entry hollow which appears to have some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes.
11	1	Unsuitable Hollow	Drone pictures indicate this chimney style hollow has no depth.
12	1	Unused Hollow.	Large chimney style hollow with some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes. No conclusive evidence of use observed.
13	1	Unsuitable Hollow	Drone pictures indicate this chimney style hollow has no depth.
14	1	Unsuitable Hollow	Drone pictures indicate this chimney style hollow has no depth.
15	1	Unused Hollow.	Large chimney style hollow with some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes. No conclusive evidence of use observed.
16	1	Unsuitable Hollow	Drone pictures indicate this chimney style hollow has no depth.
17	1	Unsuitable Hollow	Drone pictures indicate this chimney style hollow has no depth.

Five of the eight trees suspected of having possible large hollows were upon closer inspection with a drone found to be unsuitable for black cockatoos. This conclusion was in all cases based on the hollow being too shallow/open.

Two trees (ID 12 & 15) appeared to have a suitable sized chimney type hollow but no conclusive evidence of use by black cockatoos was evident in either case.

Tree 10 contains a large side entry hollow which also appears to have some depth and therefore it must also be considered to be potentially suitable for black cockatoos though no conclusive evidence of use for this purpose was evident.

6. CONCLUSION

The assessment reported on here was undertaken to determine the presence of suitable breeding trees with the proposed clearing area.

The vast majority of the trees present within the permit area were relatively young and as a consequence most do not contain hollows, or if present, what appeared to be only small hollows that would be unsuitable for black cockatoos to use for nesting.

No conclusive evidence of black cockatoo nesting activity was observed in any tree within the permit area. Eight trees were identified within the permit area as containing one or more possible hollows potentially suitable for black cockatoos to use for nesting purposes. Upon closer inspection with a drone five of the eight trees were assessed as not having hollows suitable for black cockatoos to use for nesting.

Two trees (ID 12 & 15) appeared to have a suitably sized chimney type hollows but no conclusive evidence of use by black cockatoos was evident in either case.

Tree 10 contains a large side entry hollow which also appears to have some depth and therefore it must also be considered potentially suitable for black cockatoos though no conclusive evidence of use for this purpose was evident.

Given that only at this stage only thinning of trees within the permit area is proposed these three trees can be retained. If at a later stage permission to remove the trees is sought, they should be re-assessed for use/occupancy by black cockatoos so that appropriate actions can be employed.

This report should be forwarded to DWER for their review and comment.

7. REFERENCES

Bradshaw, F. J. (2006). Native Forest Management Plan. Unpublished report for Sylvia Marsh.




Department of Water and Environmental and Regulation (DWER) (2020). Letter to Peter John Marsh – Application to Amend Clearing Permit Clearing Permit – Request for information. Ref: CPS 5377/3. Dated 27 May 2020.

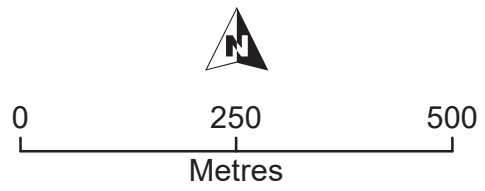
FIGURES



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

-  CPS 5377/3
-  Inspected with Drone Potential Nest Hollow
-  Inspected with Drone No Potential Nest Hollow



Drawn: G Harewood
Date: Aug 2020
Scale: 1: 50,000

CPS5377/3
Lots 10914 and 10920
Smith Brook

Air Photo & Trees Inspected

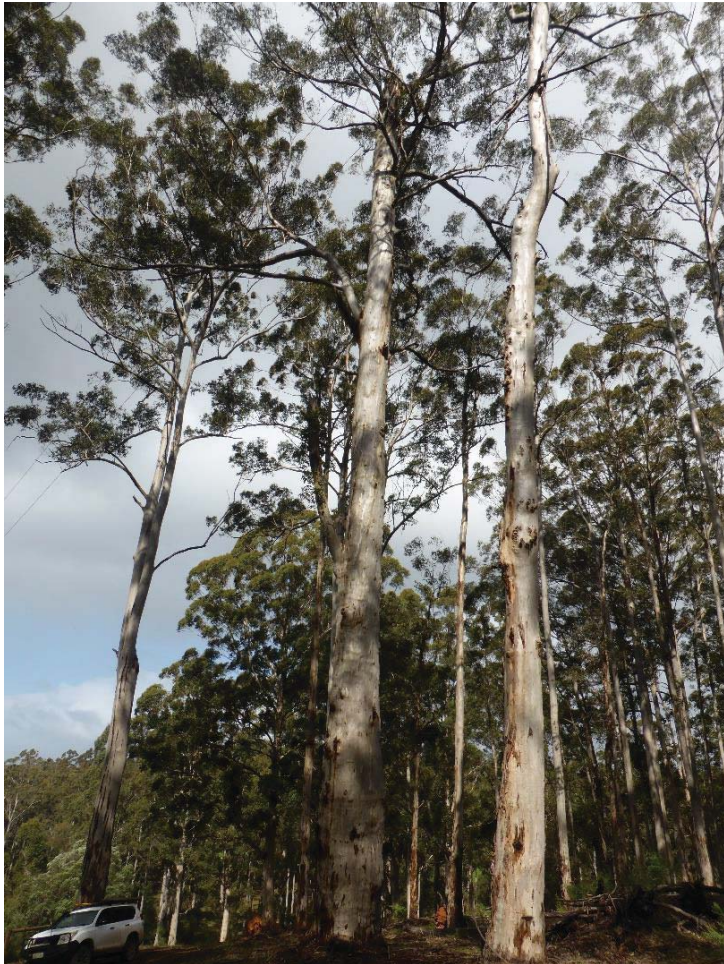
APPENDIX A

Habitat Tree Details

WPT	Coordinates (MGA 94/Z50)	425965 mE	6197377 mN	Tree Species	Karri	Survey Date	23/08/2020
10	Comments	Large Karri with possible upward facing chimney style hollow and a large side entry hollow. Upward facing hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes (centre picture). Side entry hollow (right picture) appeared to have some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes. Marks at base of hollow entrance suggests use by fauna of some type.				Classification	Unused Hollow.



WPT	Coordinates (MGA 94/Z50)	426124 mE	6197532 mN	Tree Species	Karri	Survey Date	23/08/2020
11	Comments	Large Karri with possible upward facing chimney style hollow. Upon closer inspection with a drone, the hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes. No signs of use by any fauna.			Classification	Unsuitable Hollow	



WPT	Coordinates (MGA 94/Z50)	426083 mE	6197612 mN	Tree Species	Karri	Survey Date	23/08/2020
12	Comments	Large Karri with upward facing chimney style hollow. Drone pictures indicate the hollow has a large entrance with some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes. No conclusive evidence of use observed.			Classification	Unused Hollow	



WPT	Coordinates (MGA 94/Z50)	426162 mE	6197557 mN	Tree Species	Karri	Survey Date	23/08/2020
13	Comments	Large Karri with possible upward facing chimney style hollow. Upon closer inspection with a drone, the hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes. No signs of use by any fauna.			Classification	Unsuitable Hollow	



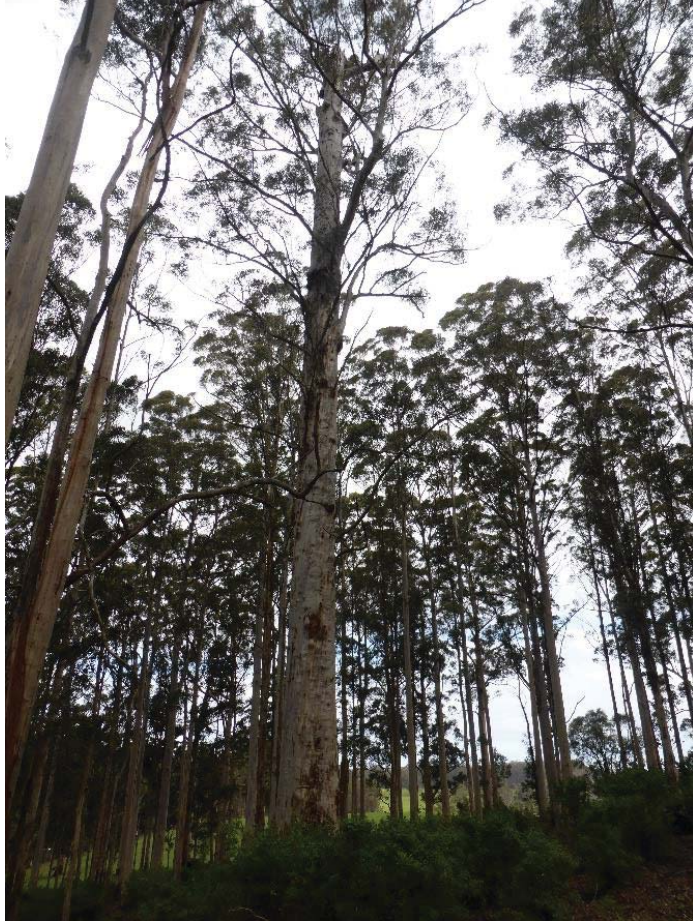
WPT	Coordinates (MGA 94/Z50)	426295 mE	6197718 mN	Tree Species	Karri	Survey Date	23/08/2020
14	Comments	Large Karri with possible upward facing chimney style hollow. Upon closer inspection with a drone, the hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes. No signs of use by any fauna.			Classification	Unsuitable Hollow	



WPT	Coordinates (MGA 94/Z50)	426171 mE	6197997 mN	Tree Species	Karri	Survey Date	23/08/2020
15	Comments	Large Karri with upward facing chimney style hollow. Drone pictures indicate the hollow has a large entrance with some depth and therefore it must be considered potentially suitable for black cockatoos to use for nesting purposes. No conclusive evidence of use observed.			Classification	Unused Hollow	



WPT	Coordinates (MGA 94/Z50)	426162 mE	6197976 mN	Tree Species	Karri	Survey Date	23/08/2020
16	Comments	Large Karri with possible upward facing chimney style hollow. Upon closer inspection with a drone, the hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes. No signs of use by any fauna.			Classification	Unsuitable Hollow	



WPT	Coordinates (MGA 94/Z50)	426227 mE	6197889 mN	Tree Species	Karri	Survey Date	23/08/2020
17	Comments	Large Karri with possible upward facing chimney style hollow. Upon closer inspection with a drone, the hollow was found to be very shallow/non-existent and unsuitable for black cockatoos to use for nesting purposes. No signs of use by any fauna.			Classification	Unsuitable Hollow	



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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 Greg Harewood (“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.

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