



Thursday, 22 August 2024

Our Ref: A23.033-MEM-FSR_A.O_Myara_FINAL

Alcoa of Australia
Marmion St & Davy St
576 Marmion St
Booragoon
WA 6154

(08) 6162 8980
PO Box 437, Leederville, WA 6903
enquiries@westenv.com.au

ATTENTION: Sarah Boys

SUBJECT: TECHNICAL MEMO BLACK COCKATOO TARGETED ASSESSMENT, MYARA, MAY-JUNE 2024

Western Environmental Approvals Pty Ltd (WEPL) presents the following letter report in relation to the Black Cockatoo targeted nest and habitat assessment surveys.

Project Background

Alcoa of Australia Limited (Alcoa) has committed to undertaking pre-clearance ecological surveys as part of its Mining Management Plan (MMP) assessment and other state assessment processes. Alcoa commissioned Western Environmental Pty Ltd (WEPL) to undertake targeted pre-clearance black cockatoo assessments for the Myara region within the Huntley bauxite mine. The project requires surveys of conceptual clearing alignments, with the survey program divided across five years (2024-2028). This report presents results for surveys undertaken between May and June 2024 corresponding to 2024 conceptual clearing alignments. The Survey Area is located in the Myara region of the Huntly bauxite mine, 23 km northeast of the town of Pinjarra.

The black cockatoo habitat field survey methodology primarily followed the Commonwealth Referral Guidelines (DAWE, 2022) for identifying breeding, foraging and roosting habitat. Consideration was also given to survey requirements under the Alcoa (2024) Fauna Management Plan (Version 1). Surveys were undertaken by WEPL ecologists across a combined 53 person days between May 2024 and June 2024.

Scope of Work

The Survey Area comprised approximately 674 Hectares of bushland within the Myara Site.

The Survey Area was subdivided by Alcoa into the following areas presented in Table 1.

Table 1: Survey Areas

Alcoa Survey subdivision name	Area (Hectares)
WE_Priority1_Tranche_2	66
WE_Priority2_HUNFCA2024A	163
WE_Priority3_Tranche_3	197
WE_Priority4	221
Mt_Solus_missed	<1
HUN_Turbidity_Monitors WE_Priority4MMP25_East	26

The scope of works included a black cockatoo habitat assessment as per DAWE (2022) *Referral guideline for 3 WA threatened black cockatoo species* (the Referral Guidelines) and marking of Significant Trees as per the Alcoa (2024) *Fauna Management Plan Huntly and Willowdale Mines* (the Fauna Management Plan).

The scope of 2024 black cockatoo surveys included two phases:

Phase 1: WEPL ecologists undertake a ground-based assessment recording potential, suitable or known nesting trees (as defined by DAWE 2022), scoring foraging habitat quality and recording observation/evidence of roosting and presence of species.

Phase 2: Follow up assessment of trees identified in phase 1 as potential suitable nesting trees or known nesting trees by Tony Kirkby and/or Glen Gaikhorst of GHD via drone, pole camera or telephoto lens, where necessary. Trees with a diameter at breast height (DBH) qualifying as Alcoa Significant Trees were also confirmed by Surveyors in phase 2. The current results of the phase 2 assessment have been incorporated into this report. At the time of submission of this report, only trees within **WE_Priority2_HUNFCA2024A** have received a phase 2 follow up survey.

Survey Limitations and constraints

Limitations and constraints of the fauna survey as outlined in the EPA technical guidance for fauna surveys (2020) are detailed below in Table 2.



Table 2: Fauna Survey Limitations and constraints

Possible Limitation	Degree of Limitation (Significant, Moderate or Negligible)	Potential Constraints on Survey Outcomes
Survey Level/ Scope	Negligible	A targeted assessment for black cockatoos was considered suitable.
Availability of contextual information	Negligible	All data required to complete the scope of works including regional and local contextual information was available.
Site Access	Negligible	The entire Survey Area was traversed on foot.
Survey Intensity and Extent	Negligible	<p>Survey effort for black cockatoos was suitable to adequately sample habitats present. A total of 53 person days of effort was allocated to phase 1.</p> <p>Assessment of potential black cockatoo nesting hollows was ground-based in phase 1 (undertaken by WEPL). A second survey phase was undertaken by others utilising a drone, pole camera or telephoto lens. Six person days of effort were allocated to phase 2.</p> <p>Survey Methodology was modified from the Referral Guidelines. Not all trees with suitable DBH were fully assessed under the phase 1 survey methodology. Only trees with a potential Bamford class of 1-3 were fully assessed under the phase 1 survey methodology. An exception was made for Alcoa Known Nesting Trees and trees classified as Alcoa Significant DBH trees. This is not considered a significant limitation as the purpose of the survey was to locate and identify Known and Suitable nesting trees.</p>
Experience	Negligible	<p>Phase 1 lead ecologist Andrew Fry has been conducting biological surveys in Western Australia for over 10 years, with over 5 years' experience undertaking targeted habitat assessments for black cockatoos. Ecology team survey members are suitably experienced, trained and operate under supervision of lead ecologist.</p> <p>Phase 2 lead zoologist were Tony Kirkby and/ or Glen Gaikhorst. Tony Kirkby has extensive experience in black cockatoo nesting habitat with over 25 years' experience as a researcher and consultant, including long-term black cockatoo studies with the West Australian Museum. Glen Gaikhorst of GHD is a Principal Zoologist with more than 25 years' experience leading and conducting fauna surveys.</p>
Timing, weather, season	Negligible	<p>Phase 1 and 2 Surveys undertaken between May and June 2024</p> <p>The surveys were undertaken within the recommended timing for both foraging and breeding habitat for forest red-tailed black cockatoo (year-round); and partially for Baudin's cockatoo (foraging Feb/March to September, breeding August-January) (DAWE, 2022) and outside of the recommended timing for breeding and foraging of Carnaby's black cockatoo (July to December); . The majority of survey work occurred outside of the core breeding periods. Assessment of hollow suitability based on dimensions are not seasonally restricted.</p>



Possible Limitation	Degree of Limitation (Significant, Moderate or Negligible)	Potential Constraints on Survey Outcomes
		Targeted searches were undertaken for secondary evidence of the species presence (e.g. foraging evidence from marri and jarrah nuts which can be done at any time of year).
		No survey days were called off or halted due to adverse weather conditions.
Proportion of the fauna recorded, and any identification issues	Negligible	Targeted survey focused on three readily identifiable species only. No identification constraints were encountered.
Disturbances (fire, flood etc.)	Negligible	No recent fires or clearing disturbances posed a constraint to surveys. Long term changes due to modification of fire regime, historical and ongoing logging and bauxite mining are considered representative of contemporary habitat and are not considered constraints in the context of the scope of the surveys.

Methodology

The black cockatoo habitat field survey methodology primarily followed the Commonwealth Referral Guidelines (DAWE, 2022) for identifying breeding, foraging and roosting habitat.

Consideration was also given to survey requirements under the Alcoa (2024) Fauna Management Plan (Version 1).

Field Survey Timing and Team

Table 3: Survey Effort Summary

Survey Phase	Team Position and Experience	Survey Effort and Timing
Phase 1 (2024)	Senior Ecologist-13 years Consultant Ecologist- 3 years Graduate Ecologist- 1 year Graduate Ecologist- 1 year	53 person days- May- June 2024
Phase 2 (2024)	GHD Principal Ecologist- 25 years	Six person days- May- June 2024

Breeding Habitat Assessment

The Commonwealth defines breeding habitat as trees species, known to support breeding, within the range of the species, which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) (1.3 m from the ground) to develop a hollow (DAWE, 2022). Terminology used in this report for trees comprising breeding habitat follows that defined in glossary of DAWE (2022) as shown in Table 4.



Table 4: Breeding Habitat Terminology

Breeding Habitat Term	Definition (DAWE, 2022)
Known nesting trees	Trees (live or dead but still standing) which contains a hollow where black cockatoo breeding has been recorded or which demonstrates evidence of breeding (i.e. showing evidence of use through scratches, chew marks or feathers).
Suitable nesting trees	Trees with suitable nesting hollows present, although no evidence of use.
Suitable nesting hollows	Any hollow with dimensions suitable for use for nesting by black cockatoos. See Table 4 for further discussion on nesting hollow characteristics.
Potential nesting trees	Trees that have a suitable DBH to develop a nest hollow, but do not currently have hollows.

In 2024 the breeding habitat assessment included two phases. The survey methodology of these phases is discussed in detail below. Portions of the breeding habitat Survey Area have been subject to prior survey efforts by Tony Kirkby and Alcoa to identify breeding habitat.

Phase 1

WEPL ecologists recorded every suitable tree (Marri, Jarrah, blackbutt, bullich, flooded gum, wandoo and powderbark wandoo) which presented a hollow with a >10cm diameter point of entry. All suitable trees were recorded using a mobile GIS field data collector platform. The following data was recorded for each tree:

- Species
- DBH (approximately 1.3 m from the ground)
- Coordinates
- Size of entry.
- Hollow type (knot, fissure, spout, vertical/chimney)
- Comments on likelihood of suitable nesting hollow formation based on factors including tree/branch architecture, branch diameter, tree species, appearance and thickness of entry rim, cracking in wood, presence of leaves/ sticks, blackening from burning etc..
- Evidence of use including chew marks or wear.
- Presence of other birds or bees.
- Images of each hollow and overall tree.

In addition to Commonwealth guidelines for assessing potential breeding trees, a scoring system based on that developed by Dr Mike Bamford (referred to as Bamford Class) was applied to class potential breeding habitat. This system and the Bamford Class alignment with DAWE (2022) breeding habitat definitions are shown in Table 5.



Table 5: Black cockatoo Potential Breeding Tree Bamford Class System

Bamford Class	Description of Tree and Hollows/Activity	Alignment with DAWE (2022) Breeding Habitat Definitions
1	Active nest observed; adult (or immature) bird seen entering or emerging from hollow, eggs present.	Known Nesting Tree
2	Hollow of suitable size and angle visible with chew marks around entrance.	Known Nesting Tree
3	Potentially suitable hollow visible but no chew marks present; or potentially suitable hollow present (as suggested by structure of tree, such as large, vertical trunk broken off at a height of >10m).	Suitable Nesting Tree (If confirmed hollow with suitable dimensions present in phase 2); Potential Nesting Tree (if confirmed hollow with suitable dimensions not present or highly unlikely to be present in phase 2)
4	Tree with hollows or broken branches that might contain hollows, but hollows or potential hollows are not of a suitable size, or are aligned or obstructed so as to prevent access	Potential Nesting Tree
5	Tree lacking large hollows or broken branches that might have large hollows; a tree with more or less intact branches and a spreading crown.	Potential Nesting Tree

Reassessment of Known Alcoa Nest Trees

The Myara mine Site is large and complex, Due to this, a number of Trees within the Survey Area had been assessed through previous survey effort to constitute Known Nesting Trees (See table above). Alcoa provided GPS locations for all trees previously recorded as Known Nesting Trees. Where previously recorded Known Nesting Trees occurred within the Survey Area, they were re-recorded by WEPL ecologists and their status as Know Nest Trees was reassessed.

Phase 2

Tony Kirkby and/or Glen Gaikhorst or GHD environment verified the presence of any suitable nesting trees or known nesting trees by revisiting trees scored by WEPL ecologist during phase 1 as Bamford Class 1-3. The phase 2 assessment utilised a drone, pole camera and/ or telephoto lens. Assessment confirmed if hollows are / have been used previously, are not suitable, currently suitable or potentially suitable in the future.

Alcoa Significant DBH Trees

Under the Alcoa Fauna Management Plan, Significant Trees are defined as the following:

- jarrah trees with a diameter of no less than 2000mm at a height of 1300mm above ground level.
- marri trees with a diameter of no less than 1500mm at a height of 1300mm above ground level.

And



- Is healthy (i.e. retaining majority of limbs, with high percentage leaf cover on remaining limbs) and may provide roosting habitat for black cockatoos, as determined by a suitably qualified and experienced person.

Potential significant DBH trees were identified from phase 1 WEPL survey data. They were then subject to follow up assessment by Tony Kirkby during phase 2 assessment.

Results

Breeding Habitat Assessment

Breeding habitat comprises trees species, known to support breeding, within the range of the species, which either have a suitable nest hollow or are of a suitable DBH to develop a hollow (DAWE, 2022). Breeding typically occurs in native eucalypt species however many species of eucalypt including non-endemic species may develop suitable hollows for breeding (DAWE, 2022). In the Huntley mine region tree species, which may provide hollows for black cockatoos as per Tony Kirkby (2023 pers. comm.) are:

- Jarrah- *Eucalyptus marginata*
- Marri- *Corymbia calophylla*
- Bullich- *Eucalyptus megacarpa*
- Blackbutt-*Eucalyptus patens*
- Flooded Gum-*Eucalyptus rudis*
- Wandoo-*Eucalyptus wandoo*
- Powderbark Wandoo-*Eucalyptus accedens*

The most frequently utilised tree species for breeding in the Northern Jarrah Forest region is marri (T. Kirkby, pers. comm. 2023). A long-term study of suitable nesting trees being utilised by forest red-tailed black cockatoo identified that marri accounted for 91% of known nest trees when comparing marri against jarrah (Johnstone *et al*, 2013). Other tree species such as blackbutt, bullich and flooded gum (particularly bullich) while good hollow providers are restricted within their range to stream zones and are far less abundant than jarrah and marri. Wandoo and powderbark wandoo are also good hollow providers however are very uncommon in the Myara region (T. Kirkby, pers. comm. 2023).

Black cockatoo hollows are located throughout the landscape but tend to be clustered in stands of old growth marri (T. Kirkby, pers. comm. 2023).

A summary of understood suitable nesting hollow characteristics for the three species is provided below in Table 6



Table 6: Black Cockatoo Nesting Hollow Characteristics

Species	Baudin's black cockatoo	Carnaby's black cockatoo	Forest red-tailed black cockatoo
Tree species and hollow characteristic	Nesting mainly in karri, marri, jarrah, wandoo, bullich, and tuart Preferred hollow dimensions have not been specifically studied but are considered likely to be similar to that of the Carnaby's black cockatoo	Nesting mainly in salmon gum, wandoo, tuart, jarrah, flooded gum, karri and marri. Utilise hollows with entry diameter of 10-65 cm, internal chamber floor diameter of 15-70 cm and depths of 30-300cm. (mean 26 cm entry, 33 cm floor and 130 cm depth).	Nesting mainly in jarrah, marri, karri, wandoo, bullich, blackbutt and tuart Utilise hollows with entry diameters from 12-150 cm, internal floor diameter of 17-54 cm and depths of 30-820 cm. (mean 30 cm entry, 33 cm floor and 140 cm depth).
Sources	DAWE, 2022	DAWE, 2022, Saunders <i>et al</i> 2014a, Saunders <i>et al</i> 2014b	DAWE, 2022, Johnstone and Storr 1998, Johnstone <i>et al</i> 2013

Phase 1 Survey Results

A combined total of 216 suitable or known nesting trees were recorded during phase 1 of the survey. A breakdown of nesting trees by Bamford Class is shown below in Table 7.

Table 7 Summary of Potential Nesting Trees recorded in Phase 1

Bamford Class	Class 1	Class 2	Class 3	Class 4 or 5	Totals (trees)
DAWE, 2022 Terminology	Known Nesting Tree		Suitable Nesting Tree (pending phase 2 inspection)	No nest feature detected but suitable DBH or marked habitat tree	
Tree species					
Blackbutt	-	-	2	-	2
Dead	-	-	15	1	16
Jarrah	-	10	69	7	86
Marri	-	15	87	10	112
Total (Bamford Class)	-	25	173	18	216

It should be noted that the as Phase 1 survey is undertaken from the ground with the use of Binoculars, without closer inspection it could be difficult to determine the origin of chew marks (potentially from other species i.e. galah, ring necked parrot) on potential nest hollows. As a result of this, records of Bamford class 2 trees may be higher than what was actually present.



Phase 1 Suitable Nesting Trees

There were 173 Bamford Class 3 trees recorded. These were recorded by WEPL ecologist in phase 1 and either appeared to have a potentially suitable nesting hollow visible (opening entry >10cm); or potentially suitable hollow present as suggested by structure of tree, such as large, vertical trunk broken off at a height of >10m which could not be confirmed from ground assessment.

Phase 1 Known Nesting Trees

No Bamford Class 1 trees were recorded within the survey area.

25 Bamford Class 2 trees which show signs of chew marks indicating they are a known nesting tree were recorded within the Survey Area. See Image 01 below for example of chew marks and hollow.

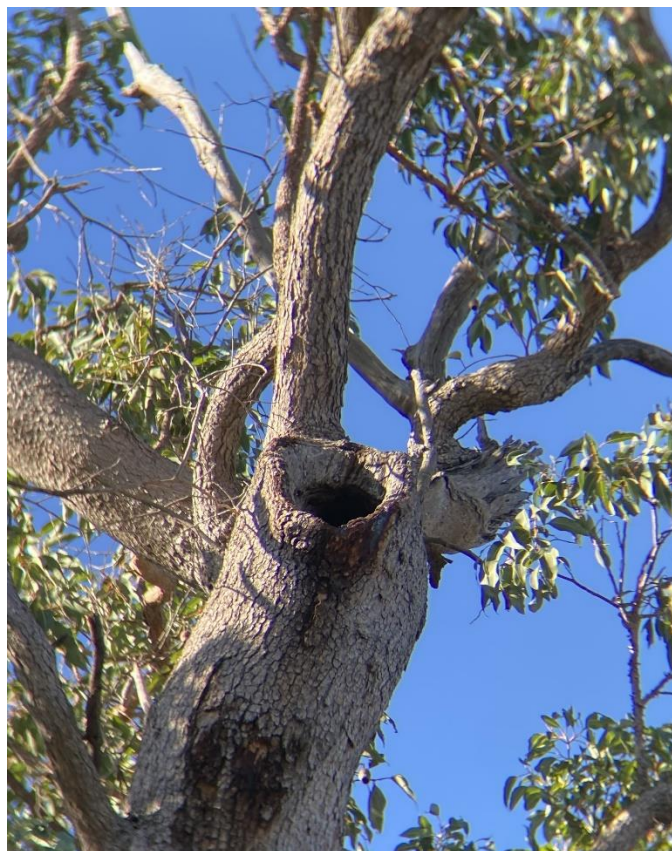


Image 01- Tree 153, a marri with a DBH of 100cm showing chew marks on rim of spout hollow

See locations of suitable nesting trees and known breeding trees in Figure 1. Tree attributes and hollow comments of Bamford Class 2-5 are provided in Appendix A.

Phase 1 Resurveyed Alcoa Known Nest Trees.

20 trees that had been previously recorded as known nesting trees within the Myara Site were revisited and reassessed by WEPL ecologists. Suitable nesting hollows for black cockatoo were not detected in three (3) of



the resurveyed trees and WEPL ecologists were unable to locate one (1) of the known nest trees which had presumably fallen.

At this time, none of the Resurveyed Alcoa Known Nesting Trees have received a phase 2 follow up survey. These trees will be resurveyed by Tony Kirkby and/ or Glen Gaikhorst at a later date. The reassessed Alcoa Known Nest trees are presented in Table 8.

Table 8: Resurveyed Alcoa Known Nesting Trees

WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		WEPL Comments
				Easting	Northing	
1	Marri	65	2	414924.1295	6410510.124	Alcoa nest tree 1542. 1 15-20 cm. chimney vertical mid canopy. Est height from ground 12 m. Old Minor chew marks
2	Marri	95	3	414957.953	6410395.255	Alcoa nest tree 1830. Unclear if. Hollow still present, view obscured
3	Marri	75	2	414952.9264	6410325.324	Alcoa nest tree 1831. Hollow, 20cm, chimney at 15m
11	Marri	120	2	416741.93	6408292.871	Alcoa nest tree 6669. 1 spout hollow, 12-15cm entry, 110 degrees entrance, old chew marks
14	Marri	80	3	417176.8226	6408134.339	Alcoa nest tree 1852. Potential chimney 27 m up off main trunk, 20cm
40	Marri	85	4	415285.3801	6411365.506	Alcoa nest tree 1526, tree appears to have burnt since being classed as a nest tree
70	Marri	90	3	426061.8651	6409972.767	Alcoa nest tree 4005. 1 side entrance hollow, 15cm diameter, 20m height, no chew marks observed
73	Marri	95	2	424711.5221	6406029.028	Alcoa nest tree 1451. Tree healthy
77	Marri	140	5	426307.9995	6409628.231	Alcoa nest tree 2518, no obvious hollow detectable
121	Marri	120	2	425329.895	6404721.352	Alcoa nest tree 2059, 1 side entry slit hollow 25m high 15cm wide. In main trunk at 20m. Fresh chew marks on top of entry and older chew around the rim.
133	Marri	85	3	426965.1657	6406837.529	Alcoa nest tree 1748, 1 hollow 17cm knot that connects with chimney, 17m height, no chew marks or sign of use, well rounded entrance, highly



WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		WEPL Comments
				Easting	Northing	
						suitable. It's the only hollow on the tree, others are burnt out marks
134	Marri	90	3	416260.1593	6403494.07	Alcoa nest tree 1531, 1 hollow 15cm chimney and 1 12cm potential side spout, 15m to 20m height, both openings are not well rounded and no chew marks or sign of use.
135	Marri	95	3	425511.2028	6404435.747	Alcoa nest tree 6289, 1x side entry 30x40cm in Main trunk at 18m. Well defined hollow.
138	Marri	110	3	425914.1296	6404461.176	Alcoa nest tree 1735, 1x 30cm upwards angle knot hollow in main trunk at 18m. Very good looking hollow. Has bees in it currently. View obscured by small branch.
140	Marri	150	2	425538.9382	6404311.966	Alcoa nest tree 2064, Hollow with upper opening. 20 cm opening. 15 m from ground. Minor chew marks around entrance and back of wall.
145	Dead	0	n/a	429409.239	6407333.987	Alcoa nest tree 2854 has presumably fallen
160	Marri	140	4	427010.9448	6407322.517	Alcoa nest tree 163, unable to detect hollow.
163	Marri	105	4	427179.8599	6407305.66	Alcoa nest tree 3885, Hollow has broken off.
172	Marri	75	3	427612.8155	6409310.862	Alcoa nest tree 1757, 1x well-formed 30cm side entry hollow at 10m in main trunk. Has wear marks, no chew visible. Bee honeycomb at back, no activity from bees observed
207	Marri	75	3	429116.5946	6405366.066	Alcoa nest tree 1653. 1x upwards facing slit hollow, 50 cm high 15 wide. At top of main trunk at 12m. Well defined with wear and potential old, weathered chew marks.





Figure 1A: Potential, Suitable or Known Nesting Trees Phase 1

	<p>PROJECT/REPORT NAME Alcoa Black Cockatoo Potential Nesting Tree Interim Data Report Myara Mine Site, near Dwellingup</p>	<p>Legend</p> <p>Survey Area</p> <ul style="list-style-type: none"> Priority 1 Priority 2 Turbidity Areas 	<p>Bamford Tree Class</p> <ul style="list-style-type: none"> 2 3 4 5 		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>JR</td> <td>8/8/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>NOTES: Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.</p>	No	Description	Drawn	Approved	Date	A	Original issue	SM	JR	8/8/2024																<p>WESTERN ENVIRONMENTAL</p> <p>Western Environmental Pty Ltd 08 6244 2310 enquiries@western.com.au Level 3/25 Prowise St, West Perth WA 6005 western.com.au</p>
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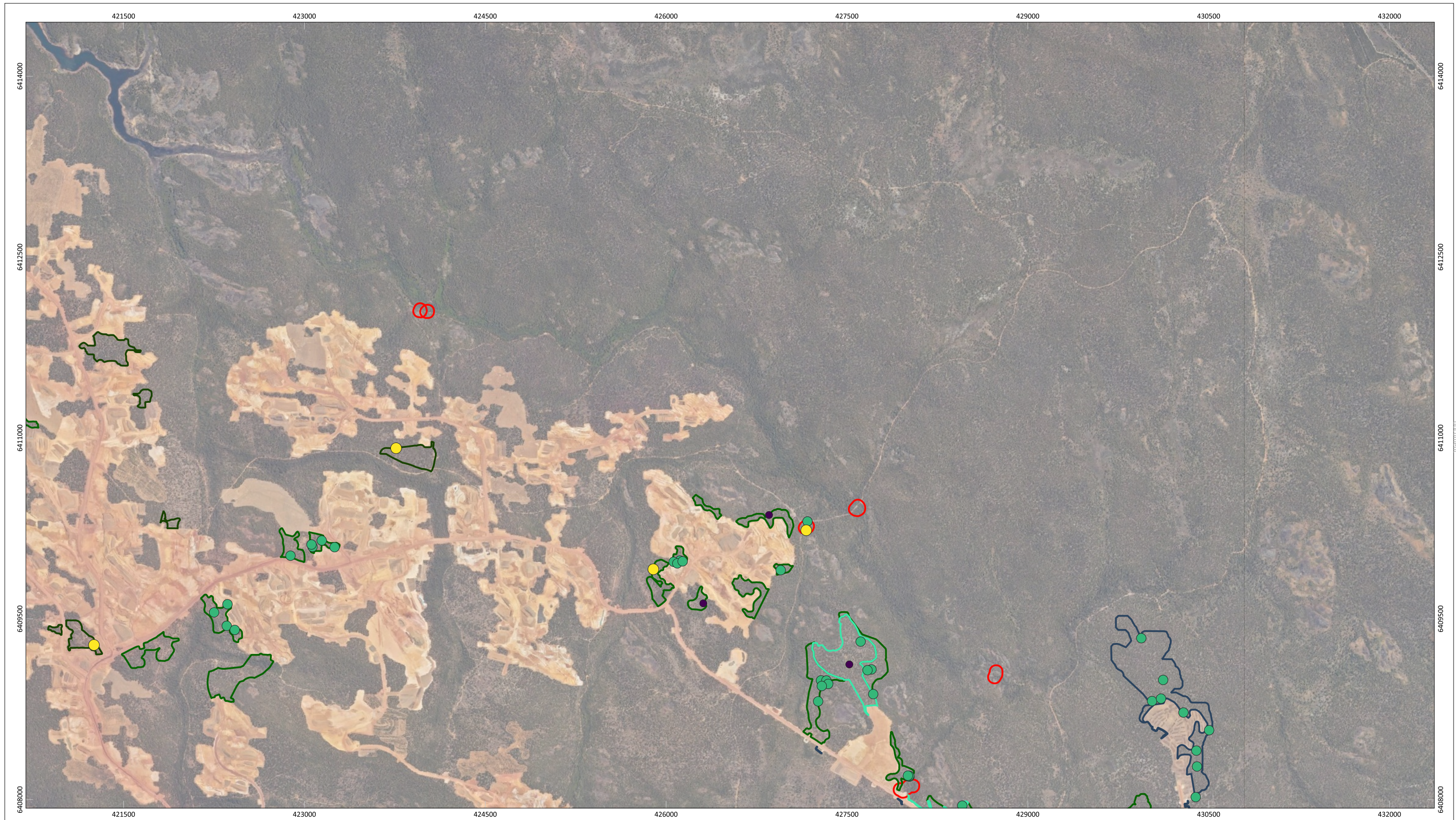


Figure 1B: Potential, Suitable or Known Nesting Trees Phase 1

	PROJECT/REPORT NAME Alcoa Black Cockatoo Potential Nesting Tree Interim Data Report Myara Mine Site, near Dwellingup		Legend Survey Area Priority 1 Priority 2 Priority 3 Priority 4 Turbidity Areas	Bamford Tree Class 2 3 5		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>JR</td> <td>8/8/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	SM	JR	8/8/2024															
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Figure 1C: Potential, Suitable or Known Nesting Trees Phase 1

	PROJECT/REPORT NAME Alcoa Black Cockatoo Potential Nesting Tree Interim Data Report Myara Mine Site, near Dwellingup		Legend Survey Area Priority 1 (Green outline) Priority 2 (Light Green outline) Priority 3 (Blue outline) Turbidity Areas (Red outline)	Bamford Tree Class 2 (Yellow dot) 3 (Green dot) 5 (Purple dot)		<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original Issue</td> <td>SM</td> <td>JR</td> <td>8/8/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original Issue	SM	JR	8/8/2024															
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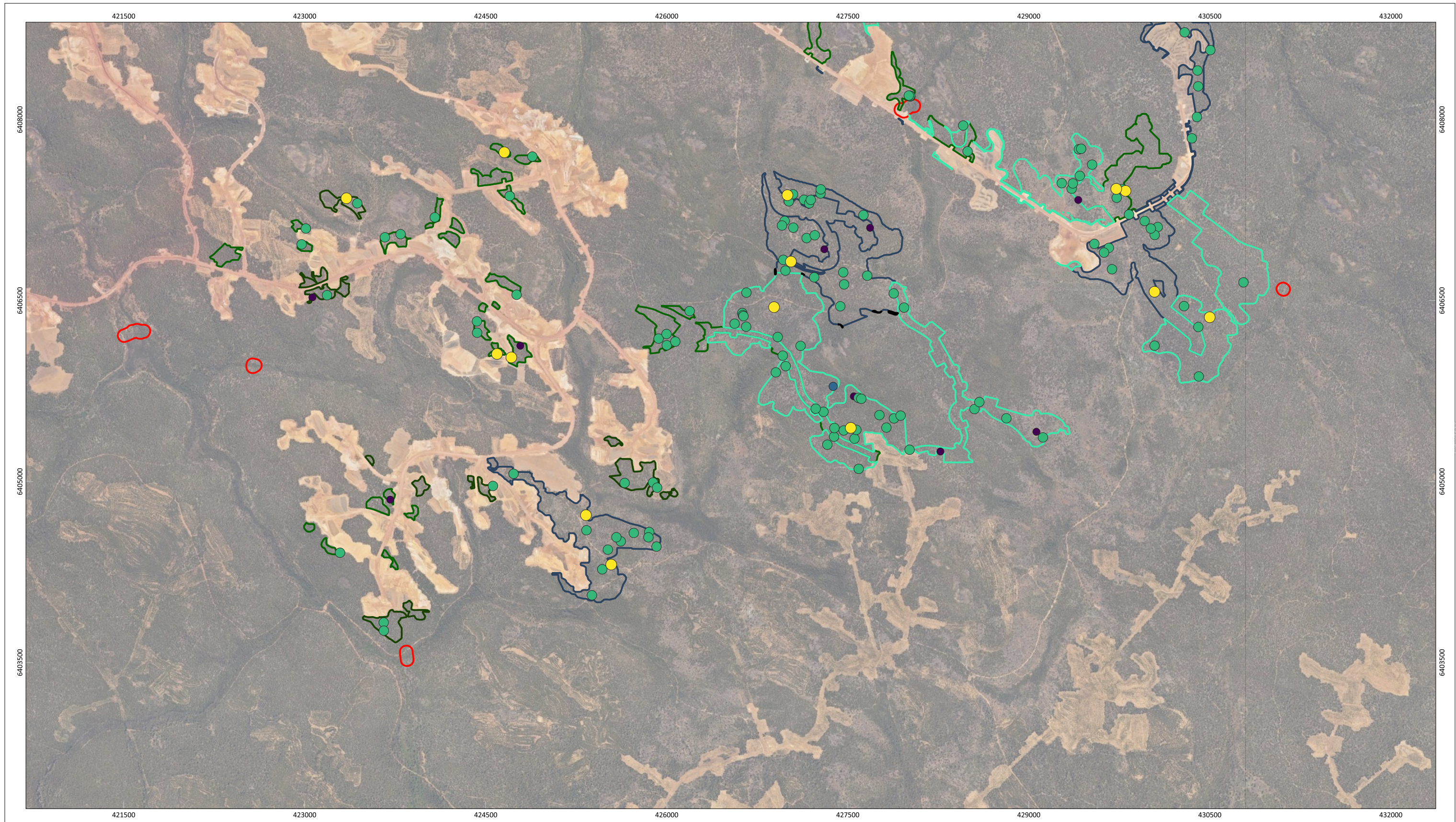


Figure 1D: Potential, Suitable or Known Nesting Trees Phase 1

	<p>PROJECT/REPORT NAME Alcoa Black Cockatoo Potential Nesting Tree Interim Data Report Myara Mine Site, near Dwellingup</p>	Legend	Bamford Tree Class																												
<p>SCALE 1:30,000</p>	<p>SHEET SIZE A3 COLOUR</p>	<p>CLIENT Alcoa</p>	<p>Survey Area</p> <ul style="list-style-type: none"> Priority 1 Priority 2 Priority 3 Priority 4 Mt Solus Extra Turbidity Areas 	<ul style="list-style-type: none"> ● 2 ● 3 ● 4 ● 5 		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>SM</td> <td>JR</td> <td>8/8/2024</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>NOTES: Cadastral boundary from LANDGATE 2022. Label corresponds to the vegetation association number.</p>	No	Description	Drawn	Approved	Date	A	Original issue	SM	JR	8/8/2024															
No	Description	Drawn	Approved	Date																											
A	Original issue	SM	JR	8/8/2024																											
<p>COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50</p>	<p>PROJECT NUMBER A23.033</p>	<p>VERSION 0</p>																													
<p>DATA SOURCE LANDGATE AERIAL IMAGERY Summer 2023</p>	<p>DRAWN BY / REVIEWED BY SM/JR</p>	<p>DATE 8/8/2024</p>	<p>Western Environmental Pty Ltd 08 6244 2310 enquiries@western.com.au Level 3/25 Prowse St, West Perth WA 6005 western.com.au</p>																												

Phase 2 Survey Results

At the time of this report's submission, 74 of the 216 potential, suitable or known nesting trees were reassessed under the criteria for phase 2 survey. An additional two (2) suitable or known nesting trees were recorded during phase 2 which weren't detected during phase 1. The additional trees are presented below in Table 9. A full detailed list of Trees recorded during phase 2 is presented in Appendix B

Table 9: Additional Suitable and Known nest trees recorded during Phase 2.

WEPL Tree Number	Species	DBH (cm)	Coordinate (AGD/84 Zone 50)		Bamford class
			Easting	Northing	
Additional Tree (217)	Marri	70	417654.8	6406840.1	3
Additional Tree (218)	Marri	90	427645.3	6409039	2

Phase 2 Suitable Nesting Trees

There were six (6) trees confirmed as Bamford class 3 during Phase 2 of the survey. One (1) of the additional trees was recorded as Bamford class 3. Details of these trees are presented below in Table 10

Table 10: Phase 2 Suitable Nest Trees

WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		GHD Comments
				Easting	Northing	
31	Marri	105	3	420537	6410991	Suitable Nest Tree. Assessed with Alcoa drone at 14:05 10/06/2024. Lower hollow coming out of branch is hollow filled with water, not suitable for Black Cockatoo use. Top spout hollow is potentially suitable. Appears to have chew marks and smooth internal walls but is only approximately 80cm deep.
32	Marri	80	3	422250	6409553	Suitable nest tree. No external chew marks, Unable to determine depth as hollow deviates to the right (towards main trunk) no defined nest chamber. However, hollow is present but not currently suitable for Black Cockatoo use. Hollow assessed with Alcoa Drone and assessment with pole camera on the 11/06 at 9.30



WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		GHD Comments
				Easting	Northing	
38	Marri	80	3	422973	6406965	Suitable Nest Tree. Hollow assessed with Alcoa drone on 18/6 at 8:55, Chimney hollow suitable but just a bit too shallow. other hollows blocked
55	Marri	0	3	424592	6406057	Suitable Nest Tree. Appears to have some external chew marks. Assessed with Alcoa drone on the 18/6 at 10:26. Suitable hollow for Black Cockatoo present
78	Marri	140	3	424077	6407190	Suitable Nest Tree Hollow assessed with Alcoa drone on the 18/6 at 9:22. Difficult to get to, suitable size hollow but no signs of use. approximately 1m deep.
Additional tree (218)	Marri	70	3	427645	6409039	Suitable Nest Tree. Hollow appears to have small recent chews at hollow entrance. Hollow was assessed with drone and GoPro but appears to be just a bit too shallow. Assessment conducted on the 12/6 at 15:45

Phase 2 Known Nesting Trees

There were three (3) trees recorded as Bamford class 2 during Phase 2 of the survey. One (1) of the additional trees was recorded as Bamford class 2. Details of these trees are presented below in Table 11

Table 11: Phase 2 Known Nesting Trees

WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		GHD Comments
				Easting	Northing	
48	Marri	120	2	415382.1	6411179	Nest Tree. Top Chimney hollow is blocked. Lower hollow approximately 20m high, has heavy chews on entrance of hollow (on main trunk). Assessed with Alcoa drone on 10/6 at 12:05, Unable to view inside hollow due to height for pole cam.
59	Marri	65	2	424653.3	6407729	Nest Tree. Assessed with Alcoa drone on 18/6 at 11:25. old and new



WEPL Tree Number	Species	DBH (cm)	Bamford Class	Coordinate (AGD/84 Zone 50)		GHD Comments
				Easting	Northing	
						chews on rim, very suitable nest chamber, breeding tree.
Additional Tree (217)	Marri	90	2	417654.8	6406840.1	Nest Tree. Recent and historic chew marks at hollow entrance and some recent chews on hollow internal wall. Defined chamber. However, due to access unable to get drone into a position to view bottom of hollow. Tree assessed with Alcoa Drone on the 10/06. Lots of Forest Red-tailed Black Cockatoos nearby.

Phase 2 Potential Nesting Trees

Of the 74 trees assed during phase 2, 59 of the trees were determined to not possess suitable hollows and were downgraded to potential nesting tree only (equivalent of Bamford class 4 and 5)

Alcoa Significant DBH Trees

As per the Alcoa Fauna Management Plan, Trees with Significant DBH (jarrah DBH>200cm; marri DBH>150cm) were identified from phase 1 WEPL survey data. Significant trees recorded from the Survey Area are identified in Table 12. These tree require follow up survey in upcoming Phase 2 to determine their health status and confirm if they are Significant Trees.

Table 12 Alcoa Significant DBH Trees

WEPL Tree Number	Species	DBH (cm)	Coordinate (AGD/84 Zone 50)	
			Easting	Northing
26	Jarrah	210	423653.6803	6403831.922
29	Dead	150	422361.1893	6409621.075
51	Marri	150	415457.8731	6411315.443
52	Marri	160	415461.5692	6411459.093
53	Marri	170	415387.567	6411458.025
54	Jarrah	200	423008.3668	6407097.336
81	Marri	155	424785.6338	6406125.857
82	Dead	160	424426.2572	6406327.898
125	Dead	160	429622.5534	6406897.765
140	Marri	150	425538.9382	6404311.966



WEPL Tree Number	Species	DBH (cm)	Coordinate (AGD/84 Zone 50)	
			Easting	Northing
141	Dead	160	425847.4812	6404538.118
143	Marri	170	427305.0087	6406925.554
144	Jarrah	200	425333.8654	6404596.49
159	Jarrah	210	427009.5103	6407325.893
171	Jarrah	200	427519.1007	6409121.8
187	Jarrah	220	427378.4064	6405788.744
190	Jarrah	210	427549.43	6405706.619
201	Jarrah	205	428266.8815	6405249.296
206	Marri	150	429062.3488	6405412.756
212	Jarrah	200	426657.4185	6406283.533



Conclusions and Recommendations

High quality black cockatoo nesting habitat is present within the jarrah-marri forest of the Survey Area.

Breeding Habitat

A combined total of 218 potential, suitable or known nesting trees were recorded during phase 1 and 2 of the survey.

Following phase 2 assessment six (6) trees confirmed as containing suitable nesting hollows (Bamford Class 3). Three (3) were identified as containing known nesting hollows with chew marks from Black Cockatoo nesting events (Bamford class 2). These trees are summarised below in Table 13

Table 13: Known Nesting trees from Phase 2.

WEPL Tree Number	Species	DBH (cm)	Coordinate (AGD/84 Zone 50)	
			Easting	Northing
48	Marri	120	415382.1	6411179
59	Marri	65	424653.3	6407729
Additional Tree (217)	Marri	90	417654.8	6406840.1

This report should be read in conjunction with the Schedule - Statement of Limitations. Should you have any queries regarding the above, please contact the undersigned on (08) 6162 8980.

Yours sincerely,

Western Environmental Approvals Pty Ltd



Andrew Fry
Associate and Lead Ecologist

Schedule

- Statement of Limitation

Appendices

- Appendix A: Phase 1 Survey Results
- Appendix B: Phase 2 Survey Results



Statement of Limitations

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Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. To the maximum extent permitted by law, no other warranty, express or implied, is made.

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APPENDIX A: Phase 1 Survey Results

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
1/05/2024	Marri	2	65	1 15-20 cm. chimney vertical mid canopy. Est height from ground 12 m. Old Minor chew marks probably BC.	414924.1295	6410510.124	Alcoa tree 1542	1
1/05/2024	Marri	3	95	1 hollow? 10-15cm, spout, 45degree, mid canopy, 20m, Alcoa tree 1830	414957.953	6410395.255	Alcoa tree 1830. Unclear if. Hollow still present, view obscured	2
1/05/2024	Marri	2	75	Hollow 1, 15cm, side entrance, 15m, chew marks Alcoa tree 1831. Hollow 2, 20cm, chimney, 15m, no chew marks	414952.9264	6410325.324	Alcoa nest tree 1831.	3
6/05/2024	Jarrah	3	60	1 hollow, spout, 12cm d, 20m high main trunk,	414765.4647	6410459.335		4
6/05/2024	Jarrah	3	0	1, spout, 12cm d, 120 cm diameter, 15m up in branch.	416503.0992	6407971.298	DBH not recorded	5
6/05/2024	Marri	3	0	Knot, 10cmd, 110 cm diameter , 20m main trunk, small potential chew marks	416472.3873	6408099.083	Smaller holes present in upper branches, too small for cockatoos, DBH not recorded	6
6/05/2024	Marri	3	110	Spout, 23cmd, 25 m branch off main trunk	416714.4464	6408294.544		7
6/05/2024	Jarrah	3	80	1hollow, spout at 90degree right angle, 15cm diameter, main trunk, 20-22m height off ground	414926.2654	6410334.925		8
6/05/2024	Marri	3	110	1 Short spout, 12cm diameter, 15m height, no chew mark, one small branch on side,	414717.1751	6410402.567		9
6/05/2024	Marri	3	85	1mid trunk hollow, 10cm entrance, 12m height, no chew marks,	416531.5989	6408330.469		10
6/05/2024	Marri	2	120	1 spout hollow, 12-15cm entry, 110 degrees entrance, old chew marks. 1 spout 10cm entry, 120-degree entry, no fresh chew marks	416741.93	6408292.871	Alcoa Nest Tree 6669. 1 potential chimney, unable to see feature, see photo	11
6/05/2024	Dead	3	120	4 spouts, unable to confirm if hollow due to high, 15m up	417363.156	6408882.8	Dead tree not ID to sp. I think it's Jarrah	12
7/05/2024	Marri	3	110	1, branch hole, 15cm d, 20m h, no chew	416767.6254	6407875.874		13
7/05/2024	Marri	3	80	1, potential chimney 27 m up off main trunk, 20cm d, no chew	417176.8226	6408134.339	Alcoa tree 1852. Not clear if hollow still present	14
7/05/2024	Jarrah	2	90	1hollow, knot, 15cmd 16 m high on limb, small evidence of chewing	423344.8214	6407347.859		15
7/05/2024	Marri	3	80	1, chimney, 30cm d, 10m up, no chew marks	423434.82	6407306.288	Dead tree	16
7/05/2024	Marri	3	65	1 chimney type hollow, 90-degree entry, 10m height, no chew marks,	416344.5655	6407529.099		17

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
8/05/2024	Jarrah	5	112	No hollow detected on Alcoa significant tree	423063.3858	6406526.694	No hollows detected but habitat marker painted on trunk, noted	18
8/05/2024	Dead	3	112	2 chimneys,30cmd+25cmd, 15m+22m, no chew on either	423184.1175	6406544.6	Probable jarrah	19
8/05/2024	Marri	2	105	1large knot/short spout, 25cmd, 13mhigh, slight chew marks	421253.4693	6409283.128		20
8/05/2024	Jarrah	5	180	Hollows not apparent but huge tree with lots of snags,	423707.771	6404850.703	Marked as habitat tree, no number	21
9/05/2024	Jarrah	2	60	1, knot, 20cmd, 7m up, chew evidence	423759.5836	6410915.115		22
9/05/2024	Jarrah	3	55	1 chimney, 15cm diameter, 7-8m height	425885.6326	6404992.285	Burnt out	23
9/05/2024	Marri	3	70	Chimney, 30cmd, topmost main trunk, 8m up, no chew	425919.5424	6404949.532	Main trunk dead, regrowth from base	24
9/05/2024	Jarrah	3	100	1 spout hollow, 15cm diameter, 22m height	425650.1971	6404988.291		25
9/05/2024	Jarrah	3	210	2 potential spout, 15cm diameter, unsure as covered by foliage	423653.6803	6403831.922	Unable to clearly photograph	26
9/05/2024	Jarrah	3	75	1 top chimney hollow, 15cm diameter, 17m height	423655.0492	6403764.364		27
9/05/2024	Jarrah	3	100	1 spout, 20cmd, 15m up, no chew	424559.0165	6404963.793	Dead	28
10/05/2024	Dead	3	150	1 knot,12cmd, 13m up, no chew marks	422361.1893	6409621.075	Not identified to species but probably jarrah	29
10/05/2024	Jarrah	3	110	Spout, 25cmd, 15m up on branch,	422354.8132	6409441.694	Red tails foraging directly adjacent	30
10/05/2024	Marri	3	105	1 chimney, 1 spout type hollow, 15cm diameter, 20-23m height, no chew marks, recently burnt	420537.919	6410991.158		31
10/05/2024	Marri	3	80	1 chimney, 2 side spout, 15cm diameter, 10m height, no chew marks	422250.0542	6409553.322		32
10/05/2024	Jarrah	3	140	2 side hollow and 1 spout on side, 13cm diameter, 25m height, no chew marks	422421.3255	6409407.791		33
20/05/2024	Marri	3	60	1 hollow, chimney/ elbow, 8 m high, no chew	417351.7982	6406679.153		34
20/05/2024	Jarrah	3	70	One 30cm side entry hollow, mid trunk at 13m. Base of entry looks smooth and worn. Rim is thin with minor cracking. Think shallow hollow present.	423291.8409	6404410.265		35
20/05/2024	Jarrah	3	75	1 hollow 10-15 cm wide. Knot in mid trunk, Smooth lip. No chew	423142.9005	6410149.193		36
20/05/2024	Marri	2	75	1 potential chimney type hollow, 15cm diameter, 12m height, potentially old chew marks around edges.	415157.8517	6410995.569		37
20/05/2024	Marri	3	80	1 chimney with 20 cm entrance. Top of main trunk. 10m from ground. No wear or chew. Think unlikely developed to suitable size.	422973.8411	6406965.971		38

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
20/05/2024	Jarrah	2	85	1 side opening, 13cm diameter, unsure if extends all the way, old chew marks on left side of hollow, 20m height	417663.4922	6406875.685		39
20/05/2024	Marri	4	85	No features observed, burnt with lots of side tree shoots	415285.3801	6411365.506	Alcoa Sig tree 1526	40
20/05/2024	Marri	3	90	One 30-40cm diameter chimney hollow in dead main trunk at 15m. Rim thin and vertical cracks. No chew or wear evidence	422883.9076	6410023.559	Central main trunk dead and heavily rotted	41
20/05/2024	Marri	3	95	1 potential chimney, unable to confirm depth, 15m height, 20cm diameter. No chew marks	415342.0771	6411059.69		42
20/05/2024	Dead	3	100	3 hollows mid tree. 20-30 cm entrances. Lowest hollow 5-6 m from ground. Side entrance hollows, smooth around lip, cracking above and below the middle hollow. No chew.	423066.6649	6410096.708		43
20/05/2024	Jarrah	3	105	2 hollows. One spout, one mid trunk/ side entrance. Approx 20 cm openings. 10 m from ground. Smooth lip on one side of spout. Appears unused. No wear or chew.	423057.9277	6410116.027		44
20/05/2024	Marri	3	105	1 chimney and 1 spout, 13cm diameter on spout, chimney diameter unsure. 20m height, recently burnt.	415071.8697	6411084.198		45
20/05/2024	Marri	3	115	1 chimney running down main trunk, 30cm diameter, 15m height, burnt out, no chew marks	415136.8993	6410920.305		46
20/05/2024	Jarrah	3	120	Three hollows. 1st side entry at 30cm mid main trunk. 2nd side entry 25cm open at elbow upper branches. 3rd 10 by 15cm upwards angle side entry in upper branches. All have wear around rim. Think unlikely BC hollow depth	423249.6569	6410094.1	Tree is dead. Dropping branches	47
20/05/2024	Marri	3	120	Chimney, top canopy, 20 cm diameter, 17 m up, no chew	415382.1455	6411178.559	Badly burnt but not dead yet	48
20/05/2024	Jarrah	3	125	Multiple potential chimney and side spout hollows, unable to clearly see depth due to it being recently burnt.	415319.0852	6411335.714		49
20/05/2024	Marri	2	130	Spout, upper branch, 15cm diameter, 10m up, potential chew	415390.4358	6411035.018	Hollow looked recently burned but good otherwise	50
20/05/2024	Marri	3	150	Canopy, chimney, 50cm diameter, 12m up, no chew, see comments	415457.8731	6411315.443	Burnt out marri, Alcoa Sig Tree	51
20/05/2024	Marri	5	160	No obvious hollow	415461.5692	6411459.093	Burnt out Marri, Alcoa Sig Tree	52
20/05/2024	Marri	2	170	1 spout, 12cm diameter, upper branches, 20mm up, likely chewed	415387.567	6411458.025	Alcoa Significant tree, Badly burnt	53
20/05/2024	Jarrah	3	200	One 20cm knot hollow slight upwards facing angle. Mid trunk at 6m. Minor wear. Think likely unsuitable.	423008.3668	6407097.336	Potential Alcoa sig tree. Burnt out at base, main trunk snapped at 10m.	54
21/05/2024	Marri	2	0	1 spout 25cm entrance. 20 m from ground. mid to upper Canopy. Old minor chew marks from BC. Think prospecting.	424592.8237	6406057.729	DBH not recorded	55

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
21/05/2024	Marri	2	60	Knot, on top of horizontal branch, 17cm diameter, 9m up, slight chew	425893.4067	6409910.891		56
21/05/2024	Marri	3	60	1 chimney type hollow, 13cm diameter, 15m height, no chew marks, termite infested	427284.3373	6408989.527		57
21/05/2024	Marri	3	60	1 side entrance hollow, 10cm, 9m height, no chew marks	427328.7001	6408988.148		58
21/05/2024	Marri	2	65	20 cm opening chimney hollow at 10m is snapped off main trunk. Has a small amount of fresh BC chew marks on rim. More older chew marks appear to be around rim. Hard to see view from NW angle.	424653.2504	6407728.923		59
21/05/2024	Marri	3	70	10-15 cm hollow. Sideways Knot.12 m from ground. Access to hollow is not good. Mid truck top portion. no chew, minor wear present unlikely to have suitable hollow.	423663.5615	6407024.366		60
21/05/2024	Marri	3	70	1 spout hollow, 10cm diameter, 10m height, no chew marks	428017.6016	6408190.847		61
21/05/2024	Marri	3	75	Chimney, 30cm diameter, 8m up, no chew	426949.8129	6409903.433	Marked with a white H	62
21/05/2024	Marri	3	75	1 chimney type hollow, 15cm diameter, 15m height, no chew marks observed	427260.4211	6408815.504		63
21/05/2024	Marri	3	80	1 side entrance hollow, 10cm, 7m height	427343.9239	6408960.065		64
21/05/2024	Marri	3	80	1 chimney type hollow, 12cm diameter, 10m height, no chew marks	428016.3424	6408197.885		65
21/05/2024	Dead	3	85	One potential spout, 10-20 cm entrance. Rough edges. Approx 20 m from ground. No chew or wear. Unlikely to be suitable hollow.	424427.7372	6406233.428		66
21/05/2024	Marri	3	85	Think a 20-30 cm chimney present in snapped main trunk at 20m. Rim looks thin with vertical cracks. No chew or wear. Needs drone	424755.1145	6406548.32		67
21/05/2024	Jarrah	3	90	1 chimney hollow and 1 side spout, 13cm diameter, full depth unable to be observed, 111m height, no chew marks, foraging evidence under tree	426114.3839	6409983.089		68
21/05/2024	Jarrah	3	90	1 side spout hollow, 15cm diameter, 12m height, no chew marks but lots of white fluffy feathers around tree	428004.838	6408199.367		69
21/05/2024	Marri	3	90	1 side entrance hollow, 15cm diameter, 20m height, no chew marks observed	426061.8651	6409972.767	Alcoa Sig Tree 4005	70
21/05/2024	Jarrah	3	95	50cm chimney hollow in dead snapped off main trunk at 12m. Internally blackened burnt out. Rim thin with vertical cracking. No chew or wear marks. Think hollow present but unlikely suitable	423793.6815	6407050.284	Main trunk dead, base burnt out.	71
21/05/2024	Jarrah	5	95	Not obvious maybe, in upper branches	426853.1623	6410361.092	Marked with a white H	72
21/05/2024	Marri	2	95	Three hollows. 2x 15 -20cm side opening knot type on main trunk at 14m, no chew. chimney with opening 30cm at top of snapped main trunk at 15m. Rim	424711.5221	6406029.028	Alcoa nest tree tag 1451. Tree healthy	73

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
				thin with vertical cracks. Small patch of fresh chew from BC think prospecting. Older chew marks on rim.				
21/05/2024	Marri	3	105	1 side spout, 12cm diameter, 12m height, no chew marks	426092.1122	6409959.723		74
21/05/2024	Marri	3	110	Think has 30cm chimney hollow in main snapped off trunk at 15m. Hard to see, need drone. Looks like thin edges of dead wood. Good form for typical chimney hollow type	424885.4096	6407693.726		75
21/05/2024	Jarrah	3	125	1 potential side spout, 13cm diameter, 15m height, no chew marks	426136.1357	6409976.727		76
21/05/2024	Marri	5	140	No obvious hollow,	426307.9995	6409628.231	Alcoa Sig tree 2518	77
21/05/2024	Marri	3	140	1 hollow, 40 cm chimney in main trunk. Snapped at 18 m. Unsure is developed to depth. Wear marks on lower edge. No chew.	424077.2033	6407189.947	View from west side.	78
21/05/2024	Marri	3	140	1 hidden side entrance, 13cm diameter, 20m height, no chew marks	427290.7652	6408942.915	Hard to see	79
21/05/2024	Jarrah	3	150	One upwards facing hollow 20cm entry in large 40cm diameter branch. Upper canopy at 18m. Heavily rotted with cracks along branch. Looks like whole limb mat be hollowed out. May lack suitable chamber	424698.149	6407366.237		80
21/05/2024	Marri	5	155	No hollows, sig tree only.	424785.6338	6406125.857	Alcoa sig tree. Main trunk dead and snapped off at 10m, poor condition. Side growth alive still	81
21/05/2024	Dead	3	160	6 potentially suitable hollows. 3 side/knot entrance in top canopy, entrances 10-20 cm wide. 2 potential vertical 15-25cm wide. and 1 side entrance main trunk 20 cm wide. 10-20 m from ground. No chew, wear present.	424426.2572	6406327.898	Jarrah	82
22/05/2024	Jarrah	2	0	Spout. 15-20 cm entrance. 15m from ground. Rough edges top of hollow opening. Wear and possible BC chew around lip and on back will of hollow. Think prospecting. Think unsuitable	429800.8126	6407408.892	DBH not recorded	83
22/05/2024	Marri	3	75	1 spout/ side entrance knot. Smooth lip. Entrance 10-15cm.8 m from ground. . Wear present. No Chew	428492.0107	6407736.821		84
22/05/2024	Marri	3	75	1x chimney hollow 25cm entry at 15m high at snapped off main trunk. Small side entry below which suggests trunk hollow several metres deep.	425931.8672	6406184.904		85
22/05/2024	Marri	3	75	2x side entrance mid trunk at 10 by 20cm. 10m high in the central trunk	426960.4671	6406043.721		86
22/05/2024	Jarrah	2	85	1 Hollow in upper canopy. 15-20 cm entrance. Knot, side entrance. 12 m from ground. Chew present. Think BC.	429724.0835	6407425.666		87
22/05/2024	Jarrah	3	95	2 hollows. 1 side entrance knot, with 15-20 cm entrance. 1m 1mfrom ground. 1 side entrance fissure, with 20cm entrance. 7 m from ground. No chew presents.	429829.908	6407213.535		88

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
22/05/2024	Marri	3	95	1x 45 degree opening knot type hollow 30cm opening. Mid trunk at 10m. 1x knot hollow 10-15cm open in large branch at 14m. Think this hollow too small.	425999.3516	6406129.948		89
22/05/2024	Marri	3	95	1x25cm spout hollow, 45-degree angle. 1xside entry hollow 15cm opening. Both at 14m in dead main trunk. Think hollow to 1m present.	425997.4245	6406222.943		90
22/05/2024	Marri	3	95	1x 40cm upwards facing knot hollow at 15m off the ground. Thin rim from recently snapped branch. Unlikely suitable	426070.1163	6406159.957		91
22/05/2024	Jarrah	3	100	2 hollows, spout, 15cm diameter, 10m up, no chew, spout 17cm d, 12m up, no chew	430350.6652	6407844.993		92
22/05/2024	Jarrah	3	105	1 side entrance knot, mid trunk. 10 m from ground. 10-15 cm entrance. Think not suitable. No chew.	427702.6205	6409080.368		93
22/05/2024	Jarrah	3	110	1 chimney and 1 sprout 1 mid trunk side entrance, 10 - 12m from ground. 30 -40 cm entrances. No chew. May be unsuitable due to access and large entrance.	427717.0676	6408875.493		94
22/05/2024	Marri	3	110	1x chimney and 1x spout that possibly connect internally. 40cm and 25cm openings at 12metres high at the end of main trunk.	426189.0896	6406412.75		95
22/05/2024	Dead	3	120	1 spout with 15-20 cm entrance. Mid trunk, 15 m from ground. No wear or chew.	429727.8131	6407352.168	Jarrah badly burned	96
22/05/2024	Jarrah	3	120	1 knot. 10-15 cm entrance. 10 m from ground. No chew. Think maybe unsuitable.	429775.2957	6407424.099	Badly burnt	97
22/05/2024	Jarrah	3	140	1 knot mid trunk 12m from ground. 20 -30 cm entrance. Minor wear present. No chew.	427670.1156	6409073.795		98
22/05/2024	Jarrah	3	160	1 fissure, side entrance. 35-40cm entrance. hollow mid trunk, 6 m from ground. No chew or wear. Fire damage present.	429354.5014	6407427.415		99
23/05/2024	Jarrah	3	70	Knot/spout, 18cm diameter, 8m up. Mid trunk. No chew	430030.207	6408817.953		100
23/05/2024	Jarrah	3	70	Knot, midtrunk, 20cm diameter, 9m up, no ch3w	430290.6566	6408722.868		101
23/05/2024	Jarrah	3	80	Knot/short spout, 25cm diameter, 45 degrees, 15m up, not obviously chewed but small potential	430397.7435	6408406.864		102
23/05/2024	Jarrah	3	80	1 fissure hollow, mid trunk. 30 cm entrance. 10m from ground. No chew. Think burnt out jarrah.	430122.1122	6408993.235		103
23/05/2024	Jarrah	3	80	1 knot, side entrance. Towards upper canopy. 10-15 cm entrance. 12 m from ground. No chew. Fire damage present.	429940.9505	6409339.35		104

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
23/05/2024	Jarrah	3	80	1 knot with 15 cm entrance, mid trunk. 8 m from ground. No chew.	430067.7659	6407109.647		105
23/05/2024	Jarrah	3	85	1x knot hollow 12cm opening. At 20m in main trunk. well defined entry, no chew marks. unsure of depth.	427385.4694	6405371.78		106
23/05/2024	Jarrah	2	90	Knot, 15cm diameter, 15 m up, midtrunk, chew marks	430041.0254	6406572.761		107
23/05/2024	Jarrah	3	95	3 hollows. 2 spout, one spout in top canopy 20 cm entrance. Other spout mid trunk 10-15 cm. 10-15 m from ground. Knot with above/side entrance with 25-30 cm entrance. 12 m from ground. No chew.	430042.4408	6407043.63		108
23/05/2024	Marri	3	95	1x 12cm opening spout hollow. At 15m in a side branch. No chew. Up to 2m deep. Cracks in wall. entry not well defined. Is a chimney hollow also present, base burnt out, not suitable.	427298.4047	6405578.402		109
23/05/2024	Marri	3	95	1x vertical opening knot 20cm opening. 15m high in main trunk. No signs of use. Clear well-rounded entrance.	427388.7828	6405443.656	10m outside survey area.	110
23/05/2024	Marri	3	95	1x 30cm opening chimney hollow at 16m in main trunk. Hollow well defined, thin walled appears connected to other smaller hollows. Entry partially obstructed by branches. Think likely hollow present.	427233.507	6405603.886		111
23/05/2024	Dead	3	100	One knot. With 10-15 cm opening. towards upper canopy. 15 m from ground. One knot. With 10-15 cm opening. towards upper canopy. 15 m from ground. Chew present at bottom of hollow. Think prospecting. Wear present at bottom of hollow. No chew.	429662.9113	6406936.642	Branch snap next to hollow many have caused this damage	112
23/05/2024	Jarrah	3	100	1 spout at top canopy. 10-15 cm entrance. 12m from ground. No chew. Think unsuitable.	429959.3951	6407159.447	Jarrah with fire damage.	113
23/05/2024	Marri	3	105	1 hollow. Knot, side entrance at upper canopy. 15 cm entrance. Smooth lip around entrance. 20 m from ground. No chew.	430104.2483	6408838.143		114
23/05/2024	Jarrah	3	110	Knot, midtrunk, 90 degree, 15cm diameter, 10 m up, hole burnt but scuffs maybe chew around edge	429688.8714	6406759.764	Maybe class 2, dbh hard to measure as standing on stilts	115
23/05/2024	Jarrah	3	110	3 hollows. 2 knots, smooth edges. Mid trunk. Entrances are around 15 cm. No chew. 1 spout with 10-15 cm entrance. 10 m up from ground. No chew.	429543.0102	6406969.885		116
23/05/2024	Marri	3	110	1 10cm side spout hollow, 10m height, no chew marks, rough rugged entrance. Tree has recently broken branches on ground.	424729.8422	6405064.346		117
23/05/2024	Dead	3	120	1 knot, side entrance. Smooth lip around edge. 10-15 cm opening. 18m from ground. 1 fissure. Directly about knot. 15 cm opening. m 18 from ground. No chew.	430403.0444	6408275.314	Jarrah with fire damage	118
23/05/2024	Jarrah	3	120	Spout with 10-15 cm hollow. Side entrance. 20-25 m from ground. No chew.	430392.3466	6408021.679		119

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
23/05/2024	Jarrah	3	120	2 hollows. 1 spout with 15-20 cm entrance. 1 knot within Y of tree. With 10-15 cm opening. Smooth edges. 15 m from the ground. No chew.	430010.2818	6407097.217		120
23/05/2024	Marri	2	120	1x side entry slit hollow 25 high 15 wide. In main trunk at 20m. Fresh chew marks on top of entry and older chew around the rim.	425329.895	6404721.352	Alcoa nest tree tag 2059	121
23/05/2024	Marri	3	120	1x chimney hollow entry 50cm. In main trunk snapped off at 7m. Rim thin and hollow present but fire blackened internally. Think unlikely suitable, too low, open and exposed.	425378.904	6404057.723		122
23/05/2024	Marri	3	120	1x side opening knot type hollow 10cm wide 20cm high. At 20m in main trunk. Entry well defined with some wear marks. Possibly a chimney hollow present 30cm entry at 22m at top of snapped main trunk.	415924.979	6403411.85		123
23/05/2024	Jarrah	3	130	Knot, mid trunk, 30cm diameter, 10m up, no chew	430503.7147	6408576.146		124
23/05/2024	Dead	3	160	1 Knot mid trunk. 15 cm entrance. 10 m from ground. No chew.	429622.5534	6406897.765	Jarrah	125
24/05/2024	Jarrah	3	60	Fissure, midtrunk, 12cm diameter, 5 m high, no chew	427158.1597	6407018.191		126
24/05/2024	Marri	3	60	Spout, 2 holes in spout, both at 45 degree, 18cm diameter for both 13m up, no chew	427225.8792	6407041.455		127
24/05/2024	Marri	3	60	1 15cm chimney type hollow, 10m height, undoubtedly dead opening, easy entry	427047.7688	6407104.369		128
24/05/2024	Marri	3	60	1 potential chimney type hollow, 15cm, 7m height, unrounded entrance, unsure of depth	426976.5147	6407159.597		129
24/05/2024	Marri	3	65	1 chimney hollow. 25 cm opening Cracking below entrance 1m. 8 m from ground. no chew. Minor wear.	425726.149	6404573.985		130
24/05/2024	Marri	3	75	2 potential chimney type hollows, 15cm, 10m height, both are hidden and unable to identify depth.	426954.4	6407121.973		131
24/05/2024	Jarrah	3	85	1 Knot side entrance 25-30 cm opening. 10 m from ground, no chew. Think unlikely.	425464.7734	6404272.929		132
24/05/2024	Marri	3	85	1 17cm knot hollow that connects with chimney, 17m height, no chew marks or sign of use, well rounded entrance, highly suitable. It's the only one on the tree, others are burnt out marks	426965.1657	6406837.529	Alcoa sig tree 1748	133
24/05/2024	Marri	3	90	1 15cm chimney type hollow and 1 12cm potential side spout, 15m to 20m height, both openings are not well rounded and no chew marks or sign of use.	416260.1593	6403494.07	Alcoa sig tree 1531	134
24/05/2024	Marri	3	95	1x side entry 30x40cm in Main trunk at 18. Well defined hollow.	425511.2028	6404435.747	Alcoa nest tree 6289 (Tag missing)	135

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
24/05/2024	Jarrah	3	100	1x 15 cm side entry in main trunk at 15. Hollows well defined worn edges, looks used by fauna. 1x 15cm side opening knot type hollow at 17m, access angle poor for BC. Well defined smooth rim.	425618.226	6404504.455		136
24/05/2024	Jarrah	2	110	1 side knot type hollow, 13cm, 15m height, opening is clean and rounded, well-hidden and with potential chew marks on edges, unable to determine depth of hollow.	427028.1926	6406823.184		137
24/05/2024	Marri	3	110	1x 30 cm upwards angle knot hollow in main trunk at 18m. Very good looking hollow. Has bees in it currently. View obscured by small branch.	425914.1296	6404461.176	Alcoa tree tag 1735	138
24/05/2024	Dead	3	120	1 upward facing Knot. With 20 cm entrance. Mid trunk, 8 m from. ground. No chew.	425853.8089	6404581.862		139
24/05/2024	Marri	2	150	Hollow with upper opening. 20 cm opening. 15 m from ground. Minor chew marks around entrance and back of wall.	425538.9382	6404311.966	Alcoa sig tree 2064	140
24/05/2024	Dead	3	160	1 upward facing Knot. 10cm entrance mid trunk. 20 m from ground. No chew. Think unlikely	425847.4812	6404538.118	Jarrah	141
24/05/2024	Jarrah	3	170	1 side entrance knot. 20-25 cm entrance. Mid trunk. 10 m from ground. No chew.	425581.8928	6404538.754		142
24/05/2024	Marri	5	170	No obvious hollow	427305.0087	6406925.554	Alcoa Sig Tree, sprayed with a H	143
24/05/2024	Jarrah	3	200	1 Upward facing knot hollow. 3/4 way up the trunk. 12m from ground. No chew. Wear present.	425333.8654	6404596.49	Sig tree. Over 2m	144
22/05/2024	Dead	5	0	Alcoa significant tree 2854 has presumably fallen	429409.239	6407333.987	Alcoa Sig Tree 2854	145
4/06/2024	Blackbutt	3	115	1x side entry 30x 40cm at 25m in main trunk. Very good-looking potential hollow. Potential for upwards facing spout hollow 25cm opening I snapped side branch at 15m.	413159.1754	6402742.473	Located 10m south of unit and solar panels	146
4/06/2024	Marri	3	80	1x chimney 30cm entry snapped main trunk at 18m. Recent broken. Section on ground is a hollow. 1x side entry 30x 25cm in fork of main trunk. Think main trunk is hollowed out.	416301.0751	6412861.486	5m north of telemetry unit	147
4/06/2024	Blackbutt	3	120	1x 20cm upwards angled hollow opening in 45 degree sloped main trunk at 12m. . Rim smooth and well developed. Hard to see, look from east side. 1x spout hollow 50-degree angle. Rim rough and flaky, think unlikely suitable	419603.2588	6405291.218		148
4/06/2024	Jarrah	3	95	1 knot side entrance. 10 cm opening. mid trunk approx. 10 m from ground.no chew. Think burnt jarrah, maybe suitable hollow.	430041.4462	6406126.358		149
4/06/2024	Jarrah	3	85	1 side entrance knot hollow. With 10-15 cm entrance. 15 m from ground upper canopy. May be burnt out. No chew.	430285.6771	6406454.158		150

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4/06/2024	Jarrah	3	70	1 side entrance knot/fissure mid trunk with 15-20 cm entrance. 6 m from ground. No chew, two other hollows around upper canopy, think too small for BC.	430404.3225	6406281.074		151
4/06/2024	Jarrah	3	150	1 knot side entrance with 10 cm opening. Mid trunk, approx. 15m from ground. No chew	430408.2695	6405871.243		152
4/06/2024	Jarrah	2	80	1 side entrance type hollow, 25-30cm diameter, 13m height, slight chew marks on bottom of hollow, unsure of depth.	430498.6589	6406361.88		153
4/06/2024	Jarrah	3	70	Knot, upper canopy, 12cm diameter, 10m up, no chew	430778.2752	6406650.747		154
5/06/2024	Marri	3	70	1 potential side knot hollow that connect to a potential chimney 14cm diameter, 15m height, no chew marks	426659.3641	6406566.002		155
5/06/2024	Marri	2	100	1 knot type hollow, 20cm diameter, 20m height, well rounded entrance, clear fresh chew marks.	426888.1687	6406445.336		156
5/06/2024	Jarrah	3	120	1 side entrance knot at top canopy. 15 m from ground. 10-15 cm entrance. Think unlikely BC hollow. Wear and discoloration within on back wall.	426982.7521	6406748.452		157
5/06/2024	Jarrah	2	180	1 side entrance type hollow, 13cm diameter, 13m height, old chew marks present.	426999.3366	6407373.796	10m out of area, DBH is burnt outs	158
5/06/2024	Jarrah	3	210	2 spouts, both 15cm diameter, but upper canopy, 18m up, no chew, see comments	427009.5103	6407325.893	Fused to adjacent Alcoa sig tree, significant dbh too, but burnt out at base	159
5/06/2024	Marri	4	140	Unable to detect hollow	427010.9448	6407322.517	Alcoa sig tree 163, incredibly, fused to adjacent jarrah	160
5/06/2024	Marri	3	135	1 spout type hollow, 15cm diameter, 20 to 23m height, no observed chew marks or signs of use. Other adjacent trunk has a slit and shows the entire stem is hollow.	427045.6759	6407380.917	Previous H mark	161
5/06/2024	Marri	3	95	1 side/spout type hollow 13cm diameter on lowed canopy, 10m height. 1 potential chimney type hollow, 12cm diameter, 15m height, can see vertical cracking. No chew marks on both.	427136.8397	6407335.574		162
5/06/2024	Marri	4	105	1 side spout has broken off, hollow trunk appears not hollow. No other features observed	427179.8599	6407305.66	Hollow has broken off. Alcoa Significant tree 3885	163
5/06/2024	Marri	3	0	1 potential chimney type hollow, 12cm diameter, 17m height in upper canopy, canny determine depth but chimney is dead wood. No chew marks or foraging evidence observed	427192.9183	6407334.51	DBH not recorded.	164

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
5/06/2024	Dead	3	95	1 upwards facing knot with smooth lower lip. 15 cm entrance. Mid trunk approx. 12 m from ground. No chew. Think burnt jarrah. Other hollows present. Think they are unsuitable.	427221.4873	6406692.729	Jarrah	165
5/06/2024	Marri	3	110	1 side spout hollow 15cm diameter and 1 potential side entrance hollow on the same trunk 12cm diameter. 13 to 16m height, no chew marks on both, upper canopy. Foraging evidence under tree	427273.5603	6407387.362		166
5/06/2024	Marri	3	90	Knot, upper trunk, 15cm diameter, 9m up, scratched 3dges probably natural and not chewed	427275.2843	6407421.824		167
5/06/2024	Marri	3	80	2x 20-30cm chimney hollows in upwards facing snapped branches at 15m.	427437.3293	6406452.882	Alcoa habitat tree, no tag number.	168
5/06/2024	Jarrah	3	140	1 chimney with 20 cm entrance. Mid canopy. Approx 10 m from ground. No chew.	427461.6979	6406734.249		169
5/06/2024	Dead	3	60	Spout, upper trunk, 20cm diameter, 9m up, no chew. Very good-looking hole	427469.0155	6406633.944	Probable marri	170
5/06/2024	Jarrah	5	200	no hollows	427519.1007	6409121.8	Significant tree by DBH. Not existing marked Alcoa tree. Alive but trunk snapped at 10m .	171
5/06/2024	Marri	3	75	1x well-formed 30cm side entry hollow at 10m in main trunk. Has wear marks, no chew visible. Bee honeycomb at back, no activity from bees observed	427612.8155	6409310.862	Alcoa tree tag 1757	172
5/06/2024	Marri	3	80	1 potential side spout type hollow, 15cm diameter, 10m height, no chew marks.	427629.0976	6407208.744		173
5/06/2024	Marri	3	105	1 side entrance spout with 15-20 cm entrance. 10 m from ground. Upper canopy. no chew.	427660.7299	6406706.021		174
5/06/2024	Marri	5	85	Non apparent	427684.0028	6407103.031	Alcoa significant tree 463,	175
5/06/2024	Marri	3	75	1 potential chimney type hollow, 15cm diameter, 10m height, no chew marks, unable to see depth	427880.1244	6406559.428		176
5/06/2024	Marri	3	100	1x upwards facing 30cm knot hollow. Upper main trunk at 15m. Well-formed hollow mouth good position and angle, think likely suitable hollow forming.	427965.8677	6406442.149		177
5/06/2024	Dead	3	95	1x potential chimney hollow 40 -50 cm at 15m in dead snapped main trunk. Think likely not suitable as too open. Needs drone to confirm	429272.6882	6407472.912	Was a marri. Decaying.	178
5/06/2024	Jarrah	3	140	1 side entrance spout hollow with 20 cm entrance. Upper canopy, approx. 14 m from ground.no chew. Think may be burnt but has potential suitable hollow.	429364.1752	6407470.779		179

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5/06/2024	Marri	3	140	1x 50cm opening chimney hollow in dead main trunk at 10m. Dead main trunk appears hollow for some meters. 1x side entry 40cm diameter at 8 m connecting into hollow of main trunk	429413.6869	6407753.72	Main trunk dead, resprouting from base	180
5/06/2024	Jarrah	3	110	One potentially suitable hollow, upward facing fissure with 20 cm entrance. Mid trunk/large branch from main trunk. Approx m 10from ground. Other Large opening in main trunk appears to be formed by fire.	429422.1558	6407533.595		181
5/06/2024	Marri	3	85	1x 25 cm side entry going into 45-degree branch at 8. Rim well defined but back walls blackened. Think unlikely to be suitable	429433.2673	6407757.852		182
5/06/2024	Jarrah	3	130	1 upper/ side entrance knot with 15-20 cm entrance. Defined rim. Mid trunk toward top approx. from No ground. Chew.	429524.1173	6407626.554		183
6/06/2024	Jarrah	3	80	2 spouts, both top canopy 15cm diameter, 28m up. No chew	426903.2064	6405905.119	Dead tree, dropped branches all hollow	184
6/06/2024	Jarrah	3	80	Whole upper branch hollow, two entrance, 30-40 cm diameter, 8m up, no chew	426984.8717	6405956.541	Unable to see if hollows lead further I to trunk	185
6/06/2024	Marri	3	60	1 potential chimney type hollow, 15cm diameter, 10m height, no chew marks, rough opening	427330.1809	6405305.559		186
6/06/2024	Jarrah	4	220	Has small and shallow hollows. Either	427378.4064	6405788.744	Significant tree. Is standing with its canopy branches but 80% have died. Not in good condition	187
6/06/2024	Marri	3	80	Two potential chimney type hollows, both around 15cm diameter and 100dbh m brunt, no chew marks, rough openings. Entire run shows hollow cracking	427465.7505	6405423.592		188
6/06/2024	Jarrah	2	90	Knot, midtrunk, 20cm across, 8 m up, very defined chew	427523.971	6405445.037		189
6/06/2024	Jarrah	5	210	No suitable BC hollows.	427549.43	6405706.619	Sig tree more than 2 m DBH	190
6/06/2024	Marri	3	90	1 potential side spout, 14cm diameter, 10m height, no chew marks. Has vertical cracking	427555.2585	6405355.669		191
6/06/2024	Jarrah	3	70	Spout, midtrunk, 18cm diameter 15m up, no obvious chew but worn around edges	427570.5426	6405428.518		192
6/06/2024	Marri	3	110	1x spout hollow at 45 degrees. Main opening 35cm. Side opening 25cm. Think whole branch is hollow. Angle may make unsuitable but is a well-developed hollow. 1x potential chimney 20cm at 18m. Needs drone	427588.3425	6405693.846		193
6/06/2024	Jarrah	3	90	Knot, 25cm diameter mid trunk, 15 up, no chew	427589.9485	6405105.248	Could possibly be burn hole	194

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
6/06/2024	Marri	3	85	1x chimney 25cm opening in large vertical branch off main trunk at 12m. Rim thin and well defined. Snapped branch 1m long may not allow sufficient depth developments.	427611.6538	6405685.868		195
6/06/2024	Marri	3	105	1 chimney in upper canopy. 40 cm entrance with thin rim. Think not fully developed to depth. 8 m from ground. No chew.	427761.5009	6405550.885		196
6/06/2024	Marri	3	110	1x chimney 40cm opening at 10m in snapped main trunk. Hollow looks very well formed, tree living around rotted heart wood. High potential for suitable hollow or formation	427819.1219	6405447.421		197
6/06/2024	Jarrah	3	130	1 spout side entrance. 15 cm opening. defined rim. 6m from ground. Unlikely BC hollow.	427881.9247	6405523.407		198
6/06/2024	Marri	3	65	1x 30 cm chimney hollow in snapped main trunk at 12m. Hollow well defined, thin rim, think likely developed to depth. Main trunk dead and decaying. Resprouting from base	427937.1211	6405546.494		199
6/06/2024	Marri	3	130	1 potential side spout, 15cm diameter, 15 m height, mid trunk. No chew marks	428011.5829	6405263.759		200
6/06/2024	Jarrah	5	205	No hollow, but significant DBH over 2m	428266.8815	6405249.296		201
6/06/2024	Marri	3	105	1x potential chimney 25cm diameter at 15m in central trunk. Rim rough not well formed, think unlikely hollow is well developed. 1x upwards opening knot hollow 15cm diameter at 14m in main trunk.	428455.9238	6407950.661		202
6/06/2024	Marri	3	120	2 hollows. 1 spout with side entrance and 20 cm entrance. Entrance has thin wood. Spout is mid trunk and approx. 8 m from ground. 1 Chimney at top with large opening think 50 or more cm. No chew. Think both hollows are connected.	428549.5963	6405600.743		203
6/06/2024	Marri	3	75	1x potential chimney hollow 30-40 cm opening in snapped main trunk at 12m. Think unlikely developed to depth but rim is thin and section dead. Needs drone to confirm.	428589.6013	6405659.162		204
6/06/2024	Jarrah	3	120	1 knot in top canopy with 10 cm entrance. 15 m from ground. Defined rim. Think burnt. No chew.	428813.7443	6405524.32		205
6/06/2024	Marri	5	150	No hollows	429062.3488	6405412.756	Sig tree with dbh of 1.5 m	206
6/06/2024	Marri	3	75	1x upwards facing slit hollow, 50cm high 15 wide. At top of main trunk at 12m. Well defined with wear and potential old, weathered chew marks.	429116.5946	6405366.066	Alcoa habitat tree tag 1653. Also tag 1753 on ground.	207
7/06/2024	Jarrah	3	110	1 spout with entrance of 40 cm. Upward facing. 8 m from ground. Thin rim. No chew. Think burnt jarrah. One large branch of ground confirms tree is hollow forming.	426561.8228	6406308.59		208

Date	Species	Bamford class	DBH	Hollow Data	Easting	Northing	Comments	Tree Number
7/06/2024	Jarrah	3	100	1 knot upper canopy, 20cm diameter, 20m up on branch, no chew	426624.7014	6406396.582		209
7/06/2024	Marri	3	65	1 potential chimney type hollow, 20cm diameter, 8m height, no chew marks	426629.8078	6406379.047		210
7/06/2024	Marri	3	60	1 potential chimney type hollow, 15cm diameter, 10m height and no chew marks, vertical cracking observed on main trunk	426635.1916	6406371.059		211
7/06/2024	Jarrah	3	200	2 hollows. 1 potential spout with 15 cm opening. Difficult to view. Top canopy defined thin rim. 15m from ground. May no longer be suitable. 1 Upward facing hollow in upper canopy with 15cm entrance. 12m from ground. No chew on either hollow.	426657.4185	6406283.533	Badly Burnt jarrah with signs of regrowth.	212
7/06/2024	Jarrah	3	90	1 knot side entrance with 10-15 cm opening. 8m from ground, mid trunk. Think just burnt jarrah. No chew.	426918.5014	6406197.802		213
7/06/2024	Jarrah	3	160	1 side entrance knot with 15 cm opening. 13 M from ground, mid trunk. Probably burnt. Unsure of depth. No chew	427108.0255	6406124.767		214
7/06/2024	Marri	2	130	1x 50cm chimney hollow in snapped main trunk at 15m. Trunk partially died and decaying. Some living sections. Minor recent chew marks, appear from BC at top of opening. Think prospecting chew not breeding.	427161.6414	6410234.337		215
7/06/2024	Marri	3	95	Potential for 30cm opening chimney in snapped main trunk at 14m. Has branches surrounding. Think unlikely developed to depth. Needs drone to confirm	427172.1497	6410307.489		216

APPENDIX B: Phase 2 Survey Results

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Dead	4	150	422361.189	6409621.075	Habitat Tree, Blocked hollows assessed with Alcoa drone 11/06 at 9:15. all hollows blocked	29
Jarrah	4	110	422354.813	6409441.694	Habitat Tree Hollows assessed with Alcoa drone on 11/06/24 at 9:00 am. hollow present, not deep enough for BC, has sticks and leaf litter inside. another shallow hollow and other hollows are blocked. Another hollow present at top, no sign of use	30
Jarrah	4	140	422421.325	6409407.791	Blocked - Habitat Tree Tree assessed with drone on 11/06/2024 at 8:55am. assessed with Alcoa drone, all hollows blocked	33

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Marri	3	105	420537.919	6410991.158	Suitable Nest Tree Assessed with Alcoa drone at 14:05 10/06/2024. Lower hollow coming out of branch is hollow filled with water, not suitable for Black Cockatoo use. Top spout hollow is potentially suitable. Appears to have chew marks and smooth internal walls but is only approximately 80cm deep.	31
Marri	3	80	422250.054	6409553.322	Suitable nest tree No external chew marks, Unable to determine depth as hollow deviates to the right (towards main trunk) no defined nest chamber. However, hollow is present but not currently suitable for Black Cockatoo use. Hollow assessed with Alcoa Drone and assessment with pole camera on the 11/06 at 9.30/	32
Marri	4	60	417351.798	6406679.153	Habitat Tree Hollows Blocked Assessed with GoPro, Blocked. 10:30am	34
Jarrah	4	70	423291.841	6404410.265	Habitat Tree Hollows Blocked Hollows assessed by Alcoa drone at 13:29 on 13/6. Very shallow hollow present approx. 10cm then Blocked.	35
Jarrah	4	75	423142.9	6410149.193	Habitat Tree Hollows Blocked assessed with Alcoa drone at 14:45 on 10/06/2024	36
Marri	4	75	415157.852	6410995.569	Habitat Tree Hollows Blocked Assessed with Alcoa drone at 11:30 on 10/6/2024	37
Marri	3	80	422973.841	6406965.971	Suitable Nest Tree Hollow assessed with Alcoa drone on 18/6 at 8:55, Chimney hollow suitable but just a bit to shallow. other hollows blocked	38
Jarrah	4	85	417663.492	6406875.685	Habitat Tree Blocked Assessed with Drone (Alcoa drone) Blocked at 10:13	39
Marri	4	90	422883.908	6410023.559	Habitat Tree Blocked Assed with Alcoa drone (15:00) Blocked	41
Marri	4	95	415342.077	6411059.69	Habitat Tree Hollows Blocked Assessed with Alcoa drone	42

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Dead	4	100	423066.665	6410096.708	Habitat Tree Hollows Blocked Assessed with Alcoa drone	43
Jarrah	4	105	423057.928	6410116.027	Habitat Tree Hollows Blocked Assessed with Alcoa drone at 14:53 on the 10/6	44
Marri	4	105	415071.87	6411084.198	Habitat Tree Blocked Hollow assessed with GHD drone on 12/6 at 9:10 all hollows blocked	45
Marri	4	115	415136.899	6410920.305	Habitat Tree Hollow Blocked Hollow Assessed with Alcoa drone Blocked. Recently burnt out by fire	46
Jarrah	4	120	423249.657	6410094.1	Habitat Tree Hollow Blocked Hollow assessed with Alcoa Drone on the 10/06	47
Marri	2	120	415382.145	6411178.559	Nest Tree Top Chimney hollow is blocked. Lower hollow approximately 20m high, has heavy chews on entrance of hollow (on main trunk). Assessed with Alcoa drone on 10/6 at 12:05, Unable to view inside hollow due to height for pole cam.	48
Jarrah	4	125	415319.085	6411335.714	Habitat Tree Hollow Blocked Hollows assessed with Alcoa drone at 12:55 on 10/06 a	49
Marri	4	130	415390.436	6411035.018	Habitat Tree Hollows Blocked Assessed with Alcoa Drone	50
Marri	4	150	415457.873	6411315.443	Habitat Tree Hollow Blocked Assessed with Alcoa Drone at 12:20 on the 10/6. Tree is dead	51
Marri	4	170	415387.567	6411458.025	Habitat Tree Freshly broken branch. No sign of BC use. Hollow is wrong angle for BC Potential tree, pics taken with drone (Alcoa drone, 12:40) send to Tony for check	53

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Jarrah	4	200	423008.367	6407097.336	Habitat Tree Blocked hollow assessed with Alcoa drone on 18/6 at 8:48. hollow blocked	54
Marri	3	70	424592.824	6406057.729	Suitable Nest Tree Appears to have some external chew marks. Assessed with Alcoa drone on the 18/6 at 10:26. Suitable hollow for Black Cockatoo present	55
Marri	4	60	425893.407	6409910.891	Habitat Tree Blocked Assessed with Alcoa drone on the 11/6 at 11:15, all hollows blocked	56
Marri	4	60	427284.337	6408989.527	Habitat Tree No hollows present Hollow assessed with Alcoa drone 11/6 13:40. No hollows	57
Marri	4	60	427328.7	6408988.148	Habitat Tree No Hollow present Visual ground assessment with binoculars, no hollow. no pics	58
Marri	2	65	424653.25	6407728.923	Nest Tree Assessed with Alcoa drone on 18/6 at 11:25. old and new chews on rim, wicked nest chamber, breeding tree. go pro pics 18/6 12:10	59
Marri	4	70	423663.562	6407024.366	Habitat Tree Blocked hollow assessed on 14:57 on 13/6. hollow goes in about 10cm then blocked	60
Marri	4	70	428017.602	6408190.847	Habitat Tree No Hollow present Visual ground assessment with binoculars, no hollow. no pics	61
Marri	4	75	426949.813	6409903.433	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 11:35 at 12:35, hollow blocked	62
Marri	4	75	427260.421	6408815.504	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 11/6 at 13:50. blocked	63

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Marri	4	80	428016.342	6408197.885	Habitat Tree Hollow Blocked Hollow assessed with drone at 15:30 11/6. blocked	65
Dead	4	85	424427.737	6406233.428	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 18/6 at 10:18. all blocked	66
Marri	4	85	424755.115	6406548.32	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 16/6 at 9:56. Blocked	67
Jarrah	4	90	426114.384	6409983.089	Habitat Tree Hollow Blocked Assessed with Alcoa drone 11/6 at 11:45 all blocked	68
Jarrah	4	90	428004.838	6408199.367	Habitat Tree Hollow Blocked Hollow assessed with drone 15:28 on 11/6. Blocked	69
Marri	4	90	426061.865	6409972.767	Habitat Tree Hollow Blocked Assessed with Alcoa Drone 11/6 at 11:30, all hollows blocked	70
Jarrah	4	95	423793.682	6407050.284	Habitat Tree Hollow Blocked tree about to fall over. assessed with Alcoa drone art 15:05 13/6. blocked	71
Marri	4	105	426092.112	6409959.723	Habitat Tree Hollow Blocked Assessed with Alcoa drone on the 11/6 at 11:33 all hollows blocked	74
Marri	4	110	424885.41	6407693.726	Habitat Tree Hollow Blocked assessed with Alcoa drone on 18/6 at 11:15.	75
Jarrah	4	125	426136.136	6409976.727	Habitat Tree Blocked Hollow Assessed with Alcoa drone 11/6 at 11:30	76
Marri	3	140	424077.203	6407189.947	Hollow assessed with Alcoa drone on the 18/6 at 9:22. Difficult to get to, suitable size hollow but no signs of use. approx. 1m deep. Has a H with a dot on it. no tag present	78

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Marri	4	140	427290.765	6408942.915	Habitat Tree Hollows Blocked Hollows assessed with Alcoa drone on the 11/6 at 13:25. All hollows to small or blocked.	79
Jarrah	4	150	424698.149	6407366.237	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone on 8/6 at 10:55	80
Jarrah, Dead	4	160	424426.257	6406327.898	Habitat Tree Hollow Blocked Assessed with Alcoa drone 18/6 at 10:13	82
Jarrah	4	0	429800.813	6407408.892	Habitat Tree Hollows Blocked Hollow assessed with GHD drone at 11:56 12/6.	83
Marri	x	75	428492.011	6407736.821	Tree already removed. SB note- TK surveyed this area in April 2024 and no nest/possible nests marked. Habitat Tree	84
Marri	4	75	425931.867	6406184.904	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 13/ 6 10:00.	85
Marri	4	75	426960.467	6406043.721	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 10:40 on the 13/6.	86
Jarrah	4	85	429724.084	6407425.666	Habitat Tree Small Hollow present, blocked with branches, no chew marks Assessed with GHD drone at 11:30 12/6., blocked and branch too small and no chews	87
Jarrah	4	95	429829.908	6407213.535	Habitat Tree Hollows Blocked Hollow assessed with Pole camera (GoPro) at 14:00 12/6. both hollows blocked	88
Marri	4	95	425999.352	6406129.948	Habitat Tree Small hollow present, not suitable for Black Cockatoo, suitable for Australin Ringneck Parrot. Hollow assessed with Alcoa drone at 10:16 on the 13/6. one hollow blocked.	89
Marri	4	95	425997.425	6406222.943	Habitat Tree One Blocked hollow and one very shallow hollow Hollow assessed with Alcoa drone 13/6 at 9: 53.top hollow blocked, side hollow too shallow	90

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Marri	4	95	426070.116	6406159.957	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 13/6 at 9:45.	91
Jarrah	4	105	427702.621	6409080.368	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone 11/06 at 14:50	93
Jarrah	4	110	427717.068	6408875.493	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 14:20 on the 11/6.	94
Marri	4	110	426189.09	6406412.75	Habitat Tree Hollow Blocked Hollows assessed with drone on the 12/6 at 14:50.	95
Dead	4	120	429727.813	6407352.168	Habitat Tree Hollow Blocked hollow assessed with GHD drone at 12:04 on the 12/6.	96
Jarrah	4	120	429775.296	6407424.099	Habitat Tree Hollow Blocked Assessed with GHD drone at 11:42 on the 12/6	97
Jarrah	4	140	427670.116	6409073.795	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone on the 11/06 at 14:50	98
Jarrah	4	160	429354.501	6407427.415	Habitat Tree Hollow Blocked Hollow assessed with GHD drone 12/6 at 11:10.	99
Jarrah	4	85	427385.469	6405371.78	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 11:38 on the 13/6.	107
Marri	4	95	427298.405	6405578.402	Habitat Tree Spout Hollow Blocked, side hollow is too small and lacks defined nest chamber. Hollow assessed with Alcoa drone at 11:10 on the 13/6.	110

Species	Bamford class	DBH	Easting	Northing	Comments	Tree Number
Marri	4	95	427388.783	6405443.656	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 11:28 on the 13/6.	111
Marri	4	95	427233.507	6405603.886	Habitat Tree Hollow Blocked Hollow assessed with Alcoa drone at 10:55 13/6.	112
Marri	2	90	417654.79	6406840.1	Nest Tree Recent and Historic chews at hollow entrance and some recent chews on hollow internal wall. Defined chamber. However, due to access unable to get drone into a position to view bottom of hollow. Tree assessed with Alcoa Drone on the 10/06. Lots of Forest Red-tailed Black Cockatoos nearby.	Additional Tree (217)
Marri	3	70	427645.32	6409039.15	Suitable Nest Tree Hollow appears to have small recent chews at hollow entrance. Hollow was assessed with drone and GoPro but appears to be just a bit too shallow. Assessment conducted on the 12/6 at 15:45	Additional Tree (218)