



BLACK COCKATOO HOLLOWS

Annual Report

2025

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1 Overview

South32 Worsley Alumina Pty Ltd (Worsley) is the operator for and on behalf of the Worsley Bauxite-Alumina Joint Venture.

Worsley received approval from the State of WA, under the *Environmental Protection Act 1986* (WA) and the Commonwealth under the *Environment Biodiversity & Conservation Act 1999* (Cwth) to expand operations within the Primary Assessment Area (PAA), enabling access to future bauxite reserves and resources to sustain production at the Worsley Alumina Refinery near Collie.

This expansion included three main components:

- **WMDE:** The next phase of mining will occur within the Worsley Mining Development Envelope (WMDE), using existing crushing and conveying infrastructure.
- **BTC:** The Bauxite Transport Corridor (BTC) will connect current mining areas with new and future sites.
- **CBME:** The Contingency Bauxite Mining Envelope (CBME) will ensure emergency bauxite supply near the Refinery if needed.

The Revised Proposal as approved by Ministerial Statement 1237 (MS1237) is described in its entirety in the referral for the Revised Proposal and the referral supporting document (Worsley, 2019), the Environmental Review Document (Worsley, 2022) and the Response to Submissions document (Worsley, 2024).

1.1 Purpose

This report addresses condition B13-5 of MS1237, documenting the methodology and findings of inspections and buffer and avoidance determinations under conditions B13-4(1), B13-4(2) and B13-4(3). As required by Condition B13-5 this report has been made publicly available on the South32 website as an appendix to the annual Compliance Assessment Report.

This report also addresses the requirements of condition 14 of the Commonwealth approval (EPBC 2019/8437).

1.2 Scope

This report covers all Potential Breeding Tree (PBT) inspections completed within seven days of clearing during the period 20th December 2024 to 30th June 2025 (the reporting period).

2 Monitoring Methodology

Monitoring of PBTs during the reporting period occurred in three stages as discussed below.

2.1 Primary Pre-clearance surveys

Primary pre-clearance surveys are conducted prior to any native vegetation disturbance and are conducted by independent Ecologists. During the reporting period this work was completed by Ecology Matters and includes information gathered during surveys undertaken by Bamford Consulting Ecologists, prior to the reporting period.

Primary pre-clearance surveys for PBTs included the following process for inspection:

- Areas of proposed clearing were walked to identify PBTs.
- All trees of suitable size (>500 mm DBH or >300 mm DBH for *Eucalyptus wandoo*) in the survey area were reviewed and PBTs assessed as potential Rank 1-3 in accordance with Appendix 1: Black Cockatoo PBT Ranking System. All PBTs assessed as potential Rank 1-3 were recorded

with GPS coordinates captured (noting trees assessed as Rank 4 and 5 are not GPS recorded).

- Where time permitted PBTs of Rank 2-3 were inspected with a pole camera (or other method e.g. drone), to verify use or appropriateness of the hollow to support black cockatoo breeding. Where a hollow was found to be unsuitable for breeding (e.g. shallow) the PBT was re-classified to a Rank 4. However, this verification step is most commonly completed during the secondary pre-clearance surveys. Noting that PBTs assessed as Rank 1 are already confirmed to support Black Cockatoo breeding and do not require further confirmation.

2.2 Secondary Pre-clearance surveys

Secondary pre-clearance surveys are focused on confirming the ranking of PBTs identified during primary pre-clearance surveys. During the reporting period, these surveys were conducted by suitably experienced personnel and consultants applying the following methodology:

- PBTs assigned as Rank 2-3 during primary pre-clearance surveys were inspected with a pole camera (or other method e.g. drone), to verify use or appropriateness of the hollow to support black cockatoo breeding. If the hollow was found to be unsuitable for breeding (e.g. shallow / platform) the PBT was re-classified to a Rank 4. Noting PBTs classified as Rank 1, have already been verified to have black cockatoos present in the hollow through direct observation.
- Information is collected for the hollow including date of inspection, photos of the hollow and confirmation or update of tree's assessed Rank.
- The images and allocated Rank are then reviewed by the Environment Specialist to assess image quality and verify any changes to ranking. Following this process the PBT GIS database is updated to reflect the verified Rank.

2.3 Tertiary Pre-clearance surveys

Tertiary pre-clearance surveys were conducted within 7 days prior to clearing. These were completed by suitably experienced personnel and consultants and included:

- monitoring of all suitable PBTs (Rank 1-3) using the following methods:
 - Visual inspection of the hollow from the ground for fresh chewings/chippings.
 - Assessment using the Tap and Flush survey method to determine occupancy (see section 2.3.1).
 - Inspection of the hollow with a pole camera or drone.

2.3.1 Tap and Flush Survey Method

The intent of the Tap and Flush survey method is to encourage a Black Cockatoo to respond and come to the opening of the hollow. The process of tapping and flushing should include the following consideration/action:

- tapping or scraping at the base of the tree – for a nesting female, this is best undertaken between 10am – 3pm when females will most likely to be sitting (DBCA 2023).
- use a large stick / wooden handle to gently tap / scrape two to three times at the base of the tree.
- wait to see if a bird climbs to the top of the hollow to investigate the noise.

Note: The absence of a bird at the hollow entrance does not confirm there is not a bird using the hollow. Verification using a pole camera / drone is also required to verify the hollow is vacant.

3 Tertiary Pre-clearance Survey Findings

Tertiary pre-clearance surveys completed within the reporting period validated secondary pre-clearance rank assessments with no changes in tree Rank recorded. No occupation of PBTs by Black Cockatoos was identified during the reporting period. Refer to Table 4-1 for full details of survey findings.

4 Buffer Application and Avoidance

During the reporting period tertiary pre-clearance surveys validated the identification of two Rank 1 PBTs, 18 Rank 2 PBTs and six Rank 3 PBTs within proposed disturbance areas. All Rank 1 and Rank 2 trees were avoided with the application of a 30 m buffer from the base of the tree. All six Rank 3 trees were removed using controlled felling techniques with hollows retained for use as habitat features in rehabilitation where possible. Refer to Table 4-1 for full details for each PBT identified within proposed disturbance areas during the reporting period.

Table 4-1 Tertiary Pre-clearance Survey Outcomes and Disturbance Summary

TREE ID	SECONDARY PRE-CLEARANCE SURVEY		TERTIARY PRE-CLEARANCE SURVEY		CLEARED STATUS / DATE	REASON COULD NOT BE AVOIDED
	Date	Outcome	Date	Outcome		
8357	14-Feb-25	Rank 3	8-May-25	Unoccupied Rank 3.	11-May-25	Clearing of area was required to allow access to ore.
8506	27-Feb-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	N/A
7301	3-Mar-25	Rank 3	28-Apr-25	Unoccupied Rank 3.	2-May-25	Clearing of area was required to allow access to ore.
7178	3-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
6699	4-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7399	5-Mar-25	Rank 3	28-Apr-25	Unoccupied Rank 3.	2-May-25	Clearing of area was required to allow access to ore.
7662	5-Mar-25	Rank 3	28-Apr-25	Unoccupied Rank 3.	2-May-25	Clearing of area was required to allow access to ore.
9716	5-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7647	5-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7722	5-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7295	5-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
8554	5-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7590	6-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
6854	6-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
6878	6-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	

TREE ID	SECONDARY PRE-CLEARANCE SURVEY		TERTIARY PRE-CLEARANCE SURVEY		CLEARED STATUS / DATE	REASON COULD NOT BE AVOIDED
	Date	Outcome	Date	Outcome		
6889	6-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
8352	10-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7990	31-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
6995	31-Mar-25	Rank 1	N/A	Feathers in hollow however unoccupied rank 1 tree. 30 m buffer applied as a protected area.	Not cleared	
6996	31-Mar-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
7031	7-Apr-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
9274	8-Apr-25	Rank 1	N/A	Occupied Rank 1 tree, 30m buffer applied as a protected area	Not cleared	
8594	14-Apr-25	Rank 3	12-Jun-25	Unoccupied Rank 3.	15-Jun-25	Clearing of area was required to allow access to ore.
8985	17-Apr-25	Rank 3	12-Jun-25	Unoccupied Rank 3.	14-Jun-25	Clearing of area was required to allow access to ore.
6664	18-Jun-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	
9511	30-Jun-25	Rank 2	N/A	Unoccupied Rank 2 tree, with old chewing. 30 m buffer applied as a protected area.	Not cleared	

5 References

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6 Definitions & Abbreviations

Term	Description
BTC	Bauxite Transport Corridor
CBME	Contingency Bauxite Mining Envelope
Cwth	Commonwealth
DBCA	Department of Biodiversity, Conservation and Attractions
DBH	Diameter at Breast Height
EPBC 2019/8437	Commonwealth Notice of Approval Decision
GIS	Geographic Information System
GPS	Global Positioning System
mm	Millimetre
MS1237	Ministerial Statement 1237
PAA	Primary Assessment Area
PBT	Potential Breeding Tree
WA	Western Australia
WMDE	Worsley Mining Development Envelope
Worsley	South32 Worsley Alumina Pty Ltd

7 Appendices

7.1 Appendix 1: Black Cockatoo PBT Ranking System

The PBT ranking scale applied by Worsley is consistent with the system established by Bamford Ecological Consultants in 2023 and 2024 as provided in Table 7-1.

Table 7-1: Black Cockatoo pre-clearance survey potential habitat tree rating system (Bancroft & Bamford, 2024)

Rank	Potential	Description	Applicable EPA Definition
1	Confirmed	Activity at hollow observed; adult (or immature) bird seen entering or emerging from hollow. Can also be used for a known nest tree active in the previous 12 months (although this should be noted in the description). Note that activity at a hollow does not absolutely mean that breeding is occurring unless a young bird in hollow is observed.	Potential breeding tree Evidence of use Suitable hollow/s
2	High	Hollow of suitable size visible with chew marks around entrance. Record if chew-marks are recent or old.	Potential breeding tree Evidence of use Suitable hollow/s
3	Moderate	Potentially suitable hollow visible but no chew marks present at entrance; or potentially suitable hollow suspected to be present - as suggested by structure of tree, such as large, vertical trunk broken off at a height of >8m; but note that hollow height is contextual. Carnaby's Black-Cockatoo will nest in hollows <5m so in a Wheatbelt breeding site a lower criterion may be more appropriate.	Potential breeding tree Suitable hollow/s
4	Low	Tree with large hollows or broken branches that might contain large hollows, but hollows or potential hollows (nest chamber) are not vertical or near-vertical; thus a tree with or likely to have hollows of sufficient size but not to have hollows of the angle preferred by Black-Cockatoos. Trees with low but otherwise suitable hollows can also be assigned a rank of 4, depending on the species of black-cockatoo likely to be present	Potential breeding tree
5	Nil	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 breeding tree