

APPEAL

CLOSES 29 JULY 2024



South32's Proposed Worsley Mine Expansion EPA Recommendations

WAFA APPEAL GUIDE

The Environmental Protection Authority (EPA) report, [Worsley Mine Expansion - Revised Proposal](#), covers two bauxite mining expansions by South32 in the Northern Jarrah Forest (NJF).

Primarily, the report completes the EPA's Public Environmental Review of South32's proposal to clear 3,885 ha of native vegetation for bauxite mining (with additional clearing of 2,356 ha of non-forested land). This is the Primary Assessment Area.

The EPA recommends approval of this proposal, with conditions.

The EPA also sets new conditions on South32's previously approved expansion where mining has not commenced. This Extended Mining Area involves 13,663 ha of native vegetation.

The total area of NJF to be cleared by South32 is 16,019 ha or 160 square km.

TOO PRECIOUS TO LOSE

In the drying and heating climate of southwest WA, the risks to biodiversity and ecological integrity of the NJF from bauxite mining cannot be 'counterbalanced' by the EPA's recommended mitigation measures of rehabilitation and environmental offsets. Instead, the EPA should have rejected the proposal outright, or at least recommended further avoidance of clearing in high conservation value and threatened species habitat areas.



Photo: Philippa Beckerling



MAKING YOUR APPEAL

Wafa have developed this guide to assist you in appealing against the EPA's recommendation to approve the proposal or the strength of the conditions. We have included information on a number of factors and conditions, but it is not exhaustive. You may choose to cover all, focus on just a few that are most relevant to you, or include additional factors that we have not been able to cover here. The EPA's full 320-page report can be found [here](#).

The appeal is not against South32's proposal itself. For the strongest appeal submission, your grounds should in your own words: argue that the proponent and then the EPA report inadequately addresses aspects of your submission (if you made one) or did not follow EPA objectives and principles. You can also include proposed conditions you do support completely or support in part and need improvement.

The EPA considers the following principles when assessing a proposal; precautionary, intergenerational equity, conservation of biological diversity and ecological integrity, improved valuation, pricing and incentive mechanisms, waste minimisation. More information can be found in the EPA's [Statement of Environmental Principles, Factors and Objectives](#).

The EPA must also assess cumulative and holistic impacts. Appeals will be received by the Office of the Appeals Convenor who will decide the appropriate matter of investigation which may include meeting with you as an appellant. Once the investigation is complete a report will be provided to the Environment Minister. The Minister has the power to either dismiss the appeal, remit the proposal to the EPA for further assessment or reassessment, or vary the EPA's recommendations by changing the implementation conditions.

We also recommend you contact the Minister directly to let him know the community does not support this proposal and wants it rejected. To make this easy Wafa have created an email template for you to use <https://bit.ly/reject-S32>.

Appeals are due 11:59pm, 29 July 2024

Steps

A fee of \$10 applies to each appeal. You can find more info about requesting a reduction, waiver or refund if you are in financial hardship [here](#).

1. Go to <https://bit.ly/Appeal-form-S32>
2. Under Type of appeal select '**Report of Environmental Protection Authority (EPA)**'
3. Put report '**1768**' and '**Worsley Mine Expansion – Revised Proposal**' in respective boxes
4. Under "What are your concerns?" list your appeal grounds. You may insert the rest of your appeal here or submit it as a Word or PDF file.

Make sure to include the report number, proposal name and proponent (1768 and Worsley Mine Expansion – Revised Proposal by South32 Worsley Alumina Pty Ltd) and then outline any personal interest in the proposal and the proposal itself using proponent or departmental information, discuss your grounds for appeal, detail the outcomes sought and any conditions you want the proposal to follow if implemented.

An example of how to state the outcomes and conditions sought:

In view of the identified significant environmental risks [I/org name] strongly submits that EPA Report 1768 be rejected and the Proposal not be implemented.

In the alternative, [I/org name] maintains that EPA Report 1768 be amended and the Proposal be implemented under the following conditions: [insert your conditions]

5. When ready, click next and fill out your personal details and unless explicitly representing a corporation, select 'individual'.
6. Click review appeal and then proceed to payment.

NORTHERN JARRAH FORESTS - WHAT IS THREATENED

The EPA recognises the significant and unique local, national and global environmental values of the NJF, including the conservation significant and threatened species flora and fauna that it supports (EPA 2024, 5).

The EPA also notes the vulnerability of the NJF to climate change and the importance of 'retaining healthy forest ecosystems as a mitigation against climate change' (EPA 2024, 47).

Past and future cumulative impacts on the ecological integrity of the NJF are explained. In the next 15 years, mining by South32, Alcoa and Newmont Mining will clear 27,806 ha of forest. If Alcoa mines a quarter of the area it plans to explore, the area cleared could later reach a whopping 120,000 ha or 1,200 square km (EPA 2024, 6).

With only 16% of the NJF study area to be placed in conservation areas by the end of the 2024-2033 Forest Management Plan, the EPA notes the target of conserving 30% of the land by 2030 will not be met at a sub-region scale.

Despite this, the EPA recommends South32 be granted approval to clear an additional 3,885 ha of the NJF for bauxite mining.



Wafa seeks to appeal the EPA's decision on the grounds it has:

1. Failed to uphold the precautionary principle in relation to knowledge gaps about the risks to the biodiversity and ecological integrity of the NJF.
2. Failed to uphold the principle of intergenerational equity in relation to the survival and rehabilitation of the NJF for future generations.
3. Failed to uphold the principle of conservation of biological diversity and ecological integrity as a fundamental consideration.

Scale of impact

The EPA misrepresents the proportion of the total NJF impacted by mining by referring to its historical area which includes cleared agricultural land. If agricultural land is excluded, the NJF area is not 1,898,781 ha but 1,083,652 ha (EPA 2024, 48-51). This increases the actual percentages of NJF that have and will be cleared.

Mining activity	Area (ha)	% of today's NJF cleared	% of historical NJF cleared*
Past - South32	8,895	0.8%	0.5%
Future - South32 (proposed and already approved)	12,504	1.2%	
Past & future - South32	21,399	2.0%	1.0%
Past - South32, Alcoa & Newmont	41,035	3.7%	2.0%
Future - South32, Alcoa & Newmont	27,806	2.6%	
Total – past & future	68,841	6.4%	4.0%
Total – if 25% Alcoa's planned exploration is also mined (EPA 2024, 51)	120,000	11.0%	6.0%

* Percentage NJF cleared according to report (includes agricultural land)

Beyond the scale of direct clearing, the EPA acknowledges, but does not establish the further area impacts of fragmentation, edge effects ('degradation of native vegetation due to proximity to disturbed areas'), 'degradation and alteration of vegetation from altered hydrological regimes' and 'isolation and degradation of vegetation through fragmentation resulting in overall decline in vegetation' (EPA 2024, 66).

The true scale impact of bauxite mining on the NJF should be corrected, published and reassessed by the EPA.



EPA CONDITIONS

B1 Greenhouse Gas Emissions

South 32 Worsley Alumina is the fourth biggest industrial emitter in Western Australia. The expansion of the mine will result in 302.1 million tonnes of carbon pollution, via the combustion of fossil fuels and the clearing of native forest over 15 years. This total represents over three and half times WA's annual emissions, and nearly 70% of Australia's annual emissions. Switching from one fossil fuel to another, (converting coal-fired boilers to natural gas-fired operation) or using biomass to reduce the consumption of coal in the meantime, as the proponent proposes, is not climate action.

The EPA-recommended **conditions (B1)** that require emissions limits further than proposed by South32 and remove rehabilitation as a mitigation measure are welcome. However, the conditions do not require South32 to take all reasonable and practicable measures to mitigate greenhouse gas emissions or transition from coal and gas to renewables in a certain time-frame. The EPA report also ignores the impact the limited supply of biomass due to increased forest protection will have on the proponent using it as an energy source to reduce consumption on coal and resulting emissions. These oversights, coupled with the assumption of the reliability and success of offsets, make it disingenuous to consider that the emission reductions proposed can be met or are adequate.



B4 - B11 Extended Mining Area

The EPA's recommended new conditions for previously approved Extended Mining Areas are a damning indictment of past approval processes, the company's environmental performance and public monitoring of that performance.

As South32 has prior approval to clear 13,663 of native vegetation in the Extended Mining Area, the recommendation of more stringent conditions is supported.

In **B10-2** the EPA recommends environmental offsets for previously approved Extended Mining Areas in the form of **new conservation areas** 'by means of conservation covenants or agreements' (EPA 2024, 229)

Expansion of the forest conservation estate is supported. However, whilst there is a requirement that the area of land be 'comparable to the area of State Forest disturbed', no other selection criteria is stipulated to ensure areas of high conservation areas are prioritised.



Photo: Kate Arebon



B12 - 18 PRIMARY ASSESSMENT AREA - THE PROPOSAL

Knowledge gaps

The EPA acknowledges a number of knowledge gaps with respect to the environmental impacts of the proposal. Many involve information about the various environmental values of the forest areas to be cleared and rehabilitation performance that South32 failed to provide EPA 2024, 62, 89, 128, 186, 239, 246). As well, the EPA notes 'significant knowledge gaps' in the State Government's data and information for the NJF (EPA 2024, 23, 209).

Of note, the EPA states 'pressures and threats to the NJF are yet to be fully described' 'due to limited understanding of complex environmental interactions at a system level, the lack of quality data and information, and the absence of a whole-of-ecosystem assessment, resulting in potential compounding unknown pressures effecting the future resilience of the NJF' (EPA 2024, 47).

While the EPA seeks to address the company's knowledge gaps in a number of its conditions, these pertain to improving the environmental outcomes of bauxite mining and not to the evidence for avoidance of forest clearing for bauxite mining.

In knowing these knowledge gaps exist, the EPA is derelict in its duty in not applying its Precautionary Principle to the 'threats of serious or irreversible damage' that the proposal poses to the biodiversity and ecological integrity of the NJF.

Mitigation over avoidance

At multiple points in the report, the EPA notes the 3,264.5 ha reduction in clearing native vegetation since the initial referral as a 'substantial' avoidance measure, yet the currently proposed figure of 3,855 ha is only 544 ha less than at the time of public review and what submissions were made on the basis of.

The EPA has generally paid too little regard to avoidance as required under the mitigation hierarchy and, instead, its recommended conditions focus on mitigation through rehabilitation and environmental offsets, with offsets a particular focus for threatened fauna species, including Endangered and Critically Endangered species as the last conservation categories before extinction.



Woylie Photo: Robert McLean

Responding to the clearing of 2,033 ha - 46% of woylie habitat - predominately with a regional focused rather than local offset is a clear example of avoidance not being applied to a highest conservation category, matter of national environmental significance (MNES) species experiencing loss of suitable habitat.

B12 and B14 Rehabilitation

The EPA often uses 'rehabilitation' and 'ecological restoration' interchangeably, obfuscating the differences between them and hence the reality that bauxite mining is causing the forever loss of significant sections and values of the NJF.

Whereas the rehabilitation goal is the 'renewed and ongoing provision of ecosystem services rather than the recovery of a specified target native ecosystem', 'ecological restoration' is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed' (Young et al. 2020).

As mining 'removes the substrate supporting the forest system and therefore fundamentally alters the environment', the 'options for future environmental management are limited to rehabilitation rather than environmental restoration' (Wardell-Johnson et al. 2024, 8).

The EPA in fact does not require South32 to ensure ecological restoration of cleared NJF areas but expects rehabilitation to produce the lesser result of 'sustainable ecosystems that approximate 'the pre-mining biodiversity and functional values' (EPA 2024, 226) or achieve 'a reasonable degree of ongoing ecological function' (EPA 2024, 21, 177, 181-82). These may be acceptable criteria for the revegetation of land that has been long cleared for agriculture (see EPA 2024, 226), but they are not acceptable for the otherwise intact and high-value ecosystems of the threatened NJF.



Result of 22 years rehabilitation. Photo: Donna Chapman

To rub salt in the wound, the EPA recognises that ‘the success and effectiveness’ of South32’s rehabilitation ‘is yet to be determined as evidence of rehabilitation performance have not been provided’ (EPA 2024, 20 and 178).

Despite decades of delayed and unproven rehabilitation by South32, the EPA expresses confidence in the company’s ability to improve its performance through new completion criteria and biodiversity indices, stronger reporting, and ‘collaborative approaches’ within industry and government (**B14**) (EPA 2024, 181-82).

However, a recent independent review of nearby miner Alcoa’s rehabilitation states there remain knowledge gaps as to whether the ecological impacts of bauxite mining in the NJF ‘can be realistically and credibly managed through rehabilitation’ (Stantec 2023, 28). Further, the review cautioned whether new Biodiversity Indicators mandated by the EPA would in fact support the ongoing ecological integrity of the NJF (Stantec 2023, 27-28).

The same independent review found ‘no published data that provides an assessment of resistance or resilience of current era rehabilitation to drought or water stress’, and noted it will take several years before an assessment of late-stage rehabilitation would be possible (Stantec 2023, 32). Indeed, the EPA itself notes that, ‘with a drying climate, rehabilitation of forest to its former structure may not be possible. For example, individual trees that have the potential to form hollows in the future (i.e. Marri and Jarrah) may never reach a level of maturity for hollows to develop’ (EPA 2024, 179). Wardell-Johnson et al. (2015) argue in a drying climate, attempts to replant Jarrah trees pose unacceptable risks to surrounding forest and rehabilitation should focus on understorey plants to keep more water in the landscape.

To date, no bauxite mining in the NJF has met completion criteria even after 60 years. The EPA fails to properly consider the difficulties and risks in attempting post mining rehabilitation of the Jarrah forest in

a drying and heating climate, both in terms of the consequences of rehabilitation failures and the threats to surrounding forest.

Moreover, let alone rehabilitation, ‘the potential for ecological restoration should never be invoked as a justification for destroying or damaging existing native ecosystems’ (Gann et al. 2019, S8, Young et al. 2022).

The EPA approval depends too heavily on rehabilitation as a mitigation strategy when its principles of precaution, intergenerational equity and conservation of biological diversity and ecological integrity as a fundamental consideration demand more deforestation avoidance, if not complete recommended rejection of the proposal.

B12 Flora and vegetation

The EPA states: “DBCA has advised that due to the currency and methodology of surveys there is a risk that not all conservation significant flora species have been identified within the PAA. Recent targeted surveys have not been undertaken for all significant flora and vegetation and of the targeted surveys provided, it is unclear when they were undertaken, what species or ecological communities were targeted, or whether the size and extent of populations were measured. The EPA considers that the targeted surveys do not meet the EPA Technical Guidance (EPA 2016f) for this factor’ (EPA 2024, 62).

Accordingly, the EPA recommends condition **B12-5** ‘to ensure all areas are adequately surveyed prior to clearing.’ (EPA 62) and **B12-5 (2)** which requires appropriate botanists with demonstrated experience in orchid surveys in the bioregion, for pre-clearance surveys of *Caladenia caesarea* subsp. *Mooradung* and threatened orchid species, including *Caladenia hopperiana* (Quindanning Spider Orchid). These conditions are welcomed.



Quindanning Spider Orchid. Illustration: Donna Chapman

The EPA notes that a proposed 50m buffer will not be adequate for the *Caladenia hopperiana* (EPA 2024, 75). Whilst the EPA recommends increasing protected areas which would provide a larger buffer on some sides, around 10% (146.5 ha) of ecological linkages in the Quindanning Timber Reserve which include known individuals of *Caladenia hopperiana* may still be cleared for infrastructure, roads and access. A buffer larger than 50m should be included in the conditions and fully protected areas should be extended to include the entirety of the Quindanning Timber Reserve, and no more of the area should be cleared to mitigate direct and indirect impacts of both identified and unidentified individuals of the threatened species.

B13 Terrestrial fauna

The proposal will still clear the following threatened species' habitats:

Woylie (Critically Endangered)	2,033 ha
Western ringtail possum (Critically Endangered)	135 ha
Numbat (Endangered)	4,324 ha
Chuditch (Vulnerable)	4,459 ha
Quokka (Vulnerable)	135 ha
Red-tailed phascogale (Vulnerable)	202 ha
Black cockatoos (2 species Endangered, 1 Vulnerable) foraging habitat plus up to 24 trees being used or that have evidence of use for breeding	4,533 ha

Condition B13-1(e) requires avoidance of black cockatoo breeding trees, but allows for up to 24 trees to be removed if not "practically avoided". If all 24 trees are cleared this equates to a 5% loss of breeding hollows and implies that the EPA accepts a 5% reduction in breeding success in the Indicative disturbance footprint (IDF).

No clearing limit is proposed for the additional 1,594 trees with potentially suitable breeding hollows estimated to occur in the IDF (i.e. all would be cleared). The combined loss of 1,594 - 1,618 confirmed or potential breeding trees will be detrimental to all three species of black cockatoo, but in particular, the threatened Forest Red-tailed Black Cockatoos as they do not reliably breed in artificial nests (Phoenix Environmental Services 2021, 42) and cannot be mitigated through the proposed Offset 4 of artificial hollows.

Condition B13-4 recommends a 30 meter buffer be applied to each identified tree that is being used or has evidence of use by black cockatoos. In comparison,

the Ministerial Approval Conditions for Alcoa's 2023-2027 Mining Management Program requires a 50 meter buffer. The minimum buffer should be increased to at least 50m for consistent protection across the NJF.

The proponent proposes to clear 2,033 ha of habitat for the Critically Endangered woylie including 1,898 ha of the 4,143 ha of habitat at Hotham North and 135 ha of the 502 ha of habitat at the CBME (EPA 2024, 100), equating to 44% of the habitat. The EPA notes the project's overall 3264.5 ha reduction in clearing native vegetation as part of the effort to avoid and minimise impact, yet this results in only 598 ha reduction in clearing of woylie habitat. As a Critically Endangered species, retaining all remaining populations and habitat is critical to the species' survival.

WAFAN welcomes the increase of protected areas for numbat habitat (**B2-1(3)**) but the 74.5 ha reduction is not taken into account in **B13-1(c)** which still allows for 4,324 ha of numbat habitat to be disturbed.

B15 ENVIRONMENTAL OFFSETS

The EPA recognises 'biological diversity and ecological integrity in the local area are important to support habitat for conservation significant fauna species' and that the proposal 'will have significant residual impact on this (EPA 2024, 21).

To 'counterbalance' these impacts, the EPA recommends a number of environmental offsets.

'Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual impacts of a proposal' (EPA 2024, 185).

The extent of the recommended environmental offsets underlines both the magnitude of the residual significant environmental impacts of the proposal and the inadequacies of mitigation strategies of avoidance, minimisation and rehabilitation. This is particularly so for the six of the eight threatened fauna species: woylie, numbat, Carnaby's cockatoo, Baudin's cockatoo, Forest red-tailed black cockatoo and chuditch, whose impacted habitat areas extend to thousands of hectares (EPA 2024, 185).

Resorting to offsets is risky.



Chuditch. Photo: Clarissa Human

Biological offsets have been widely called into question. DWER found that 'environmental offsets approved since the release of the [2011] offsets policy have not fully counterbalanced the significant residual impacts of approvals' (DWER 2019, v). The 2021 State of the Environment Report also cites critical findings with respect to biological offsets' effectiveness.

'Even in jurisdictions with strong environmental laws, averting loss using biodiversity offsets failed to deliver benefits by an order of five times, with offsets unable to show an effective improvement in biological status' (Young et al. 2022, 21).

For the proposal, offsets (**B15-2**) involve conserving and restoring a combined total of 12,346 ha of land, installation of artificial black cockatoo breeding hollows, the protection of a woylie population and a research project focussing on issues relating to the proposal and/or NJF' (EPA 2024, 194).

The offsets area includes 4,384 ha of retained native vegetation, predominantly in CBME (**Offset 1**) and a further 7,962 ha of agricultural land to be revegetated. Significantly, the impact of 3,000 ha of restoration under **Offset 3** on threatened fauna species is unknown until the location is finalised, although it is asserted to decrease habitat fragmentation (EPA 2024, 186).

Reference to the scale of offsets relative to the areas of significant residual impacts (EPA 2024, 186), belies this reliance on restoration of agricultural land (nearly two thirds of total).

Restoration targets include the future presence of threatened species within time spans of up to 20 years. These are long timelines for habitat restoration. Of particular concern is the lack of mature overstorey for some decades, during which further habitat destruction will occur. Red-tailed phascogales are known to rely on hollows for nesting and denning and need mature habitat, for example. All remaining populations of Red-tailed Phascogales must be actively protected to prevent further declines and provide for survival and recovery of this species which has already lost up to 84% of its original habitat.



Red-tailed Phascogale Photo: Clarissa Human



Carnaby's Black Cockatoo. Photo: Keith Lightbody

Offset 4 includes the installation of 72 artificial black cockatoo breeding hollows or three for every confirmed nesting tree that is cleared (up to 24 trees) (EPA 2024, 193, 200).

The success of artificial hollows for all three black cockatoo species is questioned in the EPA report, noting 15 existing artificial breeding hollows located near the Newmont Boddington Gold Mine have been monitored since 2012 with no evidence of breeding recorded (EPA 2024, 94). Recent research also shows that Forest Red-tailed Black Cockatoos select nest hollows near ephemeral and permanent drink sites. As such, location in the landscape is as important as nest tree and hollow size for breeding success (Craig et al 2022, 7-8). No conditions are set for the location of artificial nesting hollows.

The loss of existing suitable breeding trees as well as those who would mature to suitable size, is compounded by the wait for the possible return of breeding trees, being at least 130 years before they are of suitable sizes for hollows.

The risk of offsets not being effective is compounded by the assumed ability for revegetation to succeed in a drying/heating climate. In addition, there is no condition for the revegetation to be deemed successful before existing native vegetation is cleared, potentially leaving a myriad of species such as the Woylie, Red-tailed Phascogale and Black Cockatoos without suitable habitat for decades, if not hundreds of years.

The EPA states that offsets may be considered for a proposal where it determines that the residual impacts are significant, after avoidance, minimisation and rehabilitation have been pursued. Wafa argues that avoidance has not been adequately pursued and hence the EPA has not properly applied the mitigation hierarchy.

B16 - B17 Inland Water and Terrestrial Environmental Quality



Hotham River

At multiple points the EPA notes that there are limitations and knowledge gaps associated with the water modelling used (South32 2024) and as a result, it cannot assess specific impacts on how groundwater changes and discharge may impact riverbank erosion and sedimentation in the Augustus River or how potential acid sulfate soils, if exposed, may impact environmental receptors.

The exact location of additional groundwater abstraction bores is also not yet confirmed. Whilst **B16 - B17** are welcome, requiring the proponent to ensure there are no adverse impacts, knowing the existence of knowledge gaps, the EPA fails to apply its precautionary principle to ensure the protection of inland water and terrestrial environmental quality.

B18 Social Surroundings (Aboriginal Cultural Heritage)

Whilst Wafa acknowledges the limitations of the Aboriginal Heritage Act 1972 we welcome the recommendation of condition **B18** to increase the level of protection for Aboriginal Cultural Heritage in the PAA.

MONITORING & COMPLIANCE

Wafa supports **Condition C** which requires environmental management plans to meet conditions and be approved by the CEO of DWER before work can be commenced and for the plans to be reviewed regularly, as well as increased monitoring.

Wafa strongly supports **Condition D** which sets out requirements for non-compliance and compliance reporting to the CEO of DWER as well as the public availability of data.

D1-2 states: 'Failure to comply with the requirements of a condition, or with the content of an environmental management plan required under a condition, constitutes a non-compliance with these conditions' (EPA 2024, 256). However, there is no clarity re **the consequences for non-compliance**. This is particularly concerning for non-compliance with environmental outcomes.

We welcome the additional scrutiny and accountability of South32's mining and hope the consequences for non-compliance are clarified and substantial.

REFERENCES

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- Stantec (2023) *Alcoa Jarrah Forest Rehabilitation – Peer Review*, Prepared for GHD, November. (Alcoa MMP 2023-2027, Appendix 6).
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