

**ALCOA'S 'BAUXITE MINING ON THE DARLING RANGE 2023 – 2027' AND  
PINJARRA ALUMINA REFINERY REVISED PROPOSAL  
PUBLIC ENVIRONMENTAL REVIEW**

Due 21 August 2025 <https://consultation.epa.wa.gov.au/>

EPA is assessing:

- Bauxite mining on the Darling Range in the southwest of WA for the years 2023 to 2027 (Bauxite Mining Proposal)
- Pinjarra Alumina Refinery Revised Proposal (Pinjarra Refinery Proposal)

The Urban Bushland Council reads that:

*'The proposal will require clearing of no more than 7,500 hectares (ha) of native vegetation within a 42,415 ha development envelope associated with mining, and an additional 10 ha of native vegetation associated with the refinery.'*

Because of the nature of bauxite, *'About half a metre of topsoil is removed and conserved for later rehabilitation. The next one to two metres is then drilled and blasted for extraction.'* ('Mining and Energy WA': State Library of WA - [exhibitions.slwa.wa.gov.au](http://exhibitions.slwa.wa.gov.au)). *'Darling Range bauxite is a low-grade ore with a content of more than 27% aluminium oxide, taking seven tonnes of bauxite to yield one tonne of aluminium.'* (ibid)

**Jarrah forests cannot be restored after bauxite is mined.**

Jarrah forests cannot be restored after bauxite is mined. Bauxite is an important element for a healthy forest. *Over the course of 60 years, Alcoa has cleared more than 30,000 ha of native forest for its mining operations but has only handed back 1355 ha to the state government as "rehabilitated."* Alcoa maintain that it has rehabilitated more than 75% of the 27,860 hectares. However, none of that area up to 2021 *'has been found to meet the government's rehabilitation completion criteria according to WA's Department of Biodiversity, Conservation and attractions.'* (WA Today: Peter Milne March 15, 2023)

And as stated in the Forest Management Plan:

*Despite intensive rehabilitation efforts, full return of the pre-existing soils, landforms vegetation and ecosystem functions after major disturbances may take hundreds of years or may never occur.* (FMP p43)

On ecological restoration research, It was reported in Restoration Ecology Journal that *'Two-thirds of indicator plants were significantly under-represented in early-stage restoration and declined with age. Most plant species were effectively absent, including key structural species. Invasive plants and native legumes were persistently over abundant. Time required for the maturation of tree species will prevent the production of fundamental ecosystem features for well over a century (eg hollows and fallen logs), inhibiting functional fauna return (reptiles, bats, and conservation priority cockatoos in particular).'* (24 September 2024: Tristan Campbell, Kingsley W. Dixon, Sidney D. Bradshaw, George D. Gann, William Hartley, Hans Lambers, Grant Wardell-Johnson: *Standards-based evaluation inform ecological restoration outcomes for a major mining activity in a global biodiversity hotspot*)

The paper suggests that the removal of *'the deep, multilayered substrate on which the ecosystem evolved, and establishing restoration on shallow topsoil over a more homogenized, impervious substrate'*, may be the reason that restoration has been so sub-standard. (ibid: Abstract)

As the Chair of the EPA noted, there has been a change in appreciation of the forest since it was valued mainly as a timber resource. (pers comm: 31 July 2025). The destruction of more of the Northern Jarrah Forest is a net loss both for our climate and for the forest's biodiversity.

The Urban Bushland Council cannot support continued bauxite mining in the Northern Jarrah Forest.

## COMMENT ON EPA FACTORS

Flora and vegetation, Terrestrial fauna, Inland waters, Social surroundings and adds factors Human Health, Climate change and Cumulative impacts.

- 1.) **Flora and vegetation; Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained.**

## PROTECTION OF TECS, PECS.

Name	Type	Status	Occurrence	Document Source
Empodisma peatlands of southwestern Australia	Threatened Ecological Community (TEC)	Endangered (EPBC Act)	Willowdale (confirmed); Huntly (potential)	Appendix 25 - Threatened and Priority Ecological Communities Assessment
Granite communities of the Northern Jarrah Forest	Priority Ecological Community (PEC)	Priority 3 (DBCA)	Huntly (1,007 ha); Willowdale (1.8 ha)	Appendix 14 - Huntly and Willowdale Flora and Vegetation Values Summary

Project 2385 includes areas of the Threatened Ecological Community “Empodisma peatlands of southwestern Australia” and the Priority Ecological Community “Granite Communities of the Northern Jarrah Forest”.

We call for all currently known and future surveyed occurrences of these communities to be **ALL** protected in **mining avoidance zones**. We call for **NO** clearing of these communities.

The *Empodisma peatlands* are sensitive wetland systems dependent on high groundwater levels, stable hydrology, and intact vegetation buffers. They are particularly vulnerable to minor hydrological changes and require adequate buffers for their protection from mining. Even if direct clearing is avoided, fragmentation and incremental hydrological shifts could lead to long-term functional loss. If even 1–5 ha of peatland is directly cleared or hydrologically compromised within the Willowdale DE, this represents a significant fraction of the remaining patches in that subregion.

- All instances of these peatlands should be in permanent exclusion zones, with a minimum of 100 – 200 m buffer to maintain functional integrity.
- detailed hydrogeological modelling or long-term wetland health monitoring plan should be developed and implemented – none is presented within these documents.
- Include these peatlands explicitly in the design of offsets

The “*Granite Communities of the Northern Jarrah Forest*” PEC comprises unique assemblages of flora and microhabitats that are restricted to granite outcrops and associated shallow soils. They support high levels of plant endemism, including numerous Priority flora species. It is sensitive to disturbance, with limited natural resilience to hydrological changes, weed incursion, or physical soil disruption.

Due to the limited extent, high endemism, and sensitivity of the Granite PEC, even minor encroachment or disturbance can lead to disproportionately large ecological consequences.

- All instances of these granite outcrop communities should be in permanent exclusion zones with a minimum of 50–100 m buffers to maintain functional integrity
- detailed hydrogeological modelling or long-term wetland health monitoring plan should be developed and implemented
- develop weed and fire management protocols with focus on sensitive granitic flora assemblages.
- Include granite PECs explicitly in the design of offsets.

## NO FLORA OFFSETS PROPOSED PINJARRA REFINERY

The Pinjarra Refinery ERD (Flora & Vegetation chapter) concluded that no threatened or priority flora or ecological communities were recorded during field surveys across the proposed clearing areas, and thus the proposal is unlikely to cause significant residual impacts on those kinds of values meaning no flora-related offsets are proposed. Yet there is a proposed loss of 97.5 ha of native vegetation.

## OFFICE OF AUDITOR GENERAL'S REPORT ON CONSERVATION OF TECS

Furthermore, and given the recent release of the Auditor General's report "*Conservation of Threatened Ecological Communities (TECs)*" those recommendations should be integrated into Alcoa's extension plan to ensure stronger regulatory alignment with the BC and EPBC Acts, with clear accountability mechanisms, and a pathway to ongoing compliance and ecological resilience for both the Empodisma peatlands and the Granite communities.

## TREE MORTALITY

Although Alcoa acknowledges the challenges posed by climate change in the Northern Jarrah Forest (NJF) they make no direct reference to the widespread tree mortality event of Summer–Autumn 2023/2024. We call for the following to be explicitly addressed:

- The scale and intensity of the 2023–24 tree mortality event as a climate impact threshold.
- Any new mitigation or offset measures arising in response to the recent dieback.
- Modelling that explicitly accounts for non-linear forest collapse scenarios (e.g. sudden, widespread canopy death).

The Intergovernmental Panel on Climate Change (IPCC) stated that the 'Jarrah Forest east of Perth was categorised as at 'risk of collapse.' The IPCC's Sixth Assessment Report, particularly highlighted the Northern Jarrah Forest as an ecosystem facing a high risk of collapse or transition due to climate change.

## PROTECTION OF PRIORITY FLORA

Also found in this project area are at least 6 priority flora species, with many more potentially present. We call for no clearing of these species.

Name	Priority Rating	Occurrence	Document source
Netrostylis sp. Nannup	Priority 1 (DBCA)	Willowdale	Appendix 21 - Willowdale Targeted Flora Survey - Spring 2023
Grevillea prominens	Priority 3 (DBCA)	Willowdale	Appendix 21 - Willowdale Targeted Flora Survey - Spring 2023
Senecio leucoglossus	Priority 4 (DBCA)	Huntly and Willowdale	Appendix 21 - Willowdale Targeted Flora Survey - Spring 2023
Stylidium ireneae	Priority 4 (DBCA)	Huntly	Appendix 14 - Huntly and Willowdale Flora and Vegetation Values Summary
Acacia horridula	Priority 3	Huntly	Appendix 21 - Willowdale Targeted Flora Survey - Spring 2023
Thysanotus anceps	Priority 1	Huntly	Appendix 21 - Willowdale Targeted Flora Survey - Spring 2023

### 2.) Terrestrial fauna: Objective: To protect terrestrial fauna so that ecological diversity and ecological integrity are maintained.

Threatened fauna include Baudin's, Carnaby's and Forest Red-tailed Cockatoos as well as Woylie, Chuditch, Quokka and Carter's Freshwater Mussel.

The three species of black cockatoo are in danger of extinction. In the Huntly and Willowdale areas, Alcoa has cleared ~24,826 hectares of vegetation since mining started. (Huntly has cleared 11,023 hectares and Willowdale 4,667 hectares.)

We read that Huntly and Willowdale do have two black cockatoo protection zones but habitat across the development areas is significant. Clearing is a major contributor to declining populations of all three species.

#### BAUDIN'S COCKATOO

- *'(A4) The species is inferred to have undergone a greater than 80% reduction in the past two generations (1998-2024) based on observed reduction in number of individuals counted at traditional roost sites in the northern jarrah-marri forest, with most roosts declining by 90-100%. This rate of decline is estimated to continue for at least another generation due to ongoing clearing and removal of suitable breeding hollows, competition of breeding hollows with other species (e.g. other cockatoos, feral honey bees, etc.), decline in habitat quality (e.g. drought), increased mining activity and illegal shooting/poaching'.*

Meets criteria as 'Critically Endangered' (Nomination for listing as 'critically endangered' p3 nomination form)

An uplisting to Critically Endangered would put the WA legislation in agreement with recent assessments accepted by IUCN, BirdLife International and the Action Plan for Australian Birds 2020 (Garnett and Baker (eds) 2021). (p5 Nomination form)

Viv Read, BirdLife WA's spokesperson, said that *'If the government proceeds with business as usual, the Baudin's will be functionally extinct in 50 years....it will not exist in its own environment...It is a shadow species that is slipping into the dark'.* (July 22, 2025 Emma Young, WA Today: *'Death knell for Baudin's black cockatoo as conservation bid rejected'.*)

- Birdlife WA warns that if bauxite mining continues in the Northern Jarrah Forest, Baudins will go extinct. These birds are highly dependent of the Northern Jarrah Forest during the nonbreeding season... **'It's Baudin's or Bauxite. We can't have both.'** (Birdlife's bold)

The message continues *'...bauxite mining is tearing through more than 200,000 hectares of the forest. Once mined, it cannot be fully rehabilitated – not for cockatoos, and not for future generations.'*

- *'Aluminium – the world's most abundant metal – is driving Baudin's Black-Cockatoo to extinction by destroying their home in one of the world's most unique biodiversity hotspots,'* said Dr Mark Henryon. Birdlife Australia's spokesperson. (From Boddington referral by Phoenix)
- DoEE (2017) states that *'The clearing of breeding habitat is highly likely to have a significant impact'*. (p3 Phoenix – Boddington)
- There are isolated breeding populations of Baudin's in the Jarrah forest (Kirkby 2020 p 11 Phoenix Boddington)
- Number of mature individuals is observed and projected to continue to decline with 100% of mature individuals in one subpopulation. (p4 Nomination form)
- Baudin's Black-Cockatoo habitat overlaps heavily with mining operations in the Northern Jarrah Forest. The Northern Jarrah Forest is part of the Southwest Australia biodiversity hotspot – one of only 36 global regions recognised for high endemism and critical threat. (22 July 2025: Media Release 'Critically Endangered listing of Baudin's rejected'. Birdlife Australia)
- There are no records of Baudin's using artificial hollows in the wild. (DBCA unpublished data, 2023) (Threatened Species nomination form for Baudins)
- *'It is reported that 90 – 95% of the Baudin's population overwinter in the Northern Darling Scarp and Plateau region.'* (Johnstone et al. 2021) (p18 Threatened species nomination form)

- *'Baudin's cockatoo have seasonal movements within Western Australia, with flocks occupying the northern jarrah/marri forests of the Darling Scarp and Plateau region in autumn-winter, before moving south in spring-summer to breed, occupying more southern eucalypt forest'*(p 19 Th. Species nomination form).
- Although loss of hollows for the purpose of logging has reduced, loss of habitat for the purpose of mining continues, with approximately 60% of Baudin's cockatoo distribution falling within pending or active mining tenements and multiple new, high impact projects coming online. (p23 Th Species nomination form).
- The population was estimated in 2017 to be between 5000 and 8000 individuals of which 3250 (range 2500 – 4000) were estimated to be mature individuals. (TSSC2018, Johnstone et al. 2021) (p 23 of Threatened Species nomination form) mature individuals (TSSC 2018, Johnstone et al. 2021).
- This species is believed to be in decline (Pryor, Barrett and Williams 2024; Johnstone and Kirkby 2019, Peck et al. 2019, Johnstone et al. 2021). By extrapolating population trends from monitoring data at five northern jarrah-marri forest roost sites (the wintering area for c.95% of the population) from the first year of observation to present (~2 generations) an estimated decrease of >86% was observed at all monitored sites. It is suspected that declines are therefore occurring at a conservative rate of 85%, to account for the 5% of the population that do not roost in the northern jarrah-marri forest, with no apparent amelioration of the threats facing the species.
- Further evidence from the Northern Darling Scarp and Plateau region, where mixed flocks of Baudin's cockatoo (70%) and Carnaby's cockatoo (30%) have been declining at a rate of c.7% per year since 2010 (p 37, Pryor, Barrett and Williams 2023).  
Consequently, the population is inferred to have declined by more than 80% in the last two generations (1998-2024). It is suspected that the declines will continue due to nest hollow shortages causing ongoing poor breeding and recruitment, while projections of increased temperatures, drought and fire all suggest less forest food and fewer sites with accessible drinking water will be available between now and in three generation lengths' time (Johnstone et al. 2021). (p25 Nomination form)
- Removal of hollows increases competition for use of the remaining suitable hollows, with Baudin's cockatoo competing with Carnaby's cockatoo (*Zanda latirostris*), white cockatoos (*Cacatua* spp.), regent parrots (*Polytelis anthopeplus*), Australian wood ducks (*Chenonetta jubata*) and European honey bees (*Apis mellifera*), which all successfully displace Baudin's cockatoos (Johnstone and Kirkby 2008, Chapman 2008, TSSC 2018). ( p31 Th species nomination form)
- Meets criteria as 'Critically Endangered' (Nomination for listing as 'critically endangered' p3 nomination form)

An uplisting to Critically Endangered would put the WA legislation in agreement with recent assessments accepted by IUCN, BirdLife International and the Action Plan for Australian Birds 2020 (Garnett and Baker (eds) 2021). (p5 Nomination form)

#### **CARNABY'S COCKATOO**

- 'Disappeared from over one third of its historical breeding range because of extensive habitat loss in the Avon-Wheatbelt region. Subsequently the breeding distribution of Carnaby's Cockatoo has shifted westward through the Jarrah forest region where it now also breeds (p11 Phoenix Boddington)  
Alcoa's document 'Appendix 5 – Fauna Management Plan – Huntly and Willowdale Mines, June 2024' *does not acknowledge Carnaby's shift for breeding into the Jarrah forest'.* (p 37 'Conservation Significant Fauna and their associated High Value Habitats and Potential Impacts/Threats.')

Carnaby's Cockatoos have been picked up starving in and around Perth such that there is a groundswell from the community trying to help Carnaby's survive. The community and local governments are planting cockatoo food, installing drinking stations and bird baths and breeding boxes are being installed in suburbs as well. Supplementary feeding has started over suburbs.

Around 2,000 people attended a rally on 2 June where the crowd walked through persistent rain from Supreme Court Gardens to Parliament House. Included in the crowd were people who had walked 250 km over 10 days to support protection of the Jarrah Forest. This comment is an indication of support for protection of the Northern Jarrah Forest.

The 'Recovery Objective' for Carnaby's Cockatoo is:

*To stop further decline in the distribution and abundance of Carnaby's cockatoo by protecting the birds throughout their life stages and enhancing habitat critical for survival throughout their breeding and non-breeding range, ensuring that the reproductive capacity of the species remains stable or increases.* (p1 Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan October 2013)

In relation to breeding for Carnaby's Cockatoo the Recovery Plan states:

*There has been an apparent expansion in the breeding range [Jarrah forests from Mundaring to Nannup, Hopetoun, Perth and Peel region (Johnstone and Storr, 1998; Johnstone et al. 2011; Raana Scott, BirdLife Australia, pers. comm. 2012)]:*

*to include areas further west and south since the middle of last century with a more rapid increase in the past 10-30 years into the Jarrah-Marri forests and the coastal tuart forests south of Perth (Johnstone and Storr 1998; Johnstone et al. 2011).* (p7 Carnaby's Cockatoo Recovery Plan)

Further advice is that:

*In the short term (decades), the loss or degradation of feeding habitat adjacent (i.e. <12 km) to breeding sites is considered to pose the greatest risk to Carnaby's cockatoos (Saunders and Ingram 1998).* (p14 *ibid*)

#### **FOREST RED-TAILED BLACK COCKATOO:**

Showing their adaptability Forest Red-tailed Cockatoos have had to come out of the forest after drought and seek food on the Swan Coastal Plain. However, although some breeding has occurred on the Plain, Red-tails main breeding areas are in the Jarrah Forest. Jarrah is a favoured food of Red-tails (Evidence of redtails voraciously eating Jarrah every day in Underwood Bushland, Shenton Park, when the flocks are on the Plain.) Red-tails generally only breed every second year and generally only produce one young.

All habitat in the Jarrah Forest is significant.

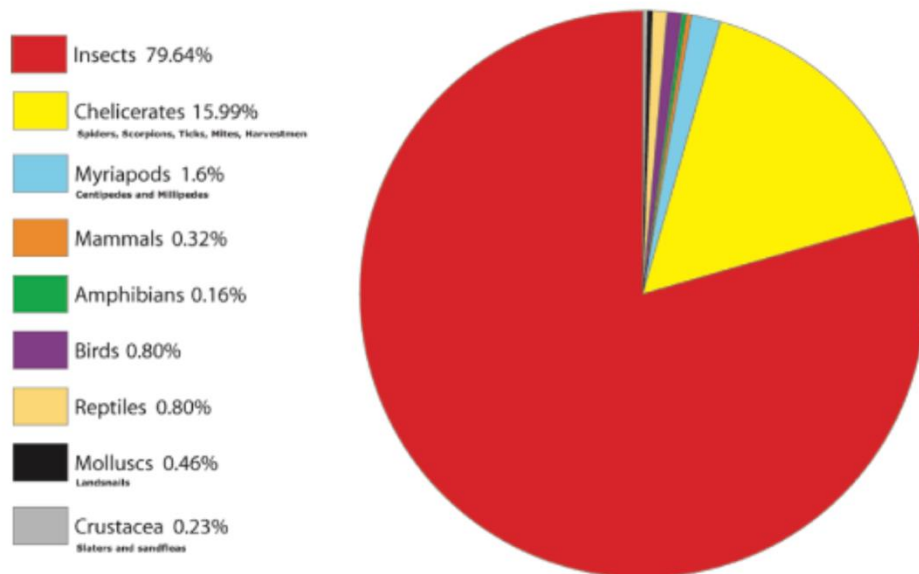
#### **WESTERN BRUSH WALLABY**

The Western Brush Wallaby is a beautiful animal. This writer has seen at close range a Western Brush Wallaby on the Bibbulmun Track near Mundaring. 'A dramatic increase in the number of foxes in the early 1970s in south-western Australia appears to have led to a decline of numbers of the Western Brush Wallaby.. The Western Brush Wallaby is now uncommon throughout its range but its numbers increase in response to fox baiting.... The Western Brush Wallaby was fully protected in 1951'. (DEC Fauna Profiles Western Brush Wallaby *Macropus irma* (Jourdan, 1837))

#### **SHORT RANGE ENDEMIC**

The pie chart below from 'Bungendore Park Macroinvertebrate and Herpetofauna Inventory Surveys 2015-2018', demonstrates the ratio of insects to other fauna species. (p 6 Spineless Wonders, Terrestrial Invertebrate Surveys)

## Western Australia's Land Fauna - Species biodiversity



Adapted from a WA Museum model - copyright SPINELESS WONDERS WA 2008

Figure 1 — This revealing pie chart serves as a general guide to the typical ratios of the major faunal groups just about anywhere on vegetated land.

*'The macroinvertebrate biota are virtually invisible from a public and management point of view. Most species sit in boxes in museums and other government departments, mostly undatabased and difficult to access.'* (ibid p 30)

This Spineless Wonders document also recommends that light pollution is a threatening process as important nocturnal pollinators will be affected by lighting. (predation of moths around lights). *The largest proportion of flower-visiting insects, by far, belong in the Order Lepidoptera (moths and butterflies) of which only a small proportion are diurnal. The implication is that the majority of potential pollinating species are active at night and that many flowering plants are making nectar available at night.'* (Ibid p31)

As an example of the biodiversity of spiders found in the 30 hectare Bungendore Park, 93 different species of spider were photographed and recorded.

### TRAPDOOR SPIDERS

Alcoa's document states that: *'No specific provisions are proposed at this stage for Short-Range Endemics (SREs) as studies and research are currently being undertaken to identify SRE (invertebrate) fauna habitat and values'*. (p9 appendix 5 – Fauna Management Plan – Huntly and Willowdale Mines. June 2024.)

As *'studies and research are underway'*, the precautionary principle should apply and further proposed clearing should not be undertaken. This writer has seen a male trapdoor spider – *Missulena* genus - wandering on a track presumably seeking a female. After mating the males die but females are very long lived. Also seen was an orange legged trapdoor spider in the forest in the vicinity of a tributary of the Helena River.

### JEWEL BEETLES

Since 1978, Jewel beetles have been protected under Western Australian law – as 'rare fauna' (Rewild Perth). They play an important role as pollinators in the Northern Jarrah Forest, 'helping to connect biodiversity across the landscape'.

#### 4.) Inland waters: Objective: To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

- Water Protection Areas. The State Government implemented a 2km 'reservoir protection zone. Alcoa has committed to not working within the 0 - 1km WPZ (Alcoa's advertisement West

Australian July. 30th p 15) but it is reported that Kane Moyle, Alcoa's Director of Regulatory Approvals, said that Alcoa will need to continue in the 1 – 2km zone 'before we transition to new mine regions.' Is Alcoa in a position for such an announcement?

- Alcoa had also stated to Premier Cook: *'It's not economically viable for the company to retreat from those higher risk areas including close to reservoirs.'* Six days later the state government issued a special exemption to bypass the EPA – a \$100 m financial guarantee from Alcoa. (conditional exemption for Alcoa under Section 6 of the EPAct) (WA.gov.au 'New framework to strengthen Alcoa's environmental approval')
- The Water Corporation has said that Alcoa's mining in water supply catchments is 'the single most significant risk to water quality in Perth and the South West' and that a contamination event is 'considered certain.'

Comment: If Alcoa cannot retreat from areas close to water protection reservoirs because it is uneconomical, despite advice from the State government that retreat is necessary, the state government should not bow to Alcoa's pressure.

#### **8.) Human Health: Objective: to protect human health from significant harm.**

Viewing the damage and fragmentation over the unique Northern Jarrah Forest caused by mining is distressing to many, not least to Aboriginal peoples to whom the forest supported their livelihood and culture. We read that 'For the Noongar, the forest is not just a landscape but a living entity with spiritual and practical connections.'

#### **Climate Change**

*'It is not a climate solution to mine for critical minerals if it degrades intact forests or habitat for threatened species'.* (21 July 2025: Minister Matthew Swinbourn on the decision to not approve mining in Cocanarup).

*Climate Change results in reduction of resources and suitable habitat and therefore lower reproductive output (past, present and future.)* (P7 Threatened Species nomination form)

*'...CO<sub>2</sub> concentrations now are likely to be the highest they have been in at least the past 2 million years'.* (CSIRO csiro.au)

CSIRO reports that to June 2023 CO<sub>2</sub> concentration is 416ppm.

In February this year, the Intergovernmental Panel on Climate Change (IPCC) released its Sixth Assessment Report. In its findings, it highlighted key ecosystems around the globe that are at greatest risk from a changing climate. Among those singled out in Australasia was the Northern Jarrah Forest, with the report finding with "high confidence" that jarrah forests are at risk of *"transition or collapse...due to hotter and drier conditions with more fires."*

Consequently, the report recommended "avoiding and reducing forest degradation from inappropriate forest management practices and land use."

A fundamental structural change has occurred in the Jarrah Forest. Grant Wardell-Johnson, Adjunct Associate Professor, Centre of Mine Site Restoration and School of Molecular and Life Sciences, Curtin University' has stated: *'Research has shown a loss of forest height, biomass and structural integrity'* [from a consistent trend of declining rainfall in the south -west region since 1970.

Within this drying climate, Professor Wardell-Johnson advised that the water table within the NJF has also dropped and is therefore likely to reach bedrock within this decade. What this means is that jarrah will have to survive on rainfall alone, upon soils that are easily damaged by disturbance such as logging and mining.

#### **Cumulative Impacts.**

The declared cumulative impacts are very large and when aggregated with those of other miners show the scale of environmental harm from these proposals.



The environmental impacts in the Northern Jarrah Forest are listed by Alcoa as *'clearing for agriculture, and timber harvesting'*. Other activities affecting flora and vegetation... *'include prescribed burning, bauxite and gold mining, timber plantations and water supply reservoirs.'* (p 747 Cumulative Environmental Impact Assessment).

Alcoa's mining areas of Huntly, Willowdale and Jarrahdale mines amount to 443,714 hectares. When the South 32 Worsley Bauxite Mine and Newmont Boddington Goldmine are added to Alcoa's three mines the total of future disturbance in 69,181 hectares.

Alcoa claim that *'mining is expected to cause a cumulative, but temporary loss of floristic diversity and ecological integrity...'* (p 751 *ibid*) and *'Mining within the subregion is expected to cause a cumulative impact over the medium to long term until rehabilitation has been completed and is established.'* (p 751 *ibid*)

Phytophthora dieback *'may result in the spread to approximately 29 ha of uninfested forest'* (Section 5.2.6.1). (p 752 *Ibid*)

Under section 10.4 'Terrestrial Fauna Cumulative Impacts' (p757 *ibid*) is the following: *'Mining has caused the following impacts:*

- *Short to medium term ecological and amenity impacts during operations and until rehabilitation establishes.*
- *Long term loss of fauna habitats.*
- *Increase in noise and light pollution.*
- *Increase of vehicle-wildlife collision because of increase traffic in the mine area.*
- *Rehabilitation restoring varying biodiversity, ecological integrity, and landscape quality.'*

In regard to 'cumulative impacts' Alcoa claims that:

*'Due to the distance between operations, alterations [of drainage channels and groundwater levels] are expected to be localised and not result in cumulative impacts.'*

In Table 10-4 of the same document, we read that cumulative impacts to fauna habitat (Huntly Mine Region) 2027 - 2028 Existing Proposal will be 4,875 ha and 2030-2034 will be 3,262 ha. The equivalent for the Willowdale Mine is 4,707 ha and 2,111 ha. (p 760)

## Conclusion

The Urban Bushland Council oppose Alcoa's proposed expansion of bauxite mining in the Northern Jarrah Forest. The destruction of our forest is a net loss, and the precautionary principle must be employed as the future is so uncertain.

Chairperson

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