# 14. Offsets

## 14.1 EPA Objective

The EPA's environmental objective for proposals that may require environmental offsets is "To counterbalance any significant residual environmental impacts and/or uncertainty through the application of offsets" (EPA 2014). In the context of the *Environmental Protection and Biodiversity Act 1999* (EPBC Act), environmental offsets are necessary when there are residual significant impacts on nationally significant fauna, flora, habitats or places[1].

Alcoa is committed to providing an environmental offset in accordance with relevant WA and Commonwealth offset policy and guidance for identified residual significant impacts.

## 14.2 Policy and Guidance

The application and assessment of environmental offsets for the Proposal has been undertaken with consideration of WA and Commonwealth Offset Policies and Guidelines and other statutory documentation.

### 14.2.1 State Guidance

Alcoa's Offset Strategy and Offset Proposal have been developed in consideration of the following WA Government offset documents:

- *WA Environmental Offsets Policy (GoWA 2011)*
- *WA Environmental Offsets Guidelines (GoWA 2014)*
- *WA EPA Public Advice: Considering environmental offsets at a regional scale (EPA 2024)*
- *Corporate Policy Statement No. 4 Environmental Offsets (DPaW 2016)*

As per the WA Environmental Offset Policy, environmental offsets will only be applied where the residual impacts of a project are determined to be significant, after avoidance, minimisation and rehabilitation have been pursued (GoWA 2014). It is also a requirement to consider the WA Offsets Policy in determining whether offsets are suitable for a Proposal, including having regard for the following principles:

- Environmental offsets will only be considered after avoidance and mitigation options have been pursued
- Environmental offsets are not appropriate for all projects
- Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted
- Environmental offsets will be based on sound environmental information and knowledge
- Environmental offsets will be applied within a framework of adaptive management
- Environmental offsets will be focused on longer term strategic outcomes.

[1] Under the EPBC Act *Environmental Offsets Policy* (DSEWPaC 2012) the term "residual significant impacts" (RSI) is used to identify significant impacts on a matter protected (MNES) under national environment law (the EPBC Act) that remain following avoidance and mitigation measures. The term significant residual significant impact (SRI) will be used in this document but is to be taken to have the same meaning as residual significant impact (RSI).

### 14.2.2 Commonwealth Guidance

Alcoa's Offset Strategy and Offset Proposal have been developed in consideration of the *EPBC Act Environmental Offsets Policy (DSEWPaC 2012)*.

The EPBC Environmental Offsets Policy (DSEWPaC 2012) requires that the following principles are met by an offset proposal:

- Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter
- Suitable offsets must be built around direct offsets but may include other compensatory measures
- Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter
- Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter
- Suitable offsets must effectively account for and manage the risks of the offset not succeeding
- Suitable offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs
- Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable
- Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

### 14.2.3 Conservation Advice, Recovery Plans, Threat Abatement Plans

Alcoa has also considered other statutory documentation relevant to threatened species including:

- Carnaby's cockatoo *(Calyptorhynchus latirostris)* Recovery Plan. Department of Parks and Wildlife, Perth, Western Australia (DPaW 2013)
- Approved Conservation Advice for *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) (DEWHA 2009)
- Conservation Advice *Calyptorhynchus baudinii* Baudin's cockatoo (TSSC 2018)
- Quokka (*Setonix brachyurus)* Recovery Plan (DEC 2013)
- Chuditch (*Dasyurus geoffroii*) Recovery Plan (DEC 2012)
- National Recovery Plan for the woylie *Bettongia penicillata* (Yeatman & Groom 2012)
- Threat abatement plan for predation by the European red fox (DEWHA 2008)
- Threat abatement plan for predation by feral cats (DotE 2015)
- Threat abatement plan for competition and land degradation by rabbits (DotEE 2016)
- Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*) (DotEE 2017)
- Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomic (DotEE 2018)

## 14.3 Significant Residual Impacts

Alcoa have implemented avoidance and mitigation measures to the extent possible at this stage of the assessment. Pre-clearance surveys will be conducted and used to incorporate further avoidance and mitigation measures during operations. Following mining, Alcoa rehabilitate mine pits to jarrah forest, returning habitat for fauna. Haul roads and infrastructure are rehabilitated once all activities in the respective area are completed.

Alcoa will clear no more than 7,500 hectares of vegetation under this Proposal over an approximate 20 year (~2026-2045) period, if the Proposal is implemented. The environmental impact assessment concluded the Proposal is unlikely to have a significant residual impact on flora and vegetation and therefore no environmental offsets for this EPA factor are proposed. However, the assessment concluded that the Proposal is likely to have a significant residual impact on habitat for some species of Threatened fauna, if implemented.

Alcoa have used the Commonwealth Offset Assessment Guide (OAG)[2] as a guide to determine the residual significant impacts and calculate a reasonable and appropriate offset area to which offset measures are to be applied. The residual significant impacts and offsets have been calculated using area  in hectares. Alcoa uses fauna spotters and other management measures to avoid direct mortality or injury to fauna. The impacts to fauna are from the loss or degradation of their habitat. Therefore, the impacts and offsets are calculated based on loss of habitat.

This ERD identifies that the construction and operation of the Proposal in the Mine DE is likely to have a residual significant impact on the EPA Terrestrial Fauna (Section 6) environmental factor and Commonwealth MNES (Section 15).

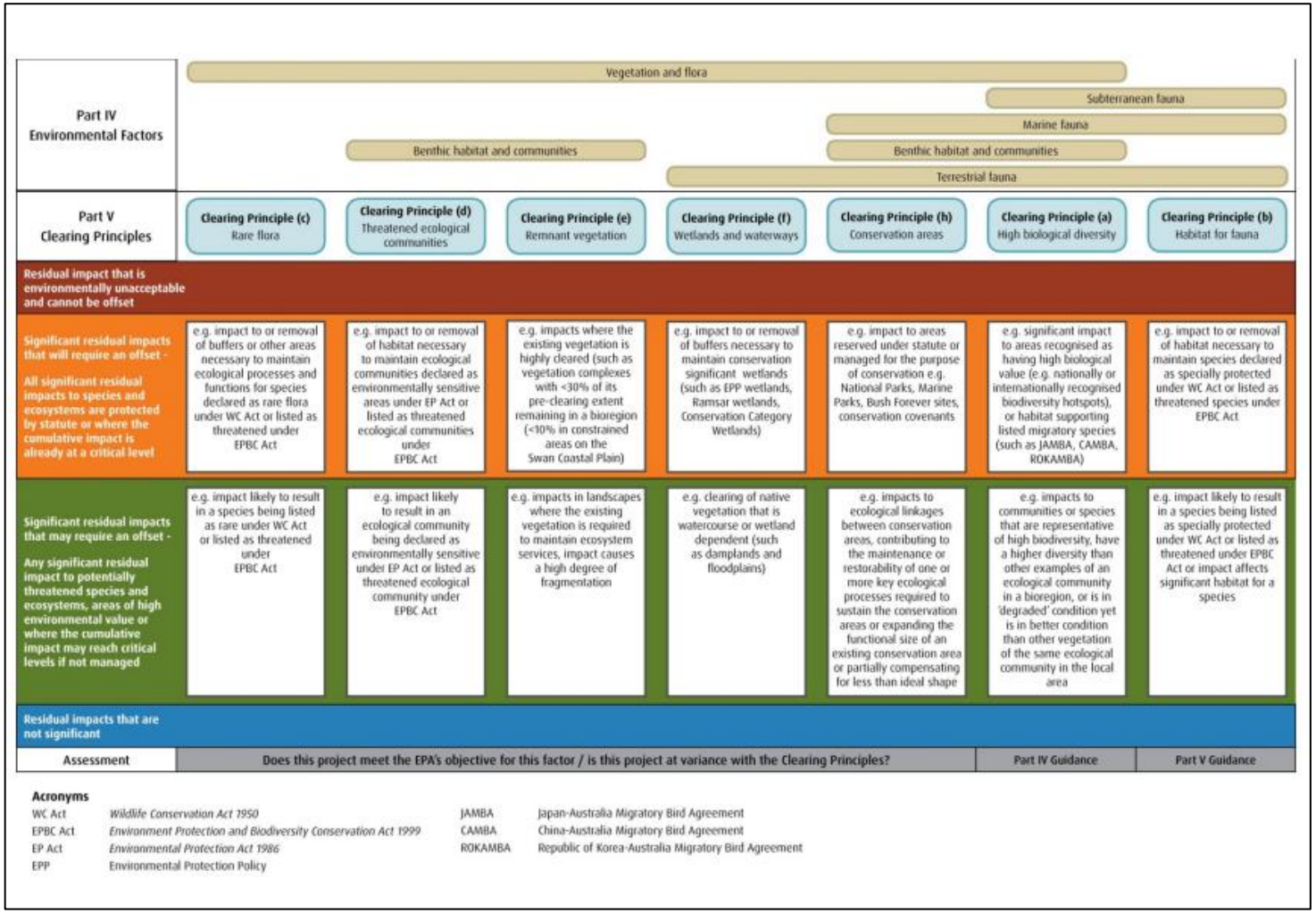
For the purposes of the accredited assessment, the SRI for Myara North and Holyoake are presented separately from the SRI for O'Neil. The extent of the likely significant residual impacts is in Table 14.1. The Residual Impact Significance Model (RISM), prepared as per Figure 3 in the WA Environmental Offsets Guidelines, is in Table 14.2

[2] The Commonwealth OAG is a tool that was developed for expert users in the government to assess the suitability of offset proposals. The OAG is available to proponents to assist with planning and estimating future offset requirements.

**Table 14.1 Residual Significant Impacts of the Proposal**

| Species | EPBC Act Status | Total area of habitat impacted (ha) | Average weighted habitat quality score | Quantum of impact (ha) (SRI) | Total area of habitat impacted (ha) | Average weighted habitat quality score | Quantum of impact (ha) (SRI) | Total area of habitat impacted (ha | Total Quantum of impact (ha) (SRI) |
|---|---|---|---|---|---|---|---|---|---|
| | | Myara North and Holyoake | | | O'Neil | | | Proposal | |
| Forest red-tailed black cockatoo | VU | 6,396 | 9 | 5,756 | 1,019 | 8 | 815 | 7,415 | 6,572 |
| Baudin's cockatoo | EN | 6,418 | 9 | 5,776 | 1,019 | 8 | 815 | 7,437 | 6,591 |
| Carnaby's cockatoo | EN | 6,413 | 8 | 5,130 | 1,017 | 7 | 712 | 7,431 | 5,842 |
| Woylie | EN | 6,293 | 5 | 3,147 | 1,061 | 6 | 637 | 7,354 | 3,783 |
| Chuditch | VU | 6,334 | 7 | 4,434 | 1,061 | 8 | 849 | 7,395 | 5,283 |
| Quokka | VU | 674 | 7 | 472 | 686 | 6 | 412 | 1,359 | 883 |

**Table 14.2 Residual Impact Significance Model**




Source: Government of Western Australia [GoWA]. (2014). WA Environmental Offsets Guidelines. Government of Western Australia, p 11.

## 14.4 Offset Strategy

Alcoa evaluated using land acquisition, revegetation, on-ground management and research as the primary approach to providing environmental offsets. The primary approach needed to be executable, reasonable and cost-effective; meet environmental offset policy and guidance and provide strategic environmental benefits for the species potentially impacted by Alcoa's operations.

The WA Environmental Offsets Guidelines expect that significant residual impacts on the public conservation estate (including State forests) will be offset by actions and activities that benefit the estate. Both State and Commonwealth offset policies require that environmental offsets should be additional to what is currently required, be as close to the impacts as possible and be able to be measured and quantified.

Delivering environmental offsets in the Northern Jarrah Forest is constrained by land tenure (most of ML1SA is Crown land) and vegetation extent (most of ML1SA contains intact native vegetation). Alcoa looked at the availability and suitability of land parcels that could be acquired or used for revegetation, but found unvegetated land parcels near its operations were small and widely dispersed, and therefore unlikely to be cost-effective, strategic or sustainable.

DCCEEW (DSEWPaC 2012) only consider research as the primary offset option when there is scientific uncertainty in the type of conservation actions that would benefit an impacted species.

After evaluating the regional, conservation and regulatory context, Alcoa determined the most appropriate and cost-effective approach for delivering environmental offsets that achieve desired outcomes is to develop an offset strategy that implements additional on-ground conservation actions in State Forests, beyond current or proposed management actions, financed through a self-managed fund. Alcoa's approach has evolved based on legislative changes, engagement with regulators (EPA and DCCEEW) and subject matter experts.

At a high-level, Alcoa's Environmental Offset Strategy aims to attain the following environmental outcomes:

1. Deliver landscape scale conservation outcomes through environmental offset projects in the Northern Jarrah Forest bioregion of Western Australia.
2. Protect and enhance important habitat areas for threatened species.
3. Support the implementation of priority actions identified in species management or recovery plans.
4. Facilitate and/or undertake research to address knowledge gaps and improve management of habitat for, and reduce threats to, threatened and conservation significant species.
5. Work collaboratively with all relevant stakeholders, including Traditional Owners, conservation agencies, industry, government, academia and environmental organisations, to achieve positive environmental, conservation and social outcomes.

Alcoa's Environmental Offset Strategy provides a systematic approach for the provision of its environmental offsets. The Environmental Offset Proposal provides an overview of the significant residual impact, the environmental objectives and outcomes to be

achieved and the proposed offset quantum. The Environmental Offset Proposal includes the conservation actions proposed to be undertaken (environmental offset project plans) and the areas in which the actions will be implemented (offset area management plans) to achieve the environmental objectives and outcomes. The Environmental Offset document framework, provided in Figure 14-1, shows how the offset documents are organised.

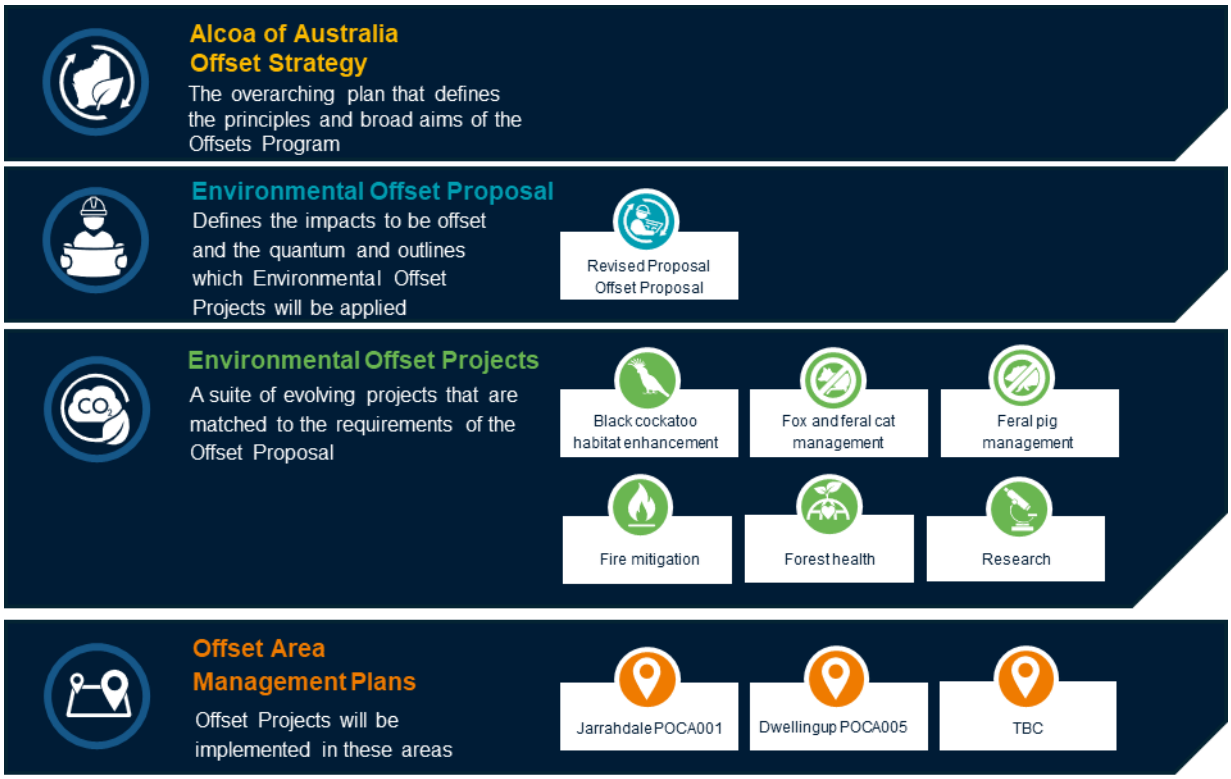



**Figure 14-1 Environmental Offset Document Framework**

A team will be established within Alcoa to manage the delivery of environmental offsets conditioned in Ministerial Statements, EPBC Act Approvals or other regulatory instruments. An Offset Steering Committee will include Alcoa Senior Executives, who review the delivery of approved Environmental Offset Proposals and consider strategic approaches or requirements for environmental offsets under any future Proposals or Controlled Actions. An Offset Advisory Group will be formed and consist of Alcoa technical specialists from the offset, biodiversity, ecology, rehabilitation and research teams.

Alcoa proposes to establish a Stakeholder Reference Group to provide stakeholder and community inputs into our Environmental Offset Proposals, Environmental Offset Project Plans and the development of Proposed Offset Conservation Areas. In addition to this Reference Group, Alcoa will continue to engage through its established forums and channels for community engagement. The membership of the group may be adjusted depending on the project or proposal area to meet local community expectations.

Alcoa has a separate compliance function within the business. This functional group will be provided with reports and assessments from the Offset Team. This will allow for an independent assessment and reporting of compliance with environmental offset conditions.

Alcoa proposes to fund environmental offset projects through transferring an AUD rate per approved hectare cleared each year into a self-managed fund on a prospective basis. The rate will be agreed prior to the commencement of actions under assessment and consider the expected costs to implement reasonable and cost-effective conservation projects. The rate per hectare and payment schedule will be documented within the Environmental Offset Proposal document.

Alcoa will be responsible for the delivery of the Environmental Offset Program; however, delivery of conservation actions may be undertaken by delivery providers. Delivery providers may include Alcoa internal functional areas or dedicated environmental offset teams, WA Government agencies (e.g. Department of Biodiversity, Conservation and Attractions (DBCA)), Traditional Owners (e.g. ranger groups), environmental practitioners, consultants or specialists, environmental non-government organisations and/or community groups.

Alcoa's Offset Strategy is in Appendix E1.

## 14.5 Offset Proposal

Alcoa has prepared an Offset Proposal for the Revised Proposal. The Offset Proposal is in Appendix E2 and is summarised here.

### 14.5.1 Proposed offsets

Alcoa's mining operations impact vegetation in State Forest. The WA Environmental Offsets Guidelines (GoWA, 2014) expect that impacts to the public conservation estate (including State Forests) will be offset by actions and activities that benefit the estate. Therefore, Alcoa propose to provide an environmental benefit that maintains or enhances environmental values and vegetation within areas of State Forest, as near to the impacts as possible (Alcoa, 2025a). This will provide beneficial conservation outcomes for the surrounding vegetation and species using habitat in the local area. Alcoa propose to deliver these environmental offsets through environmental offset projects implemented within proposed offset conservation areas (Alcoa, 2025a).

### 14.5.2 Proposed objectives

In the context of this Proposal, the environmental objectives are the overall aims that the Alcoa is seeking to achieve through the implementation of the offsets.

The objectives of the offsets proposed for this Proposal are to:

- Identify areas of important habitat within the NJF that support the ongoing viability of threatened species impacted by the Proposal.
- Implement recovery, threat abatement and conservation actions that enhance important habitat for black cockatoos, chuditch, woylie and quokka.
- Contribute to ongoing research, knowledge and understanding of threatened species and the way they use the NJF.
- Provide information on the appropriateness, suitability and effectiveness of recovery, threat abatement and management actions.

- Provide beneficial conservation outcomes for other species that use the habitat including but not limited to numbats, western ring tailed possums, quenda, brush-tailed phascogale, western brush wallaby and rakali.
- Help resolve key knowledge gaps, identified in consultation with DBCA, that will lead landscape scale and multi-organisation co-operation to maintain the ongoing ecological integrity of the NJF.

### 14.5.3 Proposed outcomes

Alcoa intends to measure success progression towards the achievement of the proposed environmental outcomes, rather than the process to be followed. Alcoa will work with the land manager (DBCA), key stakeholders and forest and species ecologists to determine the best method for achieving the proposed outcomes and will report progress on the proposed outcomes to the EPA and DCCEEW annually.

The proposed outcomes in the Offset Proposal have been developed with regards to:

- WA *Environmental Offsets Policy* (GoWA, 2011)
- WA *Environmental Offsets Guidelines* (GoWA, 2014)
- WA EPA *Public Advice: Considering environmental offsets at a regional scale* (Environmental Protection Authority [EPA], 2024b)
- *EPBC Act Environmental Offsets Policy* (DSEWPC, 2012)
- *Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans* (EPA, 2024a)
- *Environmental outcomes and outcomes-based conditions Interim Guidance* (EPA, 2021)
- *Outcomes-based conditions policy* (Commonwealth of Australia, 2016b)
- *Outcomes-based conditions guidance* (Commonwealth of Australia, 2016a)

Alcoa has proposed surrogate[3] (habitat-based) outcomes with SMART - specific, measurable, achievable, reasonable\realistic and timebound – completion criteria that reflect the condition of the environmental value at the conclusion of the offset period. Surrogate (habitat-based) outcomes are appropriate for the Offset Proposal as:

- The Proposal's significant residual impacts reflect a reduction in habitat for black cockatoos, chuditch, woylie and quokka; albeit with habitat returned for some species in shorter timeframes through Alcoa's post-mining rehabilitation program.
- Habitat-based outcomes support positive conservation outcomes for black cockatoos, chuditch, woylie and quokka. The extent and quality of habitat can be improved by changing non or low functional habitat (i.e. suitable habitat that lacks

[3] Surrogate outcomes specify an outcome (or a level of performance to be achieved) for something which directly supports the protected matter (Commonwealth of Australia, 2016b)

important habitat features or is impacted by other factors) to functional habitat (habitat that fully supports a species and/or its lifecycle).

- Measuring habitat condition provides a consistent, cost and time-efficient way of monitoring the outcomes.
- Outcomes will be achieved through the implementation of a suite of environmental offset projects, with each project contributing towards achieving the proposed outcomes. That is, no one project alone will achieve the proposed outcome for each species.
- Changes in populations of black cockatoos, chuditch, woylie and quokka can be difficult to monitor accurately given their highly mobile nature, large areas of occupancy and/or lack of population information and baseline survey data across the NJF.

#### ***14.5.3.1*** *Myara North and Holyoake*

Through the implementation of the environmental offsets, Alcoa proposes the following environmental outcomes to counterbalance impacts from clearing of habitat in Myara North and Holyoake:

- Deliver a net-gain in the condition of at least 17,600 hectares of vegetation that provides habitat for forest red-tailed black cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 19,275 hectares of vegetation that provides habitat for Baudin's cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 17,550 hectares of vegetation that provides habitat for Carnaby's cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 11,600 hectares of vegetation that provides habitat for woylie through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 14,350 hectares of vegetation that provides habitat for chuditch through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 1,525 hectares of vegetation that provides habitat for quokka through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset

conservation area, within 5 years; then maintain this score until the completion of the offset period.

- Contribute information to address key knowledge gaps that will ultimately assist with maintenance of the ongoing ecological integrity of the Northern Jarrah Forest Interim Biogeographic Regionalisation of Australia Subregion.

#### *14.5.3.2 O'Neil*

Through the implementation of the environmental offsets, Alcoa proposes the following environmental outcomes to counterbalance impacts from clearing of habitat in O'Neil:

- Deliver a net-gain in the condition of at least 2,750 hectares of vegetation that provides habitat for forest red-tailed black cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 2,790 hectares of vegetation that provides habitat for Baudin's cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 2,500 hectares of vegetation that provides habitat for Carnaby's cockatoos through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 2,290 hectares of vegetation that provides habitat for woylie through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 2,670 hectares of vegetation that provides habitat for chuditch through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Deliver a net-gain in the condition of at least 1,370 hectares of vegetation that provides habitat for quokka through a one point increase in the weighted average habitat quality score against the baseline within each corresponding offset conservation area, within 5 years; then maintain this score until the completion of the offset period.
- Contribute information to address key knowledge gaps that will ultimately assist with maintenance of the ongoing ecological integrity of the Northern Jarrah Forest Interim Biogeographic Regionalisation of Australia Subregion.

### 14.5.4 Environmental offset projects

The outcomes will be delivered by implementing a suite of environmental offset projects that address recovery and threat abatement actions such as:

- Management and monitoring of black cockatoo breeding and non-breeding habitat and associated feeding habitat
- Retain and improving habitat critical for survival for woylie, chuditch and quokka
- Predator and feral pest control
- Investigation and on-ground trials of fire mitigation technologies
- Rehabilitation of remnant vegetation
- Surveys which contribute to understanding of distribution and population structure and patterns of habitat usage.

Alcoa is developing a suite of environmental offset projects that, when implemented over the life of the offset period, will collectively deliver a net-gain for black cockatoos, chuditch, woylie and quokka. Alcoa will continually develop, monitor and adapt environmental offset projects over the offset period, to ensure conservation actions are delivered that are based on learnings from implementation of projects, new research findings and contemporary best-practice methodologies and management approaches.

Environmental Offset Project Plans will be prepared that setup the framework for the delivery of the projects. The plans will include the recovery, threat abatement, management or conservation actions to be undertaken; the information collected in baseline surveys; performance indicators (that demonstrate the project is on a positive trajectory to achieve project specific targets), deliverables, milestones and a project-specific monitoring program.

Environmental offset projects will be delivered in proposed offset conservation areas, at a local, landscape or regional scale and applied within a framework of adaptive management, with contingency actions built into the project plans to account for risks of unexpected events.

### 14.5.5 Proposed offset conservation areas

To identify offset areas that would contribute to the enhancement of vegetation and species habitat in the NJF in a holistic and meaningful way, Alcoa proposes to implement the conservation actions in State Forest as close to the impact area as possible. Alcoa has conducted an extensive review of its mineral lease area to locate areas that have high environmental values that would benefit from additional conservation actions. To locate these areas Alcoa considered:

- Alcoa's long term mine plans.
- State Forest proposed for higher conservation tenure in the 2024-2033 Forest Management Plan.
- Areas that are of high conservation value and/or adjoin protected areas[4].
- Former mining areas that contain unmined forest and older post-mining rehabilitation.

[4] Protected areas are defined as per the Collaborative Australian Protected Areas Database (CAPAD) as clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values (IUCN Definition 2008). These areas are mapped in the DBCA - Legislated Lands and Waters (DBCA-011) with an IUCN classification of I, II, III, IV, V or VI.

- Areas that have high social, recreational, environmental or cultural values.
- Consultation with DBCA regional staff, forest and species ecologists and subject matter exerts, the local community, local government, other proponents, rangers and indigenous groups.
- Following identification of areas that may be suitable as offset areas, Alcoa engaged a consultant with suitably experienced field ecologists to undertake a desktop study and initial terrestrial fauna habitat survey. Alcoa are consulting with the landowner (the WA Government) and the vested agency (DBCA) to secure the land for the implementation of the conservation actions and addition to the conservation reserve system.

The areas proposed for offset conservation are State Forest. State Forest is created under the *Conservation and Land Management Act 1984* for the purposes of timber production, conservation and recreation, although native timber harvesting ceased on 1 January 2024. The land is owned by the Crown, vested to the Conservation and Parks Commission and managed on behalf of the Commission by the DBCA. Alcoa hold a mining tenement over the area, with exclusive rights to access the bauxite. Therefore, the proposed offset conservation areas in State Forest are afforded some conservation protection by virtue of Alcoa's lease and commitment not to develop the area.

Alcoa will consult and engage with the WA Government to seek agreement to add proposed offset conservation areas into the conservation reserve system, such that it will be protected in an enduring way whilst being actively managed to maintain or improve the habitat. Working with the WA Government, Alcoa will seek to get all parties to agree to protect the habitat from disturbance or developments. Parties include but are not limited to the Conservation and Parks Commission, the DBCA, the Forest Products Commission (FPC), Water Corporation, DEMIRS, JTSI, Main Roads, Traditional Owners and planning agencies. In the interim, through the offset program, Alcoa will commit to implementing the conservation actions for the offset period.

## 14.6 Proposed offset extent

Following on from the OAG calculations of the significant residual impacts in Section 14.3, Alcoa have used the Commonwealth OAG[5] as a guideline to calculate a reasonable and appropriate offset area to which offset measures are to be applied. A summary of the proposed offset quantum is in Table 14.3 with the OAGs in Appendix E3. The calculations, assumptions, values and justification used in the application of the calculator are in the Offset Proposal.

The proposed offset extent is considered proportional, appropriate and reasonable given Alcoa implements post-mining rehabilitation to return fauna habitat for several species in the short to medium term time frame.

[5] The Commonwealth OAG is a tool that was developed for expert users in the government to assess the suitability of offset proposals. The OAG is available to proponents to assist with planning and estimating future offset requirements.

**Table 14.3 Proposed offset extent (Commonwealth OAG)**

| Species | EPBC Act Status | Quantum of impact (ha) (SRI) | Proposed offset extent (ha) | Ratio of offset to SRI | Quantum of impact (ha) (SRI) | Proposed offset extent (ha) | Ratio of offset to SRI | Quantum of impact (ha) (SRI) | Proposed offset extent (ha) | Ratio of offset to SRI |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Myara North and Holyoake | | | O'Neil | | | Proposal | | |
| Forest red-tailed black cockatoo | VU | 5,756 | 17,600 | 3.1 | 815 | 2,750 | 3.4 | 6,572 | 20,350 | 3.1 |
| Baudin's cockatoo | EN | 5,776 | 19,275 | 3.3 | 815 | 2,790 | 3.4 | 6,591 | 22,065 | 3.3 |
| Carnaby's cockatoo | EN | 5,130 | 17,550 | 3.4 | 712 | 2,500 | 3.5 | 5,842 | 20,050 | 3.4 |
| Woylie | EN | 3,147 | 11,600 | 3.7 | 637 | 2,290 | 3.6 | 3,783 | 13,890 | 3.7 |
| Chuditch | VU | 4,434 | 14,350 | 3.2 | 849 | 2,670 | 3.1 | 5,283 | 17,020 | 3.2 |
| Quokka | VU | 472 | 1,525 | 3.2 | 412 | 1,370 | 3.3 | 883 | 2,895 | 3.3 |

## 14.7 Proposed offset tranches

Alcoa proposes to implement the environmental offsets in a staged manner (tranches) so that:

- Conservation actions can be confirmed following pre-clearance surveys aligned to mine plans. This information provides a better understanding of the impacts and allows the conservation actions to be targeted to the impacted species, environmental value or matter.
- Environmental offset projects can be developed using knowledge, learnings and outcomes attained in earlier projects.
- Environmental offset projects can be responsive to ongoing monitoring, new scientific findings or emerging threats.
- Environmental offset projects can be aligned with actions where regional, or recovery plans are revised or updated.
- There is a provision for an on-going source of conservation funding within the region.
- Alcoa can consider project proposals from external groups (including Traditional Owners, universities, conservation and community groups) throughout the offset period.

Alcoa propose that tranche 1 provides 30 per cent of the overall offset quantum for the Proposal, generally aligned with the first five years of clearing and representing 100 per cent of the proposed offset quantum for O'Neil, and ~20 per cent of the proposed offset quantum for Myara North and Holyoake.

Tranches 2 and 3 have been proposed to allow time to develop and/or revise environmental offset projects to align with any significant residual impacts identified the pre-clearance surveys that may not have been identified in the surveys used in the assessment process.

An indicative schedule of tranches is in Table 14.4

**Table 14.4 Proposed Offset Tranches**

| Tranche | Year(s) impacts occur | Percent of overall offset (%) to be provided | Proposed offset extent (ha) [6] | Justification |
|---|---|---|---|---|
| Tranche 1 | Years 1 - 5 | 30 | 6,620 | Alcoa propose to provide 30 per cent of the proposed offset quantum for the Revised Proposal in tranche 1. The total proposed offset quantum is 22,065 hectares (2,790 hectares for O'Neil and 19,275 hectares for Myara North and Holyoake). Thirty per cent of the total is 6,620 hectares. Alcoa propose to provide 100 per cent of the offset quantum for O'Neil (2,790 hectares) in tranche 1, with the remainder (3,830 hectares) allocated towards the offset quantum for Myara North and Holyoake.<br>Alcoa has identified two proposed offset conservation areas that provides approximately 7,200 ha of threatened species habitat. |
| Tranche 2 | Years 6 - 10 | 40 | 8,825 | POCAs for tranche 2 will be identified during the first five years with enough time to allow for implementing the offset ahead of the proposed impacts. This timeframe allows Alcoa to work with stakeholders to locate strategic and priority areas for management. The timing also allows Alcoa to 1) evaluate the results from the offset implementation in the first tranche; 2) evaluate the results from pre-clearance surveys; and 3) revise or develop new environmental offset project plans to incorporate findings from the offset implementation or pre-clearance surveys. |
| Tranche 3 | Years 11-20 | 30 | 6,620 | POCAs for tranche 3 will be identified during the years six to nine, with enough time to allow for implementing the offset ahead of the proposed impacts. As for tranche 2, this aligns with the progressive clearing and allows for adaptation of environmental offset project plans to respond to pre-clearance surveys. |
| **Total** | **-** | **100%** | **22,065** | **-** |

[6] This has been calculated using the largest proposed offset area (for Baudin's cockatoo).

## 14.8 Monitoring Program

Monitoring, reporting and evaluating the results of the implementation of an environmental offset is important to:

- Verify that on-ground management actions proposed have been implemented as per environmental offset project plans; and
- Demonstrate the ecological responses are on a trajectory to achieve the proposed outcomes.

Alcoa's Environmental Offset Team will be responsible for overseeing the environmental offset program. This includes ensuring the Offset Proposal, if approved, is delivered as conditioned in Ministerial Statements, EPBC Act Approvals or other regulatory instruments. The roles and responsibilities of the Environmental Offset Team are described in Alcoa's Offset Strategy (Alcoa, 2025a).

A monitoring program specific to each project is described in each Environmental Offset Project Plans. This includes target criteria, performance indicators, trigger, threshold and response actions, the monitoring methodology and schedule, reporting requirements and evaluation and response actions. The location of monitoring points will be mapped in Offset Area Management Plans. The progress towards achieving the outcomes of the Offset Proposal will be monitored by the Environmental Offset Team.

Each Environmental Offset Project Plan contains a schedule of reporting details of offset implementation. This includes but is not limited to annual reports and five yearly fauna habitat assessments. Reports showing the progress of the environmental offset projects will be provided to regulators on an annual basis and key stakeholders (as required). Alcoa will also provide information[7] on the progress of the environmental offset projects on its website.

The Environmental Offset Team will review all information relevant to the environmental offset including but not limited to the annual reports, field surveys, habitat assessments and any current peer-reviewed scientific literature. A technical assessment of the results from the monitoring program will be assessed against the baseline data and reference sites to determine progress towards outcomes. The team will also consider the outcomes in the context of the wider state of the environment to understand if broader issues in the jarrah forest are having an effect (positive or negative) on the outcomes.

Where a performance indicator suggests the targets are not on a positive trajectory, the Environmental Offset Team will work with the delivery partner, ecologists, DBCA, species experts, researchers or other appropriately trained personnel to adapt the management action(s) to resolve the issue.

Spatial data will be collected, collated and shared with appropriate stakeholders and regulatory bodies in accordance with legislative requirements. At this point in time, this includes the IBSA (Index of Biodiversity Surveys for Assessments) format for Western Australia; and the Guide to providing maps and boundary data for EPBC Act projects (DAWE, 2021).

[7] Environmentally or commercially sensitive information will not be made publicly available.

## 14.9 Risk Management

Alcoa has considered the risks to the implementation of the Offset Proposal as well as the risk to the overall successful achievement of the proposed outcomes. Alcoa have applied DCCEEW's qualitative risk assessment methodology (DCCEEW 2024). Each environmental risk was given a rating in terms of likelihood and consequence, with the ratings combined using the risk rating table to generate a risk rating of low, medium, high or severe. The risk assessment is detailed in the Offset Proposal.

## 14.10 Adaptive management and continual improvement

An adaptive management framework ensures there are mechanisms in place to take account of the risk of the Offset Proposal not meeting its objectives in the timeframe predicted, and to manage any unforeseen consequences.

Alcoa has built flexibility into the Offset Proposal through:

- Staging of environmental offset projects – outcomes from new scientific findings or implementation of preceeding environmental offset projects can be used to inform future environmental offset projects.
- Procedures – reviewing and evaluting the progress of on-ground management allows the offset program manager to adapt the decision-making process over time.
- Resources – engaging the most appropriate contractor or delivery agent for the action(s). Allows the distributuion of works to be shared across businesses, agencies and eNGOs. Built in contingency to account for unanticiapted events.
- Actions – undertaking continuous review of the outcomes of management actions, surveys and reports. Applying best practice or emerging technologies.

Reports will be reviewed by forest and species ecologists / subject matter experts to ensure appropriate responses are developed to potential or actual events.

## 14.11 Governance

As per the Offset Strategy (Alcoa, 2025a), Alcoa propose to form an Environmental Offset Team. The team will be responsible for delivering approved environmental offsets conditioned in Ministerial Statements, EPBC Act Approvals or other regulatory instruments; and developing environmental offsets during approvals and assessment processes.

Any agreements between Alcoa and delivery partners will be legally binding, such as contracts, grant agreements or service agreements. Governance documents will include requirements for timeframes, reporting, financial management, milestones, deliverables, completion criteria and other legal or governance requirements as appropriate.

Likewise, agreements between the landowner and Alcoa to operate and implement the environmental offsets will be appropriately binding and secure.

## 14.12 Financial commitment

Alcoa will be responsible for funding the implementation of the Offset Proposal, including all environmental offset projects and associated administration, monitoring and reporting. Alcoa proposes to fund environmental offset projects through

transferring an AUD rate per approved hectare cleared each year into a self-managed fund on a prospective basis. The rate will be agreed prior to the commencement of actions under assessment and consider the expected costs to implement reasonable and cost-effective conservation projects.

Alcoa will make annual payments into the fund based on the actual approved hectares cleared each year on a prospective basis after the Proposal has been approved. Alcoa have benchmarked rates against comparable and contemporary environmental offset funds and/or conditions and considers that $3,500 (excluding GST) per hectare of habitat cleared is an appropriate and reasonable rate.

Funds will be released to the delivery partner(s) as agreed in governance documents or as required by the Environmental Offset Project Plan or Offset Area Management Plan.

## 14.13 Stakeholder consultation

Alcoa has identified key stakeholders for the development and implementation of the Offset Proposal. Key stakeholders for the implementation of the Offset Proposal include WA Government agencies responsible for Crown land tenure and management, landowners and potential delivery partners.

Alcoa has consulted with species and forest ecology experts to understand key recovery actions required and threatening processes to be addressed for targeted threatened fauna species in the Northern Jarrah Forest. The outcomes from these informal discussions have informed the environmental offset projects. Alcoa intend to continue discussions with species ecologists and specialists through the on-going development of the environmental offset projects.

Alcoa will continue to consult with Traditional Owners to understand ways in which traditional land management practices can be incorporated into the environmental offset program and agree the role local people can play in the delivery Alcoa's offsets.

Alcoa will also consult with the additional stakeholders, as appropriate, including but not limited to the Forest Products Commission, local government agencies, the Department of Planning, Lands and Heritage, the Department of Primary Industries and Regional Development, the Department of Agriculture, Fisheries and Forestry the Department of Water and Environmental Regulation, Main Roads Western Australia, the Water Corporation, and conservation or environmental non-government organisations.

Decision making authorities and the public will be able to provide feedback on the Offset Program during the public consultation period for the Proposal.

## 14.14 Consistency with Offset Policies and other relevant documents

Proponents need to demonstrate how their proposed offsets are consistent with WA Government and Commonwealth offset policy and guidance documents. Alcoa has developed an offset strategy, and an offset proposal that consider the policy and guidance in the following documents:

- Western Australian *Environmental Offsets Policy* (GoWA, 2011) and Western Australian *Environmental Offsets Guidelines* (G0WA, 2014)

- Western Australian P*ublic Advice: Considering environmental offsets at a regional scale* (EPA, 2024b)
- EPBC Act *Environmental Offsets Policy* (SWEWPC, 2012).

Alcoa has also considered information in:

- Recovery plans, approved conservation advice, threat abatement plans and/or strategies provide actions that can be taken to help in the recovery of threatened species. Alcoa has demonstrated in Table 4.1 of the Environmental Offset Proposal how the conservation actions proposed in the Offset Proposal will contribute to the recovery of impacted species.
- The Forest Management Plan (2024-2033) has been prepared to protect and manage over 2.5 million hectares of forests in the south-west of Western Australia. Alcoa has demonstrated how it has considered the management actions set out in the Forest Management Plan, and how Alcoa's proposed additional management actions will support the outcomes proposed in the Forest Management Plan in Section 14.14.4.
- The 2022-2032 Threatened Species Action Plan (DCCEEW, 2022), released in October 2022, maps a pathway to protect, manage and restore Australia's threatened species and important natural places. Section 14.14.5 of the Offset Proposal summarises how the actions support actions in the Threatened Species Action Plan.
- The Commonwealth government responded to the independent review of the EPBC Act (the Samuel review) with the Nature Positive Plan. The Nature Positive Plan outlines how the government intends to reverse the decline and change policy to create circumstances where nature is being repaired and regenerated. DCCEEW intends to prepare National Environmental Standards to accompany the Nature Positive Plan.
- Conservation actions have been proposed based on current scientific knowledge but with enough scope to adaptive to respond to increasing threats (as cited).

### 14.14.1 WA Government offset requirements

Environmental offsets should meet the six principles identified in the WA Environmental Offset Policy (GoWA, 2011) and the key concepts and requirements of the WA Environmental Offsets Guidelines (GoWA, 2014). The application of the principles and concepts of WA Government offset requirements are in Table 14.5 and Table 14.6.

**Table 14.5 Application of the principles in the WA Environmental Offset Policy**

| Principle | Consideration |
|---|---|
| Environmental offsets will only be considered after avoidance and mitigation options have been pursued. | Alcoa has fully pursued avoidance and minimisation measures at this stage of the mine plan.<br><br>Avoidance and mitigation measures relative to flora, vegetation and terrestrial fauna are detailed in Chapters 5 and 6.<br><br>Avoidance and mitigation measures include reducing the DEs, demarcating avoidance areas within the DEs, undertaking pre-clearance surveys, implementation of fauna management plans, clearing in a progressive manner, engaging fauna spotters, installing fauna crossing structures and undertaking progressive rehabilitation once mining in a pit ceases.<br><br>Alcoa will continue to investigate alternatives to avoid disturbance. |
| Environmental offsets are not appropriate for all Proposals. | Environmental offsets are appropriate for this Proposal. The Proposal delivers significant economic and social benefits across the region.<br><br>This Proposal is essential for the continued operation of Alcoa's Huntly Bauxite Mine, Pinjarra Alumina Refinery and the future recommissioning of the Kwinana Alumina Refinery. These operations are integral to the overall viability and success of Alcoa's Western Australian business, which has been operating since 1963.<br><br>Alcoa Australia's operating expenditure in 2023 was about $3.4 billion, of which about $2.7 billion was spent in Australia. In 2023, Alcoa's operations directly supported 1,520 Australian businesses.<br><br>Across its Australian operations Alcoa employs approximately 4,670 people, with around 4,100 employees located in Western Australia. Approximately 2,300 of its Western Australian employees live in the Peel region and across the communities near to where it operates, delivering significant economic and social benefits across the region. In 2023, Alcoa paid about $831 million in Australian wages, salaries and associated benefits.<br><br>In 2023, Alcoa paid about $397 million in local, state and federal taxes and royalties. In addition, as required under the *Alumina Refinery Agreement Act 1961*, Alcoa pays in the order of $6 million annually (indexed to CPI) to the State as compensation for forest clearing associated with its mining activities. Alcoa contributes about $1 million annually (indexed to CPI) to the State under the Forest Enhancement and Works Agreement for prescribed burns, forest road upgrades and other forest management activities and provides an additional $416,000 per year (indexed to CPI) to the State for conservation and recreation management initiatives. |
| Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value impacted. | The Offset Proposal is cost-effective, relevant and proportionate solution to the impacts as:<br><br>• Alcoa will provide funding for additional conservation actions within State Forest that support the WA Government's conservation of the forest. |

| Principle | Consideration |
|---|---|
| | • Proposed offset conservation areas contain habitat for multiple threatened, priority and other native species.<br>• Conservation actions will provide favourable outcomes for threatened, priority and other native species, as well as general improvements in vegetation health and condition.<br>• Data collected through survey, monitoring and management will add to the broader knowledge basis of species, conservation and management of the NJF.<br>• Proportionality is demonstrated through funding, aligned with similar offset funds applied in WA and Australia.<br>• Proportionality is also obtained through application of the Commonwealth offset assessment guide in determining the area to which conservation actions are applied.<br>• Proportionality also takes into account that some of the habitat loss is temporal and is returned through Alcoa's post-mining rehabilitation program. |
| Environmental offsets will be based on sound environmental information and knowledge. | The Offset Proposal has been prepared by Alcoa based on recovery plans, approved conservation advice, threat abatement plans, research findings and discussions with fauna and forest ecology specialists.<br>Species experts Alcoa spoke with generally had at least 15-20 years' experience working with black cockatoos and threatened mammals in the Jarrah Forest. They understand the current threats specific to the forest and the targeted on-ground actions that are key to maintaining the long-term viability of population(s) of black cockatoos, chuditch, woylie and quokka in the Northern Jarrah Forest.<br>In addition, Alcoa has used scientific papers to prepare the environmental offset projects. |
| Environmental offsets will be applied within a framework of adaptive management. | Alcoa has built adaptive management into the Offset Proposal through staging of environmental offset projects, the monitoring, evaluation and reporting program and engagement with the Offsets Advisory Group.<br>Findings from the implementation of on-ground management actions (effectively applied research) will be evaluated and used to inform future actions. Project targets, both successful and those not so successful, will be evaluated by the Offsets Advisory Group and be used to refine and update the on-ground management actions, identify knowledge gaps that are a priority for research and respond to any adverse or unforeseen events outside the projects control – such as wildfire, droughts, storms or human interference (such as the re-release of pigs into the conservation area). |
| Environmental offsets will be focused on longer-term strategic outcomes. | The Offset Proposal aims to implement on-going on-ground conservations actions in the NJF over the offset period.<br>Proposed environmental offset areas have been located strategically near to existing reserves, ecological corridors or remnant vegetation. |

| Principle | Consideration |
|---|---|
| | Environmental offset projects will deliver conservation actions that provide short-term benefits that lead to long term strategic outcomes for species (for example installing black cockatoo drinking water points) and projects with longer timeframes but provide long-term outcomes for the application of conservation across the NJF (for example investigating the use of early fire detection technologies).<br><br>Thus, the commitment to fund, manage and monitor key fauna habitat areas for the offset period provides confidence that the habitat will be maintained for the foreseeable future. This long-term management will promote species resilience to threats, but also a rapid response to emerging or unforeseen threats.<br><br>Long-term strategic outcomes will be delivered through:<br><br>• The offset includes spatially mapping key fauna habitat areas in the NJF. When the mapping data from the Offset Proposal is consolidated with other data and datasets it will add to the knowledge and information on species habitat areas and populations. This information can be used to inform future management actions, impact assessment and environmental offsets.<br><br>• The proposed offset conservation areas will be strategically located to adjoin existing or proposed conservation areas.<br><br>• Collectively the proposed offset conservation areas will provide for larger areas of the NJF in the conservation reserve system and under additional direct on-ground management.<br><br>• On-ground management in the proposed offset conservation areas will support management actions implemented by the land manager in the adjoining conservation reserves. This provides a more landscape scale approach to threatening processes (for example fox and feral cat management). |

**Table 14.6 Application of the principles in the WA Environmental Offset Guidelines**

| Concept | Consideration |
|---|---|
| Type | The Offset Proposal is a direct offset. On-ground conservation measures include rehabilitation (repair of ecosystem processes and management of weeds, disease or feral animals) and will provide tangible improvements to environmental values in the offset areas.<br>The environmental offset projects will additionally provide indirect benefits such as increasing scientific knowledge and data on vegetation, habitats and species in the NJF. |
| In proximity to area of impact | Proposed offset conservation areas adjoin or will be located as close to the impact area as possible. |
| Similar or better vegetation condition than area impacted | The impact area is predominantly jarrah-marri open forest in good to very good condition.<br>The proposed offset conservation areas are likewise expected to be predominantly jarrah-marri open forest. |
| Similar habitat structure to undisturbed examples of impacted vegetation type | The impact and offset area are mostly jarrah-marri forest habitat that have been subject to disturbance from harvesting, fire and dieback. |
| Has a better area to perimeter ratio than the area impacted | Bauxite occurs as tabular ore pods that vary in depth from 2 – 10 m with an average depth of about 3.5 m. Mine pits range in size from a single hectare to tens of hectares but average around 30 hectares. Due to the nature of the ore pods, the mine is characterised by a constantly moving mining footprint followed by progressive rehabilitation. The mine consists of a mosaic of ore pods, linked via a network of haul roads to a crusher and facilities area. Therefore, the mining footprint can be considered pods connected by linear corridors.<br>The proposed offset conservation areas will be large mostly contiguous areas and therefore have a better area to perimeter ratio than the area impacted. |
| Contains additional rare or otherwise significant species and threatened species of community compared with the impact site | Additional threatened and priority species likely to be present in the offset areas. |
| Close to or contiguous with an existing conservation area | POCA001 (Jarrahdale) adjoins the Serpentine National Park.<br>POCA005 (Dwellingup) adjoins the Lane Poole Conservation Reserve. |

| Concept | Consideration |
|---|---|
| Likely to enhance biological corridors or ecological linkages between conservation areas | The conservation actions will enhance the connection through improved feral predator controls and management of stream zones and riparian vegetation. |
| It includes actions to address threatening processes | The conservation actions in the Offset Proposal have been proposed based on actions to address the following threatening processes in species recovery and threat abatement plans. Actions include:<br>• Protection of habitat<br>• Control of invasive species<br>• Early fire detection<br>• Climate Change mitigations |
| Allows for secure management arrangements in place that will provide for long term conservation | The areas proposed for offset conservation are State Forest, owned by the Crown, vested to the Conservation and Parks Commission and managed on behalf of the Commission by the DBCA.<br>Alcoa will be responsible for ensuring the conservation actions are implemented for at least 20 years.<br>Upon completion of the offset, the responsibility for land management will return the landowner (WA Government) and/or land manager (currently the DBCA). Alcoa intends that the conservation areas are relatively self-sustaining when the WA Government is returned as the land manager and require only minimal intervention to maintain the habitat quality. |
| Sound knowledge and adaptive management | The Offset Proposal has been prepared by Alcoa based on recovery plans, approved conservation advice, threat abatement plans, research findings and discussions with experience subject-matter/species experts.<br>The adaptive management framework has been outlined in Section 14.10. .<br>Findings from the implementation of on-ground management actions (effectively applied research) will be evaluated and used to inform future actions. |
| Likely offset success.<br>Can the values be defined and measured?<br>What is the operator experience / evidence of previous success? | Alcoa considers the Offset Proposal has a very high likelihood of success. Conservation actions have been used in similar environments with proven results.<br>Fauna habitat extent and condition can be defined and measured. Fauna presence, abundance and density can be measured or estimated using existing methodologies.<br>Alcoa has been operating in the NJF for over 60 years. Alcoa's rehabilitation program has successfully returned fauna habitat following mining and its research program has provided valuable information to the broader scientific community. |

| Concept | Consideration |
|---|---|
| Time lag | Alcoa intend, where possible, to commence the environmental offset projects prior to the impacts occurring.<br>On-ground actions will provide benefits within around 5 years (increased feral predator controls and installation of black cockatoo drinking water points). |
| Long term strategic outcomes | The commitment to fund, manage and monitor key fauna habitat within the offset conservation areas for a period of 20 years provides confidence that the habitat will be maintained for the foreseeable future. This long-term management will promote species resilience to threats, but also a rapid response to emerging or unforeseen threats. |

### 14.14.2 Commonwealth offset requirements

Environmental offsets should meet the principles identified in the Commonwealth's Environmental Offset Policy (DSEWPC, 2012). The application of the Commonwealth offset policy principles is in Table 14.7.

**Table 14.7 Consistency with Commonwealth Environmental Offset Policy**

| Principle | Consideration |
|---|---|
| Suitable offsets should deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action. | The proposed offset will deliver an overall conservation outcome by protecting, managing, maintaining and/or improving threatened species habitat. The actions will mitigate against threatening processes to ensure the on-going health and condition of species habitat within the proposed offset conservation area. Collectively, the area of habitat managed and maintained for threatened species will be significant. |
| Suitable offsets must be built around direct offsets but may include other compensatory measures. | Direct offsets are actions that provide a measurable conservation gain for a threatened (MNES) species. Conservation gain will be achieved through:<br>• improving existing degraded threatened fauna habitat (installation of water points, feral pig management in waterways)<br>• reducing known threats to threatened fauna species (foxes, feral cats and feral pigs) in known habitat areas<br>• support the increase in potential habitat areas through removal of threatening processes. |
| Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter. | The Offset Proposal is in proportion to the level of statutory protection that applies to the protected matter.<br>• Alcoa will provide funding for additional conservation actions within State Forest that support the WA Government's conservation of the forest.<br>• Proposed offset conservation areas contain habitat for multiple threatened, priority and other native species.<br>• Conservation actions will provide favourable outcomes for threatened, priority and other native species, as well as general improvements in vegetation health and condition.<br>• Data collected through survey, monitoring and management will add to the broader knowledge basis of species, conservation and management of the NJF.<br>• Proportionality is demonstrated through funding, aligned with similar offset funds applied in WA and Australia. |
| Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter. | |

| Principle | Consideration |
|---|---|
| | • Proportionality is also obtained through application of the Commonwealth offset assessment guide in determining the area to which conservation actions are applied.<br>• Proportionality also takes into account that some of the habitat loss is temporal and is returned through Alcoa's post-mining rehabilitation program. |
| Suitable offsets must effectively account for and manage the risks of the offset not succeeding. | The Offset Proposal has considered the risks to the implementation of, or the risks of not achieving the proposed outcomes. This includes the allocation of appropriate funding, contingency actions for (environmental) stochastic events and changes in WA or Commonwealth regulatory or other policies. |
| Suitable offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs. | The State Agreement requires that Alcoa pay:<br>• Compensation to the WA Government for each hectare of forest cleared in relation to its mining activities;<br>• An annual payment to DBCA for services provided that enable safe and efficient performance of Alcoa's mining operations; and<br>• An allocation towards Northern Jarrah Forest enhancement projects.<br>Alcoa is also required under the State Agreement, to progressively restore and re-afforest the areas cleared for mining.<br>Environmental offset projects will provide conservation actions over and above the current requirements of the State Agreement.<br>Where environmental offset projects support existing conservation projects, the funding and actions undertaken as part of the offset will be additional to the actions in the existing conservation project.<br>Conservation projects already required by law or planning regulations or agreed to under other schemes or programs will not be accepted as an environmental offset project unless it is demonstrated that the funding will be used to perform conservation or threat abatement actions over and above that defined by the appropriate legislation.<br>Alcoa has proposed this offset as it provides a like for like offset (i.e. impacts to State Forest vegetation\habitat will be offset in similar vegetation\habitat in State Forest). |
| Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable. | The offsets proposed are:<br>• Efficient – these offsets support the work DBCA does in managing the forest, with Alcoa and the WA Government working collectively to provide better environmental outcomes at a landscape scale.<br>• Effective – management actions have proven outcomes. |

| Principle | Consideration |
|---|---|
| | • Timely - time to ecological benefit is likely to be relatively short, for example in terms of feral predator management.<br>• Transparent – the Offset Proposal, associated plans, surveys, studies and reports will be shared and/or made publicly available.<br>• Scientifically robust – the Offset Proposal has been prepared based on best-available and current science with methodologies that are proven, repeatable and measurable.<br>• Reasonable – the proposed offsets are reasonable considering:<br>  ○ Alcoa has committed to not mining in proposed offset conservation areas.<br>  ○ Alcoa will rehabilitate impacted areas within reasonable timeframes.<br>  ○ Alcoa conducts extensive research in the Northern Jarrah Forest.<br>  ○ Alcoa funds social and environmental programs.<br>  ○ Alcoa provides compensation to the WA Government for loss of timber resource.<br>  ○ It is acknowledged that protecting and improving existing habitat is an important recovery action. |
| Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited, and enforced | The Offset Proposal, along with the associated plans and the Offset Strategy, will be made publicly available.<br>On-going reporting of the implementation and progress towards outcomes is also expected to be made publicly available.<br>Performance indicators and methodologies use to measure the outcomes are proven, repeatable and measurable. |

### 14.14.3 EPA's Public Advice: Considering Environmental Offsets at a Regional Scale

Alcoa has considered the need for the environmental offsets to be part of a broader suite of integrated strategic actions across the bioregion. demonstrates how the Offset Proposal considered the guiding principles set out in the EPA's Public Advice: Considering Environmental Offsets at a Regional Scale (EPA 2024).

**Table 14.8 Consideration of the guiding principles in the EPA's Public Advice on Regional Scale Environmental Offsets**

| Guiding Principle | Consideration |
|---|---|
| Prioritise restoration offsets | There are limitations to restoration (revegetation) options within the area in which Alcoa operates. Delivering environmental offsets in the Northern Jarrah Forest is constrained by land tenure (most of ML1SA is Crown land) and vegetation extent (most of ML1SA contains intact native vegetation).<br>The proposed offset conservation areas identified for Tranche 1 of the Offset Proposal are for the implementation of conservation projects that protect and enhance existing vegetation and habitat in State Forest against current and emerging threats.<br>Alcoa are continuing to identify appropriate proposed offset conservation areas for Tranche 2 and 3 of the Offset Proposal and will prioritise locating areas that provide opportunities for revegetation where appropriate. |
| Be consistent with new and emerging regional plans, reserve management plans, recovery plans, strategic programs and other regional level protection instruments | Environmental offset projects have considered the current species recovery plans, threat abatement plans, and any relevant peer-reviewed research or scientific findings and will deliver conservation actions that are complementary and additional to the high-level management measures outlined in the Forest Management Plan.<br>The Offset Proposal provides the flexibility to develop and adapt the environmental offset projects based on any new or emerging recovery or threat abatement plans, regional plans or other programs. |
| Builds and maintain resilience in ecological functions and ecosystem services | Proposed offset conservations areas are near to or adjoin existing or proposed conservation reserves. This will help to maintain ecological linkages and conservation areas and places of ecological significance.<br>The environmental offset projects include actions to mitigate against current on-ground threats (for example invasive species), emerging on-ground threats (for example new invasive species or disease) and threats from climate change (for example reduced drinking water for black cockatoos). The environmental offset projects will carefully consider the overall ecosystem balance within the offset conservation areas. |
| Contribute to environmental knowledge of a region | The environmental offset projects contribute to environmental knowledge of a region. Implementation of on-ground conservation actions and adaptive management will lead to understanding of the effectiveness of and most appropriate conservation actions in certain areas or habitat types. Environmental offset projects include a monitoring program that will lead to an accumulation of data on vegetation, habitat and species over the offset period. Environmental offset projects may be research based or include trials. |
| Provides outcomes that are like for like, or are similar to the impacted value | Both the impact and proposed offset areas are predominantly jarrah-marri forest in State Forest in good to very good vegetation condition but have threats that have or will lead to degradation of fauna habitat over time without conservation actions. |

| Guiding Principle | Consideration |
|---|---|
| Demonstrate connectedness of the physical or ecological function values with those being impacted | Alcoa has proposed the implementation of environmental offset projects in the Northern Jarrah Forest, in as similar habitat as possible to the impacted area. Where possible, offset conservation areas will be located as close to the impacts as possible to support the persistence of the local population of the impacted species. However, Alcoa acknowledge that for some species, environmental offsets in other subregions or bioregions might provide significant beneficial outcomes for that species and therefore like for similar offsets will be considered where like for like offsets are either not available or have been exhausted.<br>As above, Alcoa intends to locate offset conservations areas that are near to or adjoin existing or proposed conservation reserves. |
| Provide greater co-benefits | Environmental offset projects that enhance vegetation and habitat in the NJF will provide positive outcomes for many environmental values including flora, vegetation, native fauna and waterways. This will also improve the environmental value for cultural, heritage and social values. In addition to providing positive outcomes to the environment, the environmental offsets will provide cultural, heritage and social benefits through employment, training and recreational opportunities.<br>Alcoa are consulting with relevant stakeholders including Traditional Owners, environmental groups, government agencies and the community to ensure the co-benefits are valuable. |

### 14.14.4 Forest Management Plan

The Forest Management Plan 2024-2033 (CCP, 2023) is a statutory plan that outlines high-level strategic goals and provides management objectives and activities in accordance with the *Conservation and Land Management Act 1984* (CALM Act), under four foundations: Noongar cultural heritage and management partnerships; biodiversity conservation; forest health and climate resilience and social and economic benefits and opportunities. Each management objective has one or more activities to be implemented to meet the objective.

The Offset Proposal has been developed to align or complement management activities in the Forest Management Plan. Co-ordinating and implementing management activities alongside the DBCA will support achieving the management objectives and overall strategic goals for the Northern Jarrah Forest.

This also supports Alcoa's strategic approach to delivering conservation actions and achieving conservation outcomes across the Northern Jarrah Forest and surrounding areas.

### 14.14.5 Threatened Species Action Plan

The 2022-2032 Threatened Species Action Plan (DCCEEW, 2022), released in October 2022, maps a pathway to protect, manage and restore Australia's threatened species and important natural places. The plan list 20 priority places and 110 priority species and has four objectives and 22 targets to be met over a ten-year period.

Priority species were selected after careful and strategic prioritisation principles derived from consultation with threatened species experts and the wider community (DCCEEW 2022a). The Commonwealth government also states:

> *Prioritising attention and effort on these selected species over the next 5 years will generate better outcomes for threatened species and other wildlife that shares the same habitat or threats. It also helps focus efforts of the Australian Government and others to collaborate, combining efforts to achieve better outcomes.*

Relevant to the Offset Proposal, the Threatened Species Action Plan specifically lists the Carnaby's cockatoo, chuditch and quokka as priority species. Other priority species that inhabit the Northern Jarrah Forest are also likely to benefit from the conservation actions.

The Offset Proposal will contribute to actions identified under Target 2: Implementation of priority actions for priority species, through:

- Identifying key Carnaby's cockatoo, chuditch and quokka habitat in the Northern Jarrah Forest
- Identifying threats to key Carnaby's cockatoo, chuditch and quokka habitat in the Northern Jarrah Forest
- Identifying actions required to improve key Carnaby's cockatoo, chuditch and quokka habitat in the Northern Jarrah Forest; and
- Commencing key recovery actions and/or build on activities underway, expanding collective recovery and threat management to key Carnaby's cockatoo, chuditch and quokka habitat in the Northern Jarrah Forest.

Data and information obtained from implementation of the Offset Proposal will be shared with DCCEEW (via the appropriate means requested by DCCEEW).