

Appendix 77 WA Environmental Offsets Template

Project Name: Bauxite mining on the Darling Range in the southwest of WA for the years 2022 to 2026 and 2023 to 2027

Existing environment/ Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely offset success	Time Lag	Offset Quantification
<p>Direct loss of 4,065.30 ha of fauna habitat consisting of</p> <ul style="list-style-type: none"> * 3,932 hectares of Forest Red-tailed Black Cockatoo habitat; and * 3,919 hectares of Baudin's and Carnaby's Cockatoo habitat. 	<p>Provision of Mining Avoidance Zones (MAZs), whereby no clearing activities for mining or infrastructure will occur.</p> <p>Provision of Limited Disturbance Areas (LDAs), whereby no clearing activities for mining will occur, however clearing for haul roads and infrastructure may occur.</p> <p>Establishment of Black Cockatoo Protection Zones.</p> <p>Pre-clearance Targeted Black Cockatoo and Fauna surveys and proposed waterways crossings.</p> <p>Since 2024, actual clearing is limited to 800 ha of native vegetation per calendar year with unused capacity for any year able to be rolled over into the following year with approval from the State Development Minister.</p> <p>Flora and Vegetation and Fauna management plan contains actions to minimise direct and indirect impacts to fauna.</p>	<ul style="list-style-type: none"> * 3,145 hectares revegetated with Black Cockatoo habitat. * Alcoa is committed to rehabilitation of all areas cleared within the Mine DE, with rehabilitation occurring on a rolling basis throughout the lifecycle of each mine. region and following closure. * Progressive clearing and rehabilitation. 	<p><u>Can the environmental values be rehabilitated/Evidence?</u> Yes. Black cockatoos have been seen foraging on mine site restoration within seven years.</p> <p><u>Operator experience in undertaking rehabilitation?</u> Alcoa has implemented large-scale rehabilitation across our operations for the past 60 years.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Predominantly Jarrah-Marri forest, with a streamzone specific seed mix for rehabilitation of riparian areas.</p> <p><u>Time lag?</u> Rehabilitation occurs at an average of three years post-clearing.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Alcoa's rehabilitation has demonstrated performance over more than three decades against the completion criteria approved by DBCA to meet the objective of a self-sustaining jarrah forest ecosystem that meets multiple forest uses.</p>	<p><u>Extent</u> * 2,267 hectares Forest Red-tailed Black Cockatoo habitat * 2,416 hectares Baudin's and Carnaby's Black Cockatoo habitat</p> <p><u>Quality</u> Due to gaps in vegetation condition data, and survey information the habitat values for Black Cockatoos have been rated as high.</p> <p><u>Conservation Significance</u> Forest Red-tailed are listed Vulnerable and Carnaby's and Baudin's Black Cockatoos listed as Endangered under the <i>Biodiversity Conservation Act 1986</i>.</p> <p><u>Land Tenure</u> State Forest</p> <p><u>Time Scale</u> Impacts have/will occur progressively across six years.</p> <p>According to the agreed significance framework, residual impact is considered to be significant because the impacts are occurring to species that are listed as threatened under the <i>Biodiversity Conservation Act 1986</i>.</p>	<p>Direct offset. Proposed rehabilitation of fauna habitat in State Forest.</p>	<p>Low - Crown Land classified as State Forest.</p>	<p><u>Can the values be defined and measured?</u> Yes, improvements in black cockatoo habitat can be measured through site condition, context and species presence/abundance.</p> <p><u>Operator experience/Evidence?</u> Delivery partner to be determined however Alcoa has extensive experience in operating, research, rehabilitation and management in the Northern Jarrah Forest.</p> <p><u>What is the type of vegetation being revegetated?</u> n/a</p> <p><u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> n/a</p>	<p>Habitat secured on agreement with the State to use the area for conservation. Improvements expected to be attained within 10 years.</p>	<p>* Total offset of 8,609 ha of habitat management and improvement. * The offset quantum has been determined using the DWER offset metric and following application of the rehabilitation credit.</p>
<p>Direct loss of 4,065.30 ha of fauna habitat consisting of 4,101 hectares of Chuditch habitat.</p>	<p>As above</p>	<ul style="list-style-type: none"> * 3,135 hectares revegetated with Chuditch habitat. * Alcoa is committed to rehabilitation of all areas cleared within the Mine DE, with rehabilitation occurring on a rolling basis throughout the lifecycle of each mine. region and following closure. * Progressive clearing and rehabilitation. 	<p><u>Can the environmental values be rehabilitated/Evidence?</u> Yes. Chuditch are known to recolonise mine site rehabilitation very rapidly (Nichols and Grant 2007).</p> <p><u>Operator experience in undertaking rehabilitation?</u> Alcoa has implemented large-scale rehabilitation across our operations for the past 60 years.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Predominantly Jarrah-Marri forest, with a streamzone specific seed mix for rehabilitation of riparian areas.</p> <p><u>Time lag?</u> Rehabilitation occurs at an average of three years post-clearing.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Alcoa's rehabilitation has demonstrated performance over more than three decades against the completion criteria approved by DBCA to meet the objective of a self-sustaining jarrah forest ecosystem that meets multiple forest uses.</p>	<p><u>Extent</u> * 2,358 hectares Chuditch habitat</p> <p><u>Quality</u> Due to gaps in vegetation condition data, and survey information the habitat value for Chuditch has been rated as high.</p> <p><u>Conservation Significance</u> Vulnerable under the <i>Biodiversity Conservation Act 1986</i>.</p> <p><u>Land Tenure</u> State Forest</p> <p><u>Time Scale</u> Impacts have/will occur progressively across six years.</p> <p>According to the agreed significance framework, residual impact is considered to be significant because the impacts are occurring to species that are listed as threatened under the <i>Biodiversity Conservation Act 1986</i>.</p>	<p>Direct offset. Proposed rehabilitation of fauna habitat in State Forest.</p>	<p>Low - Crown Land classified as State Forest.</p>	<p><u>Can the values be defined and measured?</u> Yes, improvements in Chuditch habitat can be measured through site condition, context and species presence/abundance.</p> <p><u>Operator experience/Evidence?</u> Delivery partner to be determined however Alcoa has extensive experience in operating, research, rehabilitation and management in the Northern Jarrah Forest.</p> <p><u>What is the type of vegetation being revegetated?</u> n/a</p> <p><u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> n/a</p>	<p>Habitat secured on agreement with the State to use the area for conservation. Improvements expected to be attained within 10 years.</p>	<p>* Total offset of 7,764 ha of habitat management and improvement. * The offset quantum has been determined using the DWER offset metric and following application of the rehabilitation credit.</p>

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Existing environment/ Impact	Mitigation			Significant Residual Impact	Offset Calculation Methodology				
	Avoid and minimise	Rehabilitation Type	Likely Rehab Success		Type	Risk	Likely offset success	Time Lag	Offset Quantification
Direct loss of 4,065.30 ha of fauna habitat consisting of 96 hectares of Quokka habitat.	As above	<p>* 76 hectares revegetated with Quokka habitat.</p> <p>* Alcoa is committed to rehabilitation of all areas cleared within the Mine DE, with rehabilitation occurring on a rolling basis throughout the lifecycle of each mine. region and following closure.</p> <p>* Progressive clearing and rehabilitation.</p>	<p><u>Can the environmental values be rehabilitated/Evidence?</u> Yes. Alcoa have streamzone specific seed mix for rehabilitation of riparian areas.</p> <p><u>Operator experience in undertaking rehabilitation?</u> Alcoa has implemented large-scale rehabilitation across our operations for the past 60 years.</p> <p><u>What is the type of vegetation being rehabilitated?</u> Predominantly Jarrah-Marri forest, with a streamzone specific seed mix for rehabilitation of riparian areas.</p> <p><u>Time lag?</u> Rehabilitation occurs at an average of three years post-clearing.</p> <p><u>Credibility of the rehabilitation proposed (evidence of demonstrated success)</u> Alcoa's rehabilitation has demonstrated performance over more than three decades against the completion criteria approved by DBCA to meet the objective of a self-sustaining jarrah forest ecosystem that meets multiple forest uses.</p>	<p><u>Extent</u> * 55 hectares Chuditch habitat</p> <p><u>Quality</u> Due to gaps in vegetation condition data, and survey information the habitat value for Quokka has been rated as high.</p> <p><u>Conservation Significance</u> Vulnerable under the <i>Biodiversity Conservation Act 1986</i>.</p> <p><u>Land Tenure</u> State Forest</p> <p><u>Time Scale</u> Impacts have/will occur progressively across six years.</p> <p>According to the agreed significance framework, residual impact is considered to be significant because the impacts are occurring to species that are listed as threatened under the <i>Biodiversity Conservation Act 1986</i>.</p>	Direct offset. Proposed rehabilitation of fauna habitat in State Forest.	Low - Crown Land classified as State Forest.	<p><u>Can the values be defined and measured?</u> Yes, improvements in Quokka habitat can be measured through site condition, context and species presence/abundance.</p> <p><u>Operator experience/Evidence?</u> Delivery partner to be determined however Alcoa has extensive experience in operating, research, rehabilitation and management in the Northern Jarrah Forest.</p> <p><u>What is the type of vegetation being revegetated?</u> n/a</p> <p><u>Is there evidence the environmental values can be re-created (evidence of demonstrated success)?</u> n/a</p>	Habitat secured on agreement with the State to use the area for conservation. Improvements expected to be attained within 10 years.	<p>* Total offset of 182 ha of habitat management and improvement.</p> <p>* The offset quantum has been determined using the DWER offset metric and following application of the rehabilitation credit.</p>