Appendix 71 Environmental Offsets Calculator – Forest Red-tailed Black Cockatoo

WA Environmental Offsets calculator

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Produced by:

The Department of Water and Environmental Regulation (DWER) in consultation with stakeholder working groups

Purpose:

Use the WA Envirionmental Offsets calculator in conjunction with the *Environmental offsets metric: Quantifying environmental offsets in Western Australia* guideline. Together, they form a supplement to section 4 of the *WA Environmental Offsets Guidelines* and provide information to help decision-makers, government officers, industry and the community to quantify environmental offsets.

Data currency:

The correct application of the WA Environmental Offsets Calculator relies on access to current datasets (such as vegetation extent and land tenure).

Process for using the WA Environmental Offsets Calculator

Step	Worksheet	Component
Step 1: Determining conservation significance	**Step1_ConservationSignificance**	**Conservation significance determination**
		Combined *area* /*feature*
Step 2: Calculating significant residual impact	**Step2_SignificantResidualImpact**	**Part A: Significant impact calculation**
		Separate *area* or *feature* calculations
		Part B: Rehabilitation credit calculation
		Separate *area* or *feature* calculations
		Part C: Significant residual impact calculation
		Separate *area* or *feature* calculations
Step 3: Calculating offsets	**Step3_Offsets**	**Offsets calculation**
		Separate *area* or *feature* calculations
Rationale for scores used in the Offsets Calculator	**Rationale**	**All**

WA Environmental Offsets Calculator

Step 1: Determining conservation significance

Key:

	Data to be entered
	Drop-down selection
	Automatically-generated scores

(Or, if appropriate, manual data entry permitted)

***Area / feature* (Impact site)**

Conservation significance determination for the environmental value impacted		
Conservation significance	**Description**	Forest Red-tailed Black Cockatoo Habitat
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened Species - vulnerable
	Conservation significance score	**0.2%**

Please select *area* or *feature* for the calculations	**Area**

WA Environmental Offsets Calculator

Step 2: Calculating significant residual impact

Key:
- Data to be entered
- Drop-down selection
- Automatically-generated scores

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Habitat

***Area* (impact site)**

Part A: Significant impact calculation *Area*

	Description	Quantum of impact	
Significant impact	Clearing of predominantly Jarrah-Marri forest habitat type	Significant impact (hectares)	3931.83
		Quality (scale)	10.00
		Total quantum of impact	3931.83

Part B: Rehabilitation credit calculation *Area* (onsite)

	Description				
Rehabilitation Credit	80% of the Mine area that will be cleared will be rehabilitated	Proposed rehabilitation (area in hectares)	3145.46	Time until ecological benefit (years)	10.00
		Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
		Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	1664.95
		Future quality WITH rehabilitation (scale)	6.00		

Part C: Significant residual impact calculation *Area*

Significant residual impact	Total quantum of impact	3931.83
	Rehabilitation credit	1664.95
	Significant residual impact	2266.88

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Step 3: Calculating offsets

Key:

	Data to be entered
	Drop-down selection
	Automatically-generated scores

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Habitat	Significant impact (step 2, part A)	3931.83
		Rehabilitation credit (step 2, part B)	1664.95
		Significant residual impact (step 2, part C)	2266.88

***Area* (offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	7517.57	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**2266.90**
	State Forest	**Current quality of offset site (scale)**	8.00	**Time until offset site secured (years)**	1.00		**100.0%**
		Future quality WITHOUT offset (scale)	6.00	**Risk of future loss WITHOUT offset (%)**	10.0%		
		Future quality WITH offset (scale)	9.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			**OFFSET ADEQUATE?**	**YES**

WA Environmental Offsets Calculator

Rationale for scores used in the offsets calculator

Environmental value to be offset			
Calculation	***Score (Area)***		***Rationale***
Conservation significance			
Description	Forest Red-tailed Black Cockatoo Habitat		Forest Red-tailed Black Cockatoo habitat
Type of environmental value	Species (flora/fauna)		Forest Red-tailed Black Cockatoo habitat
Conservation significance of environmental value	Rare/threatened Species - vulnerable		System generated
Landscape-level value impacted	yes/no		No
Significant impact			
Description	Clearing of predominantly Jarrah-Marri forest habitat type		Clearing of predominantly Jarrah-Marri forest habitat type
Significant impact (hectares) / Type of feature	3931.83		As per the Environmental Impact Assessment (Alcoa 2024)
Quality (scale) / Number	10.00		Due to gaps in vegetation condition data, and survey information all the habitat values for Black Cockatoos, Chuditch and Quokka have been rated as high.
Rehabilitation credit			
Description	80% of the Mine area that will be cleared will be rehabilitated		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.
Proposed rehabilitation (area in hectares)	3145.46		80% of the Mine area that will be cleared will be rehabilitated (see Alcoa 2024)
Current quality of rehabilitation site / Start number (of type of feature)	0.00		Following clearing and mining, the area is assumed to have no to little habitat value for Black Cockatoos, Chuditch or Quokka.
Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation	0.00		Without active rehabilitation, the area is assumed to remain as having little habitat value for Black Cockatoos, Chuditch or Quokka.
Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation	6.00		Although Alcoa's rehabilitation returns habitat for fauna, a conservative approach has been taken when attributing a value to future quality of habitat. A value of six has been given consistently for future quality following rehabilitation efforts.
Time until ecological benefit (years)	10.00		It is assumed that rehabilitation at ten years post clearing will provide foraging habitat for Black Cockatoos.
Confidence in rehabilitation result (%)	0.9		Confidence in rehabilitation is high based on the successful large-scale rehabilitation across Alcoa's operations, particularly over the past 20 years, therefore the confidence in result of this rehabilitation is therefore given a value of 90%. The 10% uncertainty is allocated to the small proportion of rehabilitation failure.
Offset			
Description	State Forest		Alcoa propose to locate the environmental offsets in areas of adjoining or nearby State Forest to the impact areas.
Proposed offset (area in hectares)	7517.57		Calaucted using the "what-if" function.
Current quality of offset site / Start number (of type of feature)	8.00		Alcoa assumes that the proposed offset conservation area will have habitat quality similar to the impact area but be highly disturbed and is degraded.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	6.00		Without intensive management existing threats and increasing impacts from climate change will lead to significant degradation of the habitat within the proposed offset conservation area.
Future quality WITH offset (scale) / Future number WITH offset	9.00		With intensive management Alcoa consider the habitat quality and functionality can be improved from baseline.
Time until ecological benefit (years)	10.00		The habitat quality for black cockatoos can take time provide benefits. Even though installing permanent drinking water sources for black cockatoos, it may take time for the cockatoos to use the water on an annual or regular basis.
Confidence in offset result (%)	0.8		Data from recent climate and assessments have demonstrated impacts to habitat is rising.
Duration of offset implementation (maximum 20 years)	20.00		Similar projects have demonstrated that if recovery actions and threat abatement is undertaken, habitat for species improves.
Time until offset site secured (years)	1.00		Alcoa will fund the implementation of the offset for at least 20 years.
Risk of future loss WITHOUT offset (%)	10.0%		Alcoa are consulting with the State Government and agencies with regards to proposed offset conservation areas.
Risk of future loss WITH offset (%)	0.0%		Offset conservation areas are proposed to be in State Forest. This is Crown land, classified as State Forest (not a protected area under IUCN tenure), and under management by DBCA. Native logging has been banned. A low risk of future loss without the offset was applied. Alcoa will commit to not mining or disturbing offset conservation areas. Alcoa will work with the State to secure the offset conservation area from future disturbance.
Offset ratio (Conservation area only)	N/A		