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**	Carnabys Cockatoo
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	**1.2%**

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

Step 2: Calculating significant residual impact

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

Environmental value (step 1)	Carnabys Cockatoo

Area **(impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Clearing of low quality foraging habitat	Significant impact (hectares)	37.70
		Quality (scale)	3.00
		Total quantum of impact	11.31

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

Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)	12.00	Time until ecological benefit (years)	5.00
	Rehabiliation of construction footprint where no longer required for operation.	Current quality of rehabilitation site (scale)	1.00	Confidence in rehabilitation result (%)	80.0%
		Future quality WITHOUT rehabilitation (scale)	1.00	Rehabilitation credit	1.81
		Future quality WITH rehabilitation (scale)	3.00		

Part C: Significant residual impact calculation *Area*

Significant residual impact		
	Total quantum of impact	11.31
	Rehabilitation credit	1.81
	Significant residual impact	9.50

WA Environmental Offsets Calculator

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnabys Cockatoo	Significant impact (step 2, part A)	37.70
		Rehabilitation credit (step 2, part B)	1.81
		Significant residual impact (step 2, part C)	9.50

***Area* (offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	65.00	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**11.20**
	Purachse and transfer of land to the conservation estate.	**Current quality of offset site (scale)**	3.00	**Time until offset site secured (years)**	1.00		**117.9%**
		Future quality WITHOUT offset (scale)	2.00	**Risk of future loss WITHOUT offset (%)**	15.0%		
		Future quality WITH offset (scale)	4.00	**Risk of future loss WITH offset (%)**	5.0%		
		Time until ecological benefit (years)	2.00				
		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	Carnabys Cockatoo		
Type of environmental value	Species (flora/fauna)		
Conservation significance of environmental value	Rare/threatened species - endangered		Conservation listing under Biodiversity Conservation Act 2016 and Environment Protection and Biodiversity Conservation Act 1999
Landscape-level value impacted	yes/no		
Significant impact			
Description	Clearing of low quality foraging habitat		Clearing of foraging habitat within Disturbance Footprint
Significant impact (hectares) / Type of feature	37.70		Extent of low quality foraging habitat to be cleared within the Disturbance Footprint.
Quality (scale) / Number	3.00		Low quality foraging habitat outside of the breeding range of Carnaby's Cockatoo. Suitable foraging species present but at a low density (i.e. foliage cover of preferred species <10%)
Rehabilitation credit			
Description	Rehabiliation of construction footprint where no longer required for operation.		Rehabilitation of 12 ha within the Disturbance Footprint in accordance with the Rehabilitation Management Plan
Proposed rehabilitation (area in hectares)	12.00		Rehabilitation of 12 ha within the Disturbance Footprint in accordance with the Rehabilitation Management Plan (ELA 2021b).
Current quality of rehabilitation site / Start number (of type of feature)	1.00		Quality assumed as 1 given completely cleared to facilitate Proposed Action
Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation	1.00		Potential for natural regeneration, however likely to be highly impacted by weed spread etc if left with no management.
Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation	3.00		Rehabilitation is intended to improve the quality of habitat.
Time until ecological benefit (years)	5.00		It will take approximately 5 years for foraging species to flower and provide similar low quality foraging habitat.
Confidence in rehabilitation result (%)	0.8		High level of confidence in successfully undertaking rehabilitation given the mechanisms proposed and the Proponent's track record with similar commitments.
Offset			
Description	Purachse and transfer of land to the conservation estate.		Acquisition, ceding to conservation estate and management in perpetuity by DBCA
Proposed offset (area in hectares)	65.00		Acquisition of 65 ha of comparable low quality foraging habitat for Carnaby's Cockatoo at an off site location approximately 3 km north of the Development Envelope.
Current quality of offset site / Start number (of type of feature)	3.00		Comparable quality rating to habitat being cleared. Low quality foraging habitat outside of the breeding range of CBC (Mattiske 2021).
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	2.00		Decreased quality assumed due to the potential for degradation of habitat from agricultural activities, i.e. inadvertent clearing, spread of weeds, dieback etc.
Future quality WITH offset (scale) / Future number WITH offset	4.00		With the offset, there is still some risk of complete loss, but this is lower than without. Loss could occur through broader events such as wildfire, climate change.
Time until ecological benefit (years)	2.00		Conservative estimate of how long it will take until benefits are realised from transfer to conservation estate and implementation of maintenance measures.
Confidence in offset result (%)	0.8		High level of confidence in success of the offset given the land will be ceded to conservation estate and managed in perpetuity by DBCA.
Duration of offset implementation (maximum 20 years)	20.00		Assume maximum time as ceded into conservation estate and managed in perpetuity by DBCA
Time until offset site secured (years)	1.00		Assume it will take approximately 12 months to purchase and transfer the offset to DBCA.
Risk of future loss WITHOUT offset (%)	15.0%		Low-medium risk of complete loss through incremental degradation by existing agricultural activities.
Risk of future loss WITH offset (%)	5.0%		With the offset, there is still some risk of complete loss, but this is lower than without. Loss could occur through broader events such as wildfire, climate change.
Offset ratio (Conservation area only)	N/A		

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**	Sandplain Duck Orchid
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	**1.2%**

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

Step 2: Calculating significant residual impact

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

Environmental value (step 1)	Sandplain Duck Orchid

Area **(impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Clearing of potential Paracaleana dixonii habitat within the Disturbance Footprint.	Significant impact (hectares)	79.70
		Quality (scale)	4.00
		Total quantum of impact	31.88

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

Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)	30.00	Time until ecological benefit (years)	5.00
	Rehabilitation of 30 ha within the Disturbance Footprint in accordance with the Rehabilitation Management Plan.	Current quality of rehabilitation site (scale)	1.00	Confidence in rehabilitation result (%)	80.0%
		Future quality WITHOUT rehabilitation (scale)	1.00	Rehabilitation credit	4.52
		Future quality WITH rehabilitation (scale)	3.00		

Part C: Significant residual impact calculation *Area*

Significant residual impact		
	Total quantum of impact	31.88
	Rehabilitation credit	4.52
	Significant residual impact	27.36

WA Environmental Offsets Calculator

Step 3: Calculating offsets

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

Environmental value (step 1)	Sandplain Duck Orchid	Significant impact (step 2, part A)	79.70
		Rehabilitation credit (step 2, part B)	4.52
		Significant residual impact (step 2, part C)	27.36

***Area* (offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	163.00	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**29.70**
	Acquisition of 163 ha of potential habitat for Paracaleana dixonii at an off site location approximately 3 km north of the Development Envelope.	**Current quality of offset site (scale)**	4.00	**Time until offset site secured (years)**	1.00		**108.6%**
		Future quality WITHOUT offset (scale)	3.00	**Risk of future loss WITHOUT offset (%)**	15.0%		
		Future quality WITH offset (scale)	5.00	**Risk of future loss WITH offset (%)**	5.0%		
		Time until ecological benefit (years)	2.00				
		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	Sandplain Duck Orchid		
Type of environmental value	Species (flora/fauna)		
Conservation significance of environmental value	Rare/threatened species - endangered		
Landscape-level value impacted	yes/no		
Significant impact			
Description	Clearing of potential Paracaleana dixonii habitat within the Disturbance Footprint.		Clearing of potential Paracaleana dixonii habitat within Disturbance Footprint
Significant impact (hectares) / Type of feature	79.70		Clearing of potential Paracaleana dixonii habitat within Disturbance Footprint
Quality (scale) / Number	4.00		
Rehabilitation credit			
Description	Rehabilitation of 30 ha within the Disturbance		Clearing of potential Paracaleana dixonii habitat within Disturbance Footprint
Proposed rehabilitation (area in hectares)	30.00		Rehabilitation of 30 ha within the Disturbance Footprint in accordance with the Rehabilitation Management Plan.
Current quality of rehabilitation site / Start number (of type of feature)	1.00		Quality assumed as 1 given completed cleared to facilitate Proposed Action
Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation	1.00		Low risk of complete loss through incremental degradation by construction and operation activities.
Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation	3.00		Rehabilitation is intended to improve quality of habitat.
Time until ecological benefit (years)	5.00		Conservative estimate of how long it will take until benefits are realised from implementation of the Rehabilitation Management Plan (ELA 2021b).
Confidence in rehabilitation result (%)	0.8		High level of confidence in successfully undertaking rehabilitation given the mechanisms proposed and the Proponent's track record with similar commitments.
Offset			
Description	Acquisition of 163 ha of potential habitat for Paracaleana dixonii at an off site location approximately 3 km north of the Development Envelope.		Acquisition of 163 ha of potential habitat for Paracaleana dixonii at an off site location approximately 3 km north of the Development Envelope.
Proposed offset (area in hectares)	163.00		Acquisition of 163 ha of potential Paracaleana dixonii habitat
Current quality of offset site / Start number (of type of feature)	4.00		Comparable quality rating to habitat being cleared.
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	3.00		Low-medium risk of complete loss through incremental degradation by existing agricultural activities.
Future quality WITH offset (scale) / Future number WITH offset	5.00		With the offset, there is still some risk of complete loss, but this is lower than without. Loss could occur through broader events such as wildfire, climate change.
Time until ecological benefit (years)	2.00		Conservative estimate of how long it will take until benefits are realised from transfer to conservation estate and implementation of maintenance measures.
Confidence in offset result (%)	0.8		High level of confidence in success of the offset given the land will be ceded to conservation estate and managed in perpetuity by DBCA.
Duration of offset implementation (maximum 20 years)	20.00		Assume maximum time as ceded into conservation estate and managed in perpetuity by DBCA
Time until offset site secured (years)	1.00		Assume 12 months to enable the purchase and transfer of land to the DBCA conservation estate.
Risk of future loss WITHOUT offset (%)	15.0%		Decreased quality assumed due to the potential for degradation of habitat from agricultural activities, i.e. inadvertent clearing, spread of weeds, dieback etc.
Risk of future loss WITH offset (%)	5.0%		With the offset, there is still some risk of complete loss, but this is lower than without. Loss could occur through broader events such as wildfire, climate change.