Prepared for
Electricity Networks Corporation trading as Western Power
ABN: 18 540 492 861

AECOM

Offset Strategy

Northern Terminal to Neerabup Terminal 330kV Transmission Line

10-Oct-2025
NREP NT to NBT
Doc No. 60743307
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Offset Strategy
Northern Terminal to Neerabup Terminal 330kV Transmission Line

Client: Electricity Networks Corporation trading as Western Power

ABN: 18 540 492 861

Prepared by

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Table of Contents

List of Figures

List of Tables

Executive Summary

Table 1 Offset Strategy Summary

Item	Details
Title of Proposal	Northern Terminal to Neerabup Terminal 330kV Transmission Line
Proponent name	Western Power
Purpose of this offset proposal	This Offset Strategy will accompany the Proposal's referral under section 38 of the *Environmental Protection Act 1986* (EP Act) and referral under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).
Permit (under application)	EPA Assessment Number – 2410 EPBC - 2024/09799
Environmental objective	To offset 100% of the Proposal's significant residual impact. The Proposal will have a significant impact on the Banksia Woodland of the Swan Coastal Plain Threatened Ecological Community (Banksia Woodland TEC). Listed as Endangered under the EPBC Act, and as several Priority Ecological Communities (PECs) by the Department of Biodiversity, Conservation and Attractions (DBCA): • Priority 3 *Banksia attenuata-Banksia menziesii* woodlands (floristic community type [FCT] 23b) • Priority 3 Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c) • Priority 3 Banksia Woodlands of the Swan Coastal Plain. The Proposal will also have a significant impact on foraging and breeding habitat for the three threatened black cockatoos, listed below: • Baudin's Black Cockatoo (Zanda baudinii) (listed as Endangered under the EPBC Act and the Biodiversity Conservation Act 2016 [BC Act]). • Carnaby's Black Cockatoo (Zanda latirostris) (listed as Endangered under the EPBC Act and the BC Act). • Forest Red-tailed Black Cockatoo (FRTBC) (Calyptorhynchus banksii naso) (listed as Vulnerable under the EPBC Act and the BC Act).
Proposed offset location	Western Power has secured one offset site, located in Orange Springs, Shire of Gingin. Other potential offset sites are currently being investigated by Western Power in consultation with DBCA.
Current scheme zoning	The Orange Springs offset is zoned as General Rural.
Stakeholders	DBCA
Plans and policies	N/A
Timeline	TBC
Governance arrangement	Western Power is planning to transfer ownership of the offset to DBCA.
Financial budget	TBC
Proposed Commencement	TBC
Offset Management Plan (OMP)	No Offset Management Plan (OMP) is proposed for Orange Springs, as the land will directly be transferred to DBCA.

1.0 Introduction

1.1 Background

Western Power (the Proponent) proposes to construct a new double circuit 330 kilovolt (kV) high voltage powerline between the Northern Terminal (NT) in Malaga and the Neerabup Terminal (NBT) in Pinjar, covering a distance of approximately 29 kilometres (km) (the Proposal) (Figure 1), as part of the Clean Energy Link North program. This Proposal, referred to as the "NT-NBT 330kV Line", falls within the North Region network, the northern area of the Western Power transmission network from Northern Terminal to Geraldton zone substation, consisting of a mix of 330kV and 132kV networks.

On 22 February 2024, Western Power referred the Proposal to the Environmental Protection Authority (EPA) under Part IV, Section 38 (s38) of the *Environmental Protection Act 1986* (EP Act). On 20 March 2024, the EPA set the Level of Assessment as Assessment on Referral Information with additional information, with a 2-week public review period.

Western Power referred the Proposal under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in February 2024. The Commonwealth Minister for Environment and Water determined the Proposal to be a 'Controlled Action' due to likely significant impacts on one or more Matters of National Environmental Significance (MNES). On the referral form to the EPA, Western Power requested that the proposal be assessed under a Bilateral Agreement with the Commonwealth Department of Climate Change, Energy, the Environment, and Water (DCCEEW). Since no Bilateral Agreement is currently in place, the EPA will be assessing the controlled action as an accredited process (EPBC 2024/09799).

Western Power submitted a section 43A request to the EPA, a request to amend a proposal during assessment in August 2025. The EPA accepted the amendment request on 7 August 2025, to be assessed under section 38 of the EP Act. Concurrently, a request to vary a proposal was submitted to DCCEEW under section 156A of the EPBC Act. This request was approved by DCCEEW on 1 September 2025.

1.2 Proposal Information

The Proposal Development Envelope (PDE) consists of the boundaries of all involved land parcels where consent has been granted for development of the Proposal and wherein all infrastructure will be contained. The PDE is 217.24 ha, and includes the following three overarching construction elements:

- The Transmission Corridor (174.13 ha)
- The Northern Terminal (19.56 ha)
- The Neerabup Terminal (11.71 ha).

The Proposal's Disturbance Footprint (Impact Area) is 205.39 ha within the PDE and includes:

- 124.63 ha of native vegetation to be cleared
- 60.76 ha of non-native vegetation to be cleared
- 20 ha of already cleared/previously disturbed areas.

1.3 Objectives

The objective of this Offset Strategy is to demonstrate that the environmental values of the proposed offset sites will counterbalance at least 100% of the Proposal's significant residual impact.

This Offset Proposal follows the 2014 Clearing of Native Vegetation Offsets procedure under the *Environmental Protection Act* (EP Act), as outlined by the Department of Environment Regulation (DER) (now DWER), and the *2012 Environmental Protection and Biodiversity Conservation Act* (EPBC Act) *Environmental Offset Policy*, as outlined by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (now DCCEEW).

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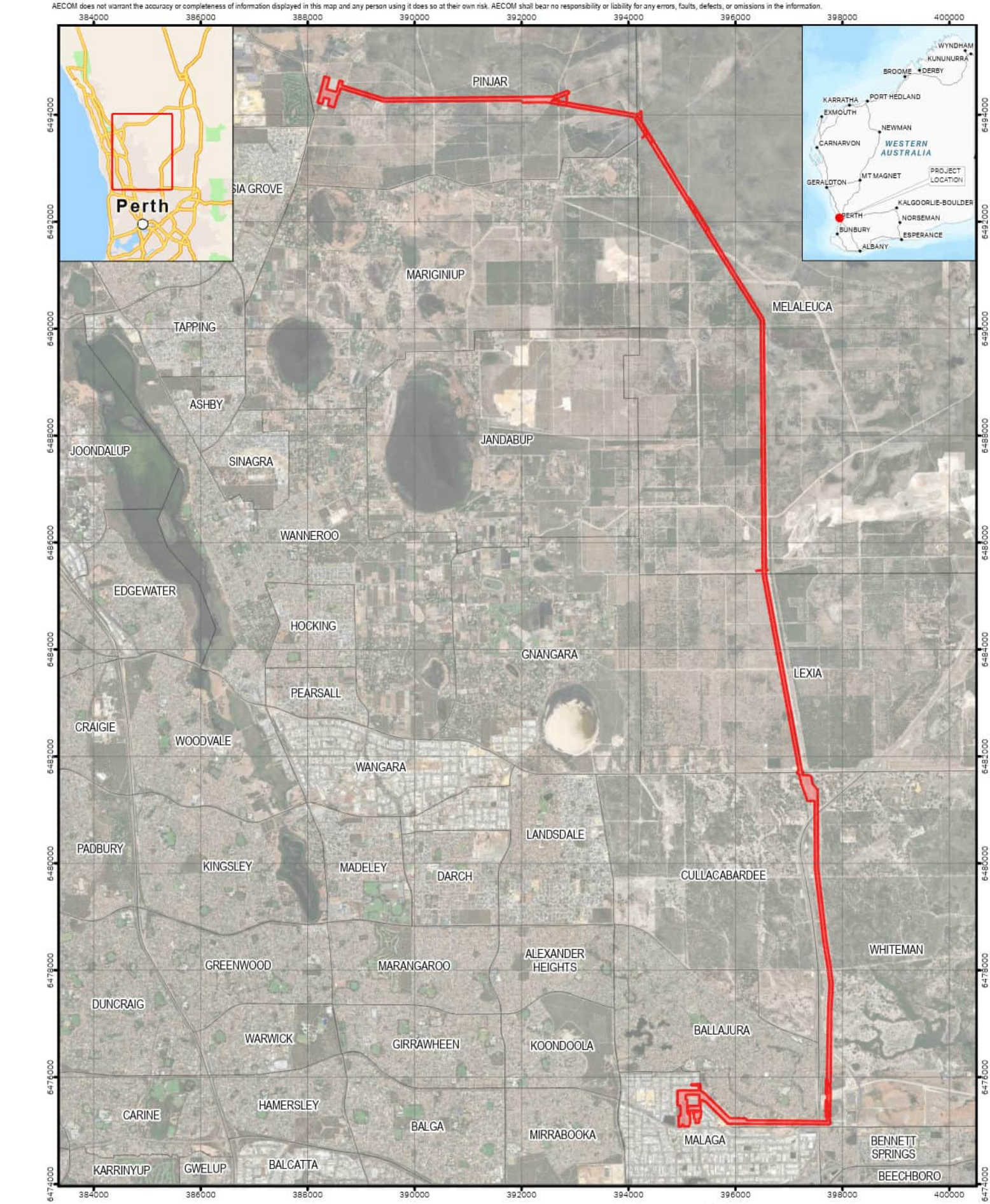

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Proposal Development Envelope

Proposal Development Envelope

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure 1

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2.0 Offset Requirement

2.1 Proposal Environmental Studies

Western Power has commissioned several biological surveys and environmental studies, and reports for the Proposal, which are detailed in Table 2 below.

Table 2 Environmental Surveys and Studies

Survey	Timing	Survey details
Environmental Review Document (ERD) - Northern Terminal to Neerabup Terminal 330kV Transmission Line (Western Power 2025)	Report: August 2025	Environmental Review Document (ERD) prepared in response to the *Notice requiring information for assessment* (s40(2)(a)) issued by the EPA.
Environmental Review and Black Cockatoo Refined Assessment (AECOM 2025)	Report: June 2025 Survey: February 2025	AECOM (2025) undertook a refined black cockatoo assessment for a 603.2 ha survey area. This comprised the DE (217.24 ha) and the AECOM (2023) survey area. The report also presents a comprehensive and updated overview of the DE, integrating both recorded and inferred data. Ground-truthing was conducted to verify inferred mapping, and habitat naming conventions were standardised to ensure consistency and accuracy across all datasets.
Environmental Impact Assessment - Northern Terminal (NT) to Neerabup Terminal (NBT) (AECOM 2024a)	Report: February 2024	AECOM (2024a) prepared an Environmental Impact Assessment (EIA) document using Western Power's template for the Proposal, prior to the changes in Development Envelope. Western Power provided the EIA to the EPA and DCCEEW on 22 February 2024 as part of the referral documentation. The report was published on the 29 February 2024.
North (CEL-N) Swan Coastal Plain Flora, Vegetation and Fauna Assessment. (AECOM 2024b)	Survey: October – November 2023 Report: March 2024	AECOM (2024b) undertook a detailed spring flora, Vegetation survey, a basic fauna survey and a targeted black cockatoo assessment for defined linear corridors within the Perth Metropolitan Region. The survey covered five distinct areas, of which two intersect the DE. These include: - Neerabup Terminal and East Wanneroo survey area (204.98 ha) - Northern Terminal survey area (25.78 ha). The remaining survey areas are not relevant to this Proposal.
NREP 1-NT-NBT 330kV Line Flora, Vegetation and Fauna Assessment (AECOM 2023)	Survey: September – October 2022 Report: May 2023	AECOM (2023) surveyed a 576.37 ha linear corridor between Malaga and Pinjar. The survey included a detailed spring flora, vegetation survey, a basic fauna survey and a targeted black cockatoo assessment.

2.2 Environmental Factors

The Proposal is expected to impact Environmental Factors identified by the EPA, and on Matters of National Environmental Significance (MNES) listed under the EPBC Act. Assessment of these impacts has determined that, after the application of the mitigation hierarchy, significant residual impacts to identified Environmental Factors and MNES remain. An Offset Strategy has been prepared to counterbalance the significant residual impacts of the Proposal. The Environmental Factors and MNES with significant residual impacts are listed below and shown in Appendix A.

- Flora and Vegetation
    - Banksia Woodland of the Swan Coastal Plain Threatened Ecological Community (Banksia Woodland TEC). Listed as Endangered under the EPBC Act, and as several Priority Ecological Communities (PECs) by the Department of Biodiversity, Conservation and Attractions (DBCA), listed below:
        - Priority 3 *Banksia attenuata-Banksia menziesii* woodlands (floristic community type [FCT] 23b)
        - Priority 3 Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c)
        - Priority 3 Banksia Woodlands of the Swan Coastal Plain.
- Fauna
    - Baudin's Black Cockatoo (*Zanda baudinii*) (listed as Endangered under the EPBC Act and the *Biodiversity Conservation Act 2016* [BC Act]).
    - Carnaby's Black Cockatoo (*Zanda latirostris*) (listed as Endangered under the EPBC Act and the BC Act).
    - Forest Red-tailed Black Cockatoo (FRTBC) (*Calyptorhynchus banksii naso*) (listed as Vulnerable under the EPBC Act and the BC Act).

2.3 Residual Impacts

The Proposal has been identified as having a significant residual impact at both State and Commonwealth levels. The ERD for the Proposal considered clearing of Moderate or higher quality black cockatoo foraging habitat as a significant residual impact, totalling up to 70.8 ha; however, this Offset Strategy considers the impacts to all black cockatoo foraging habitat within the Proposal footprint and the corresponding offset requirements (Appendix B).

The land offset requirements have been estimated using the respective State and Commonwealth calculators (DCCEEW, Offset Assessment Guide, 2023) (DWER, 2021).

Each aspect is discussed in greater detail in Sections 3.1 and 3.2.

Table 3 Residual Impacts for the Proposal

Aspect		Direct Impacts (ha)	Significant residual impact (calculator result) (ha) *
Flora and Vegetation			
Banksia Woodlands TEC/PEC		4.44	3.55
Terrestrial Fauna			
Carnaby's Black Cockatoo Foraging Habitat	Negligible quality (1)	18.02	1.8
	Low quality (2)	98.52	19.7
	Low to moderate quality (3)	1.22	0.37
	Moderate quality (4 to 6)	50.46	30.28
	Moderate to high quality (7)	13.08	9.16
	High quality (8)	6.84	5.47
Baudin's Black Cockatoo Foraging Habitat	Negligible quality (1)	71.15	7.12
	Low quality (2)	14.22	2.84
	Moderate quality (4-6)	57.3	28.65
FRTBC Foraging Habitat	Low quality (2)	28.22	5.64
	Low to moderate quality (3)	6.84	2.05
	Moderate to high quality (7)	50.46	35.32
Black cockatoo potential breeding trees		Two suitable breeding trees (three hollows) and one potential breeding trees (hollows not confirmed)	Three suitable breeding trees

* Result is from both DCCEEW and DWER offset calculators.

3.0 Offset Strategy Rationale

Western Power intend to fully offset the significant residual impacts of the Proposal through direct land acquisition offsets, incorporating land management and rehabilitation wherever feasible. Any areas within the disturbance footprint that are cleared but not required for permanent infrastructure will be rehabilitated in addition to the proposed offset sites.

To date, Western Power has secured one offset site located in Orange Springs within the Shire of Gingin. Several additional sites are currently under evaluation and negotiation with private landowners. As these sites have not yet been confirmed, they are not included in this revision of the strategy document.

To identify a suitable offset site that effectively counterbalances the significant residual impacts of the Proposal resulting from native vegetation clearing, Western Power has referred to the following policy and guidelines, and conservation advice. These resources have informed the selection process to ensure alignment with biodiversity protection objectives:

- Policy and guidance:
  - EP Act – WA Environmental Offsets Guidelines (GoWA, 2014).
  - EP Act – Draft WA Environmental Offsets Policy (GoWA, 2011).
  - EPA (Public Advice) – Considering environmental offsets at a regional scale (EPA, 2024).
- WA Conservation advice:
  - Interim Recovery Plan No. 359 – *Banksia attenuata* woodlands over species rich dense shrublands (2016 2021) (DPaW, 2016).
  - WA Wildlife Management Program No. 52 – Carnaby's Cockatoo *Zanda [Calyptorhynchus] latirostris* Recovery Plan (DPaW, 2016).
  - Black Cockatoo (Baudin's Cockatoo *Calyptorhynchus baudinii* and Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso*) Recovery Plan (DEC, 2008).

The following Commonwealth approved conservation advice were also used to inform the Offset Proposal:

- EPBC Act Approved Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain ecological community (DoEE, 2016).
- EPBC Act Referral guideline for 3 WA threatened black cockatoo species (DAWE, 2022)
- Conservation Advice (*Zanda baudinii*) Baudin's cockatoo (TSSC, 2018).
- Conservation Advice for *Calyptorhynchus banksia naso* (Forest Red-tailed Black Cockatoo) (DCCEEW, 2009).

3.1 Banksia Woodland TEC/PEC

3.1.1 TEC/PEC Description

The federally listed TEC is found in the southwest of Western Australia and is characterised by a dominant tree layer of *Banksia* spp., often with scattered eucalypts and other tree species. The understorey is rich with wildflowers, sclerophyllous shrubs, sedges and herbs (DoEE, 2016).

The three PECs are each described below and shown in Appendix A.

3.1.1.1 Banksia Attenuata-Banksia Menziesii Woodlands (FCT 23b)

This ecological community is found within the Bassendean system, extending from Melaleuca Park to Gingin. It is part of the relatively widespread Banksia woodlands located north of Perth (DBCA, 2023).

AECOM (2023) recorded this PEC at numerous locations within the 576.37 ha survey area, restricted to areas adjacent to and north of Gnangara Road (Appendix A). Of this, 0.57 ha occurs within the Proposal's Impact Area. AECOM (2023) recorded the PEC in seven quadrats in a Good to Excellent condition. The average species diversity was 52.3 species and the similarity index was relatively high, ranging from 46% (likely due to recent vegetation burns) to 64%.

3.1.1.2 Low Lying Banksia Attenuata Woodlands or Shrublands (FCT 21c)

This PEC occurs sporadically between Gingin and Bunbury and is primarily restricted to the Bassendean system. It typically occupies lower-lying, wetter areas and is dominated by *Melaleuca preissiana*, *Banksia attenuata*, *Banksia menziesii*, *Regelia ciliata*, *Eucalyptus marginata*, or *Corymbia calophylla*. This ecological community can appear as a woodland and occasionally as shrubland (DoEE, 2016). A total of 0.78 ha of this PEC was mapped within the Project Impact Area.

AECOM (2023) has recorded four quadrats that represent FCT 21c. These quadrats represent three distinct communities; however, all are located in low-lying areas that are potentially wet during winter and may feature an overstorey of *Melaleuca preissiana* or *Eucalyptus marginata*. Species richness is similar across sites, with an average of 39 species. All four quadrats were located in areas of vegetation considered to be in Excellent condition.

3.1.1.3 Banksia Woodlands of the Swan Coastal Plain

This TEC's canopy is typically dominated or co-dominated by *Banksia attenuata* and/or *Banksia menziesii*. Other species, such as *Banksia prionotes* or *Banksia ilicifolia,* may also become dominant. This community typically occurs on well drained, low nutrient soils associated with sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands. It also commonly occurs on sandy colluvium and aeolian sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau, with some presence in other, less typical environments (DoEE, 2016).

Where no other PEC was identified as FCT 21c, FCT 23b or other FCT, AECOM (2023) inferred all patches of Banksia Woodlands TEC as Priority 3 PEC Banksia dominated woodlands and shrublands of the Swan Coastal Plain. A total of 3.09 ha was mapped in Good to Very Good Condition. This PEC corresponds with the Banksia Woodlands TEC.

3.1.2 Project Impacts

The Proposal will result in clearing of up to 4.44 ha of the Banksia Woodland TEC. The TEC is recognised under multiple ecological community listings in Western Australia, including three Priority 3 PECs that occur within the PDE:

- 0.57 ha of Priority 3 *Banksia attenuata-Banksia menziesii* woodlands (FCT 23b).
- 0.78 ha of Priority 3 Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c).
- 3.09 ha of Priority 3 Banksia Woodlands of the Swan Coastal Plain.

3.1.3 Offset Strategy

To offset the significant residual impact on the Banksia Woodland TEC, Western Power proposes a combination of land acquisition and management of offset sites containing vegetation with like-for-like or ecologically similar FCTs, where feasible. According to DoEE (2016), preserving existing high-quality remnants of the Banksia Woodland ecological community is necessary for the long-term recovery of the TEC.

The proposed land acquisition offsets will be supported by a comprehensive management framework as detailed in Section 6.0. Options for servicing of the ongoing management requirements of the offset sites are currently being explored, including the potential transfer of land management responsibilities for the Orange Springs site to DBCA, and for additional sites to DBCA or a relevant Aboriginal Corporation.

3.1.4 Offset Calculator Inputs

Table 4 details the calculator inputs to determine the significant residual impact of the Proposal on Banksia Woodland TEC/PEC.

Table 4 Banksia Woodland TEC/PEC – Impact Calculator Values

Attribute	Significant residual impact
Banksia Woodland TEC/PEC	
Description	Clearing 4.44 ha of Banksia Woodland TEC/PEC in Good to Excellent condition, comprising: • Priority 3 *Banksia attenuata-Banksia menziesii* woodlands (FCT 23b) in Very Good - Excellent condition. • Priority 3 Low lying *Banksia attenuata* woodlands or shrublands (FCT 21c) in excellent condition. • Priority 3 Banksia Woodlands of the Swan Coastal Plain in Very Good - Excellent condition.
Type of environmental value	Ecological Community
Conservation significance of environmental value	TEC/PEC
Conservation significance score	4.44
Significant residual impact	4.00
Quality (scale)	8/10

3.2 Black Cockatoos

3.2.1 Habitat Description

The Proposal will impact both foraging and breeding habitat for the three threatened black cockatoo species:

- Baudin's Cockatoo (*Zanda baudinii*)
- FRTBC (*Calyptorhynchus banksii naso*)
- Carnaby's Cockatoo (*Zanda latirostris*).

The conservation status under the EP Act and EPBC Act, along with a summary of their foraging and breeding habitat, as per existing State and Commonwealth Conservation Advice are outlined in Table 5.

Table 5 Black Cockatoo Breeding and Foraging Habitat

Species	Foraging habitat	Breeding habitat
Baudin's Cockatoo Endangered under the EPBC Act and BC Act	Species forages in the Jarrah Forest, on the South Coast and eastern side of the Swan Coastal Plain. Primarily foraging in Marri trees (*Corymbia calophylla*) but may also forage in Jarrah trees (*Eucalyptus marginata*) and native proteaceous plants such as *Banksia*, *Dryandra*, and *Hakea* species (TSSC, 2018).	Southern areas of the Swan Coastal Plain, in the Jarrah Forest, woodlands or forests and the western margins of the Wheatbelt. Nesting occurs in suitable hollows of mature or dead *Eucalyptus* trees, including Karri (*E. diversicolor*), Marri, Jarrah, Wandoo, Bullich (*E. megacarpa*) and Tuart (DAWE, 2022; TSSC, 2018).

Species	Foraging habitat	Breeding habitat
Carnaby's Cockatoo Endangered under the EPBC Act and BC Act	South Coast, Swan Coastal Plain and Wheatbelt regions (DAWE, 2022). Kwongan heathlands/woodlands comprise primarily foraging species, including *Banksia* spp., Hakea spp., *Grevillea* spp., *Callistemon* spp. and Marri trees (DAWE, 2022).	The Jarrah Forest, woodlands and forests in the Wheatbelt and South Coast regions and the Swan Coastal Plain, specifically Lake Clifton, provides occasional breeding activity from July to December. Nesting occurs in hollows of mature or dead Eucalyptus trees of primarily Salmon, Gum, Wandoo, Tuart, Jarrah, Flooded Gum (*E. rudis)*, York Gum, Powderbark (*E. accedens*), Karri and Marri species (DAWE, 2022).
FRTBC Vulnerable under the EPBC Act and BC Act	Swan Coastal Plain, South Coast, and Jarrah Forest regions. Primarily foraging species include Jarrah and Marri woodlands and forests, the edges of Karri (*Eucalyptus diversicolor*) forests, Wandoo (*E. wandoo*) and Blackbutt (*E. patens*) trees (DAWE, 2022).	Swan Coastal Plain, woodland or forest, Perth Metropolitan Area, Jarrah Forest Region, Wheatbelt and the South Coast Region Nesting occurs in suitable hollows of mature or dead *Eucalyptus* trees, Marri, Karri, Wandoo, Bullich, Blackbutt (*E. patens*), Tuart and Jarrah species (DAWE, 2022).

3.2.2 Project Impacts

The Proposal will have a direct impact on foraging habitat for the three threatened species of black cockatoos due to clearing activities associated with the construction of the Proposal. AECOM (2025) assessed the foraging habitat within the PDE using the Bamford Consulting Ecologists (BCE) (2024) scoring tool. This methodology assesses habitat quality based on the presence of preferred foraging species, the site's ecological context (including the likelihood of local breeding) and species stocking rates. Significant residual impacts were only considered for foraging habitat with a quality score of moderate or above (as per the BCE [2024] methodology), as outlined in Table 3.

The total impact area is smaller than the combined individual habitat areas for each species, due to overlap in the foraging habitat types shared among species.

The Proposal will result in clearing of the two suitable breeding trees which together contain three hollows (Tree ID 18 and 9), and one potential nesting tree that could not be assessed via drone survey due to land access constraints (Tree ID 156)[1]. AECOM (2025) assessed trees ID18 and 9 and determined that the hollow dimensions and characteristics are suitable to support black cockatoo breeding. The hollow on Tree ID 9 was noted as being previously active. No evidence of active use by black cockatoos was observed in any of the hollows at the time of the survey.

The locations of all potential and suitable breeding trees are presented in Appendix A, with details the suitable breeding trees provided in Table 6 below.

Table 6 Suitable Black Cockatoo Breeding Trees

Tree ID	Tree description	Location	Hollow description
18	Structurally sound stag within Eucalyptus Woodland habitat.	115.9174614, -1.8069004	One hollow and multiple entrances (2-3).

[1] Tree ID 156 was unable to be accessed to conduct a hollow assessment. WP is conservatively assuming the potential hollow is suitable to support Black Cockatoo breeding for the purposes of assessing potential Proposal impacts and offset requirements.

Tree ID	Tree description	Location	Hollow description
9	Structurally sound stag within Eucalyptus Woodland habitat.	115.9175183, -31.8085776	Chew marks confirmed to be present within the chamber and its entrance suggesting recent visitation. Chamber is estimated to be 0.5 m deep with leaf litter at the base.
156	Marri (*Corymbia calophylla*), dead and burnt within Eucalyptus Woodland habitat.	115.9153696, -31.7991463	A potential 45-degree branch hollow (approximately 30 cm x 20 cm), approximately 15 m above ground, with an east-facing entry. This hollow could not be assessed via drone survey due to land access constraints.

3.2.3 Offset Strategy

To offset the significant residual impact on black cockatoo breeding and foraging habitat, Western Power proposes a combination of land acquisition and active management of offset sites that support vegetation with like-for-like habitat values, along with the installation of Artificial Nest Hollows (ANHs).

The proposed land acquisition offsets will be supported by a comprehensive management framework (detailed in Section 6.0). Options for servicing the long-term management requirements of these offset sites are currently being explored, including the potential transfer of land management responsibilities to the DBCA or Aboriginal Corporation.

The use of ANHs to replace breeding habitat provides for immediate benefit to black cockatoos. Black cockatoo breeding habitat requires trees with a diameter at breast height (DBH) greater than 500 mm, or >300 mm for Wandoo and Salmon Gum, which is considered the minimum size for nest hollow development (DAWE, 2022). ANHs have an estimated time until benefit of one year and will be installed in accordance with DBCA's *Fauna Notes – Artificial hollows for black cockatoos* (2023) and will be maintained periodically over the 20-year duration of the offset.

3.2.4 Offset Calculator Inputs

Table 7 details the calculator inputs to determine the significant residual impact of the Project. The black cockatoo's foraging habitat quality was based on the BCE (2024) method (AECOM, 2025).

Table 7 Black Cockatoos – Impact Calculator Values

Attribute	Significant residual impact					
Carnaby's Cockatoo foraging habitat						
Type of environmental value	Threatened species foraging habitat					
Conservation significance of environmental value	EPBC Act – Endangered BC Act – Endangered					
Conservation significance score	1.2%					
Description	6.84 ha of high-quality (8) foraging habitat	13.08 ha of moderate to high quality (7) foraging habitat	50.46 ha of moderate quality (6) foraging habitat	1.22 ha of low to moderate (3) quality foraging habitat	98.52 ha of low (2) quality foraging habitat	18.02 of negligible (1) quality foraging habitat
Significant residual impact	5.47 ha	9.16 ha	30.28 ha	0.37 ha	19.7 ha	1.8 ha
Quality (scale)	8/10	7/10	6/10	3/10	2/10	1/10
Baudin's Cockatoo foraging habitat						
Type of environmental value	Threatened species foraging habitat					
Conservation significance of environmental value	EPBC Act – Endangered BC Act – Endangered					
Conservation significance score	1.2%					
Description	57.3 ha of moderate (4-6) quality foraging habitat		14.22 ha of low (2) quality foraging habitat		71.15 ha of negligible (1) quality foraging habitat	
Significant residual impact	328.65 ha		2.84 ha		7.12 ha	
Quality (scale)	5/10 (noting balance of quality 4 & 6 within underpinning survey)		2/10		1/10	

FRTBC Foraging habitat			
Type of environmental value	Area of habitat		
Conservation significance of environmental value	EPBC Act – Vulnerable BC Act – Vulnerable		
Conservation significance score	1.2%		
Description	50.46 ha of moderate to high (7) quality foraging habitat	6.84 ha of low to moderate (3) quality foraging habitat	28.22 ha of low (2) quality foraging habitat
Significant residual impact	35.32 ha	2.05 ha	5.64 ha
Quality (scale)	7/10	3/10	2/10

Black cockatoo potential breeding trees	
Description	Two suitable breeding trees, containing three suitable hollows and one potential nesting tree that could not be assessed via drone survey due to land access constraints.
Type of environmental value	Feature
Conservation significance of environmental value	Black cockatoo's EPBC status – Vulnerable and Endangered
Conservation significance score	1.2%
Significant residual impact	Three suitable breeding trees

4.0 Offset Sites

4.1 Orange Springs

Western Power has secured one offset site in Orange Springs, approximately 70 km north of the Project, adjacent to Moore River National Park, within the Swan Coastal Plain IBRA region. Western Power engaged SLR Consulting Australia (SLR) (2025) to undertake a biological survey (detailed flora and vegetation, basic fauna and targeted black cockatoo survey) of a 508.3 ha survey area.

The location of the offset is shown in Figure 2 and the proportion of this site that is suitable for use as an offset is detailed in 4.1.3.

4.1.1 Survey Results

SLR (2025) conducted a comprehensive desktop assessment, which identified the potential for:

- Sixty-nine (69) significant flora species with the potential to occur in the survey area (11 Threatened and 58 Priority species). Of these, 24 species were considered likely to occur.
- Two state-listed Banksia Woodland PECs, Banksia Woodlands of the Swan Coastal Plain ecological community and the Swan Coastal Plain *Banksia attenuata - Banksia menziesii* woodlands (23b), with potential to occur. Both communities form part of the federally listed TEC.
- Twenty-nine (29) significant fauna species with potential to occur, which included 22 birds, six mammals and one reptile.

SLR (2025) did not record any Threatened or Priority flora within the survey area during the field survey. A post-survey likelihood of occurrence assessment found only three species of the initial 24 target species were considered likely to occur, *Paracaleana dixonii* (Endangered under the EPBC Act and Vulnerable under the BC Act), *Dillwynia dillwynioides* (P3) and *Regelia megacephala* (P4).

Six vegetation types were recorded within the survey area, including two Banksia Woodland vegetation types (BaBm and BaMpAc), an Eucalypt/Banksia woodland (EtBaBM), Regrowth vegetation (trees over shrubs), Mature trees (MT) and Garden vegetation. A total of 64.5 ha (12.6%) of the survey area was cleared. Vegetation condition ranged from Completely Degraded to Excellent, with the majority (76.3%) in Excellent condition. Evidence of disturbance included past clearing, agricultural activity, and the presence of weeds.

SLR (2025) determined 402.1 ha (79.1%) of the survey area is representative of the federally listed Banksia Woodlands of the SCP TEC. This included three of the vegetation types:

- BaMpAc (26.1 ha)
- BaBm (296.5 ha)
- EtBaBm (79.5 ha).

SLR (2025) conducted FCT analysis for each quadrat within the BaMpAc, BaBm, and EtBaBm vegetation types. Vegetation type BaMpAc, was considered representative of the *Banksia ilicifolia* woodlands, southern SCP (FCT22) Priority 3 PEC and vegetation types BaBm, and EtBaBm were analogous to the SCP *Banksia attenuata - Banksia menziesii* woodlands (FCT 23b).

Seven distinct fauna habitats were identified within the survey area, all of which are common throughout the wider region. Among them, Banksia Woodland and the Ephemeral Banksia Wetland/Woodland stand out as particularly valuable to local fauna, especially as key foraging areas for Carnaby's Cockatoo. The Wandoo Woodland also plays an important role, offering nesting and roosting sites for the species. No evidence of roosting was recorded during the survey.

No significant fauna species were observed during the survey. However, one significant species, the Carnaby's Cockatoo (*Zanda latirostris*), was assessed as having a high likelihood of occurrence post-survey, based on the presence of suitable habitat and multiple recent records from the DBCA in the surrounding area. The proposed offset site falls outside of the known distribution ranges of both the FRTBC and Baudin's Cockatoo.

The field survey recorded 217 potential breeding trees and 20 suitable breeding trees for Carnaby's Cockatoo (Table 8). Carnaby's Black Cockatoo foraging habitat quality was assessed using the DCCEEW (2023) scoring system, results are provided in Table 9.

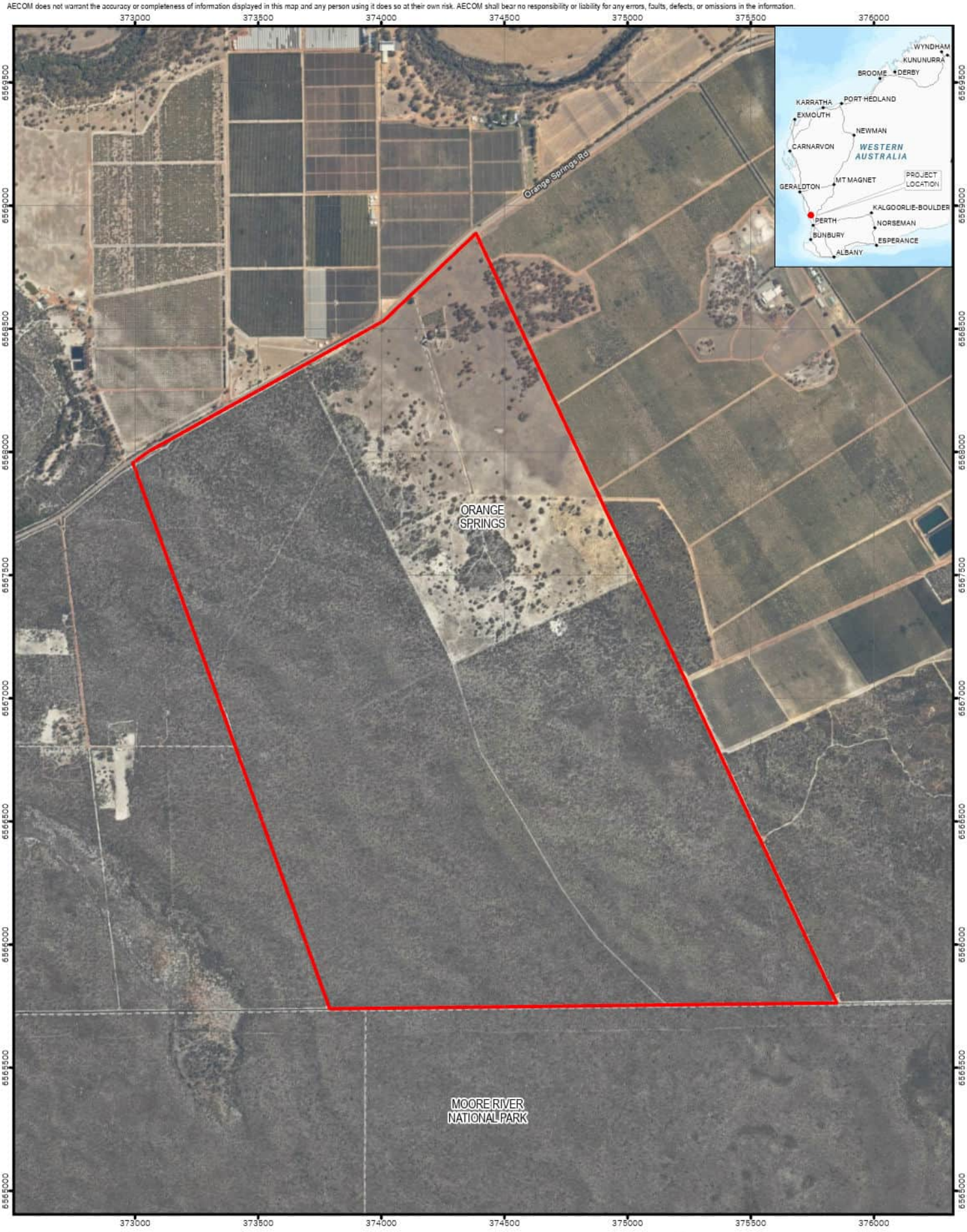
Table 8 Black Cockatoo Nesting Trees Recorded Within The Survey Aarea

Tree Taxa	Known Nesting Tree	Suitable Nesting Tree		Potential Nesting Tree		Total
	Category 1	Category 2	Category 3	Category 4	Category 5	
Marri (*Corymbia calophylla*)	0	0	0	0	10	**10**
Stag	0	0	9	0	8	**17**
Wandoo (*Eucalyptus wandoo)*	0	1	10	3	196	**210**
Total	**0**	**1**	**19**	**3**	**214**	**237**

Table 9 Foraging Habitat Quality Scores of Carnaby's Black Cockatoo Habitat

Habitat	Area (ha)	Foraging value
Banksia Woodland	376.4	Very High (7) – Native kwongan heath and shrubland (>30% projected foliage cover), banksia and eucalypt woodlands with >50% projected foliage cover.
Eucalyptus todtiana over Native Regrowth	34.7	High (6) – Native kwongan heath and shrubland (>25% projected foliage cover), banksia and eucalypt woodlands with >40% projected foliage cover.
Ephemeral *Banksia* Wetland / Woodland	25.6	Very High (7) – Native kwongan heath and shrubland (>30% projected foliage cover), banksia and eucalypt woodlands with >50% projected foliage cover.
Wandoo Woodland over Paddock	5.8	Moderate (4) – Eucalypt woodlands with 20-30% projected foliage cover.
Isolated Eucalyptus over Paddock	0.8	Low to Moderate (3) – Native kwongan heath and shrubland, banksia or eucalypt woodlands with 10-20% projected foliage cover.
Garden Planted	0.3	Negligible to Low (1) – Urban areas with scattered foraging trees.
Cleared / Paddock	64.2	None (0) – No Proteaceae, eucalypts or other potential sources of food.

AECOM does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AECOM shall bear no responsibility or liability for any errors, faults, defects, or omissions in the information.



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LEGEND

Survey Area (SLR 2025)

Orange Springs Offset Site

PROJECT ID 60743307 **CREATED BY** JOHNSTONES2
DATE MODIFIED 06 OCT 2025 **APPROVED BY** LPOTTS

N

0 250 500
Meters

1:20,000
(when printed at A4)

GDA2020 MGA ZONE 50

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **2**

A4 size

Project: \\na.aecomnet.com\ifs\APAC\Perth-AUPER1\Legacy\Projects\607x\60743307_WP_NREP_NT_NBT_ERD\900_CAD_GIS\920_GIS\02_MXD_APRX\04_NREP_Offset_Strategy\04_NREP_Offset_Strategy.aprx (JohnstoneS2)
Layout: 60743307_Fig2_OrangeSprings_OffsetSite_A4P_v1, Last exported: 6/10/2025 1:32 PM

4.1.2 Suitability as an Offset

The Orange Springs offset site contains 402.1 ha of the Banksia Woodland TEC/PEC, in Very Good to Excellent condition and 376 ha (73.9%) of the TEC is representative of the Priority 3 *Banksia attenuata - Banksia menziesii* woodlands (FCT 23b). This is expected to be sufficient to counterbalance 100% of the significant residual impact on the TEC from the Proposal.

The offset site includes 442.6 ha (87.1%) of suitable foraging habitat for Carnaby's Cockatoo, ranging in quality from moderate (4) to very high (7), with the majority being very high-quality (as per the DCCEEW foraging habitat quality scoring tool).

Given the high quality of Banksia Woodland vegetation and foraging habitat for Carnaby's Cockatoo, no rehabilitation is proposed for this offset site, with ongoing management activities considered sufficient to maintain the high quality value of the vegetation at the offset site.

The Orange Springs site is located outside of the distribution range associated with the FRTBC and Baudin's Black Cockatoo. As such, the Orange Springs site is not suitable to offset residual impacts to these species. The offset gap is detailed further in Section 4.2 and management of the offset site in Section 6.0.

4.1.3 Offset Calculator

The offset value of Orange Springs was assessed using the DWER and DCCEEW offset calculators for both Carnaby's Black Cockatoo foraging habitat and Banksia Woodland TEC. Baseline quality values were informed by the FVC (2025) biological survey, which identified extensive areas of vegetation in Excellent condition and High-quality foraging habitat. It is assumed that this condition will be maintained over the offset period, supported by the site's proposed inclusion in the DBCA conservation estate within one year of project approval.

Remaining input values were developed in collaboration with Western Power, using the following references:

- Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act (DCCEEW, 2023).
- Bunbury Outer Ring Road Southern Section: Offset Strategy (Rev 3) (Main Roads, 2021).

As a privately owned, rural-zoned property, the site is at risk of loss from activities such as clearing, grazing, and firewood collection. Formal protection would mitigate these risks, restrict public access, and ensure long-term conservation management with a high level of certainty in retaining habitat values.

4.1.3.1 Banksia Woodland TEC/PEC

A subset of the offset calculator inputs for the DCCEEW and DWER calculators for Banksia Woodland TEC are provided in Table 10, as well as the calculated area required to offset the Proposal's significant residual impact to the TEC. Appendix B includes a copy of the full offset calculator inputs.

Table 10 Banksia Woodland TEC/PEC Offset Calculator

Offset calculator inputs (Orange Springs)		Area required to offset 100% of residual impacts
Significant Residual Impact Area (ha)	4.00	**46.97 ha** (DWER 140.9%, DCCEEW 100%)
Current quality of offset site	8/10	
Future quality without offset	8/10	
Future quality with offset	8/10	
Time until ecological benefit (years)	1	
ROL without offset (%)	15	

Offset calculator inputs (Orange Springs)		Area required to offset 100% of residual impacts
ROL with offset (%)	0	
Confidence in offset result (%)	90	

Western Power will allocate 46.97 ha of the total available 402.1 ha of Banksia Woodland TEC at Orange Springs to offset 100% of the Proposal's impacts on the TEC.

4.1.3.2 Carnaby's Black Cockatoo

A subset of the offset calculator inputs for the DCCEEW and DWER calculators for Carnaby's Cockatoo foraging and breeding habitat are provided in Table 11, as well as the calculated areas required to offset the Proposal's significant residual impact to the species habitat. Appendix B includes a copy of the full offset calculator inputs.

Table 11 Carnaby's Cockatoo Offset Calculator

Offset calculator inputs (Orange Springs)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (Orange Springs)		Area of rehabilitation required to offset 100% of residual impacts
High (8) quality foraging habitat					
Significant Residual Impact Area (ha)	5.74	**64.32 ha** (DWER 139.4%, DCCEEW 100%)	Significant Residual Impact Area (ha)	N/A	**N/A**
Current quality of offset site	8		Current quality of offset site	N/A	
Future quality without offset	8		Future quality without offset	N/A	
Future quality with offset	8		Future quality with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
ROL without offset (%)	15		ROL without offset (%)	N/A	
ROL with offset (%)	0		ROL with offset (%)	N/A	
Confidence in offset result (%)	90		Confidence in offset result (%)	N/A	
Moderate to High (7) quality foraging habitat					
Significant Residual Impact Area (ha)	9.16	**107.62 ha** (DWER 139.5%, DCCEEW 100%)	Significant Residual Impact Area (ha)	N/A	**N/A**
Current quality of offset site	8		Current quality of offset site	N/A	
Future quality without offset	8		Future quality without offset	N/A	
Future quality with offset	8		Future quality with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
ROL without offset (%)	15		ROL without offset (%)	N/A	

Offset calculator inputs (Orange Springs)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (Orange Springs)		Area of rehabilitation required to offset 100% of residual impacts
ROL with offset (%)	0		ROL with offset (%)	N/A	
Confidence in offset result (%)	90		Confidence in offset result (%)	N/A	
Moderate (4-6) quality foraging habitat					
Significant Residual Impact Area (ha)	30.28	**230.06 ha of quality 8 remnant vegetation** (DWER 90.1%, DCCEEW 64.65%) **34.7 ha of quality 7 remnant vegetation** (DWER 11.9%, DCCEEW 8.53%)	Significant Residual Impact Area (ha)	N/A	**Refer to Table 12 in Section 4.2**
Current quality of offset site	8 and 7		Current quality of offset site	N/A	
Future quality without offset	8 and 7		Future quality without offset	N/A	
Future quality with offset	8 and 7		Future quality with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
ROL without offset (%)	15		ROL without offset (%)	N/A	
ROL with offset (%)	0		ROL with offset (%)	N/A	
Confidence in offset result (%)	90		Confidence in offset result (%)	N/A	
Low to Moderate (3) quality foraging habitat					
Significant Residual Impact Area (ha)	0.37	**5.74 ha** (DWER 139.5%, DCCEEW 100%)	Significant Residual Impact Area (ha)	N/A	**N/A**
Current quality of offset site	6		Current quality of offset site	N/A	
Future quality without offset	6		Future quality without offset	N/A	
Future quality with offset	6		Future quality with offset	N/A	

Offset calculator inputs (Orange Springs)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (Orange Springs)		Area of rehabilitation required to offset 100% of residual impacts
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
ROL without offset (%)	15		ROL without offset (%)	N/A	
ROL with offset (%)	0		ROL with offset (%)	N/A	
Confidence in offset result (%)	90		Confidence in offset result (%)	N/A	
Breeding habitat					
Start number (of feature)	0	**Installation of 4 ANHs** (DWER 105.4%, DCCEEW 105.4%)	Start number (of feature)	N/A	N/A
Future number without offset	0		Future number without offset	N/A	
Future number with offset	4		Future number with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
Confidence in offset result (%)	80		Confidence in offset result (%)	N/A	

The Orange Springs offset site includes 436.7 ha of Very High and High quality Carnaby's Cockatoo foraging habitat (Table 9). This is sufficient to offset 100% of the residual impacts of the Proposal to High and Moderate to High quality foraging habitat, which require 64.32 ha and 107.62 ha of offset area, respectively (Table 11).

The remaining 264.76 ha of Very High to High quality foraging habitat will offset 73.18% of the residual impacts to Moderate (6) quality foraging habitat. The remaining offset requirement will be met through the rehabilitation of 19.6 ha of vegetation at a future offset site.

A total of 5.8 ha of Moderate quality foraging habitat at Orange Springs will be used to meet the required offset of 5.74 ha for Low to Moderate (3) foraging habitat.

There is a gap in offset requirements for impacts to Low and Negligible quality foraging habitat that cannot be offset by the Orange Springs site. This is discussed in further detail in Section 4.2.

4.2 Offset Gap

Western Power has secured one offset site, Orange Springs, which provides offset values for the Proposal's residual impacts on the Banksia Woodland TEC and Carnaby's Cockatoo. The site provides no offset value for significant residual impacts to Baudin's Cockatoo and FRTBC foraging and breeding habitat due to the site being outside of the known distribution range of both species. The Orange Springs offset site does not contain sufficient Moderate or higher quality Carnaby's Cockatoo foraging habitat to offset 100% of the Proposal's residual impacts on such habitat. Additionally, the site lacks enough remnant vegetation to offset impacts on low and negligible quality foraging habitat for Carnaby's Cockatoo. The remaining offset requirement will be addressed through the acquisition of additional offset site(s) and rehabilitation efforts.

The intent is that the additional offset site(s) selected will include remnant vegetation as well as cleared and/or degraded areas, in an approximate ratio of 70:30. Cleared/degraded areas (nominally 30%) will be the subject of rehabilitation efforts targeting black cockatoo foraging and breeding habitat values. Areas proposed for rehabilitation within offset sites will have an associated rehabilitation management plan that details the performance criteria and monitoring requirements for the rehabilitation site.

Table 12, Table 13 and Table 14 provide an overview of the calculated hectares required for future offsets to meet the 70:30 ratio, assuming a starting foraging habitat quality of 8 for remnant vegetation, to address the offset gap for Carnaby's Cockatoo, Baudin's Cockatoo and FRTBC.

Western Power is currently in negotiations with private landowners to acquire additional offset sites for the Proposal. Due to the confidential nature of these negotiations, land details cannot be made publicly available. Additionally, all potential offset sites have been selected by or agreed upon with DBCA, with the intention for DBCA to manage the Orange Springs site on behalf of Western Power.

Western Power is committed to submitting a revised offset strategy to the regulators to include the additional offset site(s) once acquisition is confirmed and biological survey results are available.

Future offset sites will be selected based on the EPA's (2024) regional scale guiding principles, including:

- Suitable foraging habitat for Carnaby's Cockatoo, Baudin's Cockatoo and the FRTBC
- Viable breeding habitat for all three black cockatoo species
- Proximity to existing DBCA managed lands to support habitat connectivity and integrated land management.

Viable areas of cleared land adjacent to patches of remnant vegetation (30:70 ratio of cleared to remnant vegetation) for rehabilitation efforts targeting black cockatoo foraging and breeding habitat values.

Table 12 Calculated Offset Requirements to Address Offset Gap - Carnaby's Cockatoo

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Moderate (4-6) quality foraging habitat					
Significant Residual Impact Area (ha)	N/A	**N/A**	Significant Residual Impact Area (ha)	30.28	**19.06 ha of rehabilitation of land from quality 0 to quality 6** (DWER 27.9%, DCCEEW 26.82%)
Current quality of offset site	N/A		Current quality of offset site	0	
Future quality without offset	N/A		Future quality without offset	0	
Future quality with offset	N/A		Future quality with offset	6	
Time until ecological benefit (years)	N/A		Time until ecological benefit (years)	10	
ROL without offset (%)	N/A		ROL without offset (%)	15	
ROL with offset (%)	N/A		ROL with offset (%)	0	
Confidence in offset result (%)	N/A		Confidence in offset result (%)	80	
Low (2) quality foraging habitat					
Significant Residual Impact Area (ha)	19.7	**162 ha** (DWER 97.6%, DCCEEW 70%)	Significant Residual Impact Area (ha)	19.7	**13.88 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL without offset (%)	15		ROL without offset (%)	15	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Negligible (1) quality foraging habitat					
Significant Residual Impact Area (ha)	1.8	**14.83 ha** (DWER 97.6%, DCCEEW 70%)	Significant Residual Impact Area (ha)	1.8	**1.27 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL without offset (%)	15		ROL without offset (%)	15	
ROL with offset (%)	0		ROL with offset (%)	0	

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Confidence in offset result (%)	90		Confidence in offset result (%)	80	

Table 13 Calculated Offset Requirements to Address Offset Gap – Baudin's Black Cockatoo

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Moderate (4-6) quality foraging habitat					
Significant Residual Impact Area (ha)	28.65	**235.73 ha** (DWER 97.6%, DCCEEW 70%)	Significant Residual Impact Area (ha)	28.65	**20.17 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Low (2) quality foraging habitat					
Significant Residual Impact Area (ha)	2.84	**23.40 ha**	Significant Residual Impact Area (ha)	2.84	**2.00 ha of rehabilitation of land from quality 0 to quality 6**

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Current quality of offset site	8	(DWER 97.6%, DCCEEW 70%)	Current quality of offset site	0	(DWER 30%, DCCEEW 30%)
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Negligible (1) quality foraging habitat					
Significant Residual Impact Area (ha)	7.12	**58.54 ha** (DWER 97.6%, DCCEEW 70%)	Significant Residual Impact Area (ha)	7.12	**5.01 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Breeding habitat					
Start number (of feature)	0	**Installation of 4 ANHs** (DWER 105.4%, DCCEEW 105.4%)	Start number (of feature)	N/A	N/A
Future number without offset	0		Future number without offset	N/A	
Future number with offset	4		Future number with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
Confidence in offset result (%)	80		Confidence in offset result (%)	N/A	

Table 14 Calculated Offset Requirements to Address Offset Gap – FRTBC

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Moderate to High (7) quality foraging habitat					
Significant Residual Impact Area (ha)	35.32	**238.27 ha** (DWER 80.8%, DCCEEW 70%)	Significant Residual Impact Area (ha)	35.32	**22.52 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Low to Moderate (3) quality foraging habitat					
Significant Residual Impact Area (ha)	2.05	**13.84 ha** (DWER 80.8%, DCCEEW 70%)	Significant Residual Impact Area (ha)	2.05	**1.31 ha of rehabilitation of land from quality 0 to quality 6** (DWER 30%, DCCEEW 30%)
Current quality of offset site	8		Current quality of offset site	0	
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Low (2) quality foraging habitat					
Significant Residual Impact Area (ha)	5.64	**38.07 ha**	Significant Residual Impact Area (ha)	5.64	**3.60 ha of rehabilitation of land from quality 0 to quality 6**

Offset calculator inputs (estimated for future offset site)		Area of remnant vegetation required to offset 100% of residual impacts	Offset calculator inputs (estimated for future offset site)		Area of rehabilitation required to offset 100% of residual impacts
Current quality of offset site	8	(DWER 80.8%, DCCEEW 70%)	Current quality of offset site	0	(DWER 30%, DCCEEW 30%)
Future quality without offset	8		Future quality without offset	0	
Future quality with offset	8		Future quality with offset	6	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	10	
ROL with offset (%)	0		ROL with offset (%)	0	
Confidence in offset result (%)	90		Confidence in offset result (%)	80	
Breeding habitat					
Start number (of feature)	0	**Installation of 4 ANHs** (DWER 105.4%, DCCEEW 105.4%)	Start number (of feature)	N/A	N/A
Future number without offset	0		Future number without offset	N/A	
Future number with offset	4		Future number with offset	N/A	
Time until ecological benefit (years)	1		Time until ecological benefit (years)	N/A	
Confidence in offset result (%)	80		Confidence in offset result (%)	N/A	

5.0 Application of the Environmental Offset Policy Principles

The WA Environmental Offsets Policy (GoWA, 2011) states that environmental offsets are to be used as a last resort, and details six principles to be applied in the assessment and decision-making process with respect to offsets. The proposed offset strategy is consistent with the principles of the WA Environmental Offsets Guidelines.

The Policy overarching principles which have been considered in preparing the preliminary offsets package for the Project are:

- Principle 1: Environmental offsets will only be considered after avoidance and mitigation options have been pursued.
- Principle 2: Environmental offsets are not appropriate for all projects.
- Principle 3: Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.
- Principle 4: Environmental offsets will be based on sound environmental information and knowledge.
- Principle 5: Environmental offsets will be applied within a framework of adaptive management.
- Principle 6: Environmental offsets will be focused on longer-term strategic outcomes.

The application of the environmental offset policy principles to the Offset Proposal is provided in Section 5.1.

5.1 Policy Principles

5.1.1 Principle 1: Environmental offsets will only be considered after avoidance and mitigation options have been pursued.

The mitigation hierarchy for environmental factors has been applied in this Project design in accordance with the *Statement of environmental principles, factors, objectives and aims of EIA* (EPA, 2023) to manage the risk of the Project leading to a significant impact on environmental factors. The mitigation measures that have been applied are:

- Avoid:
  - Alignment of powerline within existing easements to avoid additional clearing of Banksia Woodlands TEC/PEC and valuable fauna habitat, where practicable.
  - Avoidance of 10.8 ha of Banksia Woodlands TEC/PEC through strategic placement of tower locations, spanning over vegetation where possible.
  - Following engagement with the DBCA, the Proposal alignment has been relocated to avoid the Dick Perry Reserve.
  - Use of existing public roads and powerline tracks within the Proposal corridor to avoid additional, unnecessary clearing.
  - A flexible design and construction approach has been adopted, allowing contractors to nominate alternative foundation methods and piling depths.
- Minimise:
  - Vegetation clearing will not exceed 185.39 ha. The majority of the 185.39 ha of native and non-native vegetation to be cleared is in Completely Degraded or worse condition. Only 45.46 ha of clearing is proposed for vegetation in Degraded or better condition.
  - A Proposal specific Flora and Vegetation Environmental Management Plan has been developed with outcome and objective based targets aimed at minimising impacts to flora and vegetation.

- A Proposal specific Terrestrial Fauna Environmental Management Plan (TFEMP) has been developed with outcome and objective based targets aimed at minimising impacts to flora and vegetation.
- An internal Construction Environmental Management Plan (CEMP) will be prepared by the Principal Contractor and approved by Western Power prior to ground disturbance activities.
- Ongoing stakeholder engagement, including engagement with Traditional Owners to seek relevant consents and approvals to manage and mitigate impacts to Register Aboriginal Cultural Heritage Places.

5.1.2 Principle 2: Environmental offsets are not appropriate for all projects.

Environmental offsets are considered an appropriate form of mitigation for significant residual environmental impacts.

The Proposal also supports Western Australia's decarbonisation objectives and the planned retirement of coal-fired power generation by enhancing transmission capacity between Perth and the Mid-West region. This increased capacity will help facilitate the integration of additional wind and solar energy into the grid.

5.1.3 Principle 3: Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.

Western Power considers environmental offsets to be a cost-effective solution that is relevant and proportionate to the environmental value being impacted by the Proposal. The offset areas to be confirmed in the Offset Management Plan (OMP) will consist of environmental values that are equal to or of higher value than the vegetation proposed to be cleared within the Proposal footprint or will be rehabilitated for net environmental gain. Western Power will counterbalance over 100% of the significant residual impacts of the Proposal, which will be demonstrated in the OMP (detailed further in section 6.0).

The value of direct offsets are assessed based on the WA Offset Policy Calculator Tool, incorporating evidence-based justification for all inputs. The relevance and proportion of the proposed offset site against the residual impacts are summarised in Section 4.1.3.

5.1.4 Principle 4: Environmental offsets will be based on sound environmental information and knowledge.

Western Power has commissioned several surveys and assessments to quantify the project's impacts, and each offset site will be assessed for its flora, vegetation and fauna values.

The offset site selection has been based on current guidance material for each significant residual impact and undertaken in conjunction with DBCA. The guidance material and offset strategy are presented in Section 3.0.

5.1.5 Principle 5: Environmental offsets will be applied within a framework of adaptive management.

The offset land acquired will be added to the conservation estate and will be managed within an adaptive management framework, as outlined in Section 6.0.

5.1.6 Principle 6: Environmental offsets will be focused on longer-term strategic outcomes.

The offset site has been selected in consultation with DBCA. The Orange Springs site will be added to the conservation estate.

6.0 Management framework

6.1 Objectives

An OMP is not proposed due to the intention for Western Power to transfer management of the offset site to DBCA.

6.2 Responsibility

Western Power is responsible for the implementation of the offset sites and OMP, unless land is directly transferred to DBCA, who will assume all responsibility for the site.

Western Power will acquire the Orange Springs offset site on behalf of DBCA and provide funding for its ongoing management throughout the duration of the offset period (20 years). DBCA will assume full responsibility for the site's management. This approach is considered appropriate due to the site's proximity to the existing Moore River Nature Reserve.

Future offset sites are proposed to follow the same strategy whereby remnant vegetation is transferred into the Conservation Estate, into an Aboriginal Corporations control or protected by an appropriate covenant.

6.3 Management Actions

The management framework will outline a range of potential actions specific to each offset site, to be confirmed in the final OMP. These actions may include:

- Strategic fire management to mitigate risk.
- Control of invasive weed species to reduce dominance of non-native understory
- Measures to prevent the spread of dieback
- Planting of mid-storey and understorey vegetation.
- Management of other site-specific threats (e.g., grazing).

Western Power will provide funding for all management activities within the offset areas. Implementation of these actions is anticipated to be carried out by DBCA and qualified contractors.

6.4 Monitoring and Reporting

Monitoring and reporting will be conducted in alignment with the requirements outlined in the Ministerial Statement and the EPBC Conditions of Approval, once these have been formally approved by the relevant Ministers.

6.5 Completion Criteria

No completion criteria are proposed for land acquisition and management.
Rehabilitation sites will be subject to a rehabilitation plan per site inclusive of monitoring and completion criteria tied to the required minimum offset areas and quality.

7.0 References

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Appendix A

Figures

Appendix A Figures

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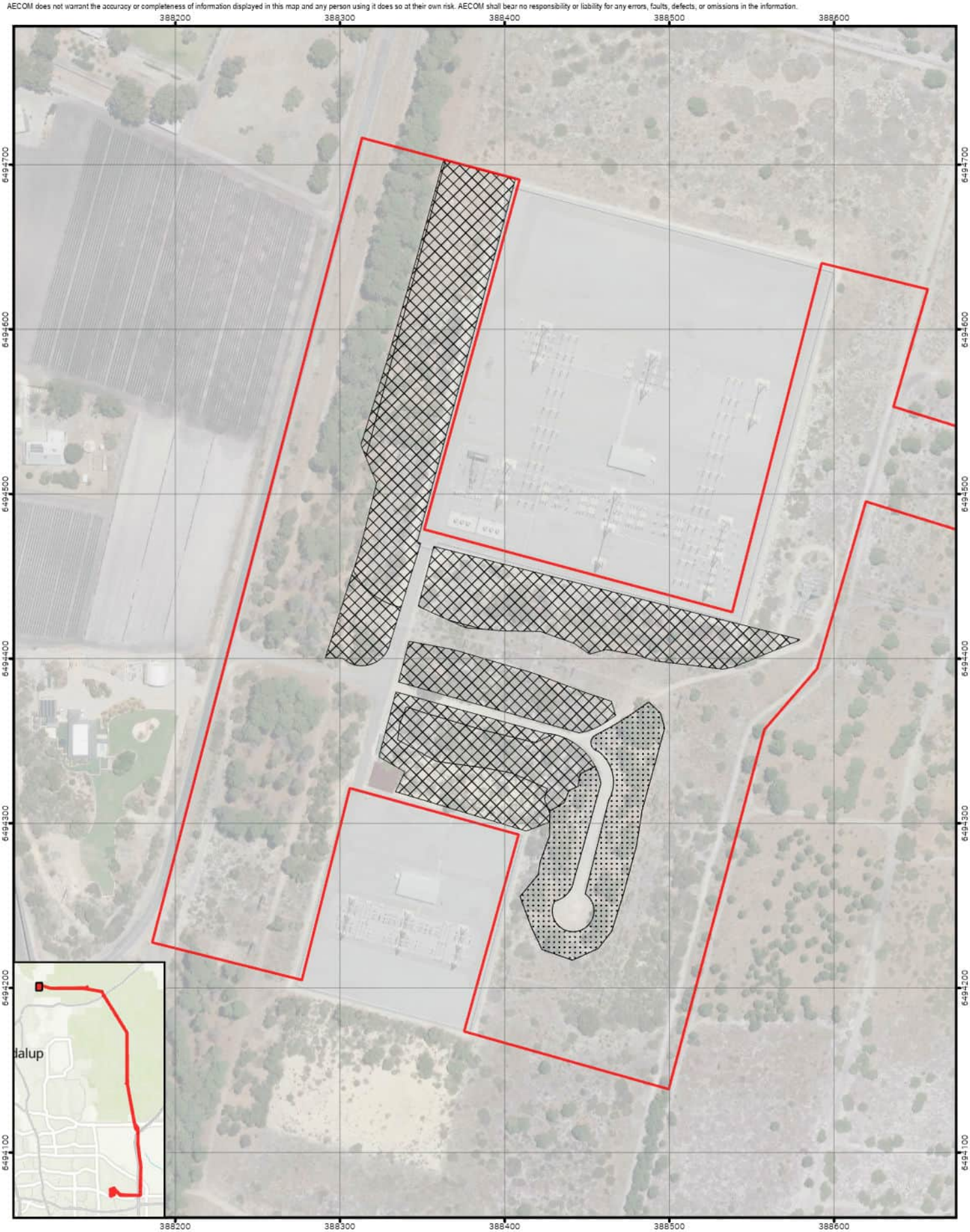

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LEGEND

- Proposal Development Envelope
- TEC Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the SCP
- WA PEC, EPBC TEC Banksia Woodlands of the SCP

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure
A-1.1

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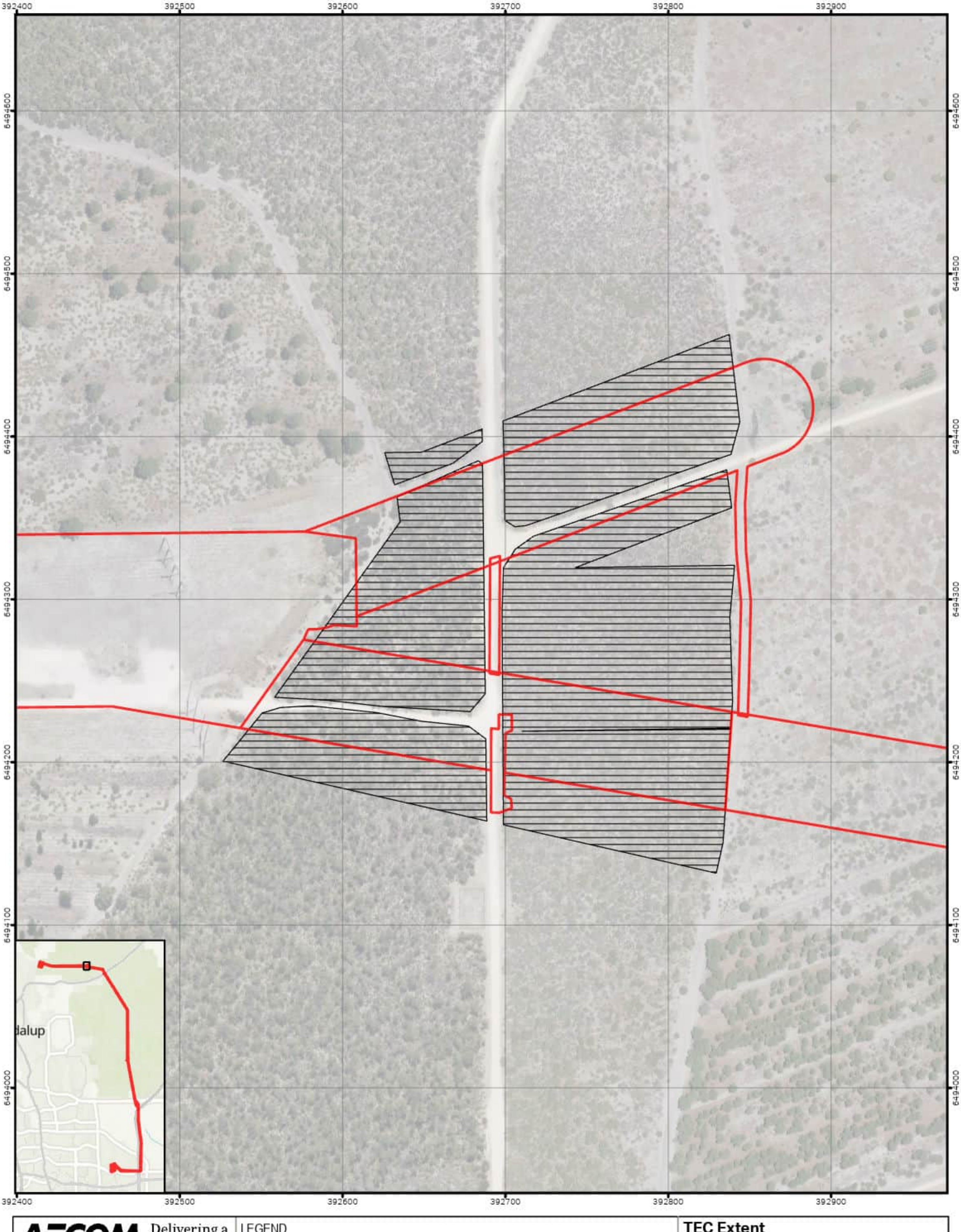

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LEGEND

- Proposal Development Envelope
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP; PEC SCP *Banksia attenuata-Banksia menziesii* woodlands (floristic community type 23b)

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **A-1.2**

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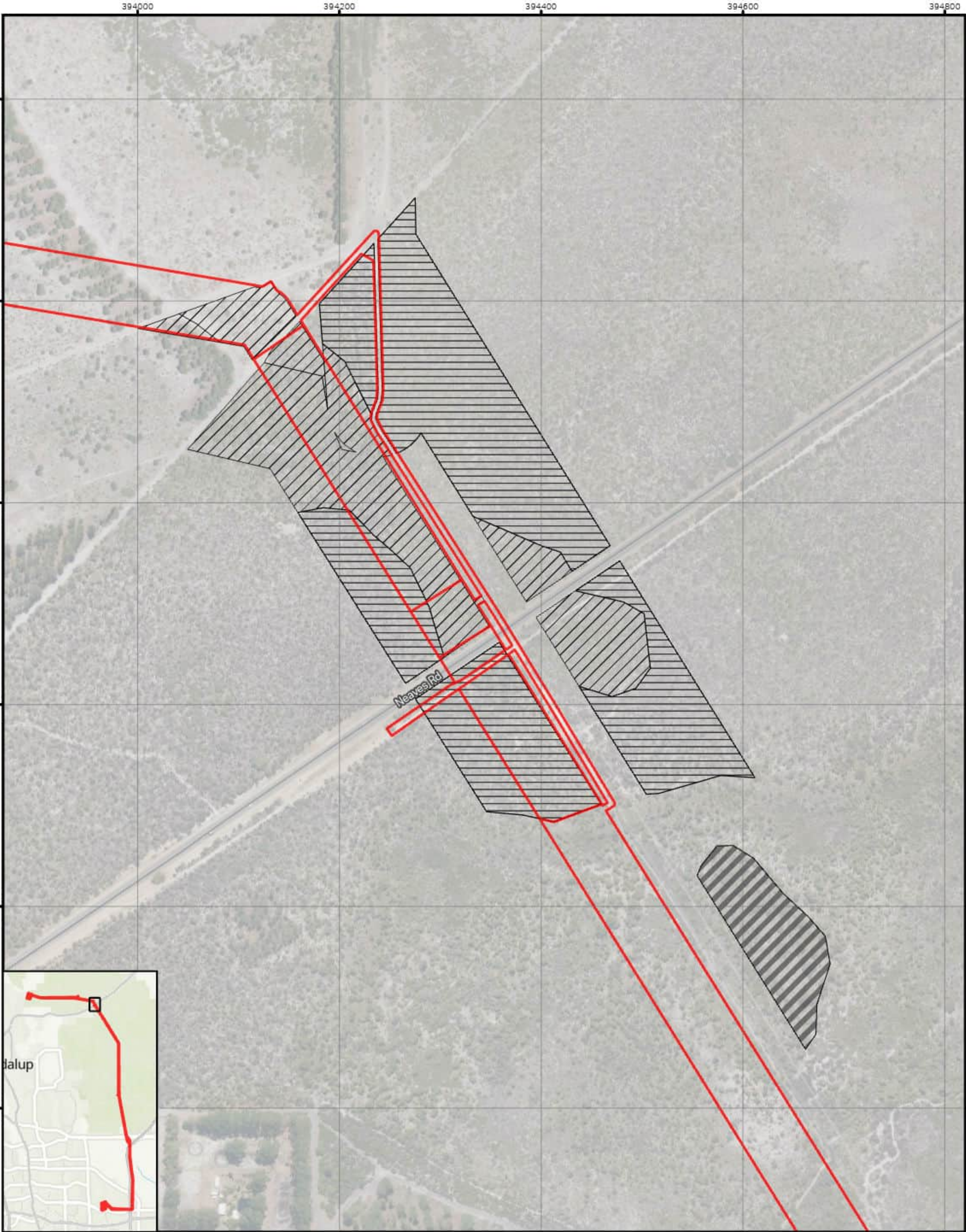

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LEGEND

- Proposal Development Envelope
- PEC Low lying *Banksia attenuata* woodlands or shrublands (floristic community type 21c)
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP; PEC Low lying *Banksia attenuata* woodlands or shrublands (floristic community type 21c)
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP; PEC SCP *Banksia attenuata-Banksia menziesii* woodlands (floristic community type 23b)

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

A-1.3

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LEGEND

- Proposal Development Envelope
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP; PEC Low lying *Banksia attenuata* woodlands or shrublands (floristic community type 21c)
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP; PEC SCP *Banksia attenuata-Banksia menziesii* woodlands (floristic community type 23b)

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure
A-1.4

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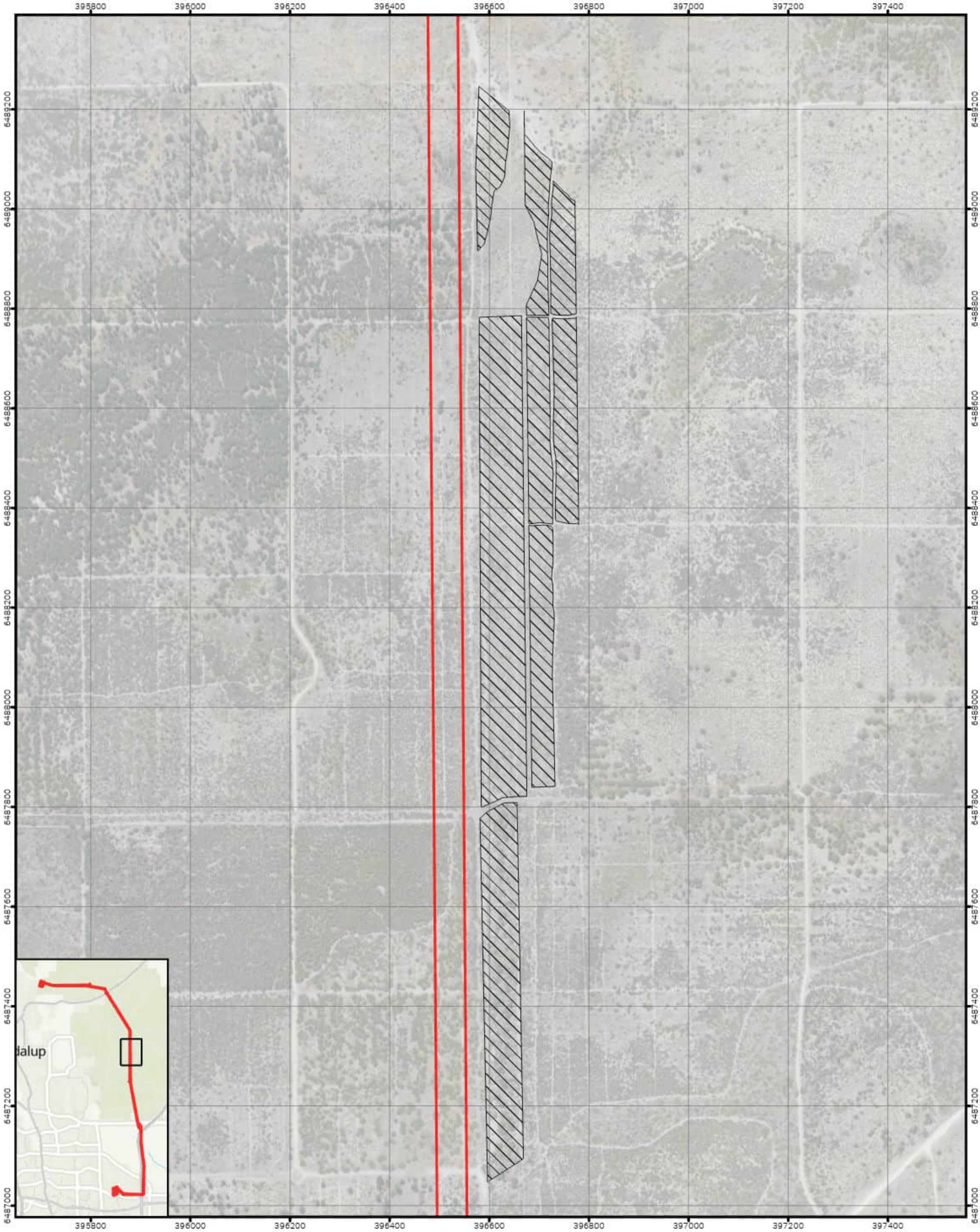

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LEGEND

Proposal Development Envelope

TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure A-1.5

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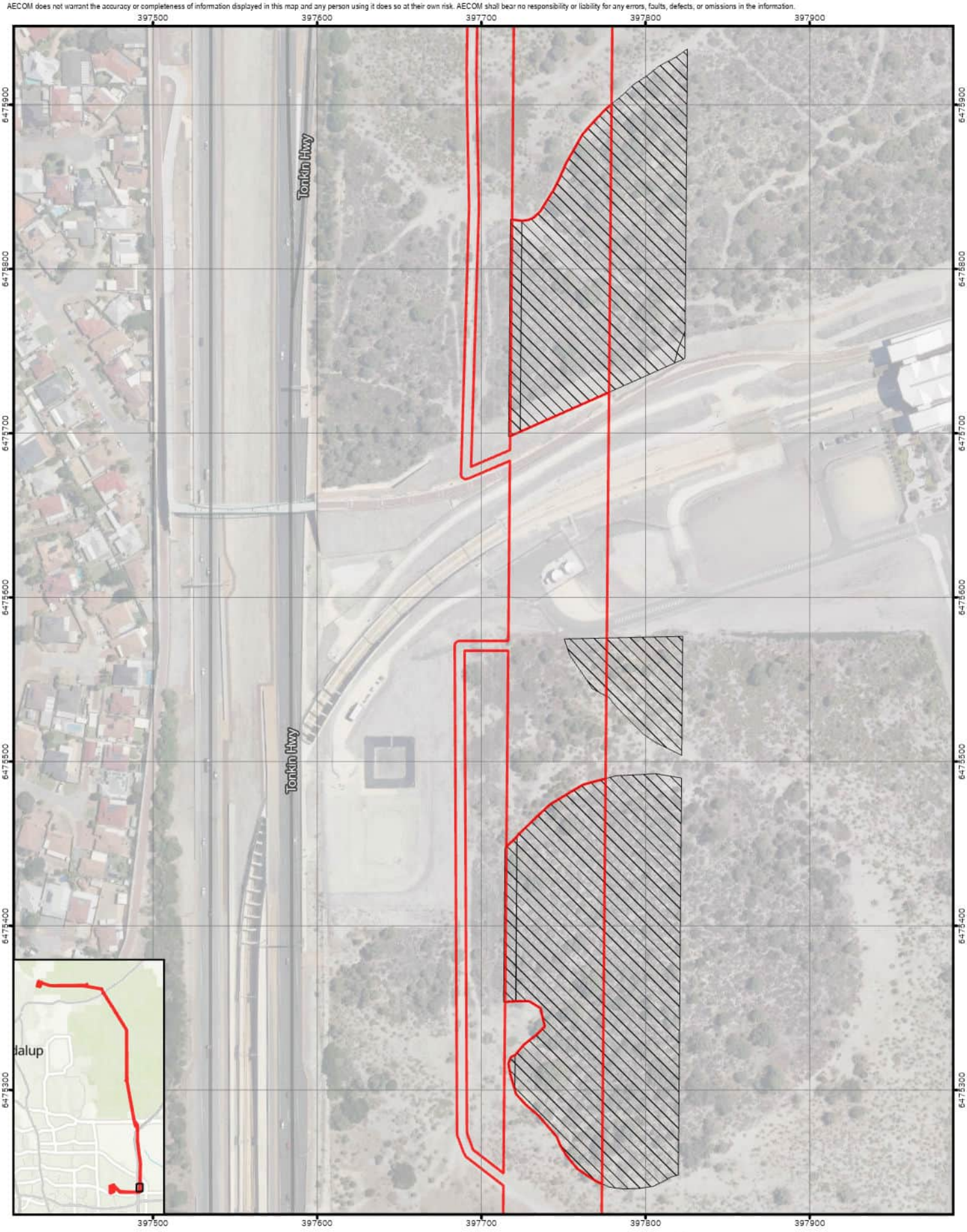

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LEGEND

- Proposal Development Envelope
- TEC Banksia Woodlands of the SCP; PEC Banksia Dominated Woodlands of the SCP

TEC Extent

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

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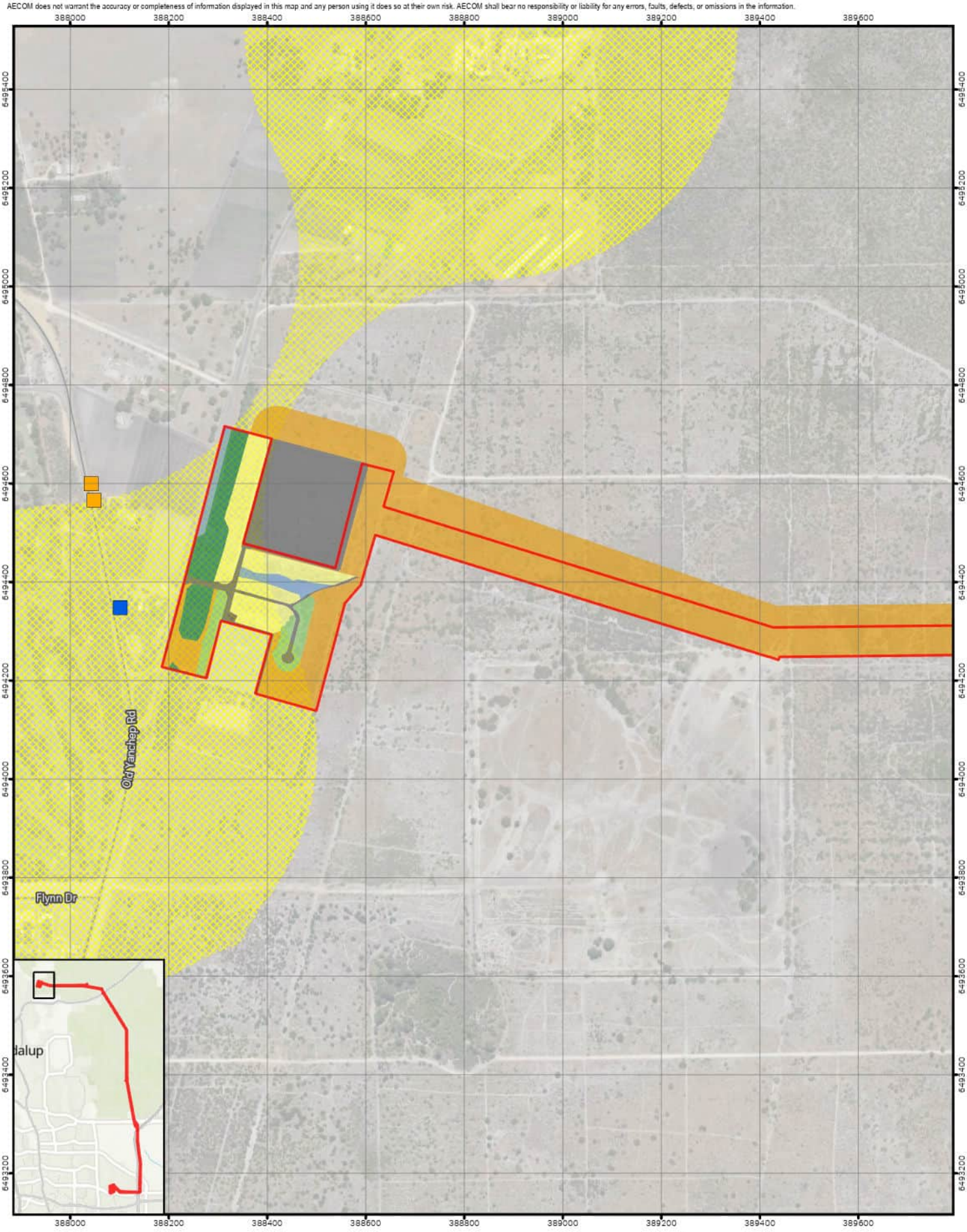

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LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered 500m
- Fauna Habitat
  - Adenanthos/Plantation
  - Banksia Woodland
  - Cleared
  - Eucalyptus Woodland
  - Mature Pine Plantation
  - Trees Over Cleared
- Black Cockatoo Breeding Trees - by species
  - Coastal Blackbutt (*Eucalyptus todtiana*)
  - Jarrah (*Eucalyptus marginata*)

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **A-2.1**

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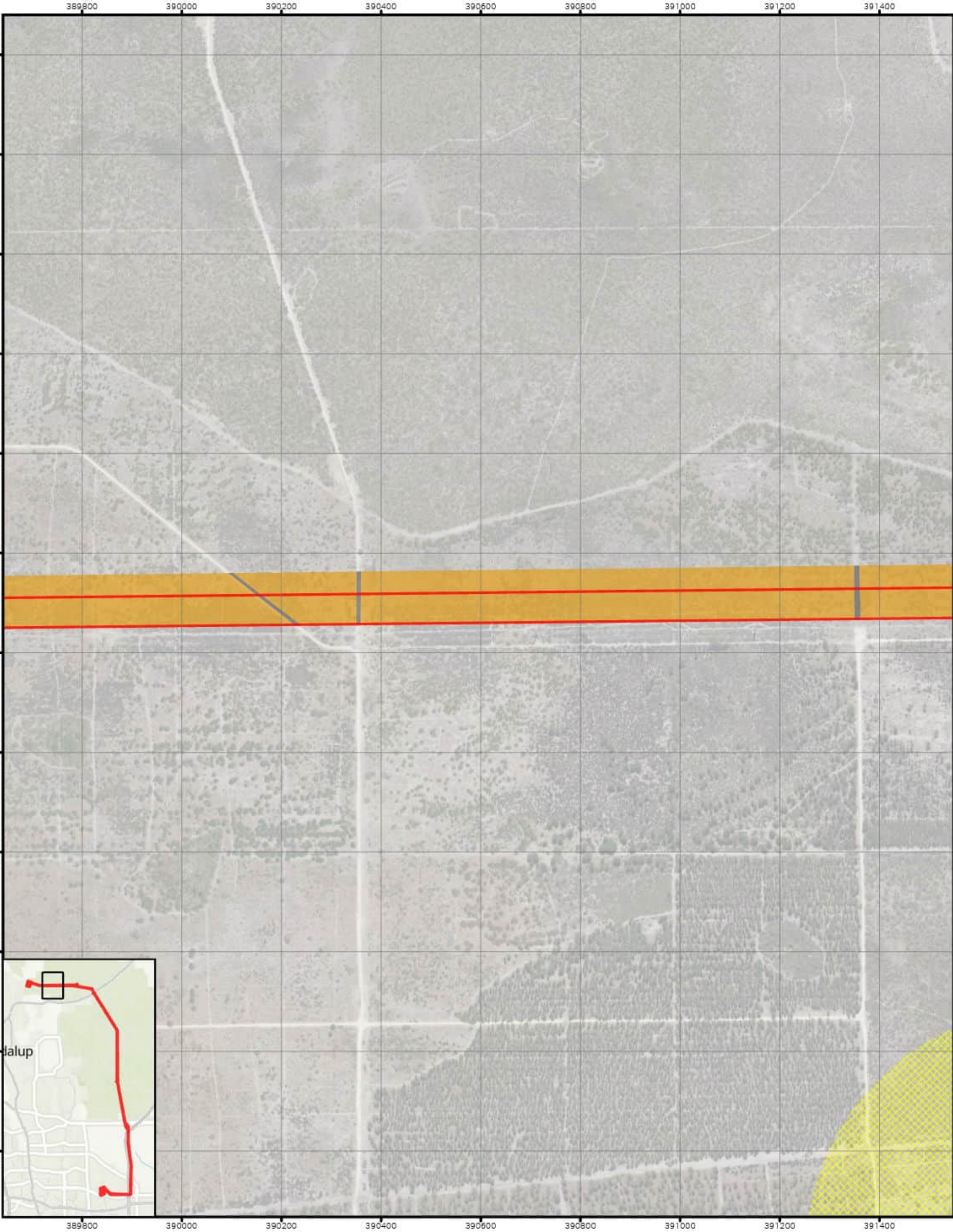

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LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered
  - 500m
- Fauna Habitat
  - Adenanthos/Plantation
  - Cleared

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **A-2.2**

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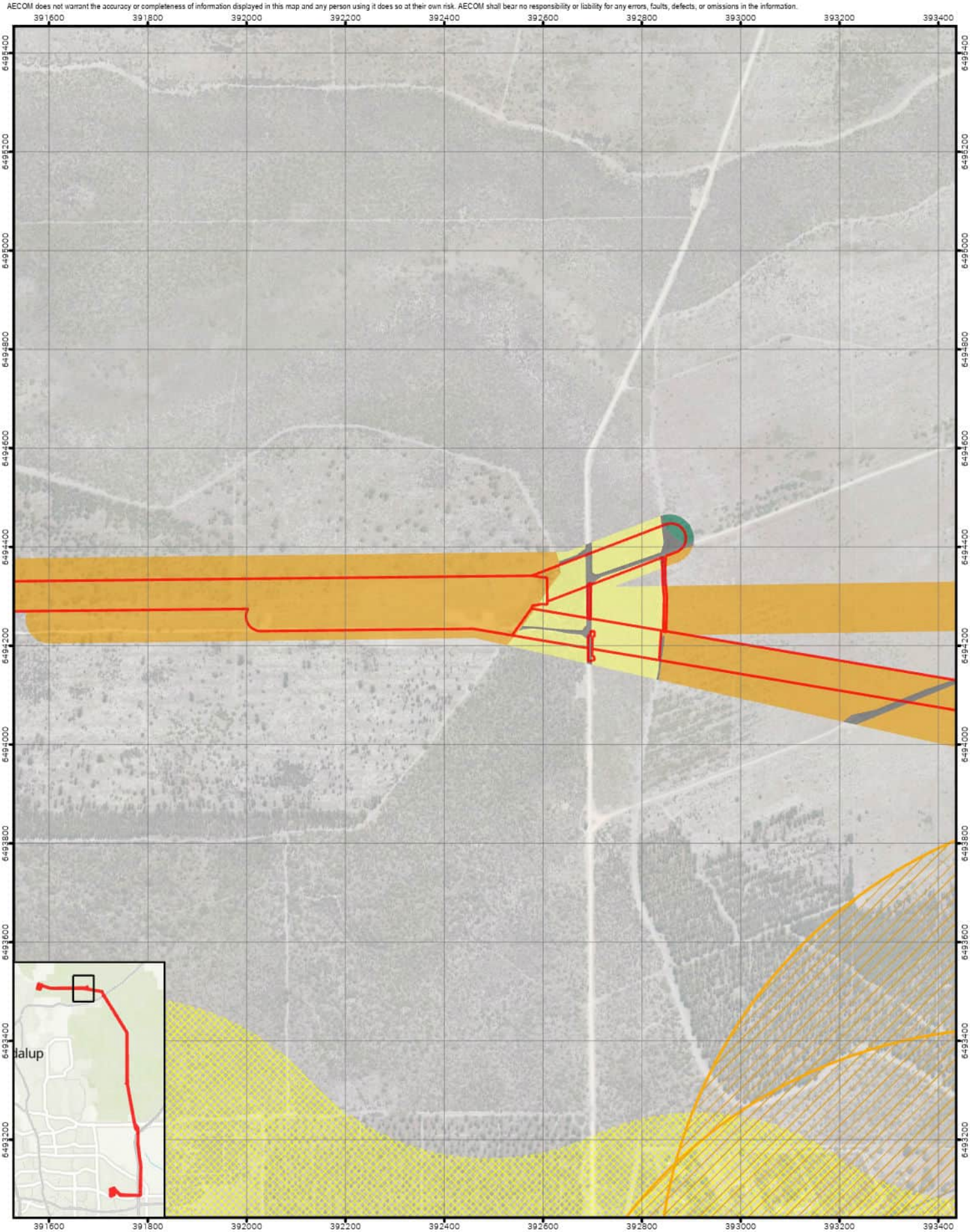

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LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered
  - 500m
  - 1000m

Fauna Habitat

- Adenanthos/Plantation
- Banksia Woodland
- Cleared
- Mature Pine Plantation

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

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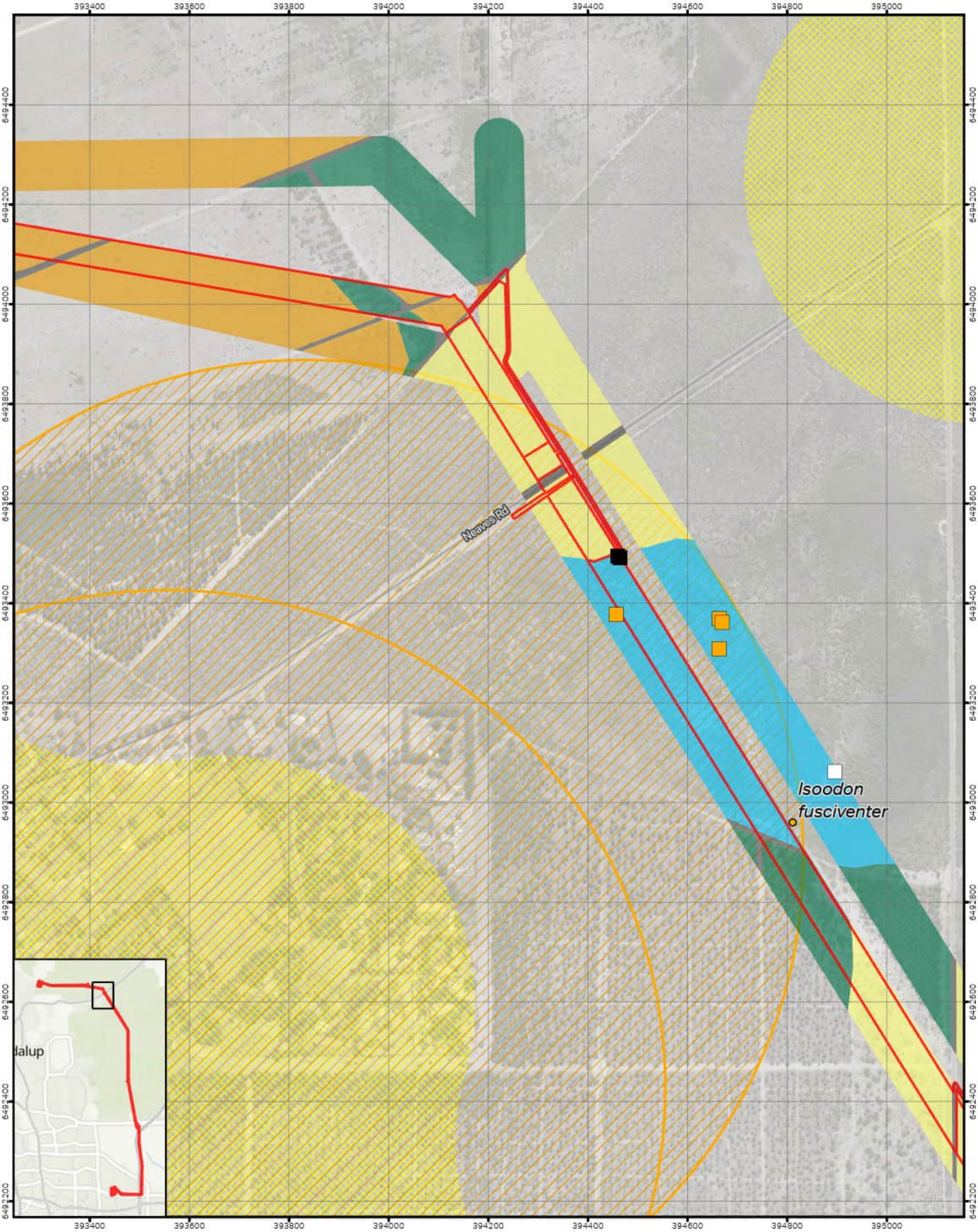

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LEGEND

- Proposal Development Envelope
- Fauna Sighting - Conservation Status
  - P4
- Black Cockatoo Roosting Sites Buffered
  - 500m
  - 1000m
- Fauna Habitat
  - Adenanthos/Plantation
  - Banksia Woodland
  - Cleared
  - Mature Pine Plantation
  - Wetlands
- Black Cockatoo Breeding Trees - by species
  - Jarrah (*Eucalyptus marginata*)
  - Stag (old dead tree, unknown species)
  - Other

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure A-2.4

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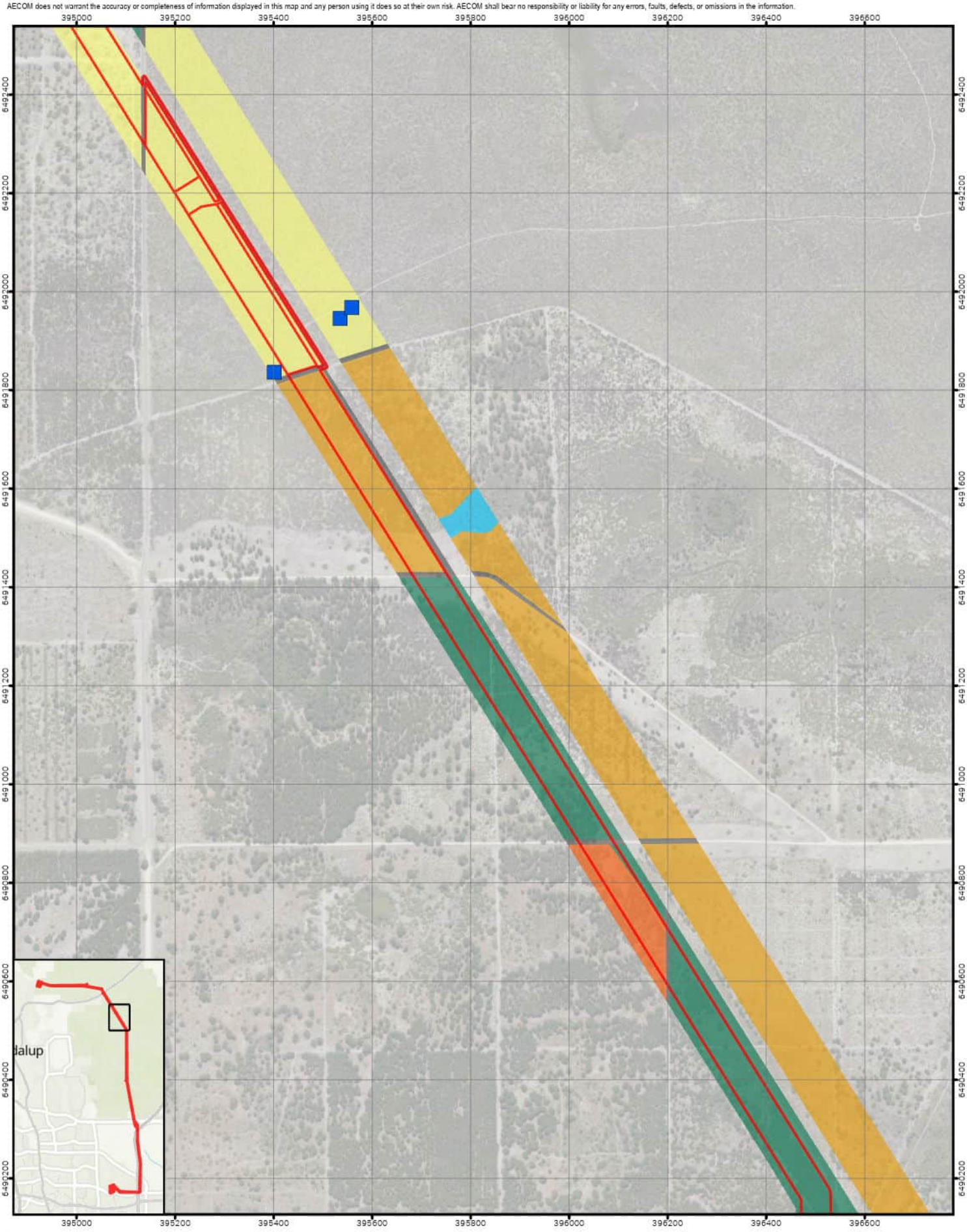

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LEGEND

- Proposal Development Envelope

Fauna Habitat

- Adenanthos/Plantation
- Banksia Woodland
- Burnt Pine Plantation
- Cleared
- Mature Pine Plantation
- Wetlands

Black Cockatoo Breeding Trees - by species

- Coastal Blackbutt (*Eucalyptus todtiana*)

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

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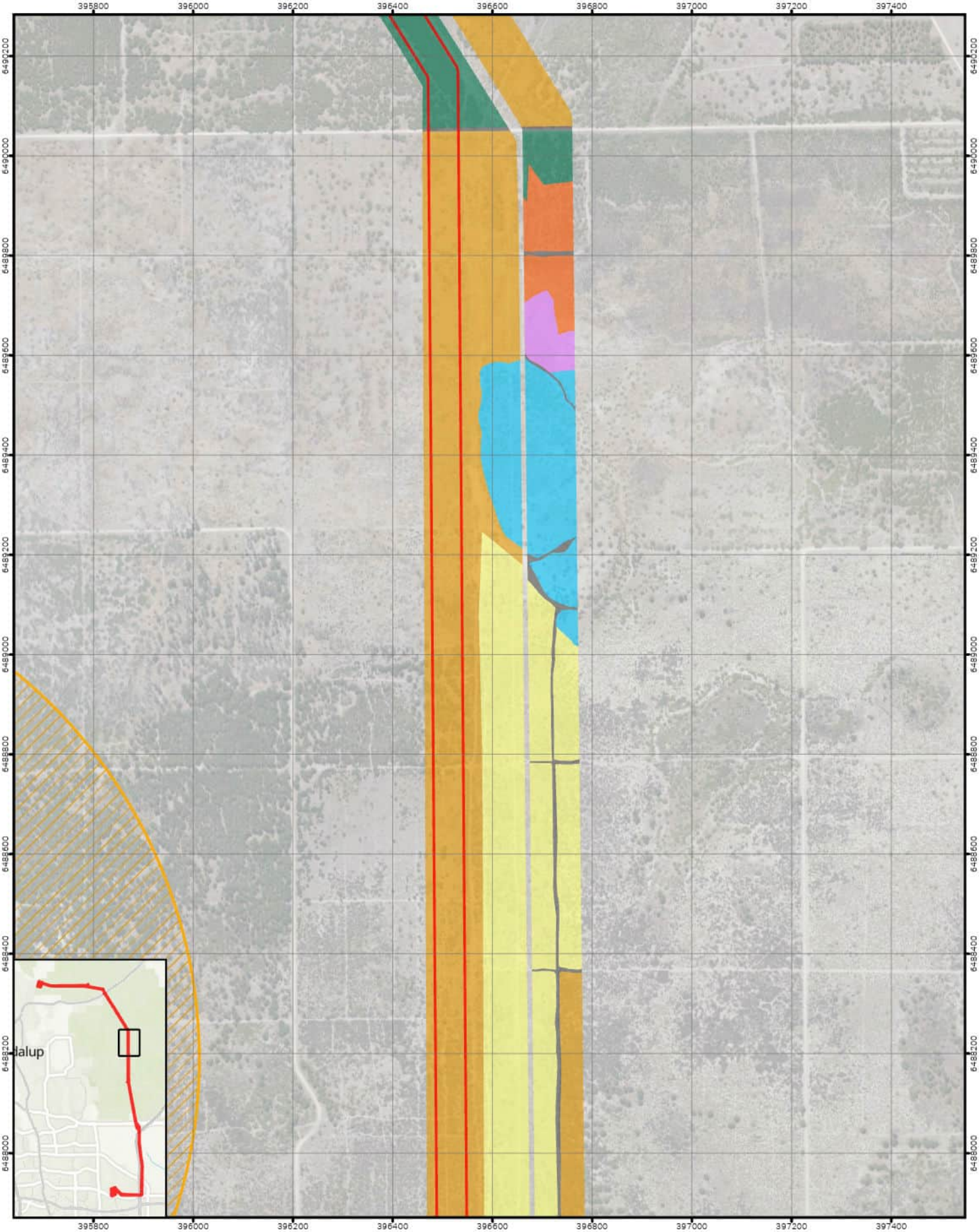

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m

GDA2020 MGA ZONE 50

LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered
- 1000m
- Fauna Habitat
- Adenanthos/Plantation
- Banksia Woodland
- Burnt Pine Plantation
- Cleared
- Mature Pine Plantation
- Mixed Shrubland
- Wetlands

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

A-2.6

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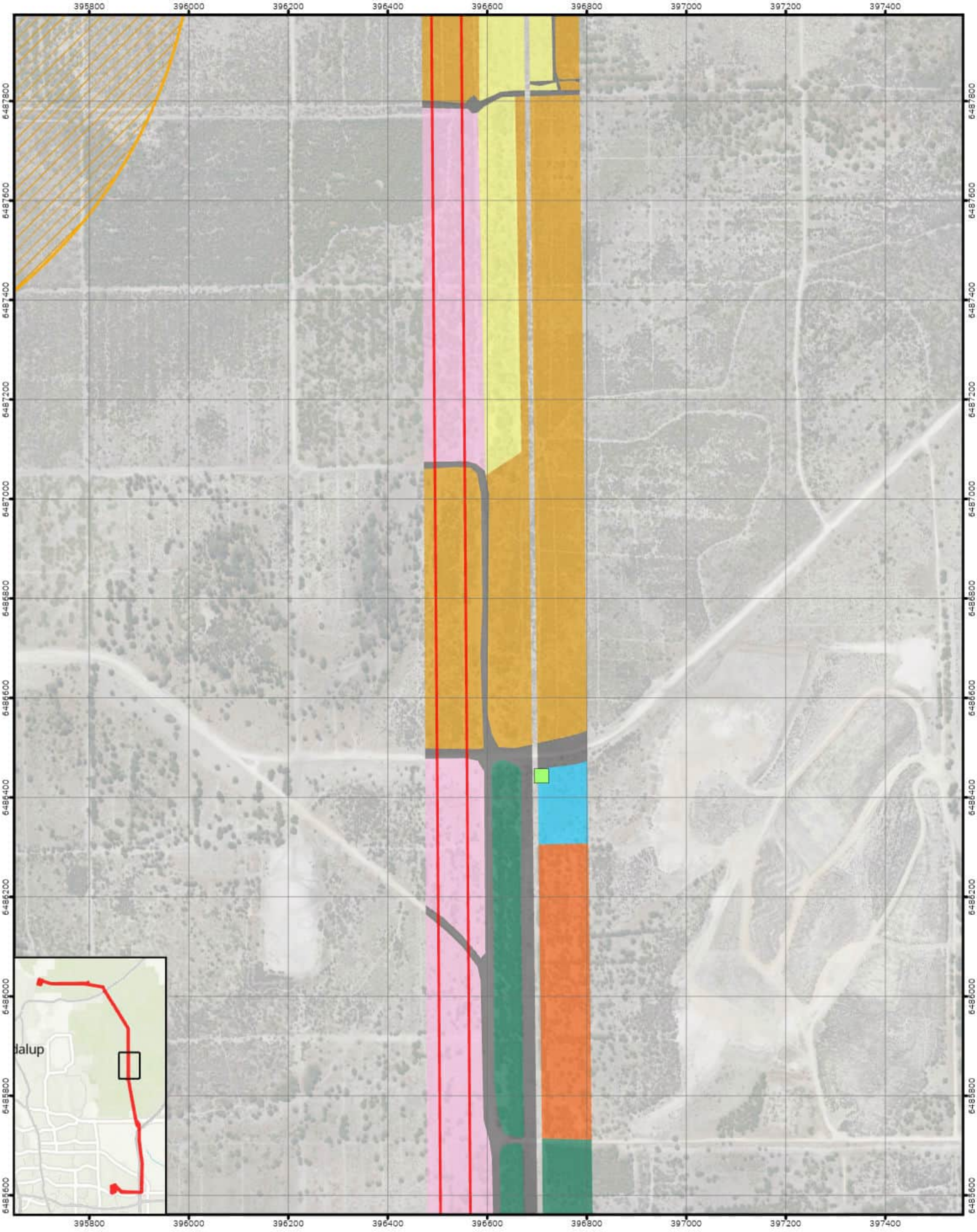

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LEGEND

- Proposal Development Envelope

Black Cockatoo Roosting Sites Buffered

- 1000m

Fauna Habitat

- Adenanthos/Plantation
- Banksia Woodland
- Burnt Pine Plantation
- Cleared
- Juvenile Pine Plantation
- Mature Pine Plantation
- Wetlands

Black Cockatoo Breeding Trees - by species

- Flooded Gum (*Eucalyptus rudis*)

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure A-2.7

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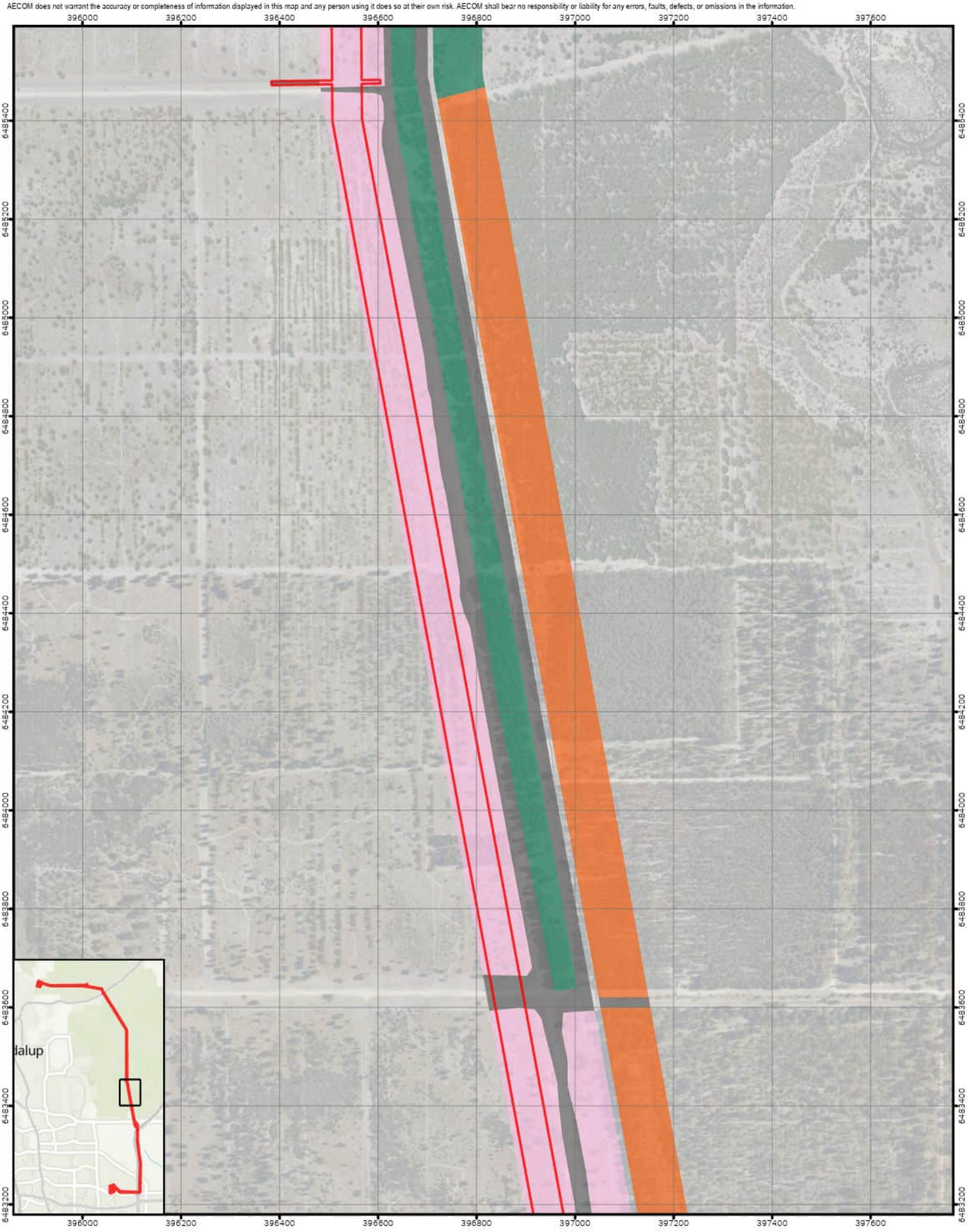

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GDA2020 MGA ZONE 50

LEGEND

- Proposal Development Envelope

Fauna Habitat

- Burnt Pine Plantation
- Cleared
- Juvenile Pine Plantation
- Mature Pine Plantation

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

A-2.8

A4 size

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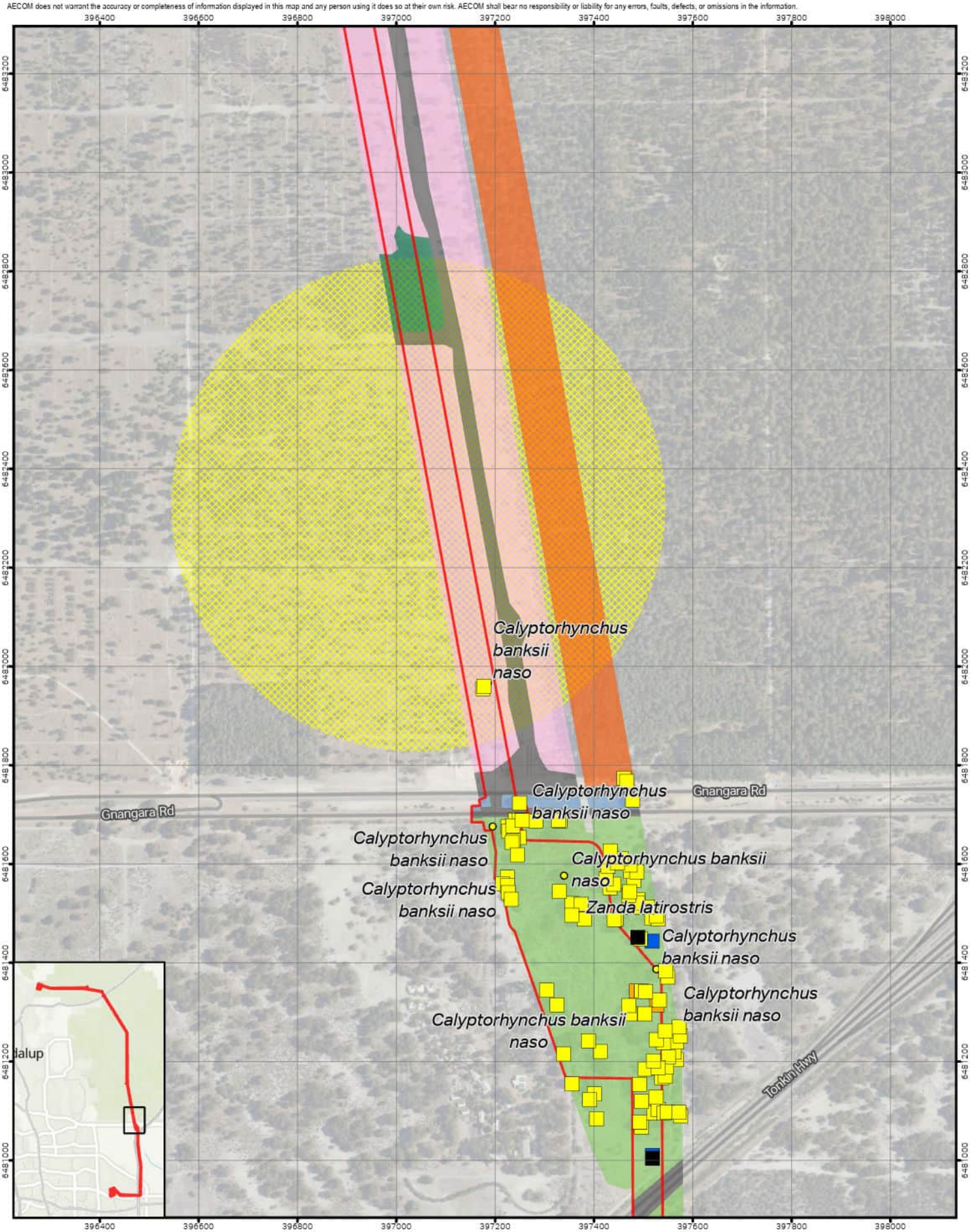

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GDA2020 MGA ZONE 50

LEGEND

- Proposal Development Envelope
- Fauna Sighting - Conservation Status
  - EN
  - VU
- Black Cockatoo Roosting Sites Buffered
  - 500m
- Fauna Habitat
  - Burnt Pine Plantation
  - Cleared
  - Eucalyptus Woodland
  - Juvenile Pine Plantation
  - Mature Pine Plantation
  - Trees Over Cleared
- Black Cockatoo Breeding Trees - by species
  - Coastal Blackbutt (*Eucalyptus todtiana*)
  - Jarrah (*Eucalyptus marginata*)
  - Marri (*Corymbia calophylla*)
  - Stag (old dead tree, unknown species)

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **A-2.9**

A4 size

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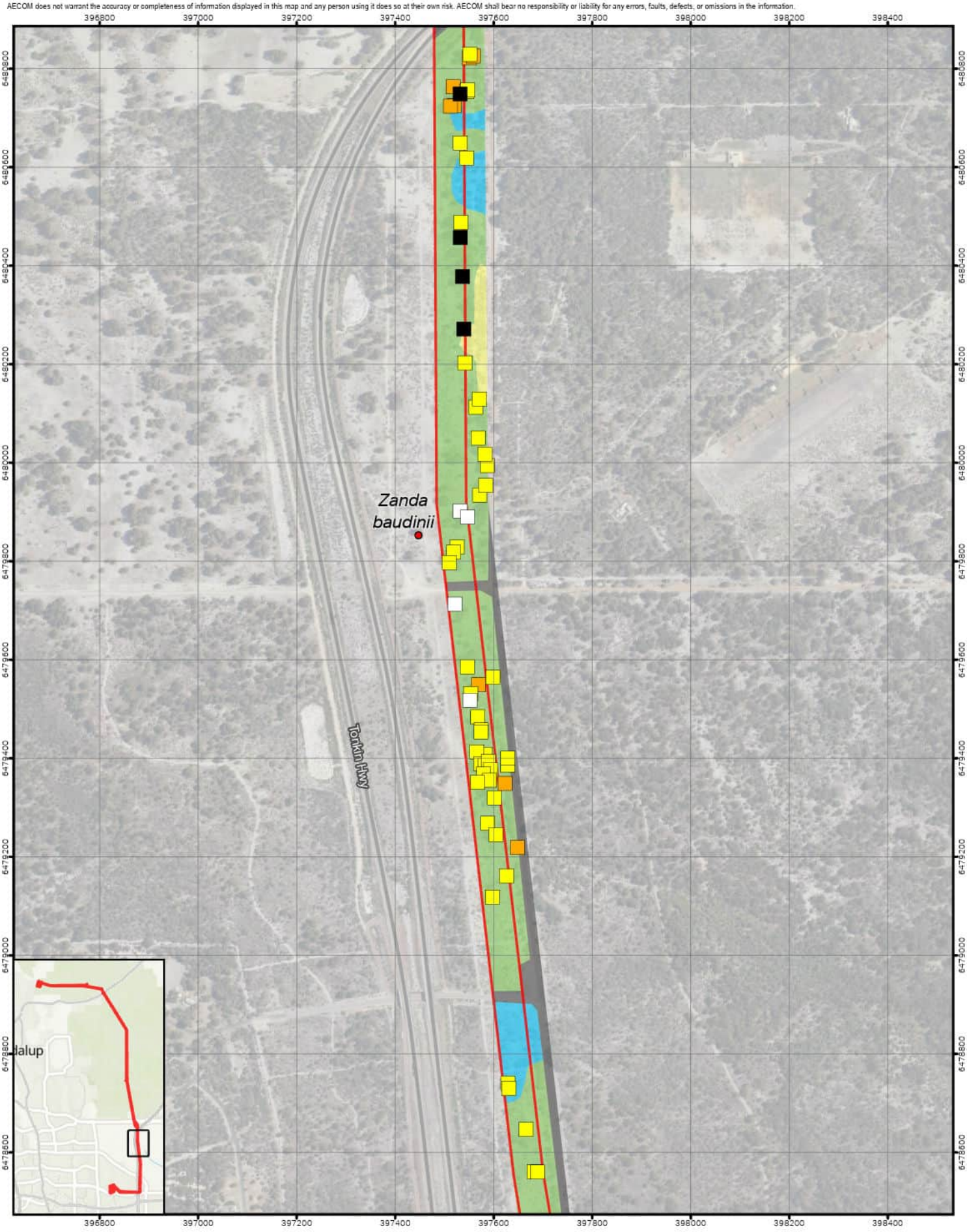

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GDA2020 MGA ZONE 50

LEGEND

- Proposal Development Envelope
- Fauna Sighting - Conservation Status
  - EN
- Fauna Habitat
  - Banksia Woodland
  - Cleared
  - Eucalyptus Woodland
- Wetlands
- Black Cockatoo Breeding Trees - by species
  - Jarrah (*Eucalyptus marginata*)
  - Marri (*Corymbia calophylla*)
  - Stag (old dead tree, unknown species)
  - Other

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

A-2.10

A4 size

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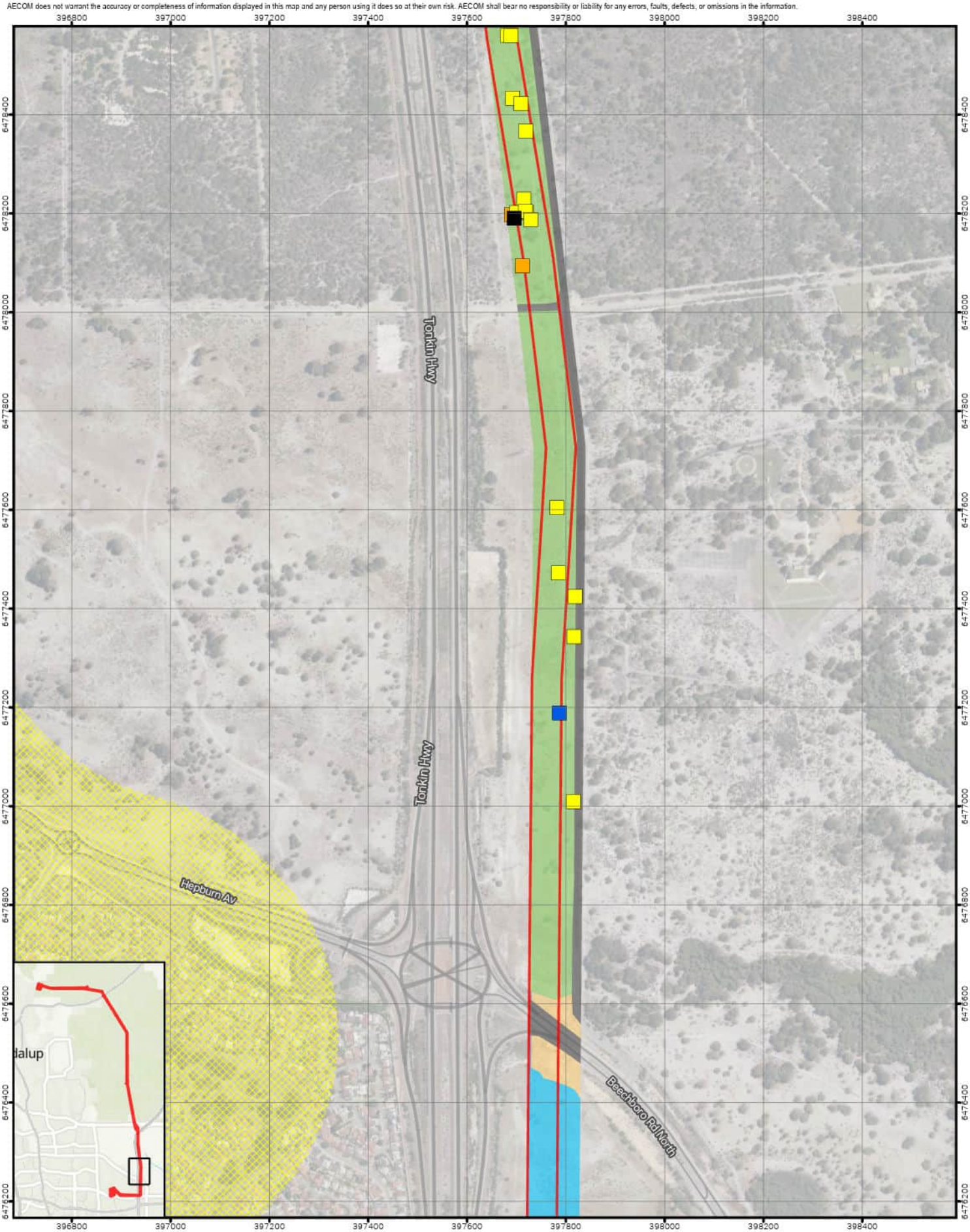

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GDA2020 MGA ZONE 50

LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered
- 500m
- Fauna Habitat
- Cleared
- Eucalyptus Woodland
- Trees Over Cleared
- Urban/Residential
- Wetlands
- Black Cockatoo Breeding Trees - by species
- Coastal Blackbutt (*Eucalyptus todtiana*)
- Jarrah (*Eucalyptus marginata*)
- Marri (*Corymbia calophylla*)
- Stag (old dead tree, unknown species)

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure

A-2.11

A4 size

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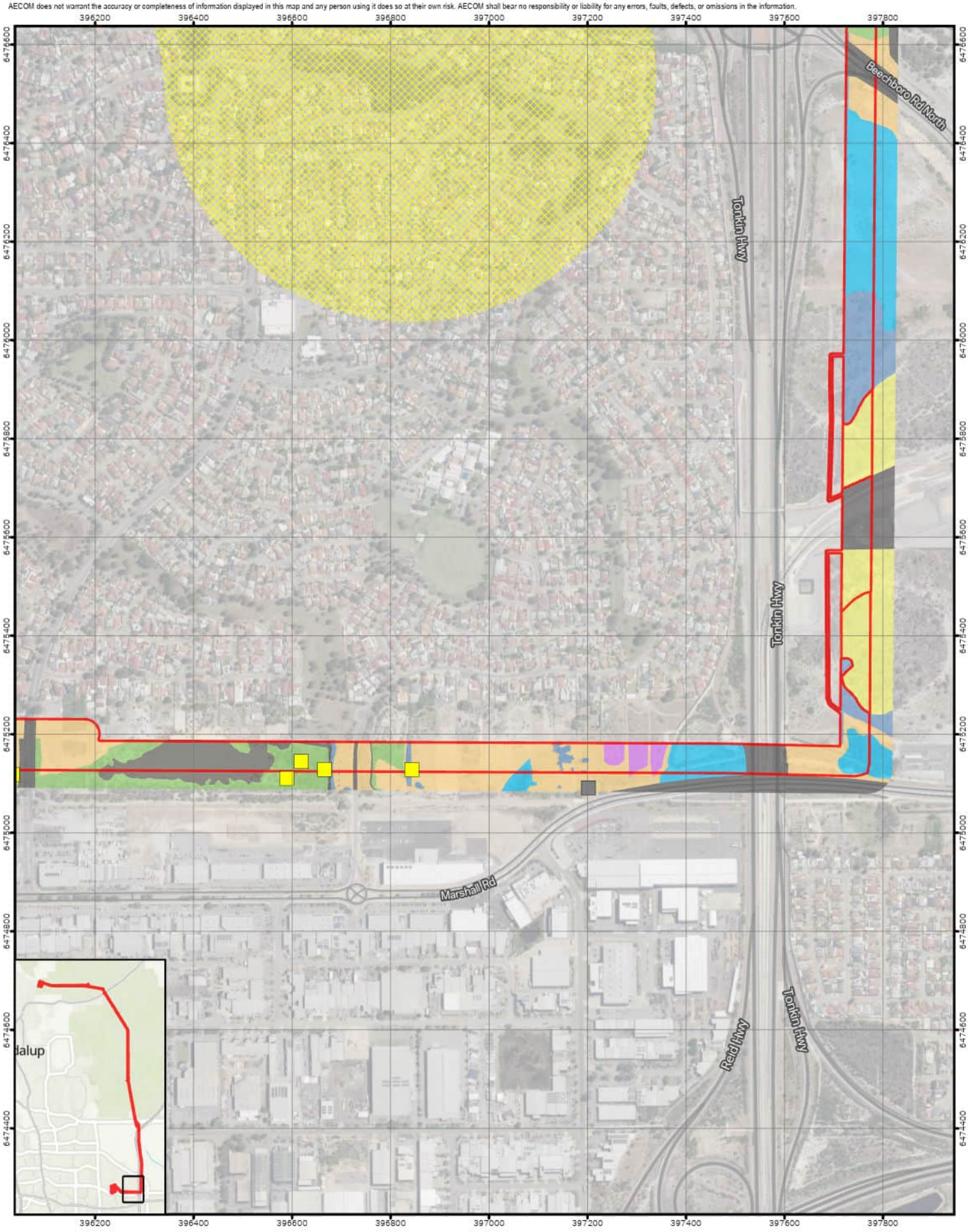

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LEGEND

- Proposal Development Envelope
- Black Cockatoo Roosting Sites Buffered
- 500m
- Fauna Habitat
- Banksia Woodland
- Cleared
- Eucalyptus Woodland
- Mixed Shrubland
- Trees Over Cleared
- Urban/Residential
- Wetlands
- Black Cockatoo Breeding Trees - by species
- Marri (*Corymbia calophylla*)
- Introduced

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure **A-2.12**

A4 size

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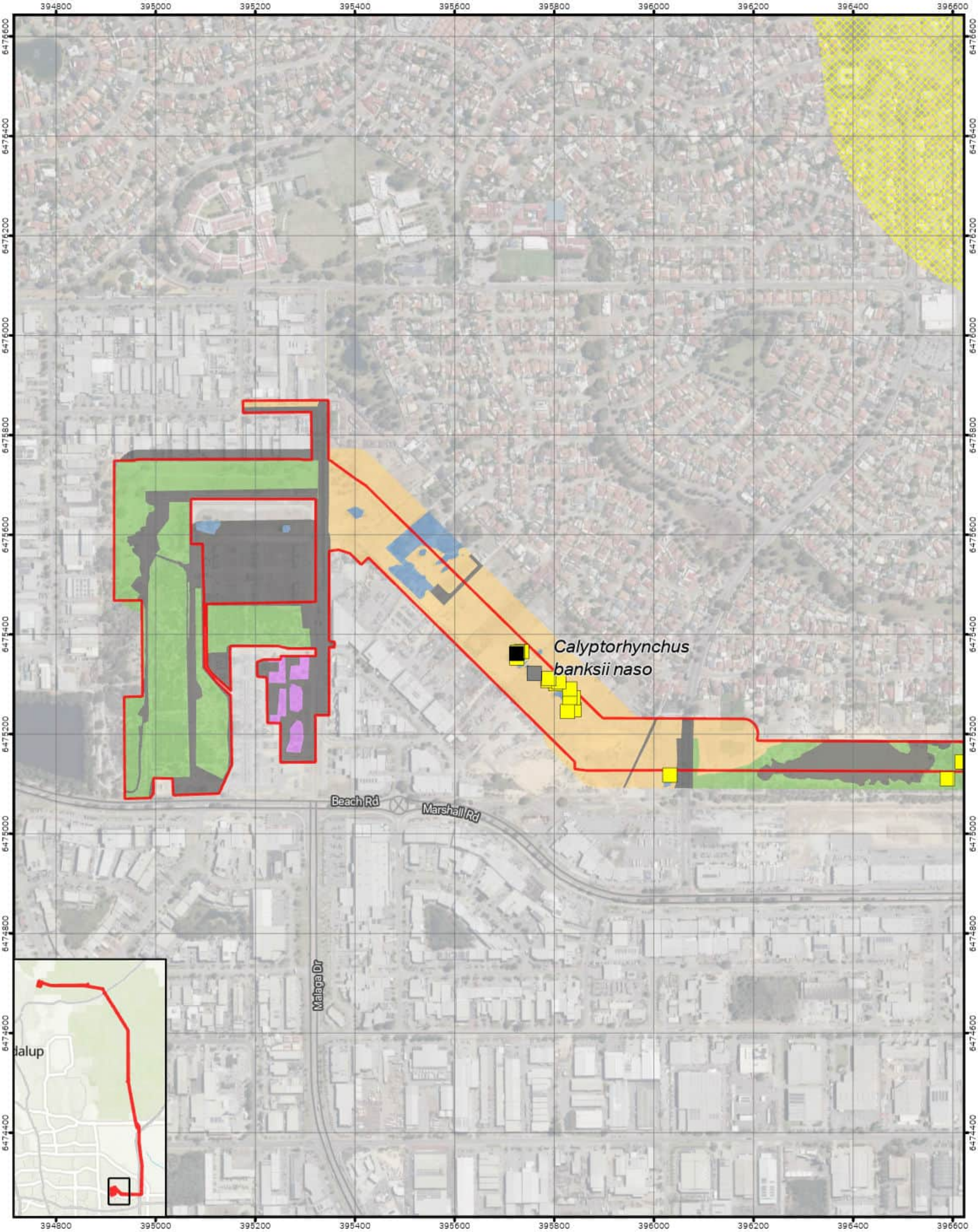

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LEGEND
- Proposal Development Envelope
- Fauna Sighting - Conservation Status
  - VU
- Black Cockatoo Roosting Sites Buffered
  - 500m
- Fauna Habitat
  - Cleared
  - Eucalyptus Woodland
  - Mixed Shrubland
  - Trees Over Cleared
  - Urban/Residential
- Black Cockatoo Breeding Trees - by species
  - Marri (*Corymbia calophylla*)
  - Stag (old dead tree, unknown species)
  - Introduced

Black Cockatoo Foraging and Breeding Habitat

WESTERN POWER

CEL NORTH-NT-NBT 330KV OFFSET STRATEGY

Figure A-2.13

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Appendix B

Banksia Woodland Offset Calculators

Appendix B Banksia Woodland Offset Calculators

DWER_WA_environmental_offsets_calculator_v1.1 - Banksia_Woodlands

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	Banksia Woodlands of the Swan Coastal Plain
	Type of environmental value	Ecological community
	Conservation significance of environmental value	Priority ecological community
	Conservation significance score	0.1%

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)	Banksia Woodlands of the Swan Coastal Plain

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	AECOM 2023, Condition dominated by Very Good/ Excellent condition	Significant impact (hectares)	4.44
		Quality (scale)	9.00
		Total quantum of impact	4.00

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	4.00
	Rehabilitation credit	0.00
	Significant residual impact	4.00

Step 3: Calculating offsets

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

Environmental value (step 1)	Banksia Woodlands of the Swan Coastal Plain	Significant impact (step 2, part A)	4.44
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	4.00

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	46.97	Duration of offset implementation (maximum 20 years)	20.00	Offset value	5.63
	Orange Springs Rd, Orange Springs Offset Site	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		140.9%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	YES

EPBC Offset Assessment - Banksia Woodlands

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Banksia Woodlands of the Swan Coastal
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	Yes	Banksia Woodlands of the Swan Coastal Plain	**Area**	4.44	Hectares	AECOM 2023, Condition dominated by Very Good/ Excellent condition
			Quality	**9**	Scale 0-10	
			Total quantum of impact	4.00	Adjusted hectares	
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)		% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																					
Area of community	Yes	4.00	Adjusted hectares	Orange Springs	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	46.96907	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	7.05	90%	6.34	5.00	4.00	100.00%	Yes		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	39.9	**Future area with offset (adjusted hectares)**	47.0									
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00					
Threatened species habitat																					
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**										
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0									
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**		**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																				
Condition of habitat Change in habitat condition, but no change in extent	No																				
Threatened species																					
Birth rate e.g. Change in nest success	No																				
Mortality rate e.g Change in number of road kills per year	No																				
Number of individuals e.g. Individual plants/animals	No																				

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	3.996	4.00	100.00%	**Yes**	$0.00	#DIV/0!	#DIV/0!
					$0.00	**#DIV/0!**	**#DIV/0!**

Appendix C

Black Cockatoo Offset Calculators

Appendix C Black Cockatoo Offset Calculators

Baudin's Cockatoo – DWER Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Low
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Negligible
- Rehabilitation Offsets
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Low
  - DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Negligible

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Moderate

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	Baudin's Black Cockatoo Foraging Habitat
	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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat

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

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Moderate	Significant impact (hectares)	57.30
		Quality (scale)	5.00
		Total quantum of impact	28.65

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	28.65
	Rehabilitation credit	0.00
	Significant residual impact	28.65

Step 3: Calculating offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	57.30
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	28.65

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	235.73	Duration of offset implementation (maximum 20 years)	20.00	Offset value	27.95
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		97.6%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Low

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	Baudin's Black Cockatoo Foraging Habitat
	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)	Baudin's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Low	Significant impact (hectares)	14.22
		Quality (scale)	2.00
		Total quantum of impact	2.84

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	2.84
	Rehabilitation credit	0.00
	Significant residual impact	2.84

Step 3: Calculating offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	14.22
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	2.84

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	23.40	Duration of offset implementation (maximum 20 years)	20.00	Offset value	2.77
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		97.6%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Remnant-Negligible

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	Baudin's Black Cockatoo Foraging Habitat
	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)	Baudin's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*		
Significant impact	Description	Quantum of impact
	Baudin's Black Cockatoo Foraging Habitat Negligible	Significant impact (hectares): 71.15
		Quality (scale): 1.00
		Total quantum of impact: 7.12

Part B: Rehabilitation credit calculation *Area* (onsite)				
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)	Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)	Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)	Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)		

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	7.12
	Rehabilitation credit	0.00
	Significant residual impact	7.12

Step 3: Calculating offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	71.15
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	7.12

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	58.54	Duration of offset implementation (maximum 20 years)	20.00	Offset value	6.94
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		97.6%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Moderate

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	Baudin's Black Cockatoo Foraging Habitat
	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)	Baudin's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Moderate	Significant impact (hectares)	57.30
		Quality (scale)	5.00
		Total quantum of impact	28.65

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	28.65
	Rehabilitation credit	0.00
	Significant residual impact	28.65

Step 3: Calculating offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	57.30
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	28.65

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	20.17	Duration of offset implementation (maximum 20 years)	20.00	Offset value	8.59
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Low

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	Baudin's Black Cockatoo Foraging Habitat
	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)	Baudin's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Low	Significant impact (hectares)	14.22
		Quality (scale)	2.00
		Total quantum of impact	2.84

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	2.84
	Rehabilitation credit	0.00
	Significant residual impact	2.84

Step 3: Calculating offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	14.22
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	2.84

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	2.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	0.85
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Baudin's Black Cockatoo - Rehabilitation-Negligible

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	Baudin's Black Cockatoo Foraging Habitat
	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)	Baudin's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Negligible	Significant impact (hectares)	71.15
		Quality (scale)	1.00
		Total quantum of impact	7.12

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	7.12
	Rehabilitation credit	0.00
	Significant residual impact	7.12

Step 3: Offsets

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

Environmental value (step 1)	Baudin's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	71.15
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	7.12

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	5.01	Duration of offset implementation (maximum 20 years)	20.00	Offset value	2.13
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

Baudin's Cockatoo – EPBC Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Moderate
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Low
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Negligible
- Rehabilitation Offsets
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Moderate
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Low
  - EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Negligible

EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Moderate

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Moderate	**Area**	57.3	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**5**	Scale 0-10	
			Total quantum of impact	28.65	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	28.65	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	235.7269	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	35.36	90%	31.82	25.07	70.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	200.4	**Future area with offset (adjusted hectares)**	235.7				20.06				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	28.65	20.06	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Low	**Area**	14.22	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	2.84	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	2.84	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	23.39991	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	3.51	90%	3.16	2.49	1.99	70.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	19.9	**Future area with offset (adjusted hectares)**	23.4								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	2.844	1.99	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Baudin's Black Cockatoo - Remnant-Negligible

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Negligible	**Area**	71.15	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**1**	Scale 0-10	
			Total quantum of impact	7.12	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	7.12	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	58.54091	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	8.78	90%	7.90	6.23	4.98	70.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	49.8	**Future area with offset (adjusted hectares)**	58.5								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	7.115	4.98	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Moderate

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Moderate	**Area**	57.3	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**5**	Scale 0-10	
			Total quantum of impact	28.65	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	28.65	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	20.17482	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	8.60	30.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	20.2	**Future area with offset (adjusted hectares)**	20.2								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	28.65	8.60	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Low	**Area**	14.22	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	2.84	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	2.84	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	2.002695	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	0.85	30.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	2.0	**Future area with offset (adjusted hectares)**	2.0								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	2.844	0.85	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Baudin's Black Cockatoo - Rehabilitation-Negligible

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Baudin's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Baudin's Black Cockatoo Foraging Habitat Negligible	**Area**	71.15	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**1**	Scale 0-10	
			Total quantum of impact	7.12	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	7.12	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	5.010257	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	2.13	30.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	5.0	**Future area with offset (adjusted hectares)**	5.0								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	7.115	2.13	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Carnaby's Cockatoo – DWER Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-High
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Moderate to High
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Moderate Part 1
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Moderate Part 2
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Low to Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Low
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Negligible
- Rehabilitation Offsets
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Rehabilitation-Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Rehabilitation-Low
  - DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Rehabilitation-Negligible

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-High

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	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat High	Significant impact (hectares)	6.84
		Quality (scale)	8.00
		Total quantum of impact	5.47

Part B: Rehabilitation credit calculation *Area* (onsite)				
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	5.47
	Rehabilitation credit	0.00
	Significant residual impact	5.47

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat		
		Significant impact (step 2, part A)	6.84
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	5.47

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	64.32	Duration of offset implementation (maximum 20 years)	20.00	Offset value	7.63
	Orange Springs Rd, Orange Springs Offset Site	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		139.4%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	YES

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Moderate to High

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	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat Moderate to High	Significant impact (hectares)	13.08
		Quality (scale)	7.00
		Total quantum of impact	9.16

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	9.16
	Rehabilitation credit	0.00
	Significant residual impact	9.16

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	13.08
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	9.16

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	107.62	Duration of offset implementation (maximum 20 years)	20.00	Offset value	12.76
	Orange Springs Rd, Orange Springs Offset Site	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		139.4%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	YES

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Moderate Part 1

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	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat Moderate	Significant impact (hectares)	50.46
		Quality (scale)	6.00
		Total quantum of impact	30.28

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	30.28
	Rehabilitation credit	0.00
	Significant residual impact	30.28

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	50.46
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	30.28

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	230.06	Duration of offset implementation (maximum 20 years)	20.00	Offset value	27.28
	Orange Springs Rd, Orange Springs Offset Site	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		90.1%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

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**	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	**Description**	**Quantum of impact**	
	Carnaby's Black Cockatoo Foraging Habitat Moderate	**Significant impact (hectares)**	50.46
		Quality (scale)	6.00
		Total quantum of impact	**30.28**

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	**Description**	**Proposed rehabilitation (area in hectares)**		**Time until ecological benefit (years)**	
		Current quality of rehabilitation site (scale)		**Confidence in rehabilitation result (%)**	
		Future quality WITHOUT rehabilitation (scale)		**Rehabilitation credit**	**0.00**
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	**Total quantum of impact**	**30.28**
	Rehabilitation credit	**0.00**
	Significant residual impact	**30.28**

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	50.46
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	30.28

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	34.70	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**3.60**
	Orange Springs Rd, Orange Springs Offset Site	**Current quality of offset site (scale)**	7.00	**Time until offset site secured (years)**	1.00		**11.9%**
		Future quality WITHOUT offset (scale)	7.00	**Risk of future loss WITHOUT offset (%)**	15.0%		
		Future quality WITH offset (scale)	7.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			**OFFSET ADEQUATE?**	**NO**

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Low to Moderate

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**	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	**Description**	**Quantity of impact**	
	Carnaby's Black Cockatoo Foraging Habitat Low to moderate	**Significant impact (hectares)**	1.22
		Quality (scale)	3.00
		Total quantum of impact	**0.37**

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	**Description**	**Proposed rehabilitation (area in hectares)**		**Time until ecological benefit (years)**	
		Current quality of rehabilitation site (scale)		**Confidence in rehabilitation result (%)**	
		Future quality WITHOUT rehabilitation (scale)		**Rehabilitation credit**	**0.00**
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	**Total quantum of impact**	**0.37**
	Rehabilitation credit	**0.00**
	Significant residual impact	**0.37**

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	1.22
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	0.37

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	5.74	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**0.51**
	Orange Springs Rd, Orange Springs Offset Site	**Current quality of offset site (scale)**	6.00	**Time until offset site secured (years)**	1.00		**139.5%**
		Future quality WITHOUT offset (scale)	6.00	**Risk of future loss WITHOUT offset (%)**	15.0%		
		Future quality WITH offset (scale)	6.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			**OFFSET ADEQUATE?**	**YES**

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Low

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	Carnaby's Black Cockatoo Foraging Habitat
	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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat

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

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat Low	Significant impact (hectares)	98.52
		Quality (scale)	2.00
		Total quantum of impact	19.70

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	19.70
	Rehabilitation credit	0.00
	Significant residual impact	19.70

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	98.52
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	19.70

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	162.12	Duration of offset implementation (maximum 20 years)	20.00	Offset value	19.22
	Future Offset Site	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		97.6%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Remnant-Negligible

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**	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat Negligible	**Significant impact (hectares)**	18.02
		Quality (scale)	1.00
		Total quantum of impact	**1.80**

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

Rehabilitation Credit	Description				
		Proposed rehabilitation (area in hectares)		**Time until ecological benefit (years)**	
		Current quality of rehabilitation site (scale)		**Confidence in rehabilitation result (%)**	
		Future quality WITHOUT rehabilitation (scale)		**Rehabilitation credit**	**0.00**
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*

Significant residual impact		
	Total quantum of impact	**1.80**
	Rehabilitation credit	**0.00**
	Significant residual impact	**1.80**

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	18.02
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	1.80

Area **(offset site)**

Offset calculation *Area*

Offsets calculation							
	Description	**Proposed offset (area in hectares)**	14.83	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**1.76**
	Future offset site	**Current quality of offset site (scale)**	8.00	**Time until offset site secured (years)**	1.00		**97.6%**
		Future quality WITHOUT offset (scale)	8.00	**Risk of future loss WITHOUT offset (%)**	15.0%		
		Future quality WITH offset (scale)	8.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			**OFFSET ADEQUATE?**	**NO**

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**	Carnaby's Black Cockatoo Foraging Habitat
	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**

WA Environmental Offsets Calculator

Step 2: Calculating significant residual impact

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat

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

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	**Description**	**Quantum of impact**	
	Carnaby's Black Cockatoo Foraging Habitat Moderate	**Significant impact (hectares)**	50.46
		Quality (scale)	6.00
		Total quantum of impact	**30.28**

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	**Description**	**Proposed rehabilitation (area in hectares)**		**Time until ecological benefit (years)**	
		Current quality of rehabilitation site (scale)		**Confidence in rehabilitation result (%)**	
		Future quality WITHOUT rehabilitation (scale)		**Rehabilitation credit**	**0.00**
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	**Total quantum of impact**	**30.28**
	Rehabilitation credit	**0.00**
	Significant residual impact	**30.28**

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	50.46
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	30.28

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	19.06	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**8.44**
	Orange Springs Rd, Orange Springs Offset Site / Future Offset Site	**Current quality of offset site (scale)**	0.00	**Time until offset site secured (years)**	1.00		**27.9%**
		Future quality WITHOUT offset (scale)	0.00	**Risk of future loss WITHOUT offset (%)**	10.0%		
		Future quality WITH offset (scale)	6.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			**OFFSET ADEQUATE?**	**NO**

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	Carnaby's Black Cockatoo Foraging Habitat
	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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat

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

Area **(impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Carnaby's Black Cockatoo Foraging Habitat Low	Significant impact (hectares)	98.52
		Quality (scale)	2.00
		Total quantum of impact	19.70

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

Rehabilitation Credit	Description				
		Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*

Significant residual impact		
	Total quantum of impact	19.70
	Rehabilitation credit	0.00
	Significant residual impact	19.70

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	98.52
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	19.70

Area **(offset site)**

Offset calculation *Area*

Offsets calculation							
	Description	Proposed offset (area in hectares)	13.88	Duration of offset implementation (maximum 20 years)	20.00	Offset value	5.91
	Future Offset Site	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

DWER_WA_environmental_offsets_calculator_v1.1 - Carnaby's Black Cockatoo - Rehabilitation-Negligible

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**	Carnaby's Black Cockatoo Foraging Habitat
	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)	Carnaby's Black Cockatoo Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	**Description**	**Quantum of impact**	
	Carnaby's Black Cockatoo Foraging Habitat Negligible	**Significant impact (hectares)**	18.02
		Quality (scale)	1.00
		Total quantum of impact	**1.80**

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	**Description**	**Proposed rehabilitation (area in hectares)**		**Time until ecological benefit (years)**	
		Current quality of rehabilitation site (scale)		**Confidence in rehabilitation result (%)**	
		Future quality WITHOUT rehabilitation (scale)		**Rehabilitation credit**	**0.00**
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	**Total quantum of impact**	**1.80**
	Rehabilitation credit	**0.00**
	Significant residual impact	**1.80**

Step 3: Calculating offsets

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

Environmental value (step 1)	Carnaby's Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	18.02
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	1.80

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	**Description**	**Proposed offset (area in hectares)**	1.27	**Duration of offset implementation (maximum 20 years)**	20.00	**Offset value**	**0.54**
	Orange Springs Rd, Orange Springs Offset Site / Future Offset Site	**Current quality of offset site (scale)**	0.00	**Time until offset site secured (years)**	1.00		**30.0%**
		Future quality WITHOUT offset (scale)	0.00	**Risk of future loss WITHOUT offset (%)**	0.0%		
		Future quality WITH offset (scale)	6.00	**Risk of future loss WITH offset (%)**	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			**OFFSET ADEQUATE?**	**NO**

Carnaby's Black Cockatoo – EPBC Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-High
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate to High
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate Part 1
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate Part 2
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Low to Moderate
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Low
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Negligible
- Rehabilitation Offsets
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Rehabilitation-Moderate
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Rehabilitation-Low
  - EPBC Offset Assessment - Carnaby's Black Cockatoo - Rehabilitation-Negligible

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-High

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat High	**Area**	6.84	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**8**	Scale 0-10	
			Total quantum of impact	5.47	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	5.47	Adjusted hectares	Orange Springs Offset Site	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	64.31801	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	9.65	90%	8.68	6.84	5.47	100.00%	Yes	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	54.7	**Future area with offset (adjusted hectares)**	64.3								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	5.472	5.47	100.00%	**Yes**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate to High

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Moderate to High	**Area**	13.08	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	7	Scale 0-10	
			Total quantum of impact	9.16	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	9.16	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	107.6198	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	16.14	90%	14.53	11.45	9.16	100.00%	Yes	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	91.5	**Future area with offset (adjusted hectares)**	107.6								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	8	**Future quality without offset (scale of 0-10)**	8	**Future quality with offset (scale of 0-10)**	8	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	9.156	9.16	100.00%	**Yes**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate Part 1

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Moderate	**Area**	50.46	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**6**	Scale 0-10	
			Total quantum of impact	30.28	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	30.28	Adjusted hectares	Orange Springs Offset Site	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	230.06	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	34.51	90%	31.06	24.47	19.57	64.65%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	195.6	**Future area with offset (adjusted hectares)**	230.1								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	30.276	19.57	64.65%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Moderate Part 2

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Moderate	**Area**	50.46	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**6**	Scale 0-10	
			Total quantum of impact	30.28	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	30.28	Adjusted hectares	Orange Springs Offset Site	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	34.7	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	5.21	90%	4.68	3.69	2.58	8.53%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	29.5	**Future area with offset (adjusted hectares)**	34.7								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**7**	**Future quality without offset (scale of 0-10)**	**7**	**Future quality with offset (scale of 0-10)**	**7**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	30.276	2.58	8.53%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Low to Moderate

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Low to Moderate	**Area**	1.22	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**3**	Scale 0-10	
			Total quantum of impact	0.37	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	0.37	Adjusted hectares	Orange Springs Offset Site	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	5.735963	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	0.86	90%	0.77	0.61	0.37	100.00%	Yes	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	4.9	**Future area with offset (adjusted hectares)**	5.7								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**6**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0.366	0.37	100.00%	**Yes**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Low	**Area**	98.52	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	19.70	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	19.70	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	162.1209	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	24.32	90%	21.89	17.24	13.79	70.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	137.8	**Future area with offset (adjusted hectares)**	162.1								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	19.704	13.79	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Remnant-Negligible

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Negligible	**Area**	18.02	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**1**	Scale 0-10	
			Total quantum of impact	1.80	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	1.80	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	14.82652	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	2.22	90%	2.00	1.58	1.26	70.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	12.6	**Future area with offset (adjusted hectares)**	14.8								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	1.802	1.26	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Moderate	**Area**	50.46	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**6**	Scale 0-10	
			Total quantum of impact	30.28	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	30.28	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	19.05992	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	8.12	26.82%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	19.1	**Future area with offset (adjusted hectares)**	19.1								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	30.276	8.12	26.82%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Rehabilitation-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Low	**Area**	98.52	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	19.70	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	19.70	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	13.87521	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	5.91	30.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	13.9	**Future area with offset (adjusted hectares)**	13.9								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	19.704	5.91	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Carnaby's Black Cockatoo - Rehabilitation-Negligible

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Carnaby's Black Cockatoo Foraging
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Carnaby's Black Cockatoo Foraging Habitat Negligible	**Area**	18.02	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**1**	Scale 0-10	
			Total quantum of impact	1.80	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	1.80	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	1.268937	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	0.54	30.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	1.3	**Future area with offset (adjusted hectares)**	1.3								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.26				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	1.802	0.54	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Forest Red-tailed Black Cockatoo – DWER Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Remnant-Moderate-High
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Remnant-Low-Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Remnant-Low
- Rehabilitation Offsets
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Rehabilitation-Moderate-High
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Rehabilitation-Low-Moderate
  - DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Rehabilitation-Low

DWER_WA_environmental_offsets_calculator_v1.1 - Forest Red-tailed Black Cockatoo - Remnant-Moderate-High

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 Foraging 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

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 Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*		
Significant impact	Description	Quantum of impact
	Baudin's Black Cockatoo Foraging Habitat Moderate to High	Significant impact (hectares): 50.46
		Quality (scale): 7.00
		Total quantum of impact: 35.32

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	35.32
	Rehabilitation credit	0.00
	Significant residual impact	35.32

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	50.46
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	35.32

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	238.27	Duration of offset implementation (maximum 20 years)	20.00	Offset value	28.54
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		80.8%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

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 Foraging 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

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 Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Low to Moderate	Significant impact (hectares)	6.84
		Quality (scale)	3.00
		Total quantum of impact	2.05

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	2.05
	Rehabilitation credit	0.00
	Significant residual impact	2.05

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	6.84
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	2.05

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	13.84	Duration of offset implementation (maximum 20 years)	20.00	Offset value	1.66
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		80.8%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

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 Foraging 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

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 Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*		
Significant impact	Description	Quantum of impact
	Baudin's Black Cockatoo Foraging Habitat Low	Significant impact (hectares): 28.22
		Quality (scale): 2.00
		Total quantum of impact: 5.64

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	5.64
	Rehabilitation credit	0.00
	Significant residual impact	5.64

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	28.22
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	5.64

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	38.07	Duration of offset implementation (maximum 20 years)	20.00	Offset value	4.56
	Future offset location	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		80.8%
		Future quality WITHOUT offset (scale)	8.00	Risk of future loss WITHOUT offset (%)	15.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

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 Foraging 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

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 Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Baudin's Black Cockatoo Foraging Habitat Moderate to High	Significant impact (hectares)	50.46
		Quality (scale)	7.00
		Total quantum of impact	35.32

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

Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*

Significant residual impact		
	Total quantum of impact	35.32
	Rehabilitation credit	0.00
	Significant residual impact	35.32

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	50.46
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	35.32

Area **(offset site)**

Offset calculation *Area*

Offsets calculation							
	Description	Proposed offset (area in hectares)	22.52	Duration of offset implementation (maximum 20 years)	20.00	Offset value	10.60
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

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 Foraging Habitat
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened Species - vulnerable
	Conservation significance score	0.2%

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 Foraging Habitat

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Forest Red-tailed Black Cockatoo Foraging Habitat Low to Moderate	Significant impact (hectares)	6.84
		Quality (scale)	3.00
		Total quantum of impact	2.05

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	2.05
	Rehabilitation credit	0.00
	Significant residual impact	2.05

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat	Significant impact (step 2, part A)	6.84
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	2.05

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	1.31	Duration of offset implementation (maximum 20 years)	20.00	Offset value	0.62
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

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 Foraging 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

Step 2: Calculating significant residual impact

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

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

Area (impact site)

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
	Forest Red-tailed Black Cockatoo Foraging Habitat Low	Significant impact (hectares)	28.22
		Quality (scale)	2.00
		Total quantum of impact	5.64

Part B: Rehabilitation credit calculation *Area* (onsite)					
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
		Current quality of rehabilitation site (scale)		Confidence in rehabilitation result (%)	
		Future quality WITHOUT rehabilitation (scale)		Rehabilitation credit	0.00
		Future quality WITH rehabilitation (scale)			

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	5.64
	Rehabilitation credit	0.00
	Significant residual impact	5.64

Step 3: Calculating offsets

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

Environmental value (step 1)	Forest Red-tailed Black Cockatoo Foraging Habitat		
		Significant impact (step 2, part A)	28.22
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	5.64

Area (offset site)

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	3.60	Duration of offset implementation (maximum 20 years)	20.00	Offset value	1.69
	Future offset location	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	1.00		30.0%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	0.0%		
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
		Time until ecological benefit (years)	10.00				
		Confidence in offset result (%)	80.0%			OFFSET ADEQUATE?	NO

Forest Red-tailed Black Cockatoo – EPBC Offset Calculators

Offset Calculators:

- Remnant Vegetation Offsets:
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Moderate-High
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Low-Moderate
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Low
- Rehabilitation Offsets
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Moderate to High
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Low to Moderate
  - EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Low

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Moderate-High

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Moderate to High	**Area**	50.46	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	7	Scale 0-10	
			Total quantum of impact	35.32	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	35.32	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	238.2725	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	35.74	90%	32.17	30.91	24.73	70.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	202.5	**Future area with offset (adjusted hectares)**	238.3								
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	35.322	24.73	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Low-Moderate

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Low to Moderate	**Area**	6.84	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**3**	Scale 0-10	
			Total quantum of impact	2.05	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	2.05	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	13.84223	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	2.08	90%	1.87	1.80	70.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	11.8	**Future area with offset (adjusted hectares)**	13.8				1.44				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	2.052	1.44	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Remnant-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Low	**Area**	28.22	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	5.64	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	5.64	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	38.07288	**Risk of loss (%) without offset**	15%	**Risk of loss (%) with offset**	0%	5.71	90%	5.14	4.94	70.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	32.4	**Future area with offset (adjusted hectares)**	38.1				3.95				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**8**	**Future quality with offset (scale of 0-10)**	**8**	0.00	90%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	5.644	3.95	70.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Moderate to High

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Moderate to High	**Area**	50.46	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	7	Scale 0-10	
			Total quantum of impact	35.32	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	35.32	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	22.52177	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	10.60	30.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	22.5	**Future area with offset (adjusted hectares)**	22.5								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.71				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	35.322	10.60	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Low to Moderate

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Low to Moderate	**Area**	6.84	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**3**	Scale 0-10	
			Total quantum of impact	2.05	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	2.05	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	1.308382	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	0.62	30.00%	No		As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	1.3	**Future area with offset (adjusted hectares)**	1.3								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.71				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	2.052	0.62	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

EPBC Offset Assessment - Forest Red-tailed Black Cockatoo - Rehabilitation-Low

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Forest Red-tailed Black Cockatoo
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Forest Red-tailed Black Cockatoo Foraging Habitat Low	**Area**	28.22	Hectares	As per Environmental Review Document and supporting surveys.
			Quality	**2**	Scale 0-10	
			Total quantum of impact	5.64	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	5.64	Adjusted hectares	Future offset location	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	3.598688	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	1.69	30.00%	No	As per Environmental Review Document and supporting surveys.
									Future area without offset (adjusted hectares)	3.6	**Future area with offset (adjusted hectares)**	3.6								
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**6**	6.00	80%	4.80	4.71				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	5.644	1.69	30.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Black Cockatoo Breeding Trees

Offset Calculators:

- DWER Offset Calculator
- EPBC Offset Calculator

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	Black Cockatoo Breeding Trees
	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	Feature

Step 2: Calculating significant residual impact

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

Environmental value (step 1)	Black Cockatoo Breeding Trees

(SCROLL DOWN FOR FEATURE CALCULATION)

Feature **(impact site)**

Part A: Significant impact calculation *Feature*			
Significant impact	Description	Quantum of impact	
		Type of feature	Number
	Impacted hollows.	Breeding Hollows	3.00
		Total quantum of impact	3.00

Part B: Rehabilitation credit calculation *Feature* (onsite)					
Rehabilitation credit	Description	Start number (of type of feature)		Time until ecological benefit (years)	
		Future number WITHOUT rehabilitation		Confidence in rehabilitation result (%)	
		Future number WITH rehabilitation		Rehabilitation credit	0.00

Part C: Significant residual impact calculation *Feature*	
Significant residual impact	Total quantum of impact: 3.00
	Rehabilitation credit: 0.00
	Significant residual impact: 3.00

Step 3: Calculating offsets

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

Environmental value (step 1)	Black Cockatoo Breeding Trees	Significant impact (step 2, part A)	7.44
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	6.55

(SCROLL DOWN FOR FEATURE CALCULATION)

Feature **(offset site)**

Offset calculation *Feature*							
Offsets calculation	Description	Start number (of type of feature)	0.00	Time until ecological benefit (years)	1.00	Offset value	3.16
	ANHs at Orange Springs	Future number WITHOUT offset	0.00	Confidence in offset result (%)	80.0%		105.4%
		Future number WITH offset	4.00				
						OFFSET ADEQUATE?	YES

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Cockatoo Breeding Trees
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	ckatoo Nesting Holl	3		Count	
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start area and quality	Future area and quality without offset	Future area and quality with offset	Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																
Area of community	No				**Risk-related time horizon (max. 20 years)**	**Start area (hectares)**	**Risk of loss (%) without offset**	**Risk of loss (%) with offset**								
							Future area without offset (adjusted hectares) 0.0	**Future area with offset (adjusted hectares)** 0.0								
					Time until ecological benefit	**Start quality (scale of 0-10)**	**Future quality without offset (scale of 0-10)**	**Future quality with offset (scale of 0-10)**								
Threatened species habitat																
Area of habitat	No				**Time over which loss is averted (max. 20 years)**	**Start area (hectares)**	**Risk of loss (%) without offset**	**Risk of loss (%) with offset**								
							Future area without offset (adjusted hectares) 0.0	**Future area with offset (adjusted hectares)** 0.0								
					Time until ecological benefit	**Start quality (scale of 0-10)**	**Future quality without offset (scale of 0-10)**	**Future quality with offset (scale of 0-10)**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**	**Start value**	**Future value without offset**	**Future value with offset**	**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	3	Count	4 AHNs	1	0	0	4	4	80%	3.20	3.16	105.40%	Yes		Northern Terminal (NT) to Neerabup Terminal (NBT) 330kV Transmission Line Environmental Review
Condition of habitat Change in habitat condition, but no change in extent	No															
Threatened species																
Birth rate e.g. Change in nest success	No															
Mortality rate e.g Change in number of road kills per year	No															
Number of individuals e.g. Individual plants/animals	No															

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	3	3.16	105.40%	**Yes**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

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