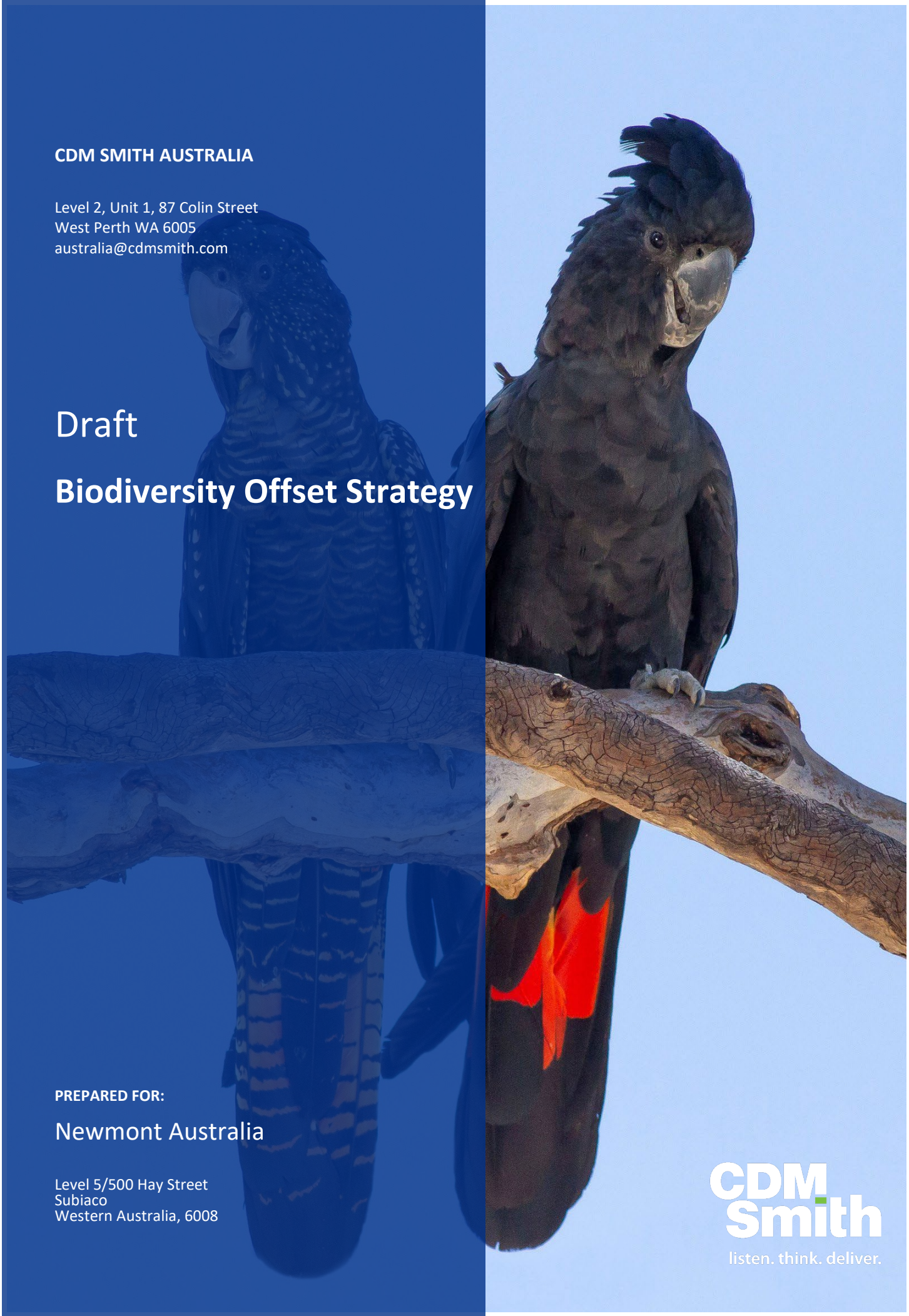
CDM SMITH AUSTRALIA

Level 2, Unit 1, 87 Colin Street
West Perth WA 6005
australia@cdmsmith.com

Draft

Biodiversity Offset Strategy



PREPARED FOR:

Newmont Australia

Level 5/500 Hay Street
Subiaco
Western Australia, 6008

CDM Smith

listen. think. deliver.

Executive Summary

Newmont Boddington Pty Ltd operates the Boddington Gold Mine located approximately 12 kilometres (km) northwest of the town of Boddington and around 130 km to the southeast of Perth, Western Australia (WA). Newmont Boddington produces approximately 790,000 ounces of gold and 80 million pounds of copper annually. Most of Newmont Boddington operations are located on Newmont-owned freehold land, however, some land is located on mining tenements held by Worsley which are sub-leased to Newmont under various commercial agreements. The surrounding land uses include State Forest, timber plantations, agriculture, and mining operations, contributing to a diverse and multi-use landscape.

Newmont Boddington is seeking approval under the Section 38 of the Environmental Protection (EP) Act and the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) to increase the approved disturbance footprint to allow for safe construction and operation of RDA2, which will also result in an increase to the Approved Development Envelope. Newmont Boddington intends to expand the RDA2 footprint by approximately 1,560 ha which is comprised of approximately 528 ha of native vegetation, 923 ha of plantation, less than 0.5 ha of rehabilitated land and 109 ha of previously cleared land.

Newmont Boddington is proposing a package of offsets to counterbalance potentially significant residual impacts associated with the Proposal. Offset requirements have been determined through assessment of the residual impacts of the Proposal based on the revised design, field surveys and site assessments.

The proposed offset package discussed in this strategy comprises direct offsets (Table 0-1). These offsets consist of a habitat protection area of 1,324 ha, and a restoration area of 150 ha. Other indirect offsets continue to be assessed and Newmont is investigating opportunities for further studies with Murdoch University.

Table 0-1 Offset Requirements

Item	Details
Title of Proposal	Newmont Boddington Life of Mine Amendment Proposal – Revised Proposal
Proponent name	Newmont Boddington
EPA Assessment Number	MS971
Purpose of this Strategy	This strategy is submitted to address the EPA request for additional information in respect to environmental offsets.
Significant Residual Impacts	To counterbalance significant residual impacts to: Clearing of 475 ha of foraging habitat for Baudin's Cockatoo (*Zanda baudinii*) (BBC) Clearing of 475 ha of Breeding habitat for Carnaby's Black Cockatoo (*Zanda latirostris*) (CBC) and 475 ha of foraging habitat. Clearing of 479 ha of Breeding habitat and 503 ha of foraging habitat for Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) Clearing of 517 ha of habitat for Chuditch (*Dasyurus geoffroii*) Clearing of 472 ha of habitat for Woylie (*Bettongia penicillata ogilbyi*) Clearing of 500 ha low value habitat for Numbat (*Myrmecobius fasciatus*)
Proposed Offsets	The direct and indirect offsets proposed within this Offsets Strategy to fully offset significant residual impacts of this proposal include: Offset 1 (Habitat protection and enhancement of 1,324 ha of Jarrah Forest) Offset 2 (Ecological restoration and protection of 150 ha on Hotham Farm)

Confirmation of the size of the offsets package has been through application of the EPBC and DWER Offset calculators. A comparison of the percentage outputs for the two direct offsets is set out in Table 0-2 Impacted Habitat for MNES Species.

Table 0-2 Impacted Habitat for MNES Species

Species	EPBC Status	BC Act status	Habitat use within the Revised Proposal	Area of impact (ha)	Direct Offset EPBC % (Habitat Protection + Restoration)	Direct Offset DWER % (Habitat Protection + Restoration)
Baudin's Cockatoo (*Zanda baudinii)*	EN	EN	Breeding: N/A Foraging: FG. JC, JM, MS, RE, WO	0 475	94.78	110.1
Carnaby's Black Cockatoo (*Zanda latirostris)*	EN	EN	Breeding: BB, DL, FG, JC, JM, WO Foraging: FG, JC, JM, MS, RE, WO	475 475	94.75	110.1
Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso)*	VU	VU	Breeding: DL, JC, JM, JS Foraging: DL, FG, JC, JM, MS, PH, RE, WO	479 503	98.66	108.3
Chuditch (*Dasyurus geoffroii)*	VU	VU	BB, DL, FG, JC, JM, WO	517	96	105.1
Numbat (*Myrmecobius fasciatus)*	EN	EN	DL, JM, JC, ML, WO	499	90.03	104.4
Woylie (*Bettongia penicillata ogilbyi)*	EN	CR	JC, JM,	472	95.38	110.9

This Offset Plan has been designed to meet the requirements for biodiversity offsets under both the *WA Environmental Offsets Policy* (GoWA, 2011) and the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (DSEWPaC, 2012a) to counterbalance the significant residual impacts on the Carnaby's Cockatoo, the Forest Red-tailed Black Cockatoo, Baudin's Black Cockatoo, Chuditch, Woylie and Numbat.

Table of contents

Figures

Tables

Appendices

Document history & status

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
C	17/05/25	AJogia BSweeney			

Distribution of copies

Version	Date issued	Quantity	Electronic	Issued to
Rev B	15/05/2025	1	Y	S. Myles

Last Saved:	17 June 2025
File Name:	1001665_PLN_Newmont_Offsets Plan_RevB for Newmont Review
Author:	Julia Curran
Project Manager:	Julia Curran
Client:	Newmont Australia
Document Title:	**Biodiversity Offset Strategy**
Document Version:	Rev C
Project Number:	1001665

1. Introduction

Background

Newmont's Boddington operation is located in the Shire of Boddington, about 12 km northwest of the town of Boddington and 120 km southeast of Perth (Figure 1-1). The mine is situated in the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) subregion and within the Hotham River catchment. The Newmont Boddington operations are located on the eastern edge of Dwellingup State Forest and to the west of the transition from State Forest to agricultural lands.

Tailings from the processing plant are currently deposited in the F1/F3 Residue Disposal Area (RDA) which is forecasted to reach capacity by 2030. Approvals were granted in 2014 for the construction of a new RDA2 based on a preliminary design. The updated design of RDA2 requires additional footprint around the RDA for ancillary infrastructure. The additional infrastructure includes access roads, pipeline and powerline corridors, surface water management infrastructure, construction laydowns, office and workshop areas, access road from the mine for movement of non-acid forming rock material, rehabilitation material (topsoil and gravel) stockpiles, and bauxite preservation and stockpiling as required.

The Newmont Boddington Life of Mine Extension Amendment Proposal (Proposal) (Figure 1-1)is a significant amendment to the Newmont Boddington Gold Mine approved under Ministerial Statement 971. The Proposal principally comprises additional footprint which will be required to ensure the safe construction and operation of the previously approved RDA2 tailings dam in the Saddleback Treefarm. RDA2 was approved as part of the Life of Mine Expansion for the Newmont Boddington Mine approved in 2014. Additional footprint (Proposal Footprint) is also required for the preservation of bauxite which would otherwise be impacted by the RDA2 construction.

The Proposal Footprint includes:

- Bauxite preservation and stockpiling as required
- Expansion of the access road from Albany Highway
- Access and perimeter roads
- Pipeline and powerline corridors
- Surface water management infrastructure
- Construction laydowns.
- Office and workshop areas, and
- Access road from the mine.

The Proposal will be referred to the Environmental Protection Authority (EPA) under Section 38 of the *Environmental Protection Act 1986* (EP Act). In addition, the Newmont Boddington considers that the Proposal will be a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 87 of the EPBC Act makes provisions for the EPA to undertake this accredited assessment of the potential impacts to Matters of National Environmental Significance (MNES) on behalf of the Department of Climate Change, Energy, the Environment and Water (DCCEEW). Newmont Boddington is seeking an assessment outcome for the Proposal and will be assessed as an 'accredited assessment' under Part IV of the EP Act.

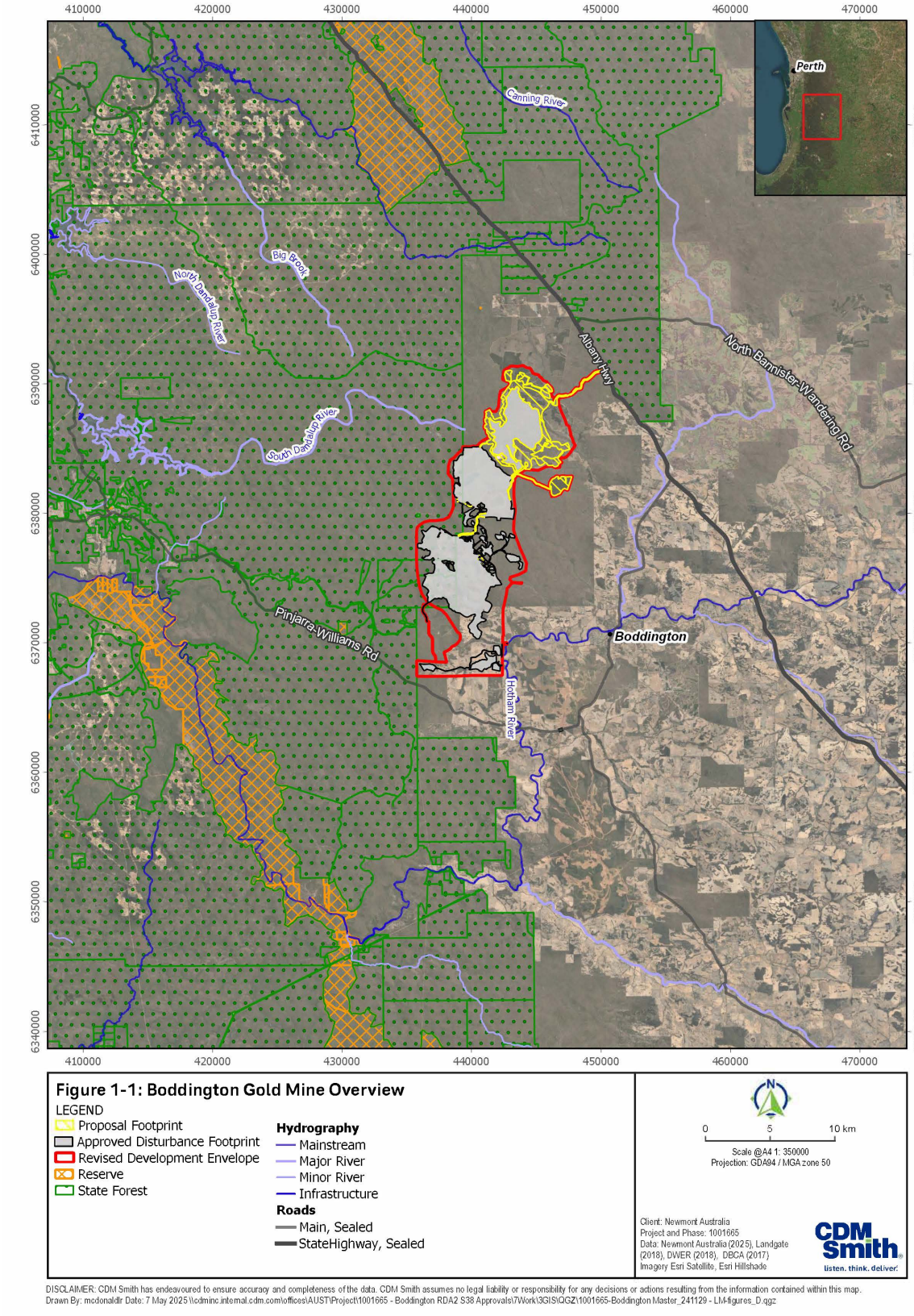


Figure 1-1 Newmont Boddington Mine

Scope and Purpose

During Environmental Impact Assessment, it was considered that the Proposal could have a significant residual impact on:

- Clearing of 475 ha of foraging habitat for BBC,
- Clearing of 475 ha of medium to high quality breeding habitat for CBC and 475 ha of foraging habitat,
- Clearing of 479ha of medium to high quality breeding habitat and 503 ha of foraging habitat for FRTBC,
- Clearing of 517 ha of habitat for Chuditch,
- Clearing of 472 ha of habitat for Woylie, and
- Clearing of 500 ha low value habitat for Numbat.

If the Proposal is approved, Newmont Boddington anticipates that an offset condition will be included in the Revised Proposal Ministerial Statement to counterbalance the significant residual impacts of the Proposal listed above. This Biodiversity Offset Plan has been prepared in anticipation of this offset condition, in order to detail potential suitable offset measures. This Biodiversity Offsets Strategy will remain in draft form until accepted by EPA Services and DCCEEW and will be incrementally revised as a result of further detailed discussions with EPA Services, DCCEEW and Department of Biodiversity, Conservation and Attractions (DBCA).

Offsets are the last of the four steps in the mitigation hierarchy (Avoid, Minimise, Rehabilitate and Offset). They are have only applied to counterbalance residual significant impacts after the other steps have already been applied to a Proposal. The outcome of the offsets described in this Biodiversity Offset Plan will be measurable to counterbalance the significant residual impact following stringent application of the mitigation hierarchy (GoWA, 2014). Offsets have been designed to achieve long-term conservation outcomes and build upon existing conservation programs and initiatives.

Assessment Offset Principle

Newmont Boddington has considered the six principles in the WA Environmental Offsets Policy (Government of Western Australia 2011) and EPBC Act overarching principles applied in determining the suitability of offsets (Table 1-1) to determine the proposed offsets and to demonstrate that these are appropriate to counterbalance the significant residual impact.

Table 1-1 Assessment WA Environmental Offsets Policy and EPBC Act overarching principles

Principle	Alignment
WA Environmental Offsets Policy	
Principle 1: Environmental offsets will only be considered after avoidance and mitigation options have been pursued.	The potential impacts from the Revised Proposal have been significantly reduced as a result of the efforts applied during the detailed design phase and during environmental assessment. This reduction has been largely achieved through the additional avoidance and mitigation measures that have been developed for the Revised Proposal. Specific avoidance minimisation and mitigation measures are further described in the referral.
Principle 2: Environmental offsets are not appropriate for all projects.	As the Proposal will result in significant residual impacts due to impact on conservation significant fauna species are appropriate for this Proposal. Newmont Boddington has employed the mitigation hierarchy of avoid, minimise, mitigate, rehabilitate, and where available enhance existing areas. This is achieved through revised designs of the footprint, and employing robust mitigation measures. Where the mitigation hierarchy has not been able to compensate for the impacts and the impacts area considered to have a SRI, Newmont Boddington has sought to compensate for the impact through the application of offsets. The proposed offsets are considered sufficient to compensate for the SRI to Carnaby's Black Cockatoo (CBC), Forest Red-Tailed Black Cockatoo (FRTBC), Baudin's Black Cockatoo (BBC), Numbat, Chuditch and Woylie. The mitigation measures for these species are provide in the referral. These align with the requirements set out in WA Environmental Offsets Policy (GoWA, 2011) and the EPBC Act Environmental Offsets Policy (DSEWPaC, 2012a). The offsets identified for the Revised Proposal are located outside of the Development Envelope for the Newmont Boddington project and are owned by Newmont Boddington. Protection and conservation of these lands are expected to provide

Principle	Alignment
	suitable protection for the identified species and assist with prevention of long-term adverse impacts on the species. • Proposed offsets for impacts to conservation significant species are those activities known to reliably provide adequate (or better) compensation based on current scientific knowledge and precedent. When implemented, the proposed offsets are considered to be adequate to provide compensation in full for the SRI to identified species as identified by the *Significant Impact Guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999* (DoTE, 2013). • The proposed offset will provide a net gain for impacted conservation significant species. The decision to implement offsets is based on the magnitude of the proposed impacts, the conservation status of the identified species, and the local context of the faunal habitats affected by the Revised Proposal. The environmental offsets are deemed appropriate for the identified significant residual impacts.
Principle 3: Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.	The proposed offsets have been designed to be cost-effective by targeting the initial retention and conservation of existing remnant vegetation, in close proximity to the Proposal, meaning that much of the same equipment and resources could be used for management. Moderate to high value CBC, FRTBC, BBC breeding and foraging habitat and habitat Numbat, Chuditch and Woylie is proposed to be cleared during the implementation of the Proposal. The proposed offsets contains correlating values that represent those that will be lost during the implementation of the Proposal. The use of the proposed offsets for the Proposal is considered to be 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.	The proposed biodiversity offsets have been informed by recent survey assessments and the Commonwealth's Offset Assessment Guide (DSEWPaC, 2012c). Offsets were selected based on the information and guidance provided within the State Policy (GoWA, 2011) and EPBC Guidelines (DSEWPaC, 2012a), and surveys and assessments were conducted, ensuring similar habitat values exist in both the offset and impact areas. The protection and maintenance of the offset sites will ensure its protection from development, and that it is managed to maintain its natural values in the long-term.
Principle 5: Environmental offsets will be applied within a framework of adaptive management.	An adaptive management framework is outlined in Proposal Offsets Management Plan. Offsets have been designed to be adaptive, Newmont Boddington will undertake regular monitoring and reporting to assess the performance of protection mechanisms and identify areas for improvement. This allows information and knowledge captured during operation to be used in an adaptive manner for ongoing maintenance and protection.
Principle 6: Environmental offsets will be focused on longer term strategic outcomes.	Practical management actions for the proposed direct offsets will be formalised through specified management plans. The proposed offsets have been designed to offset the impacts of the Proposal from the outset. The protection and maintenance of the offset sites will ensure its protection from development, and that it is managed to maintain its natural values in the long-term.
EPBC Act overarching principles applied in determining the suitability of offsets	
Principle 1: Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.	Newmont Boddington proposes offsets that will fully compensate for impacted conservation significant species: In total, 1,324 ha will be protected (in perpetuity) and managed (for life of impact) to maintain the viability of impacted MNES including the three black cockatoo species; Chuditch; Woylie and Numbat. In total, at least 150 ha will be rehabilitated and managed to recreate, improve and maintain viability of habitat for the three black cockatoo species; Chuditch; Woylie and Numbat.

Principle	Alignment
Principle 2: Be built around direct offsets but may include other compensatory measures.	The proposed offsets are direct offsets.
Principle 3: Be in proportion to the level of statutory protection that applies to the protected matter	Newmont Boddington acknowledges the level of statutory protection that apply to the protected matter. This was considered when assessing the significance of the residual impacts. The scale of the proposed offsets takes into account these considerations.
Principle 4: Be of a size and scale proportionate to the residual impacts on the protected matter.	The proposed offsets are significant in size and scale, proportionate to the predicted residual impacts. These have been designed to account for >90% SRI (and in some instances greater) calculated for each impacted MNES with respect to the quality and quantity of the habitat to be impacted by the actions of the Proposal.
Principle 5: Effectively account for and manage the risks of the offset not succeeding.	The Offset Plan has accounted for risk via the following measures: • Use of a detailed and conservative methodology for quantifying habitat and offset value for the six MNES including associated risks of loss and confidence in results • Surveys of offset areas to determine habitat suitability for MNES • Planning of offsets based on current scientific knowledge gained through document review and stakeholder engagement as well as more than 10 years of implementation of rehabilitation, including formal procedures, completion criteria and monitoring Governance to ensure effective design, implementation, evaluation and administration.
Principle 6: Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action).	The proposed offsets are in addition to that which is already required, determined by law or planning regulations, or agreed to under other schemes or programs. The offset sites is are not protected as conservation estate by any current legislation.
Principle 7: Be efficient, effective, timely, transparent, scientifically robust and reasonable.	• Efficiency and effectiveness of offsets will be achieved by ensuring that offsets are guided by subject matter experts and regulators as part of a consultation framework • Proposed offset activities will build on already established and successful conservation and land management practices appropriate for the region • Timeliness will be achieved by ensuring that all offsets will be achieved as soon as practicable and will be in place prior to impact. Time to benefit has been considered and factored into the quantification offset value • Transparency has been achieved by ensuring that the preparation of this offset plan for all conservation significant species • Scientific robustness and reasonableness will be achieved through the design of the offsets using existing scientific and on-ground knowledge as well as the proposed ongoing governance of the offset strategy Offset design has been developed in consideration of species recovery plans, including their objectives and specific recovery actions, and relevant scientific literature.
Principle 8: Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.	The governance of the offsets will be undertaken by Newmont Boddington, with input from subject matter experts and regulators to provide transparency and accountability. The measurement and monitoring of offset outcomes will occur at pre-defined intervals and with defined criteria to ensure that offsets meet key performance indicators and to ensure contingency measures are implemented should elements of

Principle	Alignment
	offsets not be delivering tangible benefits for MNES. The monitoring results will be provided to regulators (DWER and DCCEEW) in annual reports.

Research – Potential Black Cockatoo Hollow Detection

Newmont Boddington is exploring partnerships with Murdoch University and the Harry Butler Institute to develop projects which will increase the understanding of ecological processes within the Northern Jarrah Forest.

The objective of the research study is to use image and LIDAR data of natural hollows and surrounding habitat acquired using drone-borne sensors to train an artificial intelligence (AI) classifier to identify natural hollows in newly discovered or suspected breeding sites and contribute towards habitat assessment. It is anticipated that this will enable the characterisation of hollows and usage within existing and proposed footprint areas to quantify impact on breeding resources and guide future biodiversity offsets, thereby realising conservation benefit to species in the long term and develop a faster, more streamlined and repeatable approach for hollow assessment and discovery within the Northern Jarrah Forest.

The project will commence with the collection of field data to assist in training the AI model. This will be sone utilising drones to collect data (RGB images and thermal data) on known tree hollows. Data will be collected for individual hollows, allowing for easier training of the eventual AI model.

Additional drones will be sourced where available, to collect other forms of data such as LiDAR or multispectral data to determine the best sensor for the research. Nest hollow locations will be sought from other sources, to maximise the size of the training dataset for the object detection AI model. Night flights may also be considered in the case that thermal data is useful.

Data collection will explore how best to use RGB images and thermal data in detecting new nesting hollows. It will also assess the images collected using the camera sensor at 90° to the ground, which is critical to eventual ‘stitching’ of images into an orthomosaic. Data collection will be attempted where the camera sensor is at an oblique angle (30-45°), in case this approach is better suited to detecting hollows coming in at an angle or sideways to a tree. Suitable flight-heights above ground level (AGL) will be determined and a consistent flight height will be used in the collection of data for the orthomosaic. The drone should be able to cover approximately 25-30 ha across 3x30 minute flight plans, taking images at intervals, allowing for 70% overlap.

Following this, the model will be trained, with continual assessment of its accuracy and re-training may be required until an acceptable level of accuracy is achieved.

Newmont continues to engage with Murdoch about this potential research opportunity.

Relevant Regulatory Requirements for Offsets

This Biodiversity Offset Plan has been prepared in consideration of requirements outlined in the following documents:

- WA Environmental Offsets Policy (GoWA, 2011).
- WA Environmental Offsets Guidelines (GoWA, 2014).
- DWER WA Environmental offsets calculator (DWER, 2021).
- Guideline Environmental offsets metric: Quantifying environmental offsets in Western Australia (DWER, 2021).
- Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual (EPA, 2023).
- Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (DSEWPaC, 2012a).
- Offset Assessment Guide (DSEWPaC, 2012b).
- Approved recovery plans.
- Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan (DPaW, 2013).
- Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus baudinii and Forest Red-tailed Black Cockatoo Calyptorhynchus banksii naso) Recovery Plan (DEC, 2008).
- National Recovery Plan for the woylie Bettongia penicillata. Wildlife Management Program No. 51 (DEC, 2012b).
- Chuditch (Dasyurus geoffroii) Recovery Plan. Wildlife Management Program No. 54 (DEC, 2012a).
- Numbat (Myrmecobius fasciatus) Recovery Plan (DPaW, 2017).
- Threat abatement plans.
- Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi(DoEE, 2018).
- Threat abatement plan for predation by European red fox (DEWHA, 2008).
- Threat abatement plan for predation by feral cats (DotE, 2015).

- Threat abatement plan for competition and land degradation by rabbits (DoEE, 2016).
- Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa) (DoEE, 2017).
- Approved Conservation Advice for the Myrmecobius fasciatus (Numbat) (Threatened Species Scientific Community (TSSC) 2018a).
- Conservation Advice Bettongia penicillata woylie (Threatened Species Scientific Community (TSSC) 2018b).
- Approved Conservation Advice for Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo) (Threatened Species Scientific Community (TSSC) 2009a).
- Conservation Advice Calyptorhynchus baudinii Baudin's cockatoo (Threatened Species Scientific Community (TSSC) 2018c).

  Commonwealth Listing Advice on *Calyptorhynchus banksii naso* (Forest Red-tailed Black Cockatoo) (Threatened Species Scientific Community (TSSC) 2009b).

2. Summary of Significant Residual Impacts

The assessments conducted in the Referral have utilised the findings of the numerous surveys and studies completed in and around the Proposal. Further studies are currently being conducted to confirm environment values within the Proposal Footprint.

Newmont Boddington has assessed the residual impacts of the Proposal against the residual impact significance model provided in the WA Environmental Offsets Gudelines (EPA, 2014). The findings of this assessment is provided in Table 2-1.

Table 2-1 Assessment Against Residual Impact Significance Model

Relevant Part IV Environmental Factors	Vegetation and Flora					Terrestrial Fauna	
Part V Clearing Principles	**Rare flora**	**Threatened ecological communities**	**Remnant vegetation**	**Wetlands and waterways**	**Conservation areas**	**High biological diversity**	**Fauna habitat**
Residual impact that is environmentally unacceptable or cannot be offset	No residual impacts are considered to meet these criteria						
Significant residual impacts that will require an offset – all significant residual impacts to species and ecosystems are protected by statute or where the cumulative impact is already at a critical level.	No residual impacts are considered to meet these criteria: • No Threatened Flora records are located within the areas surveyed. • Impacts to Priority Flora are not considered significant.	No residual impacts are considered to meet these criteria as there are no TEC or PEC in the Proposal Footprint.	No residual impacts are considered to meet these criteria – all vegetation associations have over 80% of pre-European extent remaining	No residual impacts are considered to meet these criteria as no wetlands or waterways that are protected by statute lie within the RDE or would be indirectly impacted by the Proposal.	No clearing will occur in conservation areas	No residual impacts are considered to meet these criteria – refer above	Residual impacts to the following are considered likely to meet these criteria • FRTBC, BBC and CBC breeding and foraging habitat • Habitat for Wyolie, Numbat and Chutich The significant residual impacts are predicted to be clearing of: 475 ha of foraging habitat for BBC 475 ha of breeding habitat for CBC and 475 ha of foraging habitat. 479ha of breeding habitat and 503 ha of foraging habitat for FRTBC 517ha of Chuditch habitat 472 ha of Woylie habitat 500 ha low value Numbat habitat
Significant residual impacts that may require an offset – any significant residual impacts to potentially threatened species and ecosystems, areas of high environmental value or where the cumulative impact may reach critical levels if not managed	No residual impacts are considered to meet these criteria – refer above	No residual impacts are considered to meet these criteria	No residual impacts are considered to meet these criteria – refer above	No residual impacts are considered to meet these criteria – refer above	No residual impacts are considered to meet these criteria – refer above	No residual impacts are considered to meet these criteria – refer above	No other residual impacts are considered to meet these criteria – refer above
Residual impacts that are not significant	No residual impacts are considered to meet these criteria – refer above.	No residual impacts are considered to meet these criteria	Clearing of remnant vegetation is not considered to be a significant residual impact (noting other associated values are discussed separately in this table)	No significant wetlands (e.g. Ramsar) occur within the Proposal Footprint.	No residual impacts are considered to meet these criteria – refer above	No residual impacts are considered to meet these criteria or any other criteria above	Fauna habitats in the Proposal area are well represented locally and regionally and do not support species that are considered restricted to the area.

3. Proposed Offsets

To counterbalance the residual impact of the Proposal, Newmont Boddington is currently presenting two options. The final options will be determined pending detailed consultation and ecological and economic consideration. Newmont Boddington has identified two indicative offsets that are suitable as direct offsets for the impact from the Proposal including:

- Habitat Protection Offset – contains impacted values and includes protection and enhancement of 1,324 ha of quality native vegetation that could be managed to further reduce impacts of introduced flora and fauna to increase the habitat values for conservation significant species.
- Restoration Offset – Rehabilitation of 150 ha land on Hotham Farm to provide habitat and a corridor linking forest areas.

Values and Qualities of Offsets

Habitat Protection Offset

Phoenix (2025) conducted surveys of the Habitat Protection Offset (Figure 3- 1) to determine the presence of FRTBC, BBC, CBC breeding and foraging habitat and habitat for Woylie, Numbat and Chuditch. A summary of the offset values assessment is provided in Section 5 of the report. In summary, the report concludes the high number of conservation significant fauna recorded in the study area (including the Offset area) suggests the area serves as an important ecological refuge for significant mammals and provides extensive, high quality habitat for all three species of black cockatoos (Phoenix 2025).

The Phoenix (2025) assessment identified a total of 3,053.7 ha of high-quality foraging habitat occurs across the Habitat Protection Offset. Foraging habitat is represented by Wandoo woodland, Jarrah/Marri woodland, Jarrah/Marri/Allocasuarina woodland, and Eucalyptus woodland on valley floors. High value breeding habitat for CBC and FRTBC occurs in the Habitat Protection Offset and is represented by eucalypt-dominant habitat types. Breeding habitat for Baudin's Cockatoo was determined to be of low-value due to the species known breeding range occurring outside of the desktop search extent. The field surveyed recorded an average of 20.4 potential hollow trees Potential hollow tree (PHTs) per hectare from 1,169 PHTs recorded over a 50 ha sample area. From the 290 hollows identified in the field survey, none showed evidence of breeding or occupancy by black cockatoos or any other fauna. The total extrapolated number of hollows was 17,537 occurring inside the Habitat Protection Offset. Due to the specific nesting requirements of black cockatoos, the majority of these hollows are expected to be of unsuitable size.

Some conservation-significant mammals were recorded in relatively high concentrations throughout the survey, such as Western Brush Wallaby (768 records in the Combined Study Area, 364 in the Habitat Protection Area), Woylie (707 and 671 records, respectively), and Chuditch (646 records and 546 records, respectively). These species, along with others such as Quenda (332 and 65 records, respectively) and South-western Brush-tailed Phascogale (79 records and 71 records, respectively), indicate that both the Habitat Protection Offset and wider combined study areas provide suitable habitat with ample resources for foraging, denning, and shelter. However, these fauna may be locally concentrated in the higher quality patches of habitat which align with their niche. For example, in the Southwest, Quenda that inhabit Jarrah Forest are typically associated with watercourses, represented here by the Dam in the Worsley Study Area. It is therefore unsurprising that a majority of the survey records are concentrated to the west in the Worsley Study Area. While population estimates and modelling indicate the entire significant mammal assemblage recorded in the survey meet the industry benchmark standard of 20-50 individuals to establish a translocated population, these populations form part of a larger, more continuous population which extends beyond the boundaries of the study areas, and therefore it is not clear whether these populations would be viable and self-sustaining in isolation.

The high number of conservation significant species recorded suggests the Habitat Protection Offset provides valuable habitat with structurally diverse vegetation, abundant food resources, and connectivity to surrounding ecosystems. The prevalence of species like Chuditch (in all areas) and Woylie in the Habitat Protection Offset indicates that ground-dwelling mammals are still able to persist despite the presence of introduced predators. The abundance of Western Brush Wallabies further highlights the availability of suitable vegetation for foraging.

Survey results suggest the Habitat Protection Offset and the wider Combined Study Area serves as an important ecological refuge for conservation significant fauna. Habitat connectivity is known to be a key factor in supporting viable population of significant mammals, and the maintenance of high-quality ecological corridors between the Habitat Protection Offset and broader Jarrah Forest will assist in promoting gene flow and ecological continuity between populations in a partially fragmented and disturbed landscape.

Restoration Offset

Hotham Farm has been historically cleared for agriculture. The property has been utilised for crops as well as sheep and cattle farming. There is opportunity for rehabilitation and revegetation of a portion of the farm and for this are to fall under a form of conservation protection mechanism.

Restoration of degraded farmland has potential to create vegetation corridors that provides essential foraging, dispersal and refuge areas for MNES and priority species such as CBC, BBC, FRTBC, Woylie, Chuditch and Numbat.

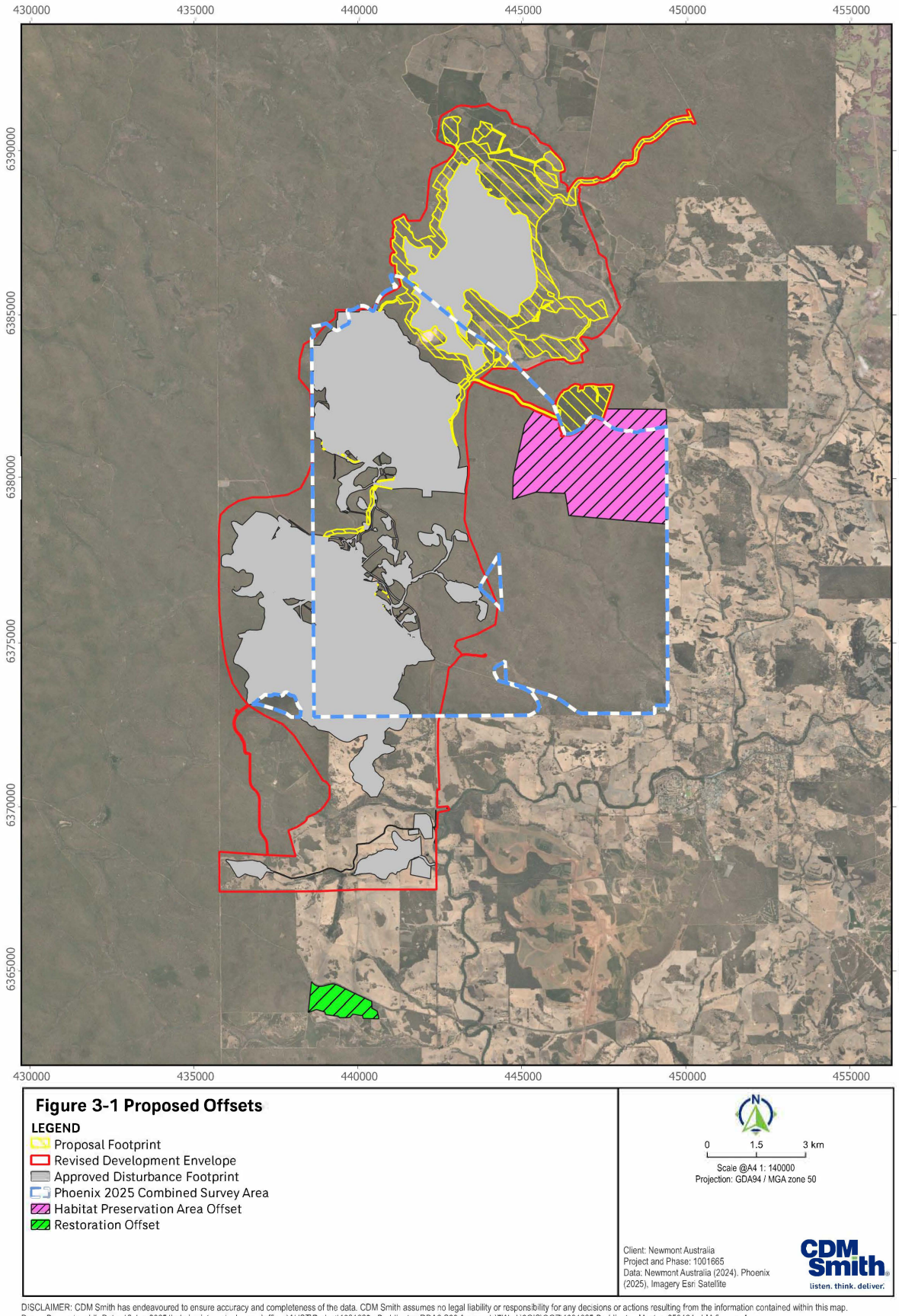


Figure 3- 1 Indicative offset locations

4. Proposed Offset Strategy

The overarching outcome of this Offset Strategy is to provide suitable offsets to counterbalance significant residual environmental impacts from the Proposal outlined in Section 3. Key objectives of this Offset Strategy that will be implemented to achieve the overarching outcome are:

- Establish suitable offsets to counterbalance significant residual impacts of the Proposal.
- Prevent future loss of and degradation to the existing environmental values of the offsets.
- Address threatening processes specific to the offset sites environmental values.

Protection Mechanisms

Newmont Boddington will work with DBCA, DCCEEW and EPA Services to determine suitable protective mechanisms for the proposed offsets.

Management of Proposed Offsets

Offsets include protection and maintenance activities to maintain (and potentially improve) the condition of the native vegetation and reduce the risk of potential degradation and loss.

Protection and maintenance activities may include:

- Demarcation of the offset sites.
- Access restrictions into vegetated areas to minimise damage from off-road vehicles.
- Erection of signs to identify the boundaries of the offset sites.
- Regular monitoring for signs of weed propagation, spread of dieback and changes in vegetation condition and foraging value.
- Implementation of the Weeds and Forest Disease Monitoring and Management Plan including:
    - Dieback Assessment Survey of the Habitat Protection Offset to determine dieback occurrence.
    - All vehicles and equipment will be cleaned free of any soil material to minimise the risk of weed or dieback introduction.
- Removal / treatment of weeds and treatment affected areas (if present).
- Implementation of the Terrestrial Fauna Management Plan and Black Cockatoo Management Plans including:
    - Regular monitoring for signs of feral animals (including Fox, Cat, Pig, Rabbit).
    - Feral animal control and management focussed on Pig, Cat and Rabbit.
- Investigate partnerships and joint management opportunities with local Aboriginal corporations.

Rehabilitation and Revegetation

Management of the Restoration Offset is proposed to be undertaken for an anticipated maximum of 20 years. Newmont Boddington intends to:

- Develop a plan and completion criteria based on SERA guidelines.
- Engage a suitable land management and habitat restoration consultant.
- Engage an experienced land care contractor.

Newmont Boddington will optimise rehabilitation by incorporating food plant (such as proteaceous shrubs) and hollow-producing tree species (such as wandoo, marri and jarrah) into the rehabilitation seed mixes.

This draws on current site rehabilitation processes and consider the following which is based on ongoing research:

- Understanding native vegetation succession and the importance of using fast growing proteaceous species (e.g. Banksia and Hakea) species which rapidly establish a thick shrub layer over the rehabilitated area which in turn provides foraging resources for black cockatoos.
- The importance of the short lived-proteaceous species which produce food in predictable seasons rather than jarrah and marri which vary in productivity subject to environmental conditions and may only flower every few years.
- The importance of the early establishment of marri due to the time lag before the species matures to a point where it produces a viable crop of foraging resources.

5. Assessment of Proposed Offsets

Newmont Boddington has completed an assessment of the proposed offset package against the WA Offsets Framework as per the requirements of the *WA Environmental Offsets Guideline* (EPA, 2014), provided in Table 5-1.

Table 5-1 Application of the WA Offsets Framework

	Mitigation				Offset Calculation Methodology				
Existing Environment/ Impact	**Avoid and Minimise**	**Rehabilitation Type**	**Likely Rehabilitation Success**	**Significant Residual Impact**	**Type**	**Risk**	**Likely Offset Success**	**Time Lag**	**Offset Quantification**
Clearing of: 475 ha of foraging habitat for BBC 475 ha of medium to high quality breeding habitat for CBC and 475 ha of foraging habitat. 479ha of medium to high quality breeding habitat and 503 ha of foraging habitat for FRTBC 517ha of Chuditch habitat 472 ha of Woylie habitat 500 ha low value Numbat habitat	Ecological surveys in the surround areas has been utilised to design the Proposal Footprint to avoid Mt Saddleback Heath PEC (P1) The Proposal utilises previously cleared areas and pine plantation where possible	Rehabilitation will be in accordance with the completion criteria. Targeting to meeting the 'Attributes of Restored Ecosystems' defined by The Society for Ecological Restoration (SER) (2004).	**Can the environmental values be rehabilitated /Evidence** Rehabilitation methods are relatively well-established for Northern Jarrah Forest species. It is acknowledged the effort and complexity involved with achieving the desired outcomes of re-establishing a functional and sustainable community, and that success cannot be guaranteed. Development of completion criteria will include objectives and performance targets and draws on current rehabilitation practices for Northern Jarrah Forest species. **Operator experience in undertaking rehabilitation** Experienced operators will be used to conduct the rehabilitation works, and will leverage existing practices. **What is the type of vegetation being rehabilitated** Jarrah/Marri and other species in the Northern Jarrah Forest **Time lag** Estimated 20 years. **Credibility of the rehabilitation proposed (evidence of demonstrated success)** Development of completion criteria will include objectives and performance targets and draws on current rehabilitation practices for Northern Jarrah Forest species.	Yes	Protection and maintenance of 1,324 ha of native vegetation in good or better condition.	Low - indicative areas identified with sufficient area suitable for use as an offset.	None as offset is protecting and maintaining existing native vegetation	No time lag as protects and maintains vegetation on agreement.	Offset provides protection and maintenance of vegetation in good or better condition. Commonwealth Calculator (DSEWPaC, 2012) and WA Offsets Calculator (DWER, 2021)
					Rehabilitation of 150 ha land	Medium - Development of completion criteria will include objectives and performance targets and draws on current rehabilitation practices for Northern Jarrah Forest species.	Refer to comments in 'Likely Rehabilitation Success' column of this table.	Rehabilitation rates estimated at least 20 years.	Offset provides revegetation Jarrah/Marri and other species in the Northern Jarrah Forest. Commonwealth Calculator (DSEWPaC, 2012) and WA Offsets Calculator (DWER, 2021)

Assessment Against WA and EPBC Offset Calculators

The Commonwealth and WA Governments have similar offset calculators that allow a general assessment of the suitability of offsets in counterbalancing the residual impacts of a proposal. The calculators consider the following factors:

- The quality of the impacted area and offset sites (with and without the offset being applied).
- The likelihood that the offset sites will be disturbed (with and without the offset being applied).
- The size of the offset areas.
- The likely change in quality with and without an offset.

The primary difference between the two calculators is how they factor in the rehabilitation of impacted areas. The WA Offset Calculator considers this in calculation of residual impact extent, while the EPBC Offset Calculator considers this as part of the offsets. Both assume suitable completion criteria are used.

The values used in the WA offsets calculator, and the justification for the value, is provided in Table 5-2. The values used in the EPBC offsets calculator, and the justification for the value is provided in Table 5-3.

Table 5-2 Criteria used in DWER Offsets Calculators

Criteria	Value Used	Justification / Rationale
Habitat Protection Offset		
Quality of offset area	8	The high number of conservation significant fauna recorded in the study area (including the Offset area) suggests that the area serves as an important ecological refuge for significant mammals and provides extensive, high quality habitat for all three species of black cockatoos (Phoenix 2025).
Future quality of offset site without offset	6	Risks of weeds, dieback, feral animals and other incremental impacts are likely over the 20 year offset period.
Future quality of offset site with offset	8	The site is currently in excellent condition. Values taken from Phoenix (2025). Risks of weeds and other incremental impacts could be mitigated or reduced over the 20 year offset period. Implementation of the protection mechanisms.
Time until ecological benefit	5 years	Protection and maintenance of the will be achieved through the implementation of the protection mechanisms (Section 4.1).
Confidence in offset result	90%	Predicted changes in quality are conservative therefore confidence is comparatively high.
Time until offset site secured	0 years	Newmont Boddington already owns the offset sites and intends to protect and maintain the offset following approval of the Proposal.
Risk of future loss of the offset site if offset was not in place	12%	Based on assessment of the risk of loss for local government areas across Australia, the Boddington local government area has a 12.36% risk of loss over 20 years.
Risk of future loss of the offset site if offset is in place	0	The future quality of the areas will be protected as Newmont Boddington will undertake measures that will enhance the proposed offset area. These activities will include the application of a protection mechanisms to protect the land in perpetuity, removal of rubbish and weeds from the area, introduce hygiene management protocols to minimise the spread of dieback, and carry our feral animal control. Revegetation will occur in those areas that have been identified as 'Cleared'" and areas of 'Plantation" and will be revegetated with endemic species that provide suitable fauna habitat to conservation significant fauna species.

Criteria	Value Used	Justification / Rationale
Restoration Offset		
Quality of offset area	0	Hotham Farm has been cleared and used for agriculture for several decades.
Future quality of offset site without offset	0	Hotham Farm has been cleared and used for agriculture for several decades. Site would be unlikely to carry any score for MNES and priority species if rehabilitation is not completed.
Future quality of offset site with offset	6	Rehabilitation methods are relatively well established for species in the Northern Jarrah Forest region and Newmont Boddington has working knowledge from existing restoration works at Hotham Farm. Newmont Boddington also aims to maximise the success of rehabilitation through the implementation of the Revised Proposal's Terrestrial Fauna Management Plan, Black Cockatoo Management Plan and Weed and Forest Disease Management Plan.
Time until ecological benefit	8	Rehabilitation methods are relatively well established for species in the Northern Jarrah Forest region. Realistic and achievable targets for the rehabilitation of the site will be set and delivered through development of plan and completion criteria based on SERA guidelines. The revegetation of long term cleared area may reinstate connectivity to remnant native vegetation, on freehold land and the surrounding State Forest. This may reduce fragmentation and help establish a functional and sustainable ecological community.
Confidence in offset result	90%	This parameter has been assigned a high confidence as the target quality is relatively low (i.e 90% confidence of achieving only 6/10).
Time until offset site secured	0 years	Newmont Boddington already owns the offset sites and intends to protect and maintain the offset following approval of the Proposal.
Risk of future loss of the offset site if offset was not in place	12%	Based on assessment of the risk of loss for local government areas across Australia, the Boddington local government area has a 12.36% risk of loss over 20 years.
Risk of future loss of the offset site if offset is in place	0	The future quality of the areas will be protected as Newmont Boddington will undertake measures that will enhance the proposed offset area. These activities will include the application of a protection mechanisms to protect the land in perpetuity, removal of rubbish and weeds from the area, introduce hygiene management protocols to minimise the spread of dieback, and carry our feral animal control. Revegetation will occur in those areas that have been identified as 'Cleared'" and areas of 'Plantation" and will be revegetated with endemic species that provide suitable fauna habitat to conservation significant fauna species.

Table 5-2 Criteria Used in EPBC Act Offset Calculator

Criteria	Value Used	Justification / Rationale
Habitat Protect Offset		
Quality of Habitat	8	The quality of the habitat has been assessed as an 8 (very good to excellent) based on the survey and report provided by Phoenix (2025).

Criteria	Value Used	Justification / Rationale
Time over which loss is averted	20 years	The land for the offset will be under Newmont Boddington's protection for a minimum of 20 years.
Start hectares	1,324	1,324 ha is available for the habitat protection to assist in achieving the 90% of the offset requirement. This will provide the majority of the requirement with the remainder will be made up with restoration
Risk of loss (%) without offset	12%	The DoEE Guidance (n.d.) for the assessment of the risk of loss for local government areas across Australian local government areas has assigned the Boddington local government area a 12.36% risk of loss over 20 years.
Risk of loss (%) with offset	0%	A value of 0% has been applied as Newmont Boddington own the land in Freehold and will secure its protection as outlined in Section 4.1.
Time until ecological benefit	5 years	It is assumed that 5 years will be required to improve the habitat value within this area. Works to improve the lands will commence immediately upon approval of the Revised Proposal, but it will take up to 5 years for those areas of revegetation to provide value to the species.
Start Quality	8	The vegetation within the proposed offset areas has been assessed as being high quality fauna habitat. The presence of introduced species, even in low numbers, suggests the need for ongoing management, particularly for feral pigs, foxes and cats.
Future Quality without offset	6	If no future actions were undertaken to protect or improve this area, the quality of the area is likely to decrease through illegal access, rubbish dumping, increase in the presence of weeds, dieback and feral animals.
Future quality with offset	8	The future quality of the areas will improve as Newmont Boddington will undertake measure that will enhance the proposed offset areas. These activities will include the application of a protection mechanisms to protect the land in perpetuity, removal of rubbish and weeds from the area, introduce hygiene management protocols to minimise the spread of dieback, and carry our feral animal control. Revegetation will occur in those areas that have been identified as 'Cleared'" and areas of 'Plantation" and will be revegetated with endemic species that provide suitable fauna habitat to conservation significant fauna species.
Confidence in results	90%	Protection and management of the proposed offset areas are expected to achieve results with a high degree of certainty given similar examples in the region.
Restoration Offset		
Quality of Habitat	0	Hotham Farm has been cleared and used for agriculture for several decades.
Time over which loss is averted	20 years	The land for the offset will be under Newmont Boddington's protection for a minimum of 20 years.
Start hectares	150	A minimum of 110 ha is required to achieve 90% of the offset requirement. 140 ha was used in the DWER calculator.
Risk of loss (%) without offset	12%	The DoEE Guidance (n.d.) for the assessment of the risk of loss for local government areas across Australian local government areas has assigned the Boddington local government area a 12.36% risk of loss over 20 years.
Risk of loss (%) with offset	0%	A value of 0% has been applied as Newmont Boddington own the land in Freehold and will secure its protection through a protection mechanism as outlined in Section 4.1 and will undertake active management.
Time until ecological benefit	8 years	It is assumed that 8 years will be required to improve the habitat value within this area. Restoration works will commence immediately upon approval of the Revised Proposal, but it will take up to 8 years for those areas of revegetation to provide habitat value to the species.
Start Quality	0	The vegetation within the proposed offset areas has been assessed as being medium to high quality fauna habitat with areas of disturbance, feral animals and weeds.
Future Quality without offset	0	If no future actions were undertaken to protect or improve this area, the quality of the area is likely to decrease through illegal access, rubbish dumping, increase in the presence of weeds, dieback and feral animals.

Criteria	Value Used	Justification / Rationale
Future quality with offset	6	The future quality of the areas will improve as Newmont Boddington will undertake measure that will enhance the proposed offset areas. These activities will include the application of a protection mechanism s to protect the land in perpetuity, removal of rubbish and weeds from the area, introduce hygiene management protocols to minimise the spread of dieback, and carry our feral animal control. Revegetation will occur in those areas that have been identified as 'Cleared'" and areas of 'Plantation" and will be revegetated with endemic species that provide suitable fauna habitat to conservation significant fauna species.
Confidence in results	90%	Protection and management of the proposed offset areas are expected to achieve results with a high degree of certainty given similar examples in the region.

Results of Offset Quantification

The proposed offsets has been assessed against the WA Offsets Calculator (DWER, 2021) and EPBC Offsets Calculator (DSEWPaC, 2012). The assessment was run in a series of 24 separate calculations (Table 5-4). The EPBC offset calculators have been provided in Appendix A and DWER offset calculators in Appendix B.

Based on the results, the Habitat Protection and Restoration offsets are considered suitable to offset the significant residual impact of the Proposal achieving over 90% for the EPBC requirement and over 100% for DWER.

Table 5-3 DWER and EPBC Act Offset Calculation Results

Species	EPBC Status	BC Act status	Significant Impact ha	Proposed Offset area ha	Direct Offset EPBC %	Direct Offset DWER %
Habitat Protection Offset						
BBC	EN	EN	475	1324	75.71	85.4
CBC	EN	EN	475		75.71	85.4
FRTBC	VU	VU	503		78.91	83.2
Chuditch	VU	VU	517		76.78	80.9
Numbat	EN	EN	500		71.92	81.2
Woylie	EN	CR	472		76.19	86.0
Restoration Offset						
BBC	EN	EN	475	150	19.07	24.7
CBC	EN	EN	475		19.07	24.7
FRTBC	VU	VU	503		19.75	25.1
Chuditch	VU	VU	517		19.22	24.2
Numbat	EN	EN	500		18.11	23.2
Woylie	EN	CR	472		19.19	24.9
Combined Offset %						
BBC					94.78	110.1
CBC					94.75	110.1
FRTBC					98.66	108.3
Chuditch					96	105.1
Numbat					90.03	104.4
Woylie					95.38	110.9

6. Offset Implementation

Table 6-1 provides the objectives, targets and completion criteria for the proposed offsets.

Table 6-1 Objectives, Targets and Completion Criteria - Direct

Objective	Target	Completion Criteria
Prevent future loss of and degradation to the existing environmental values of the Habitat Protection Offset	Conserve, maintain and enhance 1,324 ha of Jarrah Marri Forest within habitat protection offset	Protective mechanism over Land Title established. Three years of weed management and ongoing as required after monitoring. Implementation of feral animal protocols as dictated by monitoring. Control of access implemented to manage dieback.
Address the threatening processes specific to the habitat protect offset values environmental values		Initial and ongoing management works are completed in accordance with 4.2.
Restoration of BBC, CBC, FRTBC, Chuditch, woylie and Numbat habitat.	Restoration of 150 ha of new habitat	Development of plan and completion criteria based on SERA guidelines. Fencing for access control and protection from herbivores. Implementation of the plan until completion criteria are met as determined by monitoring.

Roles and responsibilities

Newmont Boddington is responsible for the implementation of the Offsets Strategy. Table 6-2 identifies the key roles and responsibilities for the implementation of offsets.

Table 6-2 Roles and Responsibilities

Role	Responsibility
General Manager	Provide resources and funding for ongoing works required for the Habitat Protection and Restoration Offsets during operations.
Director, Environment	Overseeing the implementation of the offset strategy, inclusive of monitoring, management and reporting on the status of the proposed offset and rehabilitation under this plan.

Stakeholder Engagement

Newmont Boddington will work with DBCA, DCCEEW and EPA Services to determine the most appropriate protective mechanism over the proposed offset sites. Where land is subject to a State Agreement, these key stakeholders will be engaged.

Management of the offset sites is proposed to be undertaken for a minimum of 20 years. Restoration actions are anticipated to commence prior to commencement of the Proposal.

Financial Arrangements

Newmont Boddington own the land on which all direct offsets are located and will therefore be responsible for providing adequate resources and funding through the budgeting processes to deliver the proposed offsets.

Monitoring

At a minimum, an annual review of management actions will be undertaken to ensure compliance with offset requirements, identify whether targets and key performance indicators have been met and ensure that monitoring obligations have been fulfilled. Monitoring actions will be undertaken by the Newmont Environmental Team or suitably qualified contractor authorised to undertake fauna monitoring activities in accordance with Newmont Boddington Protocols.

Reporting

Reporting on the implementation of this Offset Strategy will be undertaken annually as required to comply with conditions of approval issued by DWER and DCCEEW (i.e. Annual Compliance Reporting).

7. Review and Revision

This Offset Strategy will be reviewed prior to implementation to incorporate feedback from EIA assessment process, final offset site boundaries and governance arrangements, and then at least every five years, or in response to the following:

- Significant reduction in residual impacts (i.e. if offset requirements are reduced)
- Significant environmental incident that threatens the success of the proposed offsets
- When there is a need to improve performance in an area of environmental conservation
- When there are changes to activities that are being managed under this plan
- When there are new activities that should be managed under this plan.

The review is to assess whether the Biodiversity Offset Strategy is achieving its objectives and the requirements of approval conditions. The review is to consider environmental monitoring records, response actions taken and the results of any internal and external audits. During the review process, the reasons for varying the Biodiversity Offset Strategy are to be documented. The review may be initiated by any party that has a management responsibility for the implementation of the offsets.

8. Definitions, Terms, and Abbreviations

Offset Plan	Biodiversity Offset Strategy
Revised Proposal	Newmont Boddington Life of Mine Amendment Proposal – Revised Proposal
Mt	Million tonnes
RDA	Residue Disposal Area
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
SRI	Significant residual impacts
EPA	Environmental Protection Authority
WA	Western Australia
Km	Kilometres
Approved Proposal	Newmont Boddington Gold Mine approved under Ministerial Statement 971
IBRA	Interim Biogeographic Regionalisation of Australia
BC Act	*Biodiversity Conservation Act 2016*
MNES	Matters of national environmental significance
DWER	Department of Water and Environmental Regulation
DCCEEW	Department of Climate Change, Energy, the Environment and Water
PEC	Priority Ecological Communities
RDE	Revised Development Envelope
PF	Proposed footprint
AI	Artificial intelligence

9. References

Department of Environment and Conservation (DEC). 2008. 'Forest Black Cockatoo (Baudin's Cockatoo Calyptorhynchus Baudinii and Forest Red-Tailed Black Cockatoo Calyptorhynchus Banksii Naso) Recovery Plan'.

Department of Environment and Conservation (DEC). 2012a. 'Chuditch (Dasyurus Geoffroii) National Recovery Plan'.

Department of Environment and Conservation (DEC). 2012b. 'National Recovery Plan for the Woylie (Bettongia Penicillata Ogilbyi)'.

Department of Environment, Water, Heritage and the Arts (DEWHA). 2008. 'Threat Abatement Plan for Predation by the European Red Fox'.

Department of Parks and Wildlife (DPaW). 2013. 'Carnaby's Cockatoo (Calyptorhynchus Latirostris) Recovery Plan'.

Department of Parks and Wildlife (DPaW). 2017. 'Numbat (Myrmecobius Fasciatus) Recovery Plan'.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). 2012a. 'Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy'. Canberra, Australian Capital Territory: DSEWPAC. https://www.awe.gov.au/sites/default/files/documents/offsets-policy_2.pdf.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). 2012b. 'How to Use the Offsets Assessments Guide'. Canberra, Australian Capital Territory: DSEWPAC.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). 2012c. 'Offset Assessment Guide'. https://www.dcceew.gov.au/environment/epbc/approvals/offsets/guidance/offsets-assessment-guide.

Department of the Environment and Energy (DoEE). 2016. 'Threat Abatement Plan for Competition and Land Degradation by Rabbits'.

Department of the Environment and Energy (DoEE). 2017. 'Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs (Sus Scrofa)'.

Department of the Environment and Energy (DoEE). 2018. 'Threat Abatement Plan for Disease in Natural Ecosystems Caused by Phytophthora Cinnamomi'. Department of the Environment and Energy, Canberra, Australian Capital Territory. https://www.awe.gov.au/sites/default/files/documents/tap-phytophthora-cinnamomi-2018.pdf.

Environmental Significance - Significance Impact Guidelines 1.1'. Commonwealth of Australia.

Department of the Environment (DotE). 2015. 'Threat Abatement Plan for Feral Cats'.

Department of Water and Environmental Regulation (DWER). 2021. 'DWER WA Environmental Offsets Calculator'.

Department of Agriculture and Water Resources (DAWE) 2022, Referral guideline for 3 WA threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black cockatoo, Department of Water and the Environment, Canberra, ACTEnvironmental Protection Authority (EPA). 2023. 'Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual'.

Environmental Protection Authority (EPA). 2024. 'Considering Environmental Offsets at a Regional Scale'. Government of Western Australia.

Government of Western Australia (GoWA). 2011. 'WA Environmental Offsets Policy'. Perth, Western Australia: GoWA. www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WAEnvOffsetsPolicy-270911.pdf.

Government of Western Australia (GoWA). 2014. 'WA Environmental Offsets Guidelines'. Perth, Western Australia: GoWA. www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA%20Environmental%20Offsets%20Guideline%20August%202014.pdf.

Mattiske Consulting Pty Ltd (Mattiske). 2021. 'Assessment of Flora and Vegetation on Worsley Mine Expansion Primary Assessment Area'. Unpublished Report prepared for South32 Worsley Alumina Pty Ltd.

Mattiske Consulting Pty Ltd (Mattiske). 2024. 'Assessment of Flora and Vegetation Values on Hotham Farm'.

Newmont Boddington. 2025. 'Referral Supporting Document Life of Mine Amendment Proposal – Revised Proposal'.

Phoenix Environmental Sciences (Phoenix). 2025. 'Targeted Significant Mammal and Black Cockatoo Survey for the Boddington Gold Project'. Prepared for Newmont Boddington.

Threatened Species Scientific Community (TSSC). 2009a. 'Approved Conservation Advice for Calyptorhynchus Banksii Naso (Forest Red-Tailed Black Cockatoo)'. Canberra: Department of the Environment, Water, Heritage and the Art. http://www.environment.gov.au/biodiversity/threatened/species/pubs/67034-conservation-advice.pdf.

Threatened Species Scientific Community (TSSC). 2009b. 'Commonwealth Listing Advice on Calyptorhynchus Banksii Naso (Forest Red-Tailed Black Cockatoo)'. Department of the Environment, Water, Heritage and the Arts. http://www.environment.gov.au/biodiversity/threatened/species/pubs/67034-listing-advice.pdf.

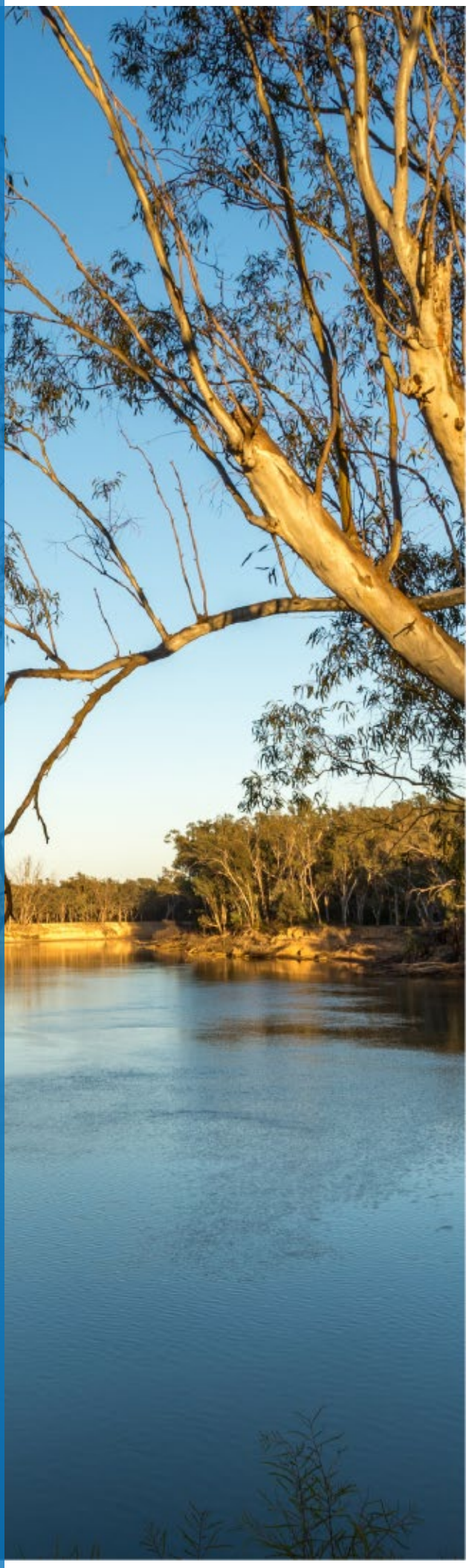
Threatened Species Scientific Community (TSSC). 2018a. 'Approved Conservation Advice for Myrmecobius Fasciatus (Numbat)'. Canberra: Department of the Environment and Energy. http://www.environment.gov.au/biodiversity/threatened/species/pubs/294-conservation-advice-15022018.pdf.

Threatened Species Scientific Community (TSSC). 2018b. 'Conservation Advice Bettongia Penicillata Woylie'. Commonwealth Government - Department of the Environment and Energy. http://www.environment.gov.au/biodiversity/threatened/species/pubs/213-conservation-advice-01022018.pdf.

Threatened Species Scientific Community (TSSC). 2018c. 'Conservation Advice Calyptorhynchus Baudinii Baudin's Cockatoo'. Canberra: Department of the Environment and Energy. http://www.environment.gov.au/biodiversity/threatened/species/pubs/769-conservation-advice-15022018.pdf.

EPBC DCCEEW Calculator Sheets

Habitat Protection and Restoration



DCCEEW Calculator - Baudins Black Cockatoo Habitat Protection Site

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
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	475	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	380.00	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	380.00	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	112.64	287.69	75.71%	No	
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0								
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.70				
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		Count										0		0.00	0.00	#DIV/0!	#DIV/0!		
Condition of habitat Change in habitat condition, but no change in extent	No																			

DCCEEW Calculator - Baudins Black Cockatoo Habitat Restoration Site

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
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	475	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	380.00	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	380.00	Adjusted hectares	150	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	12.76	72.45	19.07%	No		
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0								
					Time until ecological benefit	8	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	90%	5.40	4.91				
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		Count										0		0.00	0.00	#DIV/0!	#DIV/0!		
Condition of habitat Change in habitat condition, but no change in extent	No																			

DCCEEW Calculator – Carnaby's Black Cockatoo Habitat Protection Site

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	CBC
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	475	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	380.00	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 Excel for	Yes	Hollow trees	12		Count	
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	380.00	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	112.64	287.69	75.71%	No	
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0								
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.70				
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	12	Count		2		24		12		24		12	90%	10.80	10.55	87.88%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			

DCCEEW Calculator – Carnaby's Black Cockatoo Habitat Restoration Site

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	CBC
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	475	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	380.00	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 Excel for	Yes	Hollow trees	12		Count	
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	380.00	Adjusted hectares	150ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	12.76	72.45	19.07%	No	
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0								
					Time until ecological benefit	8	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	90%	5.40	4.91				
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	12	Count		2		24		12		24		12	90%	10.80	10.55	87.88%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			

DCCEEW Calculator – Chuditch Habitat Protection Site

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	Chuditch
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	517	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	413.60	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	413.60	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	137.39	317.55	76.78%	No	
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0								
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.78				
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																			

DCCEEW Calculator – Chuditch Habitat Restoration Site

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	Chuditch
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	517	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	413.60	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 Excel for	No	Hollow trees	12			
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	413.60	Adjusted hectares	150 ha consisting of all Habitat Restoration	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	15.57	79.49	19.22%	No	
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0								
					Time until ecological benefit	8	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	90%	5.40	5.31				
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	12			2		24		12		24			90%						
Condition of habitat Change in habitat condition, but no change in extent	No																			

DCCEEW Calculator – FRTBC Habitat Protection Site

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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	503	Hectares	Insert survey report here
			Quality	8	Scale 0-10	
			Total quantum of impact	402.40	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	402.40	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	137.39	317.55	78.91%	No	
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0								
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.78				
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																			

DCCEEW Calculator – FRTBC Habitat Restoration Site

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.

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

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%

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	503	Hectares	Insert survey report here
			Quality	8	Scale 0-10	
			Total quantum of impact	402.40	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	402.40	Adjusted hectares	150 ha consisting of all Habitat Restoration	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	15.57	79.49	19.75%	No	
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0								
					Time until ecological benefit	8	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	90%	5.40	5.31				
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																			

DCCEEW Calculator – Numbat Habitat Protection Site

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	Numbat
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	500	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	400.00	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 Excel for	No	Hollow trees	12			
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	400.00	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	112.64	287.69	71.92%	No		
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0									
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.70					
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	12			2		24		12		24			90%							
Condition of habitat Change in habitat condition, but no change in extent	No																				

DCCEEW Calculator – Numbat Habitat Restoration Site

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	Numbat
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	500	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	400.00	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	400.00	Adjusted hectares	150 ha consisting of all Habitat Restoration	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	12.76	72.45	18.11%	No		
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0									
					Time until ecological benefit	8	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	90%	5.40	4.91					
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																				

DCCEEW Calculator – Woylie Habitat Protection Site

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	Woylie
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 Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	472	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	377.60	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	377.60	Adjusted hectares	1324 ha consisting of all Habitat Protection	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	1324	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	158.88	90%	142.99	112.64	287.69	76.19%	No	
									Future area without offset (adjusted hectares)	1165.1	Future area with offset (adjusted hectares)	1324.0								
					Time until ecological benefit	5	Start quality (scale of 0-10)	8	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	90%	1.80	1.70				
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																			

DCCEEW Calculator – Woylie Habitat Restoration Site

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	Woylie
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

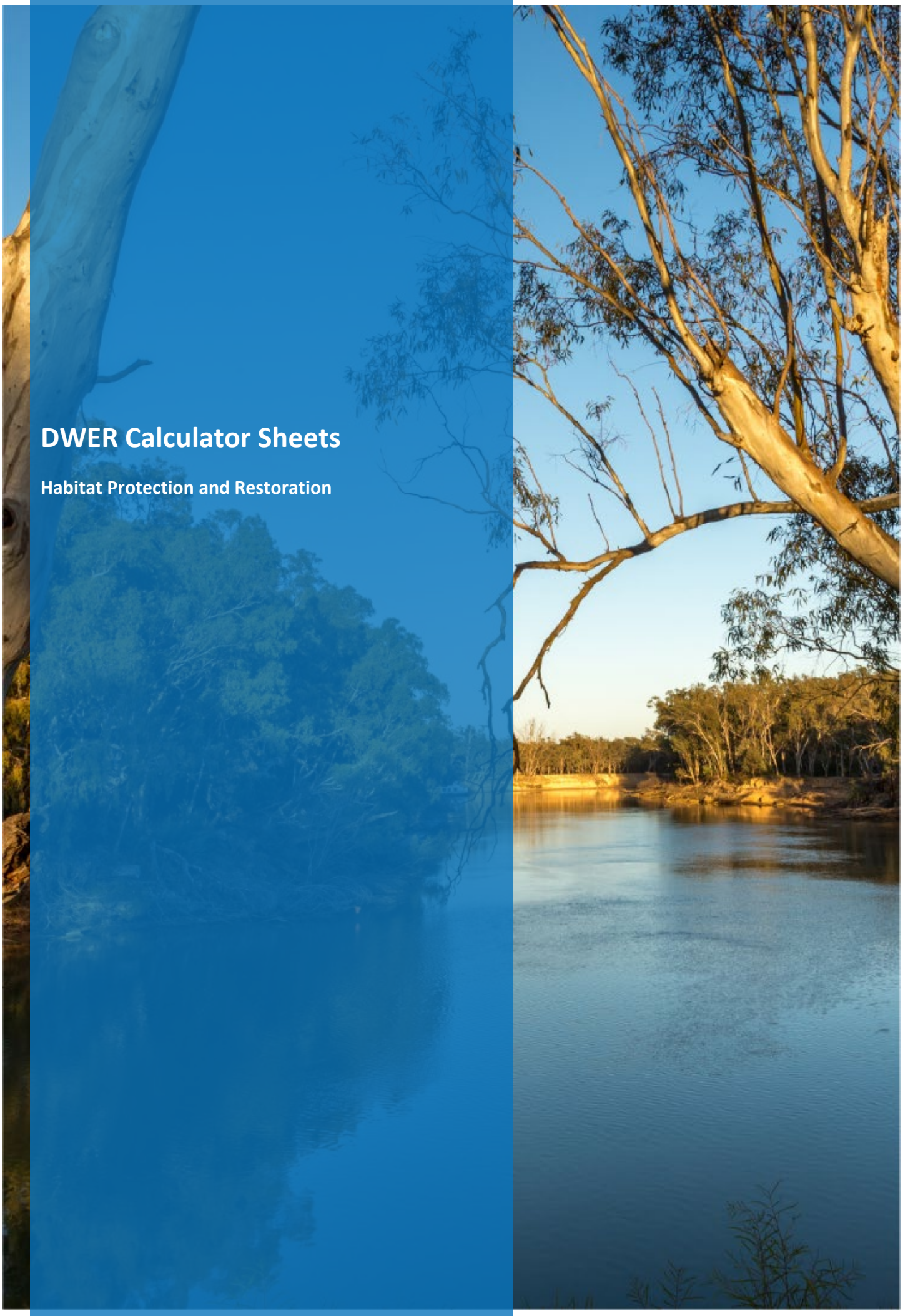
Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community Excel for	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat Excel for	Yes	RDA2	Area	472	Hectares	
			Quality	8	Scale 0-10	
			Total quantum of impact	377.60	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 Excel for	No					
Condition of habitat Change in habitat condition, but no change in extent Excel for	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	Yes	377.60	Adjusted hectares	150 ha consisting of all Habitat Restoration	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	150	Risk of loss (%) without offset	12%	Risk of loss (%) with offset	0%	18.00	90%	16.20	12.76	72.45	19.19%	No	
									Future area without offset (adjusted hectares)	132.0	Future area with offset (adjusted hectares)	150.0								
					Time until ecological benefit	8	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	90%	5.40	4.91				
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																			

DWER Calculator Sheets

Habitat Protection and Restoration



DWER Calculator - Baudins Black Cockatoo Habitat Protection Site

Key:
- Data to be entered
- Drop-down selection
- Automatically-generated scores (Or, if appropriate, manual data entry perm

Area / feature (Impact site)

Conservation significance determination for the environmental value impacted	
Description	Baudin's Black cockatoo
Type of environmental value	Species (flora/fauna)
Conservation significance of environmental value	Rare/threatened species - endangered
Conservation significance score	1.2%

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

Part A: Significant impact calculation *Area*

Description	Quantum of impact	
	Significant impact (hectares)	475.00
	Quality (scale)	8.00
	Total quantum of impact	380.00

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

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*

Total quantum of impact	380.00
Rehabilitation credit	0.00
Significant residual impact	380.00

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

Environmental value (step 1)	Baudin's Black cockatoo	Significant impact (step 2, part A)	475.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	380.00

Area (offset site)

Offset calculation *Area*

Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	324.68
	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00		85.4%
	Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	5.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator - Baudins Black Cockatoo Restoration Site

Area / feature (Impact site)

(Or, if appropriate, manual data entry permi

Conservation significance	Conservation significance determination for the environmental value impacted	
	Description	Baudin's Black cockatoo
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

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

Area (impact site)

Significant impact	Part A: Significant impact calculation *Area*	
Description	Quantum of impact	
	Significant impact (hectares)	475.00
	Quality (scale)	8.00
	Total quantum of impact	380.00

Rehabilitation Credit	Part B: Rehabilitation credit calculation *Area* (onsite)			
Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years)	8.00
	Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
	Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	73.63
	Future quality WITH rehabilitation (scale)	6.00		

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	380.00
	Rehabilitation credit	73.63
	Significant residual impact	306.37

Environmental value (step 1)	Baudin's Black cockatoo	Significant impact (step 2, part A)	475.00
		Rehabilitation credit (step 2, part B)	73.63
		Significant residual impact (step 2, part C)	306.37

Area (offset site)

Offsets calculation	Offset calculation *Area*					
Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	75.59
	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00		24.7%
	Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	8.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator - Carnaby's Black Cockatoo Habitat Protection Site

(Or, if appropriate, manual data entry permi

Area / feature **(Impact site)**

Conservation significance determination for the environmental value impacted		
Conservation significance	Description	Carnaby's Black cockatoo
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

Part A: Significant impact calculation *Area*		
Description	Quantum of impact	
Significant impact	Significant impact (hectares)	475.00
	Quality (scale)	8.00
	Total quantum of impact	380.00

Part B: Rehabilitation credit calculation *Area* (onsite)				
Description	Proposed rehabilitation (area in hectares)		Time until ecological benefit (years)	
Rehabilitation Credit	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	380.00
	Rehabilitation credit	0.00
	Significant residual impact	380.00

Environmental value (step 1)	Carnaby's Black cockatoo	Significant impact (step 2, part A)	475.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	380.00

Area **(offset site)**

Offset calculation *Area*						
Offsets calculation	Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value 324.68
		Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00	85.4%
		Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%	
		Time until ecological benefit (years)	5.00			
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE? NO

DWER Calculator - Carnaby's Black Cockatoo Restoration Site

Area / feature **(Impact site)**

Conservation significance		
Conservation significance determination for the environmental value impacted		
	Description	Carnaby's Black cockatoo
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

Area **(impact site)**

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
		Significant impact (hectares)	475.00
		Quality (scale)	8.00
		Total quantum of impact	380.00

Part B: Rehabilitation credit calculation *Area* (onsite)				
Rehabilitation Credit	Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years) 8.00
		Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%) 90.0%
		Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit 73.63
		Future quality WITH rehabilitation (scale)	6.00	

Part C: Significant residual impact calculation *Area*		
Significant residual impact	Total quantum of impact	380.00
	Rehabilitation credit	73.63
	Significant residual impact	306.37

Environmental value (step 1)	Carnaby's Black cockatoo	Significant impact (step 2, part A)	475.00
		Rehabilitation credit (step 2, part B)	73.63
		Significant residual impact (step 2, part C)	306.37

Area **(offset site)**

Offset calculation *Area*						
Offsets calculation	Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value 75.59
		Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00	24.7%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%	
		Time until ecological benefit (years)	8.00			
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE? NO

DWER Calculator - Chuditch Habitat Protection Site

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

Conservation significance		
Conservation significance determination for the environmental value impacted		
	Description	Chudditch
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened Species - vulnerable
	Conservation significance score	0.2%

***Area* (impact site)**

Significant impact	Part A: Significant impact calculation *Area*	
Description	Quantum of impact	
	Significant impact (hectares)	517.00
	Quality (scale)	8.00
	Total quantum of impact	413.60

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

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	413.60
	Rehabilitation credit	0.00
	Significant residual impact	413.60

Environmental value (step 1)	Chudditch	Significant impact (step 2, part A)	517.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	413.60

***Area* (offset site)**

Offsets calculation	Offset calculation *Area*					
Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	334.74
	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00		80.9%
	Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	5.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator - Chuditch Habitat Restoration Site

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

Conservation significance	Conservation significance determination for the environmental value impacted	
	Description	Chuditch
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened Species - vulnerable
	Conservation significance score	0.2%

Significant impact	Part A: Significant impact calculation *Area*	
Description	Quantum of impact	
	Significant impact (hectares)	517.00
	Quality (scale)	8.00
	Total quantum of impact	413.60

Rehabilitation Credit	Part B: Rehabilitation credit calculation *Area* (onsite)			
Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years)	8.00
	Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
	Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	79.72
	Future quality WITH rehabilitation (scale)	6.00		

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	413.60
	Rehabilitation credit	79.72
	Significant residual impact	333.88

Environmental value (step 1)	Chuditch	Significant impact (step 2, part A)	517.00
		Rehabilitation credit (step 2, part B)	79.72
		Significant residual impact (step 2, part C)	333.88

***Area* (offset site)**

Offsets calculation	Offset calculation *Area*					
Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	80.95
	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00		24.2%
	Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	8.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator – FRTBC Habitat Protection Site

Area / feature (Impact site)

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

Area (impact site)

Part A: Significant impact calculation *Area*			
Significant impact	Description	Quantum of impact	
		Significant impact (hectares)	503.00
		Quality (scale)	8.00
		Total quantum of impact	402.40

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	402.40
	Rehabilitation credit	0.00
	Significant residual impact	402.40

Environmental value (step 1)	Forest Red-Tailed Black Cockatoo	Significant impact (step 2, part A)	503.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	402.40

Area (offset site)

Offset calculation *Area*						
Offsets calculation	Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value 334.74
		Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00	83.2%
		Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%	
		Time until ecological benefit (years)	5.00			
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE? NO

DWER Calculator – FRTBC Habitat Restoration Site

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

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

***Area* (impact site)**

Significant impact	Part A: Significant impact calculation *Area*	
Description	Quantum of impact	
	Significant impact (hectares)	503.00
	Quality (scale)	8.00
	Total quantum of impact	402.40

Rehabilitation Credit	Part B: Rehabilitation credit calculation *Area* (onsite)			
Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years)	8.00
	Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
	Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	79.72
	Future quality WITH rehabilitation (scale)	6.00		

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	402.40
	Rehabilitation credit	79.72
	Significant residual impact	322.68

Environmental value (step 1)	Forest Red-Tailed Black Cockatoo	Significant impact (step 2, part A)	503.00
		Rehabilitation credit (step 2, part B)	79.72
		Significant residual impact (step 2, part C)	322.68

***Area* (offset site)**

Offsets calculation	Offset calculation *Area*					
Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	80.95
	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00		25.1%
	Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	8.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator – Numbat Habitat Protection Site

Area / feature **(Impact site)**

Conservation significance		
Conservation significance determination for the environmental value impacted		
	Description	Numbat
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

Area **(impact site)**

Significant impact			
Part A: Significant impact calculation *Area*			
	Description	Quantum of impact	
		Significant impact (hectares)	500.00
		Quality (scale)	8.00
		Total quantum of impact	400.00

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

Significant residual impact		
Part C: Significant residual impact calculation *Area*		
	Total quantum of impact	400.00
	Rehabilitation credit	0.00
	Significant residual impact	400.00

Environmental value (step 1)	Numbat		
		Significant impact (step 2, part A)	500.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	400.00

Area **(offset site)**

Offsets calculation						
Offset calculation *Area*						
	Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value 324.68
		Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00	81.2%
		Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%	
		Time until ecological benefit (years)	5.00			
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE? NO

DWER Calculator – Numbat Habitat Restoration Site

Area / feature **(Impact site)**

Conservation significance		
	Conservation significance determination for the environmental value impacted	
	Description	Numbat
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	**1.2%**

Area **(impact site)**

Significant impact	Part A: Significant impact calculation *Area*		
	Description	**Quantum of impact**	
		Significant impact (hectares)	500.00
		Quality (scale)	8.00
		Total quantum of impact	400.00

Rehabilitation Credit	Part B: Rehabilitation credit calculation *Area* (onsite)			
	Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years)	8.00
		Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
		Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	73.63
		Future quality WITH rehabilitation (scale)	6.00		

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	400.00
	Rehabilitation credit	73.63
	Significant residual impact	326.37

Environmental value (step 1)	Numbat	Significant impact (step 2, part A)	500.00
		Rehabilitation credit (step 2, part B)	73.63
		Significant residual impact (step 2, part C)	326.37

Area **(offset site)**

Offsets calculation	Offset calculation *Area*					
	Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value 75.59
		Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00	23.2%
		Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)
		Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%	
		Time until ecological benefit (years)	8.00			
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE? NO

DWER Calculator – Woylie Habitat Protection Site

Area / feature (Impact site)

Conservation significance		
Conservation significance determination for the environmental value impacted		
	Description	Woylie
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

Area (impact site)

Significant impact		
Part A: Significant impact calculation *Area*		
Description	Quantum of impact	
	Significant impact (hectares)	472.00
	Quality (scale)	8.00
	Total quantum of impact	377.60

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

Significant residual impact		
Part C: Significant residual impact calculation *Area*		
Total quantum of impact	377.60	
Rehabilitation credit	0.00	
Significant residual impact	377.60	

Environmental value (step 1)	Woylie	Significant impact (step 2, part A)	472.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	377.60

Area (offset site)

Offsets calculation						
Offset calculation *Area*						
Description	Proposed offset (area in hectares)	1324.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	324.68
	Current quality of offset site (scale)	8.00	Time until offset site secured (years)	0.00		86.0%
	Future quality WITHOUT offset (scale)	6.00	Risk of future loss WITHOUT offset (%)	12.0%		
	Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	0.0%	(applied to step 2, part A)	
	Time until ecological benefit (years)	5.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO

DWER Calculator – Woylie Habitat Restoration Site

Area / feature (Impact site)

Conservation significance		
Conservation significance determination for the environmental value impacted		
	Description	Woylie
	Type of environmental value	Species (flora/fauna)
	Conservation significance of environmental value	Rare/threatened species - endangered
	Conservation significance score	1.2%

Area (impact site)

Significant impact	Part A: Significant impact calculation *Area*	
Description	Quantum of impact	
	Significant impact (hectares)	472.00
	Quality (scale)	8.00
	Total quantum of impact	377.60

Rehabilitation Credit	Part B: Rehabilitation credit calculation *Area* (onsite)			
Description	Proposed rehabilitation (area in hectares)	150.00	Time until ecological benefit (years)	8.00
	Current quality of rehabilitation site (scale)	0.00	Confidence in rehabilitation result (%)	90.0%
	Future quality WITHOUT rehabilitation (scale)	0.00	Rehabilitation credit	73.63
	Future quality WITH rehabilitation (scale)	6.00		

Significant residual impact	Part C: Significant residual impact calculation *Area*	
	Total quantum of impact	377.60
	Rehabilitation credit	73.63
	Significant residual impact	303.97

Environmental value (step 1)	Woylie	Significant impact (step 2, part A)	472.00
		Rehabilitation credit (step 2, part B)	73.63
		Significant residual impact (step 2, part C)	303.97

Area (offset site)

Offsets calculation	Offset calculation *Area*					
Description	Proposed offset (area in hectares)	150.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	75.59
	Current quality of offset site (scale)	0.00	Time until offset site secured (years)	0.00		24.9%
	Future quality WITHOUT offset (scale)	0.00	Risk of future loss WITHOUT offset (%)	12.0%	(applied to step 2, part A)	
	Future quality WITH offset (scale)	6.00	Risk of future loss WITH offset (%)	0.0%		
	Time until ecological benefit (years)	8.00				
	Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	NO