Earl Grey Lithium Project – Life of Mine

Threatened Fauna Offset Strategy and Management Plan

Covalent Lithium

Report

JBS&G 64174 | 170,833 Rev 4V1

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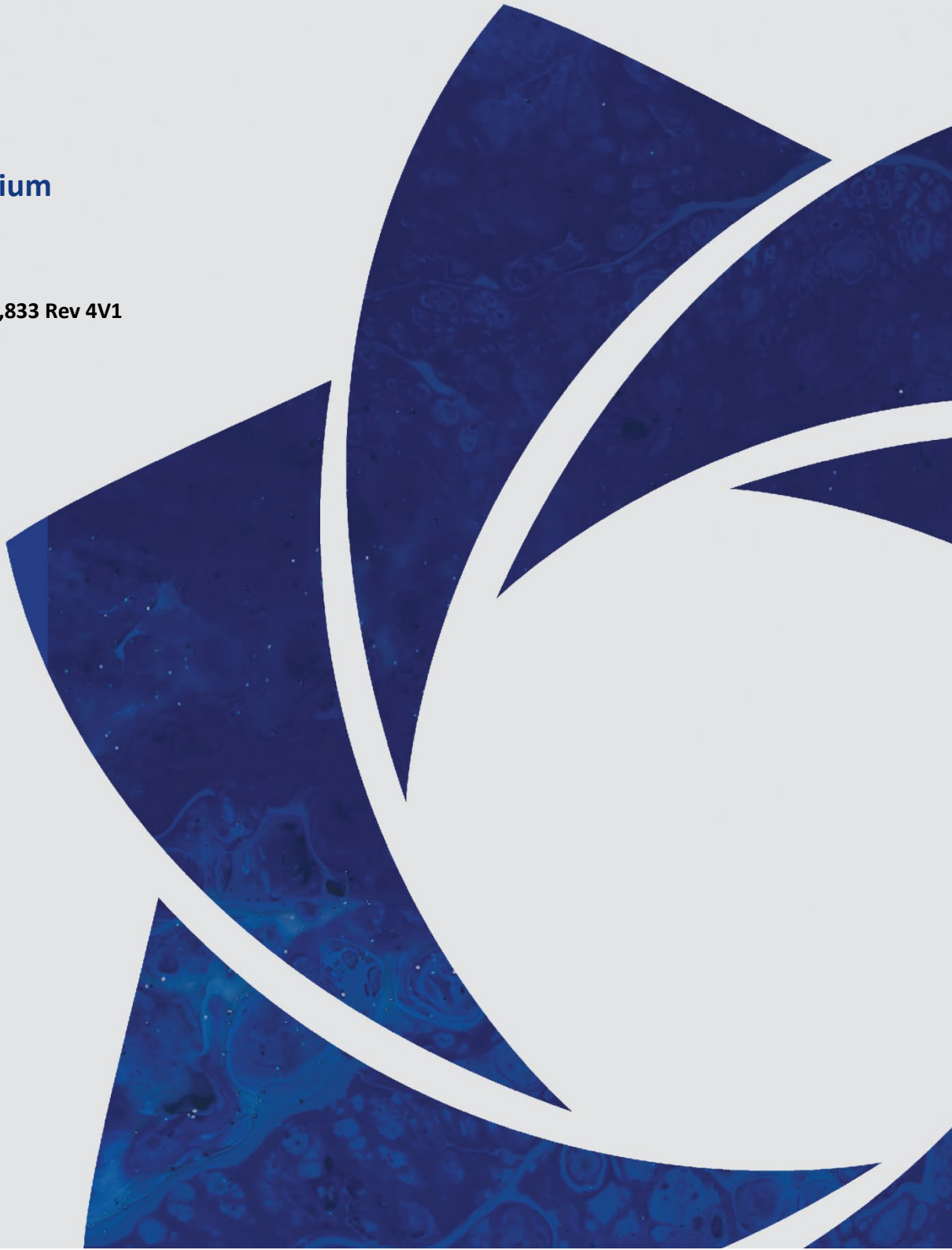

We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.

Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte

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Abbreviations

Term	Definition
BC Act	*Biodiversity Conservation Act 2016*
DBCA	Department of Biodiversity, Conservation, and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DCCEEW	Department of Climate Change Energy the Environment and Water
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
GWW	Great Western Woodlands
LOM	Life of Mine
MNES	Matter of National environmental significance
MS	Ministerial Statement
NMRG	National Malleefowl Recovery Group
SRI	Significant Residual Impact
UCL	Unallocated Crown Land

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1. Introduction

1.1 Proposal

The Earl Grey Lithium Project (the Approved Project) is located approximately 105 km south–southeast of Southern Cross, Western Australia in the Shire of Yilgarn (Figure 1-1). Covalent Lithium (Covalent) is a joint venture between Wesfarmers Limited and Sociedad Química y Minera.

A large, economic pegmatite–hosted lithium deposit was discovered by Kidman Resources Limited in 2016. The deposit is situated at the previously abandoned Mt Holland Mine Site, which operated between 1988 and 2001, and comprised of open pits, an underground mine, a processing plant, waste rock dumps, tailings storage facilities and associated infrastructure.

The Project is currently approved under the *Environmental Protection Act 1986* (EP Act) via Ministerial Statement 1199 (MS 1199) and the *Environment Protection and Biodiversity Protection Act 1999* (EPBC Act), under conditions of approval for MS 2017/7950.

Covalent is now seeking approval for the completion of mining activities and associated disturbance for the remaining life of mine. A proposal for the Life of Mine (the LOM Proposal) is currently under assessment by the Environmental Protection Authority (EPA) (Assessment 2387) and by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) as a Controlled Action (reference: EPBC 2023/09711).

The LOM Development Envelope and the Approved Project area intersect with habitat of two conservation listed fauna species, the Malleefowl (*Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*). Both species are listed at the conservation level of 'Vulnerable' (VU) under the Commonwealth EPBC Act and the Western Australian (WA) *Biodiversity Conservation Act 2016* (BC Act). While progressive rehabilitation will be undertaken and a Mine Closure Plan will ensure the environmental values of the native vegetation are restored following the LOM, the LOM Proposal includes additional clearing requirements, and as such a suitable offset package is required in accordance with the EP Act and the EPBC Act.

1.2 Summary of offset requirements and approach

The LOM Proposal will have a residual impact on conservation significant fauna, related to the additional clearing of 1443 ha of native vegetation which represents:

- 1443 ha Malleefowl habitat; and
- 1430 ha Chuditch habitat.

In summary, Covalent proposes to directly offset the clearing associated with the LOM Proposal by implementing a landscape-scale predator control and monitoring program over the life of the mine operation. This will target and reduce one of the key *Threatening Processes* for Malleefowl and Chuditch according to DCCEEW (2024) *National Recovery Plan for the Malleefowl (Leipoa ocellata)*, and DEC (2012) *Chuditch (Dasyurus geoffroii) National Recovery Plan*. Managing threatening processes will improve existing habitat quality for both species in the vicinity of the impact area which aligns with policy and guidance as discussed in section 5.

The Commonwealth and WA environmental offsets policies and guidelines have been considered throughout this strategy:

Commonwealth

- *Environment Protection and Biodiversity Conservation Act 1999;*
- Australian Government's EPBC Act Environmental Offset Policy (DSEWPaC, 2012a);
- Offsets assessment guide (excel spreadsheet) (DSEWPAC, 2012b) and "How to use the offsets assessment" guide (DSEWPAC, 2012c);

- Policy statement: Advanced environmental offsets under the Environment Protection and Biodiversity Conservation Act 1999 (DotEE, 2017). – Advanced offsets fact sheet (DoEE, 2018);
- EPBC Act Offset Policy Principles (DCCEEW, 2022); and
- Habitat Quality Scoring Tools (DCCEEW, 2024).

Western Australia

- *Environmental Protection Act 1986;*
- *Biodiversity Conservation Act 2016;*
- WA Government's Environmental Offset Policy (GoWA, 2011)– outlines the principles for the use of offsets – WA Environmental Offsets Register (2013) – Central public record of all offset agreements in WA, providing transparency and accountability;
- *WA Environmental Offsets Guidelines* (GoWA, 2014) – complements the policy by clarifying how environmental offsets will be determined and applied;
- Environmental offsets metric: Quantifying environmental offsets in Western Australia (DWER, 2021);
- Considering offsets at a regional scale (EPA, 2024); and
- WA Feral Cat Strategy 2023-2028 (DBCA, 2023).

1.3 Purpose of this document

This document has been developed to facilitate the approval of the LOM Proposal and provides Covalent's proposed approach to counterbalancing the significant residual impact to fauna habitat associated with the LOM Proposal.

Background to the project is provided in section 2. The proposed strategy including a rationale for the approach, the requirement for an offset based on WA and Commonwealth calculations and a high level description of the proposed program is set out in sections 3, 4 and 5. Management of the offset is set out in section 6.

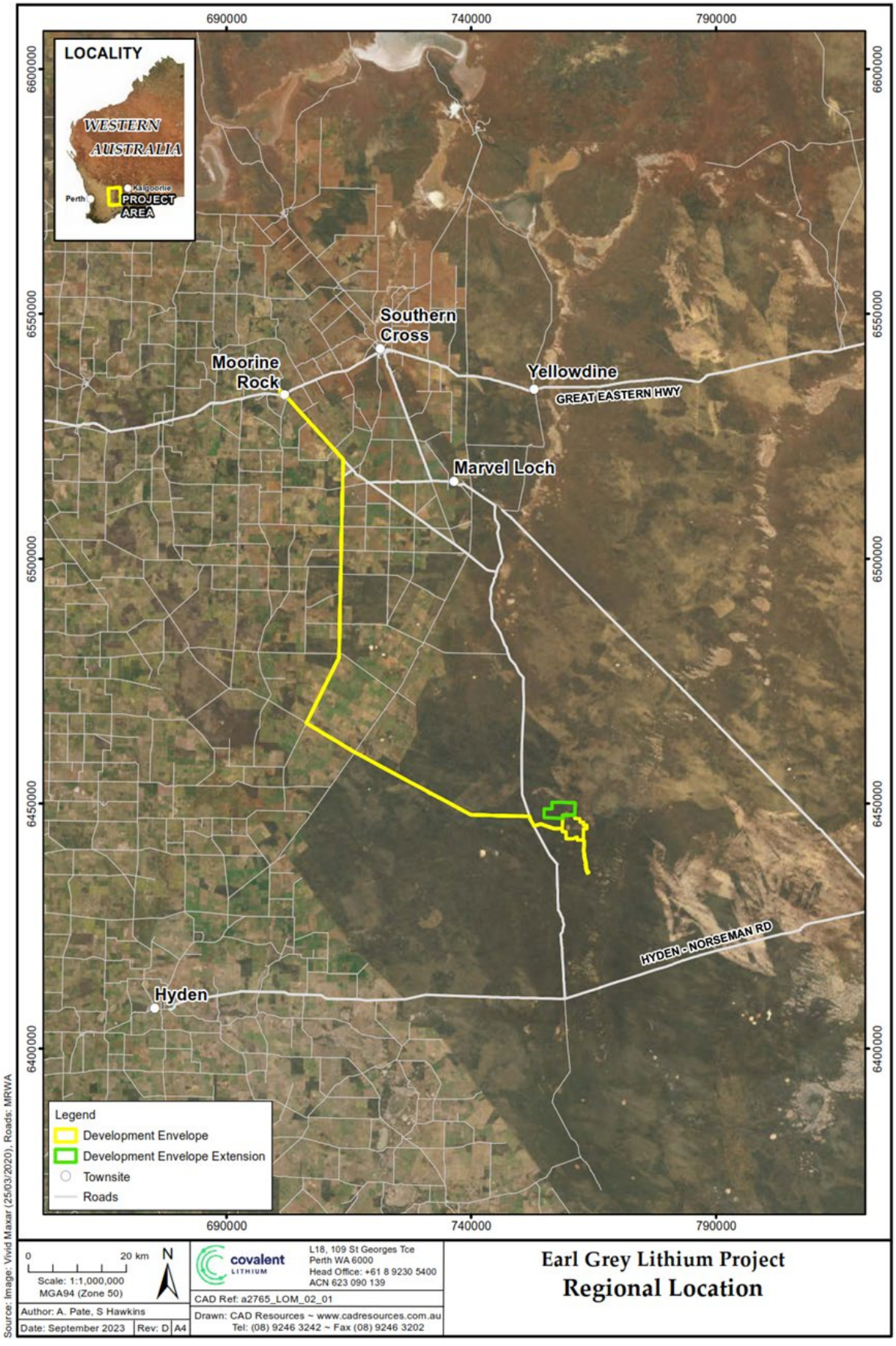

Figure 1-1: Early Grey Lithium Project regional location (as submitted in Covalent's ERD)

2. History

2.1 Approved project

The Approved Project was granted initial environmental approval in November 2019 under the EP Act through MS 1118, and in February 2020 granted approval under the EPBC Act through EPBC Decision 2017/7950.

Following these initial environmental assessments and approvals, the Project was amended under the EP Act through MS 1167 (change to implementation conditions), MS 1199 (change to Proposal), and under the EPBC Act through EPBC Decision 2017/7950 approval variations (change to Proposal and implementation conditions).

Covalent is authorised to clear 442 ha of native vegetation through the Approved Project.

2.2 Offset background

In assessment of the Approved Project, the EPA concluded that it would impact terrestrial fauna values, related to:

- clearing of potential breeding and foraging habitat for Malleefowl and Chuditch;
- potential direct impacts from feral animals; and
- indirect impacts on potential habitat from weeds, altered fire regimes, dust, and hypersaline water used for dust suppression.

The EPA determined that after avoidance and mitigation measures, the residual impact of the clearing listed above was significant. Consistent with both Commonwealth and WA offset frameworks and policies, Covalent was required to counterbalance this significant residual impact, as follows.

Original approval (MS 1118)

Under the original approvals in 2019 (MS 1118) and 2020 (EPBC 2017/7950), Covalent was required to offset impacts to 386 ha Malleefowl and 386 ha Chuditch habitat. Acquisition of "Site 10", in the Shire of Yilgarn was proposed, approved and subsequently acquired by Covalent. The offset site is a 1788-ha parcel of previously unprotected, freehold land on Lot 958 of Parcel 214324, located on Emu Fence Rd and Dunbar Rd in Skeleton Rock, Shire of Yilgarn. Site 10 is predominately remnant vegetation representing suitable habitat for the two species, and provides strong connectivity to the adjacent extensively vegetated Great Western Woodlands (GWW). It is intended that the site be transferred into the conservation reserve system, with discussions with the Department of Biodiversity, Conservation and Attractions (DBCA) currently ongoing. The alternative will be to use conservation covenant over the title to protect the site in perpetuity.

Revised Proposal (MS1199)

Approval for a revised proposal, which included an additional clearing requirement of 56 ha of foraging and breeding habitat for Malleefowl and Chuditch (a 15 percent increase), was granted in 2022 (MS 1199 & EPBC 2017/7950). Covalent prepared Fauna Offset Strategy (Rev 5 V2 January 2026) to address the revised total clearing requirement of 442 ha of native vegetation, and offset the additional significant residual impact to fauna habitat, which was approved in February 2026.

In addition to Site 10 discussed above, a second freehold land parcel which provides habitat for both fauna species was identified, which would be acquired for protection and conservation, referred to as 'Warralakin'. The Warralakin offset site is 260 ha, on Lot 366 of Parcel 203231, located on Echo Valley Rd in Warralakin, Shire of Westonia.

The Revised Proposal Fauna Offset Strategy provides 100 percent of the Approved Project's offset requirements (original and revised), to allow the Approved Project impacts to 442 ha native vegetation,

comprising 436 ha of foraging and breeding habitat for Malleefowl; and 442 ha of foraging and potential breeding habitat for Chuditch.

2.3 Skeleton Rock Fire 2025

In January 2025, lightning strike started a large regional fire which burnt approximately 35,000 ha of native vegetation in the local area, including approximately 2,500 ha within the Development Envelope, and the southwest corner of Jilbadji Nature Reserve (Figure 2-1). All baseline flora and fauna surveys had been undertaken for the LOM Proposal prior to the fire. Evidence from a fire in 2015 just south of the Development Envelope indicate that the *Banksia dolichostyla* was observed flowering six years post-fire, with many individuals carrying more than three flowers per plant. While the rate of maturation to a reproductive state in natural vegetation is dictated in part by seasonal conditions and soil fertility, it is expected that the native vegetation burnt in the Skeleton Rock fire will fully recover to its pre-fire state in 20 to 30 years.

Implications for the program are further discussed in section 6.5.

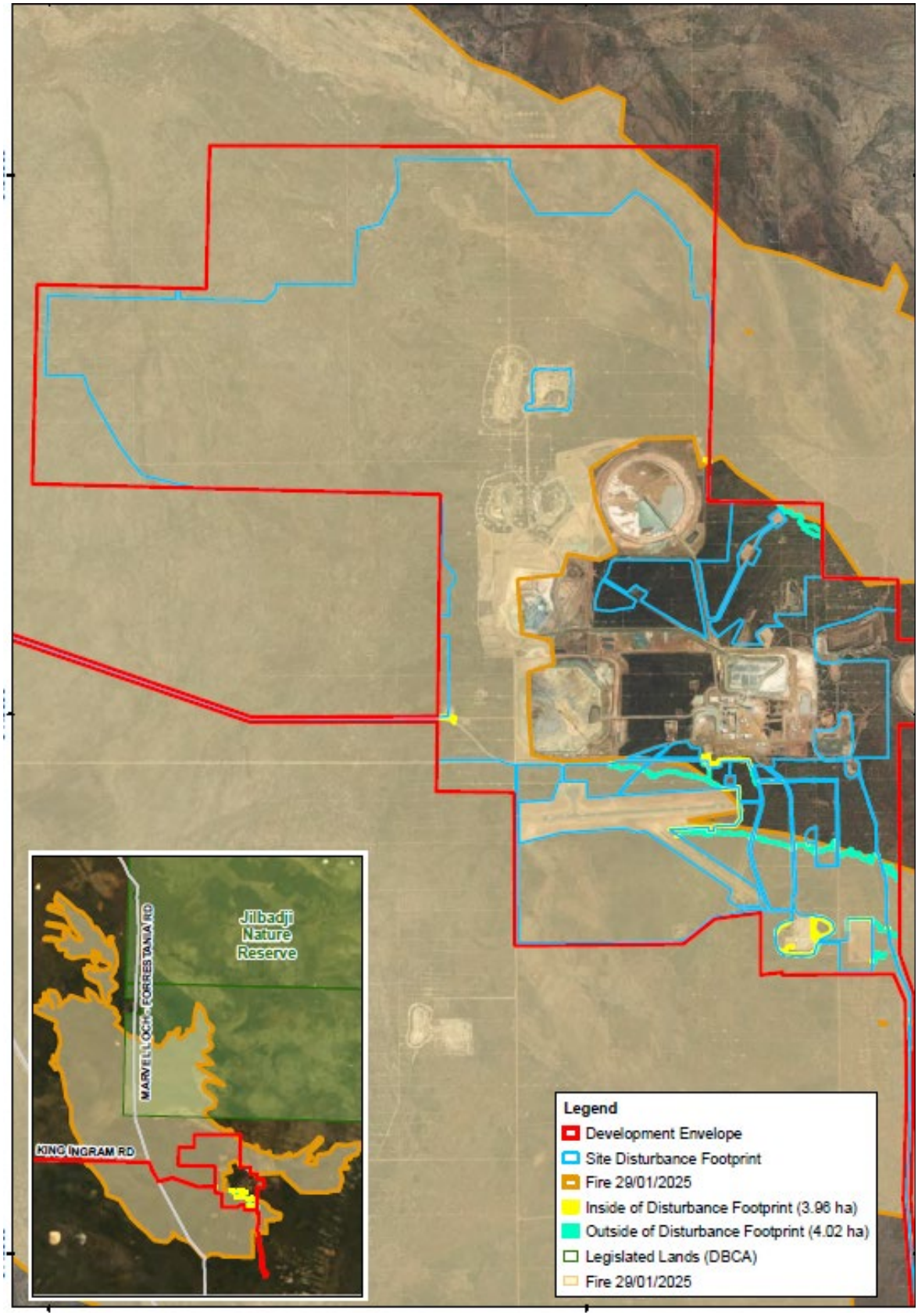

Figure 2-1 Impact of 2025 bushfire at Proposal and Jilbadji Nature Reserve

3. Clearing requirement for LOM Proposal

The LOM Proposal proposes to increase the clearing of native fauna habitat by 1,443 ha to a total of 1885 ha. Table 3-1 compares clearing for approved aspects of the project, changes proposed and total clearing requirements. As discussed in section 2.2, impacts associated with the clearing of 442 ha native vegetation have already been addressed though conditions in MS 1199 and the implementation of the approved Fauna Offset Strategy. Therefore, this document relates only to the additional clearing associated with the LOM Proposal, that is 1,443 ha of fauna habitat.

Table 3-1 Clearing for approved aspects of the project, changes proposed and total cumulative impact

Impact	MS1199 Approved Impact (ha)	Change in impact as a result of this LOM Proposal (ha)	Total cumulative impact (ha)
Development Envelope	2,347	1,649	4,009[1]
Disturbance Footprint	882	1,526	2,408
Clearing Footprint	442	**1,443**	1,885

1: Total = 3996 ha plus 13 ha as per s43A (for new booster stations) = 4009 ha

3.1 Understanding of LOM Development Envelope

The flora, vegetation and fauna values have been subject to numerous biological surveys over multiple years and seasons by suitably qualified and experienced personnel in the survey and identification of flora taxa and vegetation units and native fauna. The results of the biological surveys provide a sound basis on which to assess the potential environmental impacts of the LOM Proposal. In summary, the surveys indicate that the flora and vegetation is important to support the numerous fauna species including mammals, birds, reptiles and frogs, including Chuditch and Malleefowl. Further information is set out in the ERD, and a list of relevant surveys is found in Appendix A.

In summary, three broad fauna habitats were identified across the Development Envelope and broader region (Mattiske 2018, 2023):

- Mallee woodland
- Salmon Gum woodland
- Shrubland.

Biological surveys identify the LOM Proposal Development Envelopment and surrounds contain a variety of terrestrial fauna, including fauna taxa of listed conservation significance protected under the State BC Act and the EPBC Act.

3.2 Impact avoidance and minimisation

In accordance with the 'Mitigation Hierarchy', planning for the LOM Proposal has sought to avoid / minimise the potential environmental impacts to the recorded fauna values as far as practicable. Most notably, the Disturbance Footprint for the Proposal comprises more than 20 % of previously cleared / disturbed land associated with the previously abandoned Mt Holland Mine Site (523 ha of total 2,408 ha Disturbance Footprint); thereby substantially reducing the area of fauna habitat (native vegetation) clearing required for the Proposal.

Covalent's ERD sets out a range of measures to minimise impacts to significant fauna, including Fauna Protection Areas, consisting of a 100 m avoidance buffer established around active Malleefowl mounds, and exclusion of access to native vegetation that contains active Malleefowl mounds, as well as on-site warning signage.

4. Residual impacts and offset quantum

4.1 Key environmental values impacted by LOM Proposal

The Key Environmental Factors and Matters of National Environmental Significance (MNES) identified during assessment of the Proposal and relevant to this offset strategy are:

- 'Terrestrial Fauna' (EP Act) related to the loss of Chuditch and Malleefowl habitat as a result of clearing of native vegetation; and
- 'Fauna Habitat' (EPBC Act) related to:
  - Malleefowl *Leipoa ocellata* (EPBC-Vulnerable)
  - Chuditch *Dasyurus geoffroii* (EPBC-Vulnerable)

4.1.1 Quantum of impact

The residual impact of the LOM Proposal is:

- loss of 1443 ha Malleefowl habitat; and
- loss of 1430 ha Chuditch habitat.

Covalent's impact assessment indicates that whilst the impact of the LOM Proposal to *individuals* of Malleefowl and Chuditch is not considered to be environmentally significant, the impact to the *fauna habitats* occupied by these taxa is likely to be significant and require offset. Therefore, Covalent has calculated the offset requirements related to the loss of fauna habitat in 'area'. The quantum of impact calculated using the WA calculator (Appendix B) and a comparison with the Commonwealth calculator (Appendix C) is in Table 4-1.

Table 4-1 Quantum of impact for two species, based on Commonwealth and WA calculator methodology

Species	Attribute		Quantum of Impact (ha) WA	Quantum of Impact (ha) Commonwealth
	Residual impact (ha)	Quality score		
Chuditch	1430	8	1144	1144
Malleefowl	1443	8	1154.40	1154.40

Table 4-1 demonstrates that the quantum of impact is the same using the WA environmental offset calculator and the Commonwealth's offset calculator. As a conservative approach, Covalent has adopted the quantum of impact associated with Malleefowl habitat, 1154.4 ha, as it is the larger of the two species.

4.1.2 Significant residual impact

The WA calculator allows for the consideration of a rehabilitation credit, to reduce the significant residual impact of the Proposal. While the LOM Development Envelope will be rehabilitated at the end of life, on advice of DWER, a rehabilitation credit has not been included in calculation of the significant residual impact for the LOM Proposal (and the EPBC calculator does not include a rehabilitation credit step).

Therefore, the significant residual impact considered by Covalent is 1154.40 ha based on the WA and Commonwealth's calculators (refer to Appendix B and Appendix C).

4.2 Scale of offset required to counterbalance significant residual impact

The WA offset calculator indicates the area of suitable habitat required to adequately (at least 100 %) counterbalance the significant residual impact of 1154.40 ha of Malleefowl and Chuditch habitat associated with the LOM proposal is approximately 9,600 ha (Table 4-2), the EPBC calculator initially required approximately 10,100 ha.

A summary of the attributes used in the calculators is provided in the Table 4-2 below. Covalent has taken a conservative approach and assumed there is a hypothetical high value site with like for like values available to purchase, and improvement is achieved via ongoing active land management (e.g. fire control, weed and predator control, fencing for stock exclusion etc).

Table 4-2 Offset calculator inputs and outputs to address LOM proposal impacts to fauna habitat

Attribute	Quantum	Justification/assumptions
Conservation significance determination	0.2	Based on Vulnerable status
Residual impact	1443 ha	Using highest impact (Malleefowl)
Quality scale prior to clearing	8	Impact site quality based on previous impact assessments
Quantum of impact	1154.40	As per WA and EPBC offset calculator, having regard for conservation status and quality score.
Significant residual Impact	1154.40	As per WA and EPBC offset calculator, having regard for the quantum of impact (and no rehabilitation credit).
Start quality (current quality of offset site)	8	Assuming acquisition of high value site with equivalent quality to impact site.
Future quality without offset	7	Assuming some degradation may occur over time without active management.
Future quality with offset	8	Assuming ongoing management actions to maintain existing quality.
Duration of offset implementation	20 years	Maximum duration
Time to ecological benefit	1 year	Based on land available for purchase
% of impact	100.4 % (WA calc) 100.1% (EPBC calc)	As per WA and EPBC offset calculators, offset requirement met with over 100% of the impact offset
Required offset area	9,600 ha (WA calc) 10,1000 (EPBC calc)	Minimum area of land required to achieve 100% offset using the above inputs

Following subsequent reconsideration of inputs and recalculation of offsets requirements, in consultation with DCCEEW, the required EPBC Act offset requirement for both species is in the order of 36,000 ha.

As discussed in section 2.2, the impacts to Malleefowl and Chuditch habitat associated with the Approved Project will be addressed through a proposed land acquisition strategy. However, as identified in section 5.2, this approach is no longer available to adequately offset the impacts associated with the LOM impacts, particularly given the quantum of land required (36,000 ha). To adequately counterbalance the impact of the LOM therefore, Covalent is proposing an alternative threat abatement strategy, as described in section 6.

Table 4-3 provides a comparison of the proposed approach with what would otherwise have been required with the traditional approach of land acquisition.

Maximum residual impact	Quantum of Impact using Commonwealth and WA calculators	Equivalent land acquisition requirement to achieve at least 100% offset	Approximate area of Chuditch and Malleefowl habitat to be improved by Covalent through this offset
Up to 1443 ha of habitat that supports Malleefowl (and 1430 ha Chuditch habitat)	1154.40 ha	9,600 ha (WA calculator) 36,000 ha (Commonwealth)	37,500 ha

As is further described in section 6, the proposed offset will improve approximately 37,500 ha of habitat suitable for both fauna species. In comparison to the quantum of impact, this is approximately 30 times the area of impacted habitat. Therefore, the proposed offset is considered more than adequate to counterbalance at least 100 % of the significant residual impact to Malleefowl and Chuditch habitat.

5. Rationale for proposed offset strategy

There are four types of offsets that are usually considered in an offset strategy. These options are:

- Land acquisition;
- On ground management;
- Research; and
- Contributing to offset fund.

As discussed in section 2.2, Covalent has previously adopted an approach of land acquisition to address the significant residual impacts to fauna habitat associated with the approved aspects of the project. Land acquisition is a common approach to offsetting, and can represent a clear 'like for like' offset. This document proposes a different approach, as explained below, to offset the significant residual impact of the LOM Proposal. This decision was based on several key reasons, in particular the key threatening processes to the conservation significant fauna species impacted by the proposed clearing (section 5.1), and the availability of land within the vicinity of the impact (section 5.2). While taking an alternative approach presents challenges, Covalent is committed to achieving the greatest environmental outcomes, specific to the impact and most appropriate for the location.

Rationale for the proposed approach is set out further in this section, as well as how the proposed offset aligns with National Recovery Plans for Chuditch and Malleefowl (Table 5-3), the WA Offsets Framework (Table 5-1), and the EPBC Environmental Offsets Policy (Table 5-2).

5.1 Threatening processes

To deliver the greatest potential conservation gain, Covalent's proposed program targets the key threatening process for native fauna in the GWW region, in this case, predation by (and competition with) introduced foxes and cats.

The National Recovery Plans for Malleefowl and Chuditch outlines several other threatening processes that impact Chuditch and Malleefowl.

Land clearing, and associated habitat loss, alteration and fragmentation is a key threatening process for both species across the country. However, the Proposal is located within the GWW which is largely intact and in the Coolgardie Bioregion approximately 98 % of pre-European vegetation extent remains (Government of WA 2019). Therefore, specific to the local populations of Malleefowl and Chuditch impacted by the Proposal, land clearing is most likely not the greatest threat.

Similarly, given the remote, unpopulated location, mortality on roads (Malleefowl) and deliberate or accidental death (Chuditch) are unlikely to pose significant threats to local populations.

Malleefowl is also threatened by herbivores, grazing and weeds. The presence of herbivores (grazing) and weeds reduce habitat quality and are therefore secondary or contributing to threats. In this case, grazing as a threat to habitat is limited due to the proximity to an expansive nature reserve, and surveys of the Development Envelope indicate limited weed occurrences.

Fire is a threat to Malleefowl. As discussed in section 2.3, the January 2025 skeleton rock fire impacted the local area including sections of the Development Envelope. Covalent will assist the recovery of native fauna species by managing introduced predators which can thrive in an open post-fire landscape. Covalent will implement a Bushfire Management Plan and fire mitigation measures within the Development Envelope, which is contiguous the offset site. In addition, Covalent will contribute to fire management within the offset site and adjacent native vegetation through an agreement with DBCA and contribution to the Southern Range Fire Mitigation Plan (section 6.6).

Contingency measures in the event of a fire are discussed in section 7.

5.2 Land availability / Offset scarcity

In the Yilgarn region, a direct offset approach of land acquisition for transfer into conservation reservation is technically difficult, as 'Freehold' land with large blocks of native vegetation are scarce (the majority of freehold land having been previously cleared for agriculture). Where large blocks of native vegetation exist, they are often of Unallocated Crown Land (UCL) tenure vested with the State Government; and therefore, unavailable for purchase as offsets.

On this basis, Covalent reviewed its land acquisition approach to offsetting to date in consultation with a Senior Consultant Zoologist, Bruce Turner. Mr Turner has extensive experience relevant to the LOM Proposal, including undertaking numerous Malleefowl and Chuditch surveys in the region and for the Approved Project. The review confirmed that the traditional approach of land acquisition, while suitable to date (inclusive of the approved Project), may not be the best approach for the long-term LOM Proposal. In the context of the scale of land acquisition required (as established in section 4.2), Mr Turner's conclusion is based on the following findings:

- there is limited availability of suitable land for purchase, and any remaining land available for purchase is comprised of small pockets of native vegetation, which are discontinuous, scattered and fragmented over multiple properties which would require subdivision; and
- what land is available abuts existing DBCA conservation estates which are currently not actively managed for pests and predators. The additional land parcels offer limited value to the conservation estate given the lack of management, and responsibility with no foreseeable plan or funding to control predators in and around the existing reserves has limited conservation gains.

On these two points, first, the home range of the Chuditch is relatively large – with males requiring over 15 km^2 (1500 ha) which is larger than most suitable land parcels available for purchase. It is also accepted that fragmentation of habitat, for example in the Wheatbelt where remaining pockets of native vegetation are small, scattered and not contiguous in a highly cleared landscape, has an impact on ecosystem processes, and can result in further habitat decline and species loss from the increase in edge effects such as weed and predator incursion. For this reason, the protection of larger areas of habitat, or at the very least, management of small remnants at the landscape scale, has a greater conservation gain for native fauna (Saunders & Hobbs, 1994).

Second, a growing body of literature suggestions that for an offset site to succeed in providing conservation gains, management measures, in particular predator control, are vital to protect existing populations of conservation significant fauna, and ensure the continued viability of the habitat into the future.

5.3 Additionality

As discussed in detail in section 6.2, the offset site is within Unallocated Crown Land (UCL) within 15 km of Jilbadji Nature Reserve, an A class reserve vested in the conservation and Parks Commission (CPC), with the DBCA as the managing authority. Management actions within regional parks and reserves by DBCA can involve controlling threatening processed such as weeds, feral animals, introduced predators and fire. Management of parks and reserves in the region is guided by the *Wheatbelt Region Parks and Reserves Management Plan 2021*, which covers more than 131,000 km^2. Introduced predator control is implemented by DBCA's Western Shield program, who bait for foxes and cats in some of the nature reserves in the region. Howeverowever there are no threat abatement measures currently being implemented within Jilbadji Nature Reserve or within the majority of the adjacent UCL; and limited measures within Covalent's mining tenure As such, without the proposed program, there will be no management of introduced predators for the foreseeable future. The proposed offset therefore provides additional and quantifiable conservation benefits to Malleefowl and Chuditch habitat in the region. The program aims to support a resilient population of both species, within the habitat within the immediate proposed UCL offset site, as well as providing for movement of populations

across the continuous landscape into the nearby Jilbadji Nature Reserve as well as within uncleared areas within Covalent's tenure. The latter ensuring a population will be able to inhabit future rehabilitated minesite, post-closure.

5.4 Alignment with policy and guidance

5.4.1 Offset policy and guidance

The Commonwealth Environmental Offsets Policy defines environmental offsets as measures that compensate for the residual adverse impacts of an action on the environment (Commonwealth 2012). Offsets provide environmental benefits to counterbalance the impacts that remain after avoidance and mitigation measures. These remaining, unavoidable impacts are termed residual impacts. Offsets should align with conservation priorities for the impacted protected matter, typically identified in approved National Recovery Plans, and be tailored specifically to the attribute of the protected matter that is impacted to deliver a conservation gain (Commonwealth 2012).

The WA Government's Environmental Offsets Policy seeks to protect and conserve environmental and biodiversity values for present and future generations, ensuring that economic and social development may occur while supporting long term environmental and conservation values (Government WA 2011). There are generally three types of offsets considered by the WA offsets framework – land acquisition, on-ground management and research.

The principles of the WA Offsets Policy include the requirement for offsets to be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted; based on sound environmental information and knowledge; applied within framework of adaptive management; and focussed on longer term strategic outcomes.

Direct offsets are those actions that provide a measurable conservation gain for an impacted protected matter (Commonwealth) and are designed to provide on ground improvement, rehabilitation and conservation of habitat outside of the project area (WA). An offset package must include direct offsets. A minimum of 90 percent of the offset requirements for any given impact must be met through direct offsets (Commonwealth 2012).

In the southwest of WA, offsets are most commonly delivered via land acquisition, which aims to provide protection of existing biodiversity values. According to a 2019 review of WA's offsets framework, as land acquisition simply changes the tenure of existing vegetation, such offsets result in net loss of native vegetation and do not necessarily include ongoing management and monitoring (Government of WA, 2021). What's more, there is growing evidence that habitat protection by land acquisition alone may not be feasible, cost effective, or result in the best environmental outcome for some threatened species and communities. This is especially true where the greatest threat to a species is not loss of habitat from clearing.

For this reason, the EPA favours rehabilitation and restoration of habitat rather than land acquisition for some threatened fauna species (for example, black cockatoos of the Swan Coastal Plain). This is in the context of a highly cleared, fragmented landscape where the loss of habitat is the primary threatening process for these species; and where revegetation of degraded areas can restore habitat values for those species. In contrast, the highly vegetated GWW consists of 16,000,000 ha of woodland, with more than 80,000 ha of native vegetation within a 10 km radius of the LOM Proposal. The largely intact GWW provides limited opportunities for restoration due to the limited areas of degraded vegetation. As noted above, the GWW and in particular the Chuditch and Malleefowl of the GWW are primarily threatened by introduced predators, including fox and feral cats, and therefore management of this threat, rather than land acquisition or rehabilitation, addresses the primary risk to the species.

Notwithstanding the above, it is acknowledged that it is often unclear how to measure the benefit of activities such as predator control, fire management or weed control. As such, the use of these types of activities as direct offsets has been historically underutilised, and remains challenging.

Development impacts and offsets are calculated on a project-by-project basis. This poses the risk that the combined impacts of many small developments which may collectively imperil the viability of a threatened species, are not fully captured and adequately compensated. A more strategic coordinated approach to biodiversity offsetting presents opportunities for improved outcomes through jointly targeted actions such as the inclusion of broadscale introduced predator baiting programs in an offset package. The WA offset review recommends more strategic approaches to offsets be adopted, such as pooling of funds to implement offsets at a landscape scale (Government of WA 2021).

As detailed further in this document, it is intended that the proposed program adequately counterbalances the significant residual impact of the Proposal (calculated as at least 100 percent of the offset requirement); overcomes the issue of a lack of land availability for land acquisition and/or restoration; provides the best environmental value by targeting the greatest threats to the species; aligns with conservation priorities and Recovery Plans for the species; and is strategic, long-term and scalable to allow for a broadscale, cost-effective ongoing program.

As set out below, the proposed program demonstrates consideration of:

- The six offset principles defined in the WA Environmental Offset Policy and WA Environmental Offset Guidelines (Government of Western Australia 2011, 2014).
- The eight principles defined in the EPBC Act Environmental Offsets Policy.

Table 5-1 Assessment of the offset program against EPA offset policy principles

Offset Principle	Proposed Offset
1. Environmental offsets will only be considered after avoidance and mitigation options have been pursued.	Fauna surveys of the site have been used in the design of proposed facilities to avoid direct impacts on Malleefowl active mounds. The Proposal has been designed to minimise clearing to the maximum extent practicable by utilising existing disturbed areas where possible and backfilling the mine pit as far as practicable. The Project will result in clearing of a relatively small area within a bioregion which is almost fully vegetated. After avoiding clearing of habitat as far as possible, significant residual impacts on Chuditch and Malleefowl habitat are offset.
2. Environmental offsets are not appropriate for all projects.	Offsets have been deemed appropriate for this Proposal based on calculations determining the SRI, and the ability to achieve at least 100% of the impact counterbalanced.
3. Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.	The quantum of offsets based on calculations by the DWER WA Offsets Calculator and Commonwealth Offset Calculator are proportionate to the significance of the environmental value being impacted.
4. Environmental offsets will be based on sound environmental information and knowledge.	Impacted values have been identified through multiple surveys which have been conducted by industry professionals with significant experience and in liaison with DBCA. The proposed methodology of Western Shield means the program is based on scientifically proven and tested methodology, implemented by experienced personnel. The DBCA Western Shield program has provided definitive evidence that broad scale introduced predator baiting programs can provide significant conservation gains for threatened species.
5. Environmental offsets will be applied within a framework of adaptive management.	The program includes a monitoring program and adaptive management.

Offset Principle	Proposed Offset
6. Environmental offsets will be focused on long term strategic outcomes.	Implementation of a long-term introduced predator baiting program is likely to be the single most beneficial management action to ensure the persistence of Malleefowl and Chuditch in the GWW. The program is scalable to allow other projects to contribute, and is intended to be implemented for the LOM (30 years).

Table 5-2 Assessment of offset program against EPBC Act Offset policy principles

Principle	Offset Program
Suitable offsets must:	
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.	The proposed action impacts habitat suitable for the protected Malleefowl and Chuditch. The proposed offset will directly improve suitable habitat for both species directly adjacent to the proposed action. This will be achieved by targeting a key threatening process (see Recovery Plans) in the GWW. By broad-scale management of introduced predators, the existing habitat will be improved, delivering additional continuity of habitat and an associated conservation outcome, to ensure ongoing population perseverance. The conservation outcome will be confirmed through an ongoing monitoring program (Section 6.5)).
2. Be built around direct offsets but may include other compensatory measures	Implementation of a long-term introduced predator baiting program is likely to be the single most beneficial management action to ensure the persistence of Malleefowl and Chuditch in the GWW and is considered consistent with a 'direct offset' as it directly benefits the protected matter (by improving suitable habitat); will result in a tangible, measurable improvement (population numbers and predator occurrence will be monitored); and it is additional to existing obligations, ie there is currently no predator control.
3. Be in proportion to the level of statutory protection that applies to the protected matter	Chuditch and Malleefowl are classified as Vulnerable under the EPBC Act, and therefore the impact to the protected matter (1443 ha of habitat) must be offset. Consistent with the EPBC offset calculator, the conservation significance determination is 0.2, and therefore the quantum of impact is 1154 ha. Covalent is proposing to improve habitat within a 37,500 ha area (with exact baiting and monitoring locations to be confirmed). The proposed offset will compensate more than 100 % of the quantum of impact associated with the proposed action.
4.Be of a size and scale proportionate to the residual impacts on the protected matter	Chuditch and Malleefowl are classified as Vulnerable under the EPBC Act. The program will improve habitat quality on a landscape scale, for a period of approximately 30 years (or the mine operation life). Consistent with the EPBC offset calculator, approximately 36,000 ha would be required to adequately offset the impact. Covalent is proposing to improve habitat within a 37,500 ha area (with exact baiting and monitoring locations to be confirmed). The proposed offset will compensate more than 100 % of the impact of the proposed action.
5.Effectively account for and manage the risks of the offset not succeeding	Basing the program on the methodology of Western Shield, with definitive evidence that broad scale introduced predator baiting programs can provide significant conservation gains for protected matters, reduces the risk of the offset failing. Ongoing

Principle	Offset Program
	monitoring, with early response trigger values (section 7.4) and corresponding management actions will ensure risks are identified and responded to accordingly.
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)	There is currently no predator control measures or programs in or around the Development Envelope or adjacent and contiguous UCL and Jilbadji Nature Reserve. Chuditch and Malleefowl are currently threatened by predators in this location and therefore the program will add additional protections and extra assurance that the habitat remains viable.
7.Be efficient, effective, timely, transparent, scientifically robust and reasonable	The long-term introduced predator baiting program is likely to be the single-most effective management action to ensure the persistence of Malleefowl and Chuditch in the GWW. Once established, there is potential to create a single point of funding for other proponents to contribute, and enable the program to be scale up for greater effectiveness, and persist and expand across Western Australia. Adopting the methodology of Western Shield means the program is based on scientifically proven and tested methodology, implemented by experienced personnel. The National Threat Abatement Plan for foxes acknowledges that research suggests broadscale fox baiting is the most effect and practical measure to manage foxes. The offset plan will be published on Covalent's website for transparency. Monitoring results will be published and provided to regulators and to Western Shield/ National Malleefowl Recovery Group to contribute to the body of literature.
8.Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.	The program includes monitoring and adaptive management to allow continual improve and ensure objectives are being met. The results will be published and provided to regulators. Covalent will be responsible for funding to ensure the program continues for the life of the Proposal.

Considering offsets at a regional scale

The EPA advice on regional scale offsets (EPA, 2024) notes that offsets are the final component of the mitigation hierarchy and should only be considered after all measures to avoid, minimise, and mitigate impacts from the implementation of a proposal or scheme have been fully exhausted. Once applied, offsets are the principal method for proposals to contribute to regional environmental enhancement.

Guiding values for offsets at a regional scale are:

- Restoration – Prioritisation of restoration offsets is needed to address the cumulative effects of past environmental impacts and achieve nature-positive outcomes. While not a typical restoration offset, the proposed program will tangibly improve existing habitat by managing a key threatening process.
- Regional scale management – Environmental offsets should improve ecological linkages, provide environmental buffers and/or manage threatening processes, consistent with regional level management. The program will involve broadscale threat abatement, improving 37,500 ha of habitat.

- Resilient systems – Environmental offsets should be designed in a way that builds and maintains resilience in ecological functions and ecosystem services. By reducing a key threatening process, the program will improve resilience of the protected species and ecosystem services.
- Expanding scientific knowledge – Environmental offsets should contribute to environmental knowledge of a region, for example, through research into knowledge gaps which are likely to contribute to enhanced protection, or restoration trials. Periodic performance monitoring, evaluation and reporting of the environmental outcomes of offsets in a way that expands scientific knowledge should also be required. The ongoing monitoring, consistent with existing methodology of Western Shield and the Malleefowl Recovery Group will contribute to the understanding and literature on Malleefowl and Chuditch in the GWW, the impact of predators, the impact of predator control, and best practice baiting and monitoring techniques.
- Like for like, and similar values – Like-for-similar environmental offsets can be considered where a regional environmental need and benefit can be demonstrated. Previous survey efforts have demonstrated that both the Development Envelope and offset site represents suitable habitat (and recorded occurrences) of Malleefowl and Chuditch.
- Connectedness – Environmental offsets that demonstrate connectedness of the physical or ecological function values with those being impacted should be prioritised. The offset site is directly adjacent to the proposed action, potentially impacting the existing local populations, and improving continuity/ connectedness of habitat in the region.
- Co-benefits for social surroundings – Environmental offsets that provide greater co-benefits for the same environmental outcome should be prioritised.

DBCA advice

Covalent understands that the current preference of land managers DBCA is to avoid small parcels of degraded land as offsets. On advice of DBCA, the program will be implemented within UCL rather than Jilbadji Nature Reserve which is not currently prioritised for baiting programs.

5.4.2 Recovery plans

Due to their threatened status, both Chuditch and Malleefowl have National Recovery Plans. The proposed offset addresses many of the relevant priority recovery actions and strategies in the Recovery Plans, and Table 5-3 summarises how the proposed offset aligns with both.

The definition of critical habitat for Chuditch and Malleefowl in Recovery Plans is broad. Areas currently occupied, used for breeding or foraging, with suitable den and food resources and large in area (greater that 20,000 ha) are habitats critical to Chuditch survival and maintenance of important populations. Malleefowl are found in arid to semi-arid shrublands and low woodlands, requiring sandy substrate and leaf litter to construct nests/ mounds. Both the LOM proposal impact site and the proposed offset site represent critical habitat for Chuditch and Malleefowl.

Both Recovery Plans identify introduced predators as key threats to the species. Foxes and feral cats predate young Chuditch and compete for food, while fox prey on Malleefowl at all stages of the bird's life cycle.

The Chuditch Recovery Plan prioritises determining the impacts of foxes and cats and the control programs on Chuditch populations, and the expansion of existing baiting of foxes and feral cats. Recovery actions include (but are not limited to):

- Monitor abundance of foxes and feral cats;
- Effective baiting programs (e.g. Western Shield Program) for feral cats and foxes; and
- Monitoring Chuditch at reference sites.

Malleefowl actions recommended in the Recovery Plan include (but not limited to):

- Undertake predator management consistent with the Adaptive Management Predator Experiment project, including treatment and control sites;
- Undertake control of introduced predators (particularly foxes and cats) where Malleefowl populations show decline and predation is a likely explanation of decline;
- Analyse data available on the relationship between predation rates from foxes and cats and habitat; and
- Record all information relating to predator control in Malleefowl habitat areas and make the information easily available to the National Malleefowl Recovery Team.

The proposed program will achieve or contribute to each of the above.

Table 5-3 Alignment with Recovery Plans

Recovery Plan priority actions and strategies	Introduced Predator Control and Monitoring Program
Chuditch (*Dasyurus geoffroii*) National Recovery Plan (2012)	
Retain and improve habitat critical for survival	The program will improve existing habitat for Chuditch by reducing introduced predators within known habitat, increasing the value of that habitat and enabling increasing population size, reducing competition for food resources.
Determine impacts of feral cats	Baiting of cats and monitoring of population trends as a result of the program will improve understanding of the effects of feral cat predation on local Chuditch populations. Control sites will provide a comparison to determine the impact of predation.
Continue, expand and improve baiting of foxes and feral cats	The offset is based on the Western Shield methodology of baiting cats and foxes and will expand an existing program into an area currently unmanaged for predators.
Determine the impact of feral cat control methods on Chuditch	The program will include monitoring of both Chuditch and feral cats, at managed and control sites to determine the success of the predator control program.
Establish reference sites for monitoring Chuditch population abundance to evaluate the effectiveness of fox and cat control	A control site will be established in Jilbadji Nature Reserve with baseline monitoring to determine existing populations, and ongoing annual monitoring to determine the effectiveness of predator control measures.
National Recovery Plan for Malleefowl (*Leipoa ocellata*) (2024)	
Enhance protection and improve or maintain quality, connectivity and extent of habitat for Malleefowl	The program will improve the quality and safety of existing habitat by removing a key threating process and may expand the habitat available to Malleefowl.
Manage and monitor impacts of introduced predators on Malleefowl	The program is a landscape scale predator control program, directly and measurably reducing the threat of predation from introduced predators, with a monitoring aspect to identify population trends and the effect of predator control on local Malleefowl populations.

5.4.3 National threat abatement plans

The national threat abatement plan for predation by feral cats identifies Chuditch as being extremely or highly susceptible to predation by cats, and priorities identification of sites for intensive feral cat control to protect species of moderate to high cat-susceptibility that exist as remnant populations, including habitat for Chuditch (DCCEEW 2024).

The national threat abatement plan for predation by European red fox identifies both Malleefowl and Chuditch as species affected by the European red fox. The plan notes that while there are several methods of fox control, only broadscale baiting is effective and practical. Priority actions include conducting and monitoring regional fox control through new or existing programs. Objectives of the plan (DEWHA 2008) include:

- Eradicating foxes from high-conservation-value 'islands'.
- Promoting the maintenance and recovery of native species and ecological communities that are affected by fox predation.
- Improving knowledge and understanding of fox impacts and interactions with other species and other ecological processes.
- Improving the effectiveness, target specificity, integration and humaneness of control options for foxes.

5.4.4 WA Feral Cat Strategy

Feral cats are a declared pest in WA under the *Biosecurity and Agriculture Management Act 2007*. The relevant objectives of the Feral Cat Strategy (DBCA 2023) are:

- Increase effective feral cat management to improve conservation outcomes for native species, through a tenure-blind approach.
- Reduced predation on native species across a broad range of habitats in Western Australia.

Targets include increasing the area and effort for feral cat management to maximise biodiversity conservation outcomes.

5.5 Confidence in offset benefit

Several factors contribute to Covalent's confidence in the offset outcome.

Of the key threats to Malleefowl and Chuditch in the GWW, the proposed strategy will address the most significant – introduced predators and fire. The feral cat and the introduced European red fox have been implicated in range reductions and population declines of many conservation significant species across Australia, including ground-nesting birds and small to medium-sized mammals (Comer *et al* 2018). Research shows that over the past 30 years the most important threatening process affecting WA's medium sized mammal species is predation by foxes and feral cats. The research also demonstrates that if these introduced predators can be controlled, then many native species can recover in suitable habitats (Possingham, Jarman, & Kearns, 2004). Both the Chuditch and Malleefowl Recovery Plans recognise the importance of baiting of foxes and feral cats to improve habitat quality (DEC 2012; DCCEEW 2024).

Examples of successful conservation gains through the implementation of introduced predator baiting programs are numerous and well documented. Western Shield has provided definitive evidence that broadscale introduced predator control programs can provide significant conservation gains for protected species (Drew 2022, Abbott 2008). Results from monitoring both native and introduced species collated annually demonstrate steady decline of predators (Drew 2022), with fox numbers in the southwest reducing by over 80 percent with corresponding recovery of several species, including the Chuditch. Comer *et al* (2018)'s review of the efficacy of a landscape scale feral cat control program in the Pilbara demonstrates the significant benefits to ground-nesting and migratory birds.

There is also precedent for successful threat abatement offsets in Western Australia. Rio Tinto's Threatened Species Offset Plan for the Yandicoogina JSW and Oxbow Iron Ore Expansion Project approval involved the implementation of a best-practice landscape-scale introduced predator control program to benefit the threatened northern quoll (*Dasyurus hallucatus*). Similar to the proposed program, to ensure a robust foundation from which to measure benefit of the introduced predator control program, baseline monitoring of the abundance of northern quoll was undertaken at control and managed areas (Palmer, 2019).

Surveys and camera monitoring for the Approved Project have recorded both feral cats and foxes at monitored Malleefowl mounds within and around the development envelope (Turner 2024). The implementation of a long-term introduced predator control program is likely to be the single most beneficial management action to ensure the persistence of Malleefowl and Chuditch in the GWW (Turner 2024). The offset will provide a measurable environmental conservation gain against the residual impacts of the Proposal. The conservation gain is represented by a reduction in threats to Chuditch and Malleefowl.

In addition, Covalent will manage fire risk within its Development Envelope and meaningfully contribute to the management of fire within the UCL supporting the offset site and nearby to the minesite and Nature Reserve. Fire is a threatening process to both species and the ongoing risk of fire (even naturally occurring lightning strike fires) poses a risk to the success of the program and benefits to conservation significant species and MNES. By supporting fire mitigation efforts in the region, Covalent has sufficient confidence in the offset outcomes.

Confidence in the approach is also improved by relying on science-back methodologies and existing programs. Covalent's proposed program has adopted methodology of existing programs, as described below.

5.5.1 Western Shield Methodology

Around Australia, the threat of introduced predators is being managed by broadscale control programs. The most successful involve sustained and intensive baiting campaigns for fox population reduction, with the longest established of these programs being the Western Shield program in southwestern Australia. Western Shield has led to substantial and sustained population increase for many native mammal species (Woinarski, Burbidge, & Harrison, 2015).

Western Shield's initial success eradicating foxes however highlighted the significant impact of feral cat predation. Some populations of threatened species (woylie, numbat and black-flanked rock-wallaby) that had recovered with fox baiting, started to decline again due to an increase in populations of feral cats. Western Shield now incorporates feral cat bait Eradicat® with fox baiting to reduce the impact of both predators on native fauna (Department of Parks and Wildlife, 2017).

Western Shield monitors both predator and native fauna species, however its primary aim is to recover and sustain native fauna, and on this basis, monitoring and population trend analysis focuses on the native fauna rather than predator numbers. A total of 22 sites are now monitored by the Western Shield program for predators on an annual basis.

Western Shield is predominately implemented and funded by the State government; however, the program has received significant support from private corporations with development interests in Western Shield regions. Since 1996, efforts have been made to attract corporate sponsorship to fund additional operations and meet rising costs (Wyre, 2004). For example, Alcoa Foundation has provided financial support for the program in the Northern Jarrah Forest (the region where Alcoa's Bauxite mining occurs), for 25 years. In 2022 Alcoa provided AU$1 million funding over a three-year period to strengthen protection of 14 threatened species occurring in the northern jarrah forest from foxes and feral cats. Alcoa's funding goes to fox and cat baiting, wildlife surveillance and population monitoring (DBCA, 2024).

Western Shield is science-based, with an established but adaptable methodology which has demonstrated it delivers on-ground measures to ensure long term persistence of threatened fauna. For the reasons set out in this document, it is considered that the Western Shield methodology can be applied to the GWW context with similar benefits for local Chuditch populations.

5.5.2 National Malleefowl Recovery Group and Adaptive Management Predator Experiment (AMPE)

The National Malleefowl Recovery Group Inc. (NMRG) manages the volunteer-based national monitoring program and collected data. To ensure robust and reliable population estimates, the NMRG designed and instigated a standardised monitoring program which is coordinated across Australia.

The goal of the Malleefowl AMPE is to learn about the effect of fox and cat reduction on Malleefowl breeding activity by establishing a network of monitored control and treatment sites. Introduced predators are managed in and around treatment sites, while nearby control sites are left unmanaged. The proposed program will follow the methodology established by the National Malleefowl Recovery Group and AMPE and will provide data to contribute to the knowledge base.

Other successful programs around Australia include the Wedderburn Conservation Management Network targeting foxes in Wychitella Nature Conservation Reserve to protect isolated populations of Malleefowl (Wedderburn CMN 2025); and Wimmera CMA building resilient communities of Malleefowl through fox bating in Little Desert National Park and Tooan State Park (Wimmera CMA 2025). Both of these Victorian programs demonstrate successful ongoing baiting programs.

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6. Offset strategy

6.1 Bioregional context

The LOM Proposal and offset site is located within the GWW, the largest remaining intact temperate woodland on Earth. Covering almost 16 million ha, this continuous band of native vegetation stretches from the edge of the Wheatbelt to Kalgoorlie-Boulder in the north, to the inland deserts to the north-east and the Nullarbor Plain to the east (DEC, 2012) (Figure 6-1).

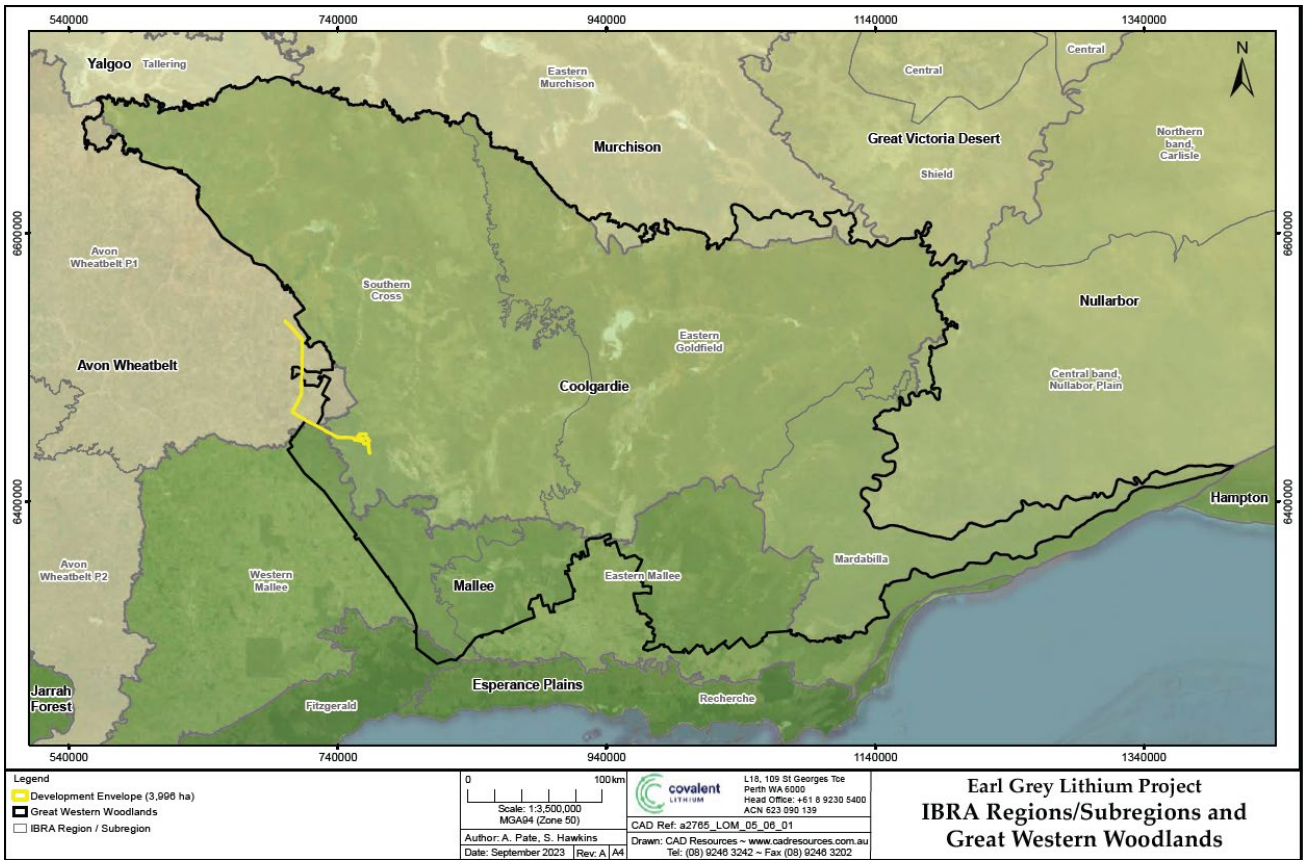


Figure 6-1 Bioregional context of the LOM proposal in the GWW

The ancient landscape of broad, flat valleys and ridges, ranges in elevation from 140 m in the south and east to 500 metres west of Kalgoorlie. The region experiences hot, dry summers (with just 200–400 mm of rainfall a year) and frosty winters, and there is almost no permanent water. Surface water flows into salt lakes from which it evaporates rather than draining to the sea. The low, variable rainfall and lack of potable groundwater have historically made the GWW less attractive for agriculture and livestock grazing than the lands further south and west (DEC, 2012).

These conditions support more than 3,000 flowering plant species, representing some 20 percent of Australia's known flora. The GWW consists of a mosaic of largely intact semi-arid open eucalypt woodlands (63%), mallee, shrublands and grasslands (Fox *et al.* 2016). The eucalypt species that dominate much of the region can reach 25 m in height and exceed 1 m in stem diameter in old-growth stands (Jucker *et al*., 2023).

Patches of the western-most extent of the *Eucalypt Woodlands of the Western Australian Wheatbelt* ecological community may overlap with the GWW but the community is generally thought to exist to the west of the GWW, occupying the transition zone between the semi-arid to arid woodlands, mallee and shrublands, and the wetter forests associated with the Darling Range and the southwest coast (DoE 2015).

Other habitats in the GWW include granite outcrops, banded ironstone formations, salt lakes and freshwater wetlands (Fox et al. 2016).

The relative lack of fragmentation is a key value of the GWW (Fox *et al.* 2016). The south-western half of the GWW provides habitat for many birds that are locally extinct or have reduced populations in the adjacent and substantially cleared wheatbelt (Fox *et al*. 2016). The GWW is predominantly UCL. Pastoral leases make up about 20 percent of the area, and 13 percent is protected via national parks and conservation reserves. Ngadju Indigenous Protected Area, proclaimed in 2020, covers about 27 percent of the GWW.

According to the EPA, the key pressures on the environmental values of the GWW are fire, feral/introduced animals and weeds (EPA, 2022).

6.2 Offset location

In consultation with Bruce Turner (Senior Zoologist) and DBCA Western Shield personnel, Covalent considered the most appropriate location for the offset and control sites, including factors such as proximity to impact site, existing habitat, and status of active management (Table 6-1).

The proposed offset site is located within UCL, 17.5 km west of the Development Envelope (Figure 6-3). The site is approximately 37,500 ha and consists of suitable habitat and known records of Chuditch and Malleefowl, as well as introduced predators. Previous survey efforts have recorded Chuditch in a range of habitat types (mallee woodlands, open woodlands and shrublands) within the region, and males are known to have a home range of over 2000 ha (Western Wildlife 2017). Surveys and camera monitoring for the Approved Project have recorded both feral cats and foxes at monitored Malleefowl mounds within and around the Development Envelope (Turner 2024). Regional fauna surveys undertaken by Western Wildlife in 2017 found extensive areas of mallee woodlands and shrublands, as well as smaller patches of open woodland (e.g. Salmon Gum woodlands). Western Wildlife concluded that Malleefowl are likely to occur throughout the woodlands and shrublands of the region and were recorded within the regional survey area. Chuditch were also recorded in the regional study area, via targeted camera traps (Figure 6-2) (Western Wildlife 2017).

A comparable 36,000 ha control site will be located immediately north of the Development Envelope, within the Jilbadji Nature Reserve, the second largest nature reserve in the GWW. Jilbadji Nature Reserve is reserved for the purpose of conservation of flora and fauna, and covers 208,866 ha, including quality habitat suitable for Malleefowl and Chuditch. The environmental values of the Jilbadji Nature Reserve include its large reserve size, importance as a fauna refugia site, high diversity of fauna species and flora species endemism. The Jilbadji Nature Reserve is a significant area in maintaining existing processes at a regional scale (DAWE, 2020). It is substantially larger than the average reserve area in the Wheatbelt of 114 hectares and therefore is a potentially important refugium for many species, (DAWE, 2020). Malleefowl individuals and suitable habitat have been recorded within the Jilbadji Nature Reserve (for example, Western Areas 2020). Previous survey efforts have recorded Chuditch in a range of habitat types (mallee woodlands, open woodlands and shrublands) within the region, and males are known to have a home range of over 2000 ha (Western Wildlife 2017).

There are currently no predator baiting or monitoring programs within or around Jilbadji Nature Reserve, the UCL or outside of the Covalent mining tenure.

As discussed above, both Chuditch and Malleefowl have been recorded within the Proposal's Development Envelope and the proposed offset site. Covalent is proposing to manage predators in close proximity to the impact site to ensure the offset benefits the local populations. A control site will be located approximately 17 km north of the offset site, at a sufficient distance from the baiting to ensure separation of treatments (Figure 6-3). Following Lidar and baseline surveys, optimal areas for baiting cells and monitoring transects within the offset site and control site will be further refined. Covalent will ensure all necessary are approvals are received prior to commencing work within Jilbadji Nature Reserve (monitoring only) or UCL (predator control, monitoring).

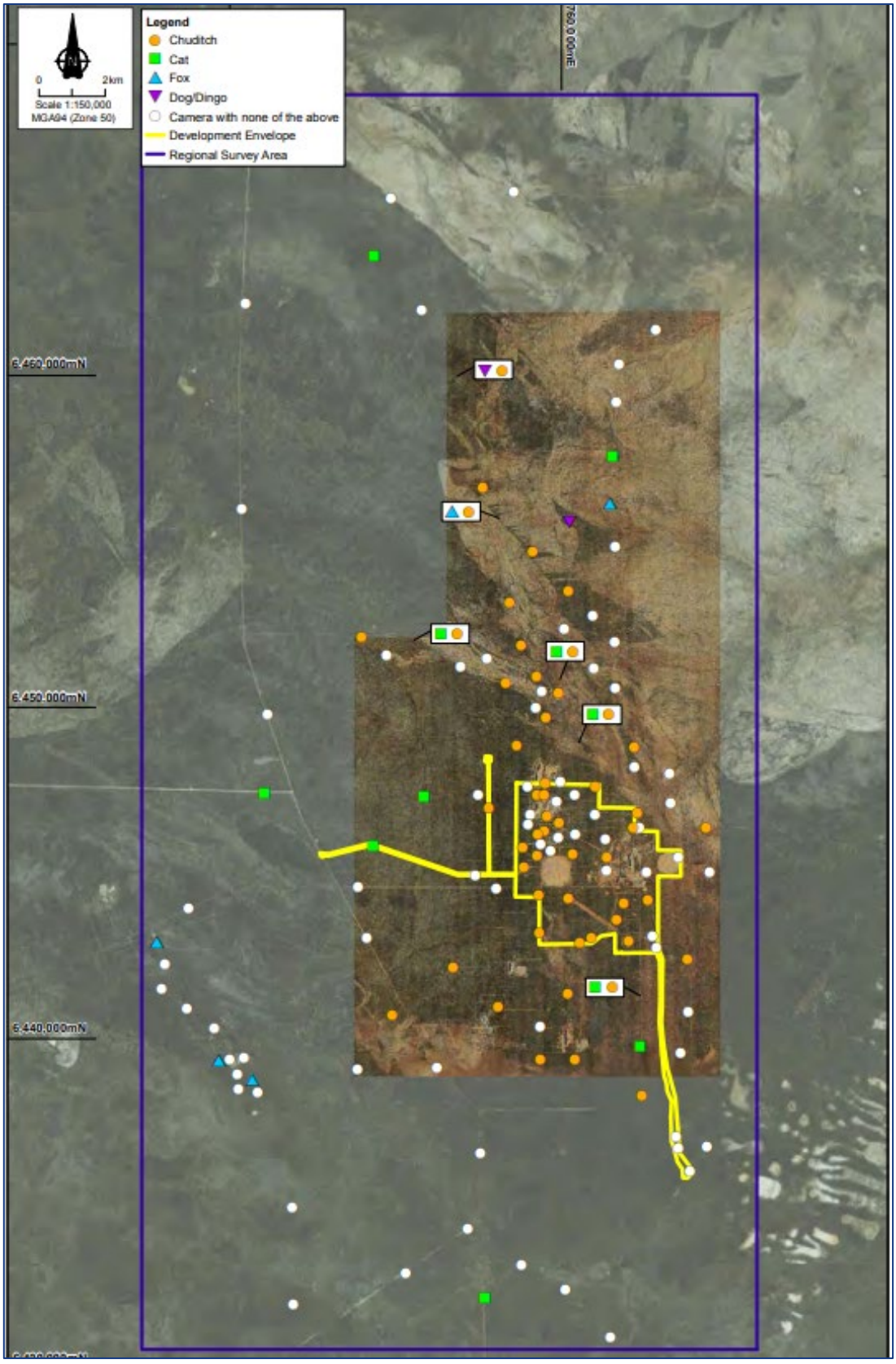


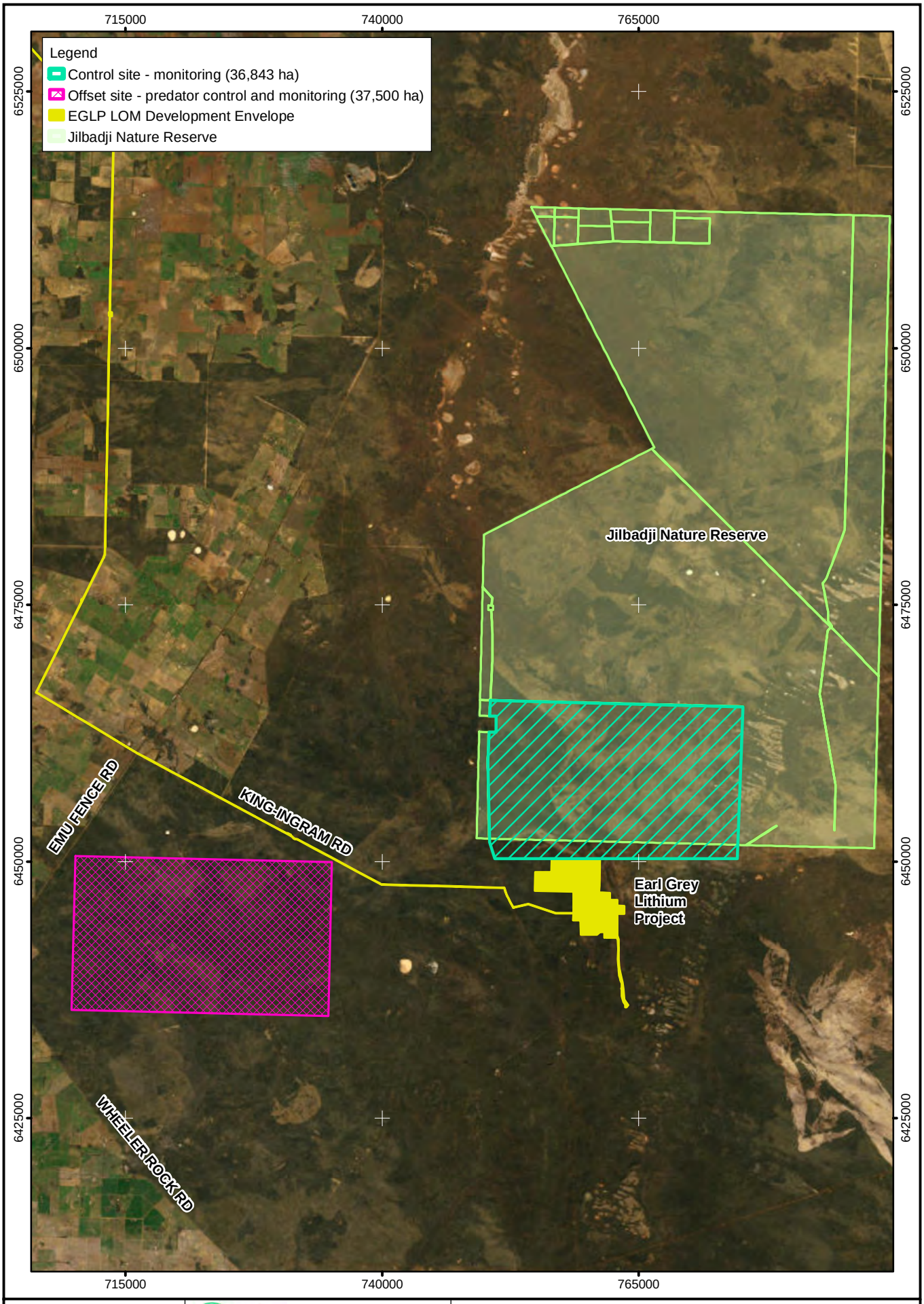
Figure 6-2 Camera traps recorded Chuditch and feral predators in the vicinity of the Development Envelope (2017)

Table 6-1 Factors guiding site selection for LOM Proposal offset

Key factor	Offset site location
Close proximity to impact site	The offset site lies 17.5 km to the western boundary of Development Envelope, in UCL that is contiguous with the Development Envelope and Jilbadji Nature Reserve. The control site is immediately to the north of the Development Envelope within Jilbadji Nature Reserve.
Large in extent (Western Shield-style baiting program requires a minimum of 10 km^2)	The proposed 375km^2 (37,500 ha) offset site is considered landscape scale – adequate to provide effective predator management. The extent of the offset site will also provide flexibility and contingency to the program. Covalent can focus efforts where predators are recorded or move treatment if external threats occur (ie fire).
Tenure	The offset site is within UCL, with no underlying mining tenure. This means a conservation covenant or similar mechanism can provide protection for the offset site in the future without sterilising future mineral resources.
Existing habitat and fauna species	The offset site includes quality habitat suitable for Malleefowl and Chuditch contiguous with both the Development Envelope and Jilbadji Nature Reserve. Surveys have confirmed the presence of both species in the local area.
Accessible	The offset site is accessible by plane and road, with tracks within offset site. This is a key factor for implementation of program.
Status of current management	There is currently no predator control or other active management in the proposed offset site. There is a current predator management program along Emu Fence Road, where baiting occurs under DPIRD management. No predator control occurs within the control site (Jilbadji Nature Reserve).
Existing threat of feral cats and foxes	There are records of both feral cats and foxes in the vicinity of the offset site with predation a recognised threat to native fauna in the region (consistent with National Recovery Plans and Threat Abatement Plans).
Additional considerations	Offset site includes a water source to support populations, and is not actively grazed Fire management can occur on UCL through a contribution to DBCA's implementation of Southern Range Fire Mitigation Plan; or via the Department of Fire and Emergency Services (DFES) in consultation with the Department of Planning Lands and Heritage (Crown Land manager) and the relevant Local Government Authority (Shire of Yilgarn).

6.3 Outcomes of the offset

To counterbalance the impacts of the Proposal on Chuditch and Malleefowl habitat, the proposed offset program will improve existing habitat in the region, by a targeted reduction of existing threats to local Chuditch and Malleefowl populations, to ensure the persistence of the species within the broader landscape, including UCL and nearby Jilbadji Nature Reserve.



Source: Aerial photography: ESRI, Tenements: DMIRS, Managed Lands: DBCA, Fire Scar: DBCA

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Earl Grey Lithium Project
Revised Offset and Control Site Locations

Figure 6-3 Location of offset and control sites and LOM Proposal Development Envelope

6.4 Proposed predator control program

A landscape-scale predator control program will be implemented within a 37,500-ha (375 km^2) offset area, within UCL (discussed in detail in section 6.2).

The program will target both feral cats and the introduced European fox. The program will incorporate annual aerial baiting, primary with Eradicat® and 1080 bait, based on DBCA's Western Shield methodology. Eradicat® has been an effective broad-scale method for controlling feral cats and reducing their impacts on native wildlife, and is currently registered by the Australian Pesticides and Veterinary Medicines Authority (APVMA) for the broad-scale control of feral cats in WA (Cowan *et al*. 2020). DBCA is currently using Eradicat® to manage cats in Kalbarri National Park to protect Chuditch and Black-flanked Rock Wallabies, and at Matuwa Kurrarra-Kurrara National Park to protect Bilby (Lohr and Algar 2020). Covalent notes that supply of Eradicat bait in WA is currently low and may not be available in the near term. If it cannot source adequate quantities of bait, Covalent will employ alternative methods of predator control to target cats such as cat trapping and humane destruction until supply is restored. 1080 is regularly used as a fox control method to minimise the impact of foxes on native fauna.

Feral cat and fox management requires baits to be deposited across large areas where introduced predators roam. Aircraft will be the primary method of deployment to achieve broad-scale bait delivery and ongoing sustained control of feral cats and foxes over the life the of program within the remote offset site, as is common practise across WA. As far as practicable, the baits will be deployed at the optimal time for uptake by predators, and have regard for the degradation of baits following rain fall and hot weather.

Consistent with Western Shield, prescribed baiting rates of 5 baits per km^2 for fox; and 50 baits per km^2 for cats will be implemented. Supplementary vehicle baiting may be undertaken once a year, if required, using Eradicat® when available, and cat trapping or alternative methods if required.

The use of a non-treatment site as a 'control' will allow Covalent to validate the impact of predator control, assuming that there is no significant difference in occupancy in the unbaited control site. This is common practice for Western Shield and other similar baiting programs in WA, and consistent with the guidance in the National Malleefowl Recovery Plan - to undertake predator management consistent with the Adaptive Management Predator Experiment project, including treatment and control sites (on-ground strategy 4.1).

Chuditch and Malleefowl are both impacted by largescale fires, with a loss of den sites and prey for Chuditch and loss of leaf-litter for Malleefowl to build their mounds (Western Wildlife, 2017). Covalent is cognisant of the recent bushfires that burnt through the region in January 2025 (as was also the case in 2009, 2015 and 2016). The southwest corner of Jilbadji Nature Reserve was impacted by the fire, which overlaps with a portion of the control site. While fire is a regular feature of the landscape, it also provides the remaining native species an opportunity to recolonise regenerating native vegetation in the absence of predators. Advice from DBCA officers suggests that controlling predators by commencing predator control as soon as practical will provide the local populations of Chuditch and Malleefowl with best opportunity to thrive post-fire.

6.5 Proposed monitoring program

The monitoring program will incorporate predators, Malleefowl and Chuditch, within the offset site and control site, to document the ongoing success (or otherwise) of the predator control in maintaining suitable habitat for, and persistence of, local populations of Chuditch and Malleefowl in the UCL, contiguous with Jilbadji Nature Reserve. Monitoring will be undertaken in accordance with best practice techniques and be based on the guidance in *Designing a Monitoring Project for Significant Native Fauna Species* (Freegard, 2009).

Local population baselines will be established over 12 months prior to predator control commencing, with population trends identified over multiple years to determine the impact of predator control on both species. The unbaited control site will also be monitored for comparison.

A monitoring framework is set out in Table 6-2.

Monitoring of Malleefowl and Chuditch will be undertaken following methods relevant and suitable for each species.

Population monitoring of Malleefowl will be consistent with the *National Malleefowl Monitoring Manual* (NMRT 2020) standards and undertaken in consultation with the National Malleefowl Recovery Group (NMRG). Due to Malleefowl's shy and elusive nature, monitoring will focus on mounds and evidence of breeding activity as a means of measuring the abundance of breeding birds in the area (consistent with the National Recovery Plan). Key features of Covalent's Malleefowl monitoring program will include:

- A baseline Lidar survey to identify potential Malleefowl nest mounds within offset and control sites, which will identify suitable mounds for ongoing monitoring;
- A selection of mounds will be camera monitored for hatching success (this will also identify predators robbing eggs);
- Mound status (active, annual, 5 year, do not monitor) will be recorded and monitoring amended accordingly;
- Ongoing annual population monitoring will occur between October and February, recording the number of active mounds, sightings etc, to estimate local population numbers. A report will be prepared at the completion of each annual field session;
- From annual monitoring, population trends will be identified over multiple years, to determine the impact of the predator control on local populations; and
- Monitoring data will be submitted to the National Malleefowl Monitoring Database to contribute to the long-term Malleefowl population trend analysis.

Monitoring and reporting of Chuditch will follow the established methodology of Western Shield, as follows:

- Camera and cage traps set up over transects of 25 to 50 km within offset and control sites;
- A minimum of 30 cameras will be established in each of the offset and control sites, approximately 1.5 km apart;
- Trapping will occur over 5 nights, during April-June to target periods when male Chuditch are actively seeking females for breeding; and
- 100 small cage traps spaced approximately 500 m apart, at least 10 m from vehicle tracks.
- Traps will be re-baited if the bait had been consumed or removed and refreshed on day 3 or 4.

Predator control and monitoring will occur in areas burnt and unburnt and any spatial differences in predator occurrence /population numbers post fire may be identified through the program as an additional knowledge gain.

Table 6-2 Monitoring framework

Monitoring Action	Description	Time Frame	Responsible Role
Malleefowl mound monitoring			
Lidar	Detect mounds within Jilbadji and UCL, and identify potential nest mounds in accessible areas for ongoing monitoring within offset site and control site.	Once. Prior to commencement of predator control program.	Covalent Lithium Environment Manager
Ground truthing	Ground truth a selection of mounds within the offset and control sites as a subset for ongoing annual monitoring.	Once.	Covalent Lithium Environment Manager

Monitoring Action	Description	Time Frame	Responsible Role
		Following Lidar, prior to commencement of monitoring program.	
Monitoring	Monitor selected mounds to NMRT standard. A team of suitably qualified people will undertake a broad search of the area, and locations of all Malleefowl mounds that are found within the search area will be recorded by GPS using the WGS84 datum and status recorded. Selected mounds will have cameras for hatching success and predator occurrence.	Annually. Undertake field program in breeding season October-December.	NMRG / NMRT Team Leader/Co-ordinator
Reporting	Report on number of nest mounds in all categories. An estimate of local population number based on number of active mounds, sightings and temporal analysis. Any opportunists observations of predators recorded.	8 weeks post annual field program.	NMRG / NMRT Team Leader/Co-ordinator
Chuditch population monitoring			
Baseline	Cage traps and cameras assembled to establish pre-baiting population baseline.	Once. 12 months prior to initial baiting.	Covalent Lithium Environment Manager
Monitoring	Establish and operate road-based transects over 5 nights using 100 small cage traps spaced approximately 500 m apart. This will allow for either a single transect of 50 km, or 2 transects of 25 km in length. Each cage trap lured with chicken and deployed at a minimum of 10 m from vehicle tracks. Traps re-baited if the bait is consumed or removed and refreshed on day 3 or 4.	Annually. Undertake in Chuditch breeding season April-June	Covalent Lithium Environment Manager
Camera monitoring and image analysis	Deploy camera monitoring stations within offset and control sites as per Western Shield procedure. Results of image analysis will assist with determining population trends for both Chuditch and introduced predators.	As per Western Shield procedures	Covalent Lithium Environment Manager
Reporting	Reporting of Chuditch populations recorded as per Western Shield annual reports.	As per Western Shield procedures	Covalent Lithium Environment Manager
Predator monitoring			
Monitoring	2 measures of the relative abundance of cats and foxes using camera trapping (site occupancy and detection rate).	Before and after baiting program	Covalent Lithium Environment Manager

6.6 Proposed fire mitigation

While the proposed offset strategy focuses on threat abatement related to introduced predators, Covalent acknowledges that fire poses a significant threat within the region, particularly to fauna habitat and Malleefowl in particular. To reduce the risk of fires occurring within the offset site and improve the confidence in offset outcomes, Covalent will contribute to fire mitigation efforts implemented on UCL by DBCA through the Southern Range Fire Mitigation Plan. This program is based on 'Tolerable Fuel Age' of vegetation as per routine DBCA and DFES fire planning. Satellite aerial imagery is used to identify high vegetation fuel loads and allow the areas needing treatment to be prioritised. A prescribed burn plan comprising several discrete cells to be burnt at different times would then be developed for the UCL and implemented using a helitak to ignite the fire which would drop ignited gel onto areas to be burnt in favourable weather conditions at the right time of the year.

A MOU will be developed with DBCA/DFES as appropriate, to detail these arrangements and confirm areas of contribution/support by Covalent.

6.7 Support for local conservation programs

Further to the implementation of the predator control program in the UCL, Covalent will commit to providing financial contributions to an appropriate conservation program following the approval of the LOM Proposal. Covalent is exploring the opportunities to contribute to a local conservation program (such as local NRM Group activities, WA Feral Cat Working Group) and will provide financial support for 3 years from the date of an agreed MOU with the relevant organisation, with the MOU process intended to be finalised within the first 12 months following approval.

7. Offset management

7.1 Goal

To reduce threats and improve existing habitat for Chuditch and Malleefowl to ensure the persistence of the species in the GWW.

7.2 Objectives

The objectives of the program (see Table 7-1) are:

- Chuditch and Malleefowl demonstrate a trend of a stable or increasing population size and/or number of individuals (noting some natural fluctuations are expected) within the offset site;
- Reduced occurrence of feral cats and foxes within the offset site;
- An improved understanding of the impacts of introduced predators on Chuditch and Malleefowl; and
- An improved understanding of best practice introduced predator control measures, and monitoring methodology for Chuditch and Malleefowl.

Ideally the program will also increase the extent of Malleefowl and Chuditch within the offset site, as the existing habitat is improved. Due to mobile nature of both species, the large home ranges of Chuditch and the breeding activity of Malleefowl (reusing nests etc), it will be difficult to quantify an increased extent of population.

Table 7-1 Offset Management Plan framework

To reduce threats and improve habitat for Chuditch and Malleefowl to ensure the persistence of the species			
Objectives			
Stable or increasing population trend and/or number of individuals of Chuditch and Malleefowl within the Offset site.	Reduce the numbers of feral cat and foxes within the offset site.	An improved understanding of the impacts of introduced predators on Chuditch and Malleefowl.	An improved understanding of the benefits of introduced predator control measures and monitoring methodology for Chuditch and Malleefowl.
Actions			
• Monitor Chuditch and Malleefowl within the offset site and control site. • Determine population trends within the offset site and control site. • Adapt on-ground actions based on Chuditch and Malleefowl monitoring.	• Facilitate effective management of foxes and feral cats within the offset site. • Monitor foxes and feral cats within the offset site and control site. • Adapt on-ground actions based on fox and feral cat monitoring.	• Implement the introduced predator control program and monitor both predator and Chuditch and Malleefowl within the offset site and control site, to determine population trends. • Assess the potential benefits of broad-scale baiting on Chuditch and Malleefowl populations by comparing their	• Implement the introduced predator control program and monitor both predator and Chuditch and Malleefowl within the offset site and control site, to determine population trends. • Assess the effectiveness of this baiting program on reducing feral cats and foxes within the offset

		abundance, over time within a treatment (baited) and control site.	site through long term monitoring.
Measures of success			
1.	Chuditch and Malleefowl population size is maintained or improved at offset site compared to control site.		
2.	Occupancy of foxes is reduced by 50 % at offset site compared to control site.		
3.	Occupancy of feral cats is reduced by 30 % at offset site compared to control site.		
Early response triggers			
1.	Chuditch and/or Malleefowl population size reduces by 25% over two consecutive years.		
2.	Introduced predator sightings increase by 25% over two consecutive years.		

7.3 Measures of success

Being able to measure the effectiveness of the predator control program is critical to improve and adjust delivery mechanisms for optimal introduced predator control, to understand the impact of baiting (or alternative methods), and to justify the approach to offsetting the impacts of the Proposal.

Due to the comparable methodology proposed and to ensure they are scientifically robust, as a starting point Covalent has adopted success criteria based on the Western Shield program. These are:

1. Chuditch and Malleefowl population size is maintained or improved at offset site compared to control site;
2. Occupancy of foxes is reduced by 50 % at offset site compared to control site; and
3. Occupancy of feral cats is reduced by 30 % at offset site compared to control site.

7.4 Early response triggers

Covalent proposes two indicative early response triggers at this planning stage (Table 7-2). These have been developed in consultation with subject matter expert, Bruce Turner, who has significant experience monitoring Malleefowl and Chuditch in the local area.

While developing this strategy, baseline monitoring is yet to occur, interannual variability is not well understood (see section 7.5), and the potential impacts of predator control to Malleefowl and Chuditch populations has not been quantified. As population monitoring data is gathered, trending will indicate acceptable changes to predator occurrence and population size. The implementation of monitoring at both offset and control sites will also identify if observed changes are associated with the predator control or other environmental factors. In the interim, the early response triggers have been established to identify any significant decrease to Malleefowl and Chuditch populations/ increase in predators in the first few years of implementation and provide an indication if the bating and/or monitoring methodology needs amending.

Covalent commits to reviewing the trigger criteria following baseline monitoring and expects that once sufficient monitoring data is collected (i.e. at least 3 years) the trigger criteria will be reviewed by an appropriate fauna specialist (and potentially in consultation with Western Shield/DBCA and the NMRG to ensure consistent methodology) and revised accordingly.

Table 7-2 Early response triggers and actions

Objective	Early response trigger	Early response action	Early response trigger justification
Stable or increasing populations (noting some natural fluctuations are expected) of Chuditch and Malleefowl within the Offset site.	Chuditch and/or Malleefowl population size at the offset site reduces by over 25% over two consecutive years.	• Report internally that early response trigger has been met in accordance with internal procedures. • Consider potential environmental factors (fire, rainfall, extreme events) that may have contributed by comparing results from control site. • Amend program if environmental factors are not likely responsible. Consider supplementary vehicle baiting, new locations for baiting, increase in baiting intensity, additional cameras for monitoring, new camera locations. • If after two consecutive monitoring events trigger is no longer exceeded, resume standard monitoring.	Based on the experience of other programs, interannual variability is expected. The trigger value (reduction in population) must be significant enough to not be triggered for each annual variation. Following 3 years of data collection and a better understanding of average variability, the trigger value will be reviewed and potentially revised.
Reduce the impact of fox and feral cat predation on Chuditch and Malleefowl within the Offset site.	Introduced predator occurrence at the offset site increases by over 25% over two consecutive years.	• Report internally that early response trigger has been met in accordance with internal procedures. • Consider potential contributing factors (environmental or reduced competition) that may have contributed by comparing results from control site. • Consider supplementary vehicle baiting, new locations for baiting, increase in baiting intensity. • Refine remote camera monitoring for introduced predators such as additional cameras or new locations.	Based on experience of other programs, interannual variability is expected. The trigger value (increase in occurrence) must be significant enough to not be triggered for each annual variation. Following 3 years of data collection and a better understanding of average variability, the trigger value will be reviewed and potentially revised.

7.5 Adaptive management and contingencies

Covalent recognises the dynamic nature of ecosystems and the importance of adaptive management to achieve the success criteria above. Adaptive management involves implementing mitigation measures, monitoring and evaluation against early response triggers and success criteria, and systematically adapting management measures and monitoring to meet the environmental objectives.

A literature review of relevant examples of similar baiting programs suggests that there are several risks and potential responses that may require adaptative management, contingency measures or in the very least, careful consideration.

Western Shield and the predator control and monitoring program at Yarraloola and Red Hill in the Pilbara Region (implemented by DBCA as part of Rio Tinto's Threatened Species Offset Plan to benefit the northern quoll and Pilbara olive python), have noted initial success in significant reductions in feral cat numbers following implementation of baiting programs. For example, cat population abundance reduced by 57% in the first year of baiting at Yarraloola (DBCA 2018). However, after several years, feral cat numbers began to recover. This is likely the result of reduced competition for resources and potentially a movement of cats into baited areas (DBCA 2018). Limiting re-invasion of cat–managed areas surrounded by open-system populations of feral cats remains an ongoing challenge for landscape scale cat control programs (Comer *et al.* 2018). Covalent acknowledges that there is a risk that the proposed program will shift existing predators into adjacent areas (that may then re-invade the offset site). However, the scale of the proposed baiting will result in a large area of improved habitat, and in the case monitoring indicates an increase in predators, early response actions will be triggered.

A landscape-scale feral cat and fox baiting program delivered across the south coast of WA in the early 2000s demonstrated an average reduction in feral cats of 28% each year, but the results varied over 5 years from 0% to 62%. Trends in Chuditch populations however showed positive responses to the integrated feral cat and fox control program. This indicates that Covalent should expect some interannual variability, and to accommodate this, the proposed early response is only triggered once a 25% increase in predators/ reduction in Chuditch and Malleefowl is recorded from one year to the next. This will be revised if 3 years of monitoring data demonstrate significantly larger or smaller interannual variability.

Covalent also recognises that other factors may impact both introduced predator and native fauna species numbers, such as fire, rainfall, extreme events and resource availability. The establishment of the offset site and control site will assist in teasing apart the effect of predator control from other environmental factors that might cause a change. This is consistent with the Adaptive Management Predator Experiment in the National Malleefowl Recovery Plan (2024). Undertaking monitoring at the same time/season each year (tailored to best suit each species) will limit the influence of rainfall and seasonal differences.

Fire is an ongoing risk in the region that impacts infrastructure and native fauna habitat. Covalent will manage fire within the Development Envelope as a standard operating management measure, which will reduce mine-related fire risk to the adjacent offset site. In addition, Covalent will contribute to fire mitigation within the UCL through its proposed agreement with DBCA (section 6.6) The large extent of the 36,000-ha offset area allows for flexibility as a contingency measure in the case of fire impacting the offset site. Notwithstanding this, Hradsky (2020) suggests that fire results in localised increases in predator activity and higher predator hunting success after fire, which increases native mammal mortality and limits population recovery in fire-affected landscapes. Hradsky (2020) argues that landscape-scale predator control improves survival and population recovery after disturbances like fire. Therefore, Covalent considers that implementation of the program in the event of a fire will still have an ecological benefit.

Results of monitoring will inform any program improvements and ongoing adaptive management which may involve:

- implementing mitigation measures, and changes to management measures in response to monitoring results if population numbers of predators, Chuditch and Malleefowl are not responding as expected (or in line with program objectives). Changes to on-ground management may include supplementary baiting by vehicle, new locations for baiting;
- alternative monitoring techniques to better understand parts of an ecosystem responding differently than expected;
- additional or revised early response triggers and success criteria; and/or
- review of management actions as new management measures and technologies become available that may be more effective for terrestrial fauna management.

In addition, effective and humane baiting methods will be identified and adopted if available. Covalent will introduce Eradicat® in its baiting program when supply is restored and continue to review new technology and methodology to ensure its program is best practice. The adaptive management and long term monitoring results, including analysis of program efficacy, will provide a sound basis for decisions on the future of on-ground management within the offset site. Covalent will continue to engage with DBCA and Western Shield throughout the life of the program, to consider continuation of the program following the implementation of the LOM proposal, and the potential for transferring responsibility for ongoing active management of the UCL.

7.6 Finance

Covalent will assume and maintain financial and controlling responsibility of the proposed offset.

The cost of the program is expected to reduce after initial outlay, as equipment is purchased, the methodology is confirmed, and ongoing monitoring program is established.

Covalent will directly fund the proposed activities for the life of the mine, approximately 30 years.

The program is easily scalable, to be expanded in extent throughout the UCL and surrounding region. It is envisaged that other developments and proponents in the region with similar significant residual impacts could contribute to predator control and monitoring efforts and deliver long term strategic outcomes for Chuditch and Malleefowl beyond Covalent's 30-year program.

7.7 Security

The offset site is located within UCL, with no underlying mining or exploration tenure and the offset is considered secure against clearing for exploration or mining in the future at this time. To ensure protection in perpetuity, as part of its consultation and engagement with the DPLH, Covalent is exploring the application of a conservation covenant or similar mechanism to protect the offset site into the future.

7.8 Reporting

All environmental offsets required as part of approvals under WA legislation are now made public via the WA Environmental Offsets Register. Progress of environmental offsets are tracked via the register as actions listed as 'complete' or 'not complete'. For projects approved under Part IV of the EP Act, the Offsets Register is administered by DWER. Once a Statement is issued, DWER will upload the relevant details into the register. The offsets' condition milestones' are based on the conditions in the Ministerial Statement.

Covalent currently submits an annual compliance reporting to DWER and DCCEEW that reports on progress in operating the Approved Project and implementing progressive rehabilitation. Covalent will be required to provide an annual report (or as required in accordance with approval conditions) to DWER and DCCEEW detailing the progress of the offset strategy or as a result of an action arising from a Ministerial Statement or EPBC Act approval conditions. This reporting will include reporting on the outcomes of the actions, objectives, and targets in the Offset Strategy.

8. Conclusion

As part of the approval requirements for the LOM Proposal, an additional offset package is required to mitigate significant residual impacts from proposed clearing of Chuditch and Malleefowl habitat, associated with the expansion of existing operations.

While land acquisition has been the traditional mechanism for biodiversity offsets for the Approved Project, Covalent recognises that for the LOM Proposal, an alternative approach can achieve a greater environmental benefit to Chuditch and Malleefowl habitat in the region.

The greatest threat to native fauna populations in the GWW, including Malleefowl and Chuditch, has been identified as introduced predators.

Covalent's proposed introduced predator control (targeting feral cats and foxes) and monitoring program will improve this existing habitat to ensure the long term preservation of Chuditch and Malleefowl in the region.

Active predator management (baiting, trapping, etc) sites (offset site) and control sites will allow validation of effectiveness of on-ground measures and ongoing monitoring will identify population trends and adaptative management measures required.

Covalent is committed to achieving the best possible outcome and directly delivering a measurable, long term benefit that improves and manages existing habitat, increasing the value of that habitat and enabling increasing population size.

Covalent is confident that the offset strategy set out in this document adequately counterbalances the potential impacts of the Proposal, consistent with policy and guidance.

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Appendix B WA Offset Calculation

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WA Environmental Offsets Calculator

Step 3: Calculating offsets

Key:

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

Environmental value (step 1)	Chudich & Malleefowl habitat	Significant impact (step 2, part A)	1443.00
		Rehabilitation credit (step 2, part B)	0.00
		Significant residual impact (step 2, part C)	1154.40

Area **(offset site)**

Offset calculation *Area*							
Offsets calculation	Description	Proposed offset (area in hectares)	9600.00	Duration of offset implementation (maximum 20 years)	20.00	Offset value	1159.28
		Current quality of offset site (scale)	8.00	Time until offset site secured (years)	1.00		100.4%
		Future quality WITHOUT offset (scale)	7.00	Risk of future loss WITHOUT offset (%)	10.0%		
		Future quality WITH offset (scale)	8.00	Risk of future loss WITH offset (%)	5.0%		
		Time until ecological benefit (years)	1.00				
		Confidence in offset result (%)	90.0%			OFFSET ADEQUATE?	YES

WA Environmental Offsets Calculator

Step 1: Determining conservation significance

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

Area / feature **(Impact site)**

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

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

WA Environmental Offsets Calculator

Step 2: Calculating significant residual impact

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

Environmental value (step 1)	Chudich & Malleefowl habitat

***Area* (impact site)**

Part A: Significant impact calculation *Area*

Significant impact	Description	Quantum of impact	
	Maximun clearing of habitat for LOM	Significant impact (hectares)	1443.00
		Quality (scale)	8.00
		Total quantum of impact	1154.40

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

Rehabilitation Credit	Description				
		Proposed rehabilitation (area in hectares)	0.00	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	1154.40
	Rehabilitation credit	0.00
	Significant residual impact	1154.40

WA Environmental Offsets Calculator

Rationale for scores used in the offsets calculator

Environmental value to be offset			
Calculation	***Score (Area)***		***Rationale***
Conservation significance			
Description	Chudich & Malleefowl habitat		
Type of environmental value	Species (flora/fauna)		
Conservation significance of environmental value	Rare/threatened Species - vulnerable		Chuditch and Malleefowl breeding and foraging habitat identified by surveys for the Approved and LOM proposal and referencing DBCA and EPBC species lists
Landscape-level value impacted	yes/no		yes
Significant impact			
Description	Maximun clearing of habitat for LOM		
Significant impact (hectares) / Type of feature	1443.00		Clearing of Malleefowl habitat for LOM (representing the larger area of the 2 species)
Quality (scale) / Number	8.00		Based on previous assessment of impact site for LOM
Rehabilitation credit			
Description	0		
Proposed rehabilitation (area in hectares)	0.00		
Current quality of rehabilitation site / Start number (of type of feature)	0.00		
Future quality WITHOUT rehabilitation (scale) / Future number WITHOUT rehabilitation	0.00		
Future quality WITH rehabilitation (scale) / Future number WITH rehabilitation	0.00		
Time until ecological benefit (years)	0.00		
Confidence in rehabilitation result (%)	0		
Offset			
Description	0		
Proposed offset (area in hectares)	9600.00		Aim to achieve at least 100% offset by hypothetical land acquisition
Current quality of offset site / Start number (of type of feature)	8.00		Assumes a high quality, like for like land parcel is available for purchase (based on Covalent's Approved Project - Site 10 and Warralakin)
Future quality WITHOUT offset (scale) / Future number WITHOUT offset	7.00		Without active management some degredation is assumed.
Future quality WITH offset (scale) / Future number WITH offset	8.00		onground management as per land acquisition offset requirements, such as weed and predator control and fencing for stock exclusion.
Time until ecological benefit (years)	1.00		Assumes a site is available for purchase
Confidence in offset result (%)	0.9		Site condition ensured by ongoing management
Duration of offset implementation (maximum 20 years)	20.00		Maximum applied, LOM is 30 years
Time until offset site secured (years)	1.00		Assumes site is available for purchase
Risk of future loss WITHOUT offset (%)	10.0%		Conservative, unknown future onsite management
Risk of future loss WITH offset (%)	5.0%		Assumes successful purchase and active management
Offset ratio (Conservation area only)	N/A		

Appendix C Commonwealth Offset Calculation

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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	Malleefowl and Chuditch habitat
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

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

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	clearing of native vegetation that is suitable habitat for both Malleefowl and Chuditch	**Area**	1443	Hectares	Ha represents the maximum clearing extent of habitat (ERD)
			Quality	**8**	Scale 0-10	
			Total quantum of impact	#####	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									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	1154.40	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	36,000	**Risk of loss (%) without offset**	1%	**Risk of loss (%) with offset**	1%								
									Future area without offset (adjusted hectares)	35787.6	**Future area with offset (adjusted hectares)**	35787.6	0.00	95%	0.00	0.00				
					Time until ecological benefit	1	**Start quality (scale of 0-10)**	**8**	**Future quality without offset (scale of 0-10)**	**7**	**Future quality with offset (scale of 0-10)**	**8**	1.00	35%	0.35	0.35				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	1154.4	1250.07	108.29%	**Yes**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

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