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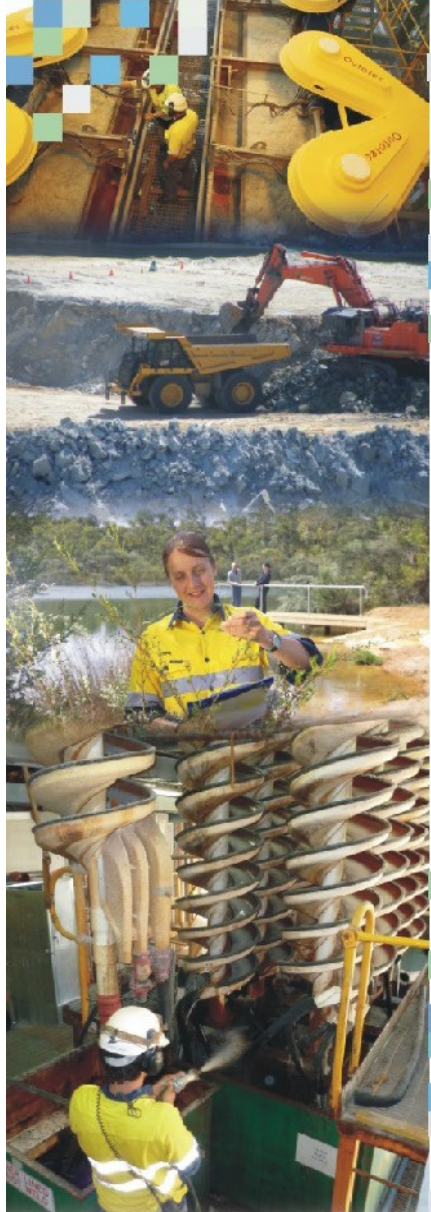


Talison Lithium Pty Ltd

Conservation Significant Terrestrial Fauna Management Plan

SITE MANAGEMENT PLAN: ENV- MP - 0002

Lithium
batteries



TALISON
GREENBUSHES
OPERATIONS



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Executive Summary

The Conservation Significant Terrestrial Fauna Management Plan (the Plan) has been prepared to satisfy Ministerial Condition 6 associated Ministerial Statement 1111 published on 19 August 2019 for the Greenbushes Lithium Mine Expansion under the *Environmental Protection Act 1986* (EP Act) and in consideration with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the Greenbushes Lithium Mine Expansion (the Project) developed by Talison Lithium Pty Ltd (Talisson).

Talisson has prepared the Plan to be consistent with the “*Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plan*” (EPA 2018). The Plan has been prepared to manage potential impacts to terrestrial fauna from the Project, with the purpose of the Plan detailed in Table 1.

Table 1: Outline of the Plan

Detail	Description
Proponent Name	Talisson Lithium Pty Ltd (Talisson)
Project	Greenbushes Lithium Mine Expansion (Mine Expansion)
Ministerial Statement	MS1111
Management Plan Purpose	To provide a framework to ensure that impacts on conservation significant fauna attributable to the Project are minimised, and impacts do not conflict with the EPA objective for terrestrial fauna.
Key Environmental Factor	<p>Terrestrial fauna; specifically, the conservation significant fauna potentially impacted by the Project:</p> <ul style="list-style-type: none"> • Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>); • Forest Red-tailed Black Cockatoo (<i>C. banksii naso</i>); • Baudin's Black Cockatoo (<i>C. baudinii</i>); • Chuditch (<i>Dasyurus geoffroii</i>); • South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>); • Numbat (<i>Myrmecobius fasciatus</i>) – note this species was not recorded at the site; and • Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) – note this species was not recorded at the site, secondary evidence- scats, potentially belonging to the WRP were recorded in the Jarrah/Marri forest habitat within the northwest of the MDE.
Objective	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
Plan Objectives	<p>To avoid, where possible, and minimise direct and indirect impacts upon conservation significant fauna within the mine development envelope during ground disturbing activities and during all phases of mining activities, as far as practicable;</p> <p>To ensure there is no direct and indirect impact from the implementation of the proposal to conservation significant fauna habitat in the areas defined in the Plan.</p>

1. Project Description

The Greenbushes Lithium Mine (the Mine) is an existing mining operation owned and operated by Talison. The Mine is located at the current operations immediately south of the Greenbushes townsite, approximately 250 km south of Perth and 80 km south east of Bunbury in Western Australia (WA) (Figure 1). Talison currently mines and processes spodumene ore at the Mine to produce a lithium mineral concentrate at approximately 6% Lithium Oxide (Li₂O).

Talison proposes to expand the Mine within tenements M1/03, M1/06, M1/07, M1/08, M1/09, M1/16, G01/1, G01/2 (see Figure 2). The expansion will require the current approved operational boundary (Active Mining Area) to be extended to the south, with a smaller extension to the north, increasing the current (approved) area of 1,591 hectares (ha) to a 1,989 ha area (i.e. an increase of 398 ha). The new operation boundary is referred to as the Mine Development Envelope (MDE).

This expansion includes the following development (see Figure 3):

- Developing an expanded open pit;
- Establishment of two additional chemical grade processing plants (CGPs), a tailings retreatment plant, a crusher and centralised run-of-mine (ROM);
- Establishment of a new Mine Services Area and explosives storage and handling infrastructure;
- Expansion of the existing Floyds Waste Rock Landform;
- Construction of an additional tailings storage facility (TSF4); and
- Establishment of additional linear infrastructure corridors (Bypass Road, powerline, pipeline and road corridors).

The mining rate will also increase from 3.5 Million bench cubic metres per annum (Mbcmpa) to approximately 16 Mbcmpa, which will require additional mining fleet and blasting activity. The ore processing rate will increase from 4.7 Million tonnes per annum (Mtpa) to 9.5 Mtpa. Lithium mineral concentrate production will increase from 1.2 Mtpa to 2.3 Mtpa.

The proposed expansion of 398 ha to the MDE will require the clearing of 350 ha of native vegetation clearing within State Forest 20 (within Talison tenements). Of the 350 ha, approximately 193 ha is comprised of Jarrah/Marri forest over *Banksia*, and the remainder (157 ha) is Jarrah/Marri forest fauna habitats. The clearing of 350 ha has the potential to directly impact terrestrial fauna through the loss of habitat or through direct interaction with fauna. The area within this clearing footprint is suitable for foraging, breeding and/or roosting by Black Cockatoos, and provides habitat for other conservation significant fauna species (as detailed below).

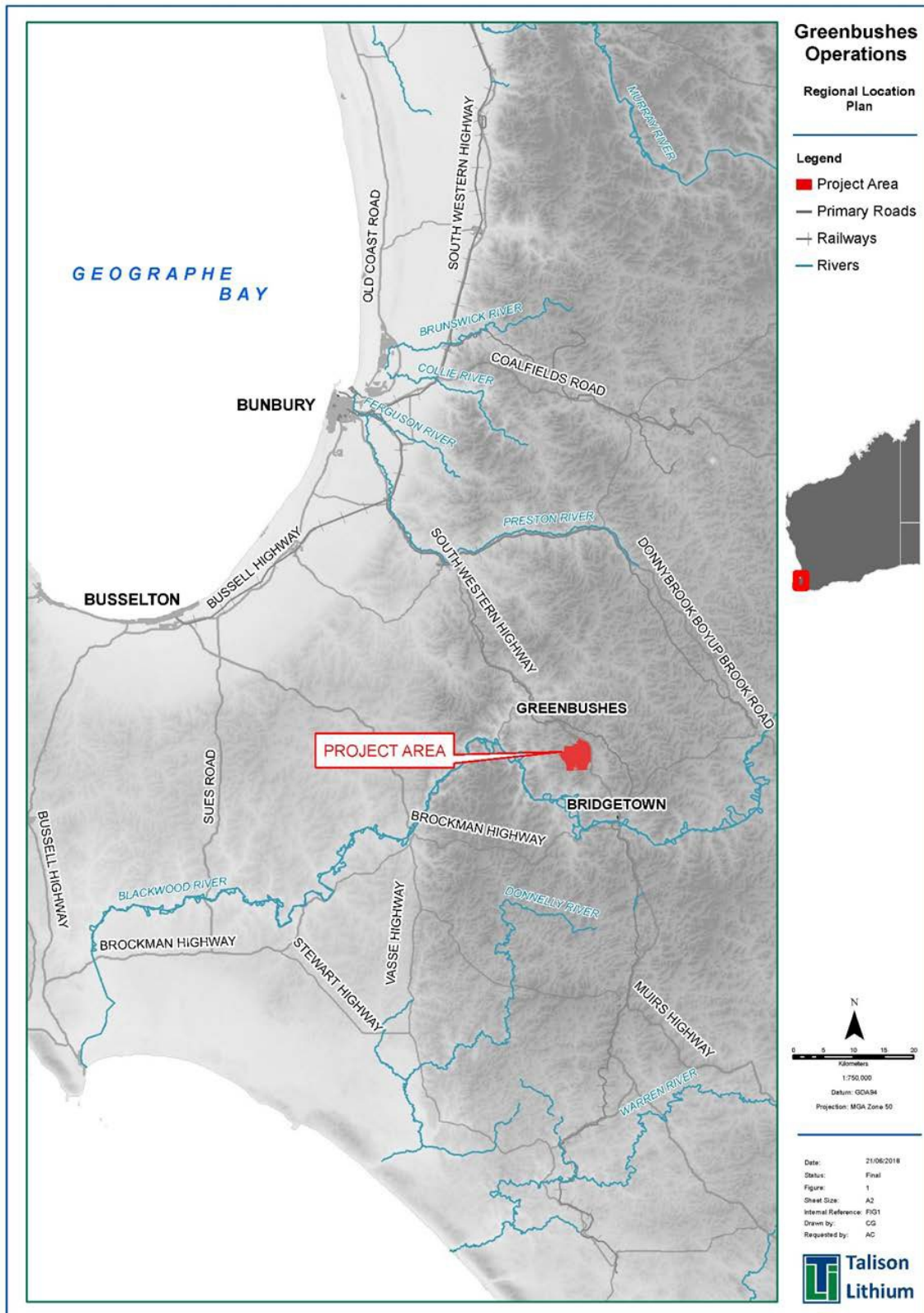


Figure 1: Location of the Project



Conservation Significant Terrestrial Fauna Management Plan

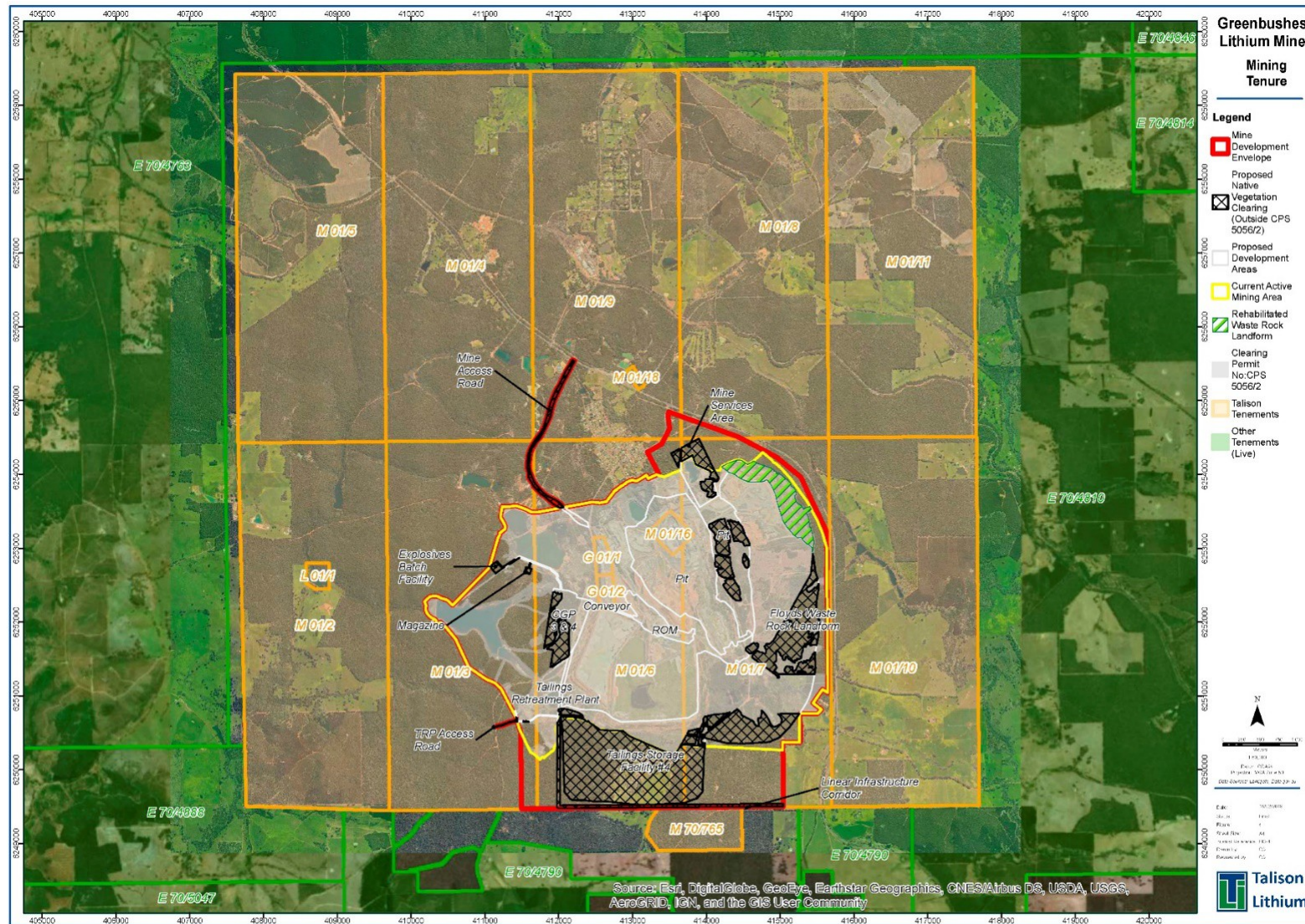


Figure 2: Talison Tenements



Conservation Significant Terrestrial Fauna Management Plan

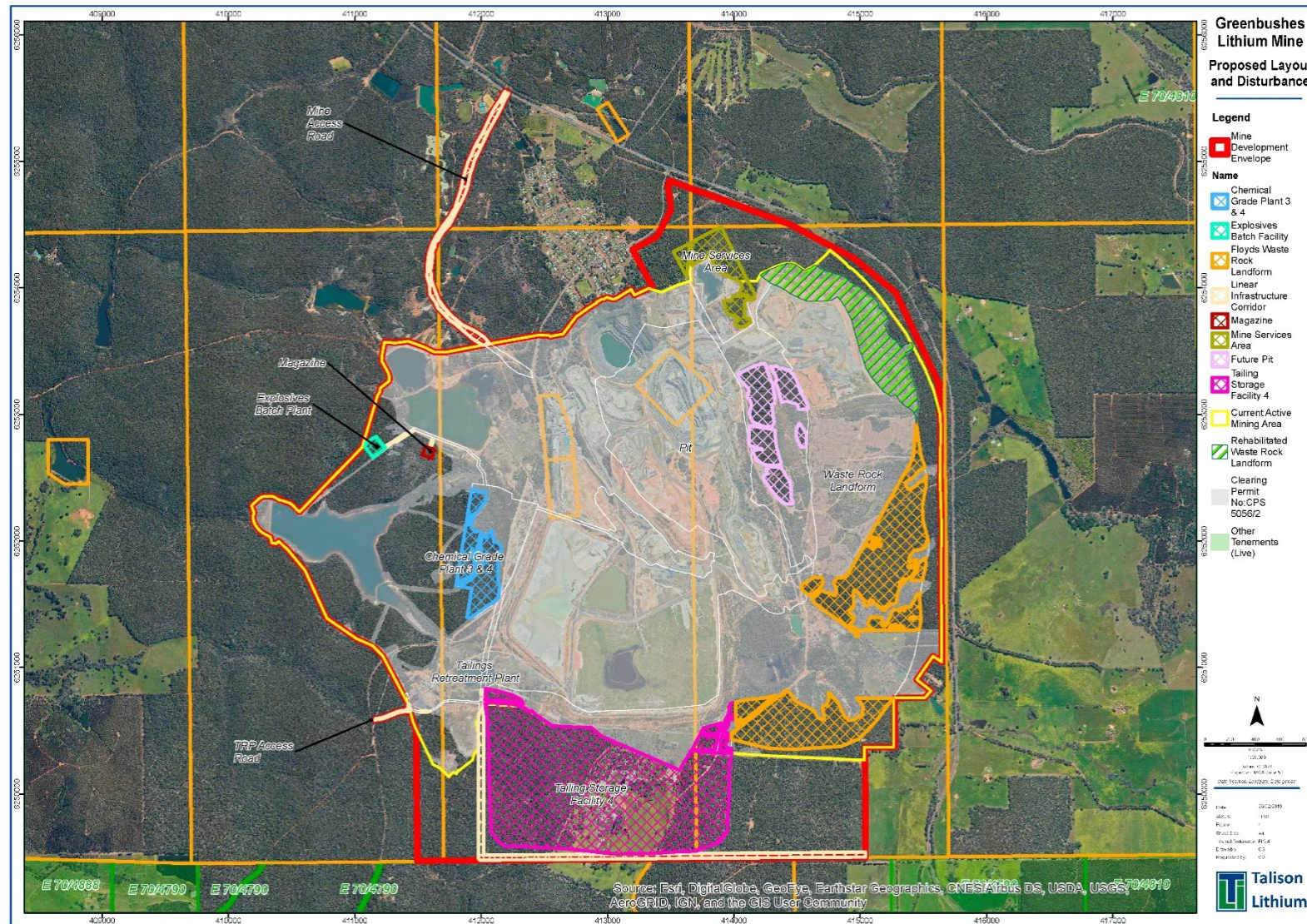


Figure 3: Proposed Disturbance Areas



2. Roles and Responsibilities

The accountability for fulfilling the requirements of the Plan is dependent on the stage of project development (clearing, construction, operations, decommissioning, rehabilitation and closure). Irrespective of whether clearing and construction activities are undertaken by external contractor or internal personnel, the designated Project Manager will be accountable for ensuring the requirements of the Plan are met. Responsibility may be delegated to the Environmental Manager or other personnel. During operational stages, the Manager Environment is accountable for ensuring the requirements of the Plan are met (responsibility for specific tasks may be delegated). Where responsibilities are delegated, this must be clearly recorded and communicated. Table 2 attributes specific management actions to the appropriate personnel.

Table 2: Roles & Responsibilities

Roles	Responsibility
Superintendent Approvals & Stakeholder	To formulate the Plan, performance measures, establish clear objectives and provide guidance in the approach to fulfilling commitments of the Plan.
Environmental Team	To provide technical support and advice to site staff.
Superintendent Environment & Community	To implement and report on fauna monitoring and assessment work and audit conformance of activities against the management actions of the Plan. To maintain site records of surveys and arrange trapping and monitoring programs as required. To document any direct observations into the Threatened species database.
Manager Safety, Environment, Community & Training	To establish roles and responsibilities and allocate appropriate resourcing to the Plan. To provide site staff with the tools and resources required to meet Talison objectives. To ensure that the Plan is implemented and that risks related to the activities, products and services are managed.
Construction Manager / Operations Manager	To ensure Talison conditions, commitments and policies are followed on-site.
General Manager Operations	To provide and support resources to effectively manage the risks identified in the Plan. To ensure overall compliance to the Plan.
Employees, contractors and visitors	To reduce any impacts on fauna resulting from the construction and operation of the project. To report sightings, vehicle strikes or any encounters with recognisable significant fauna species.

3. Context, Scope and Rationale

Talison has prepared the Conservation Significant Terrestrial Fauna Management Plan (the Plan) to meet the requirements under Part IV of the EP Act to meet Ministerial Statement Number 1111 (MS1111) conditions for the Greenbushes Lithium Mine Expansion Project. The Plan has been developed to be consistent with the *Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans* (EPA 2018).

3.1. Scope

In scope:

- All activities and facilities that occur within the operational area of the Greenbushes Lithium Operation, as defined by the Mine Development Envelope (MDE) (Figure 3)
- Mining and associated activities that have the potential to impact terrestrial fauna.

Out of scope:

- Progressive rehabilitation of the Floyds Waste Rock Landform and visual amenity (refer to *ENV-MP-0004 Visual Impact Management and Rehabilitation Plan*)
- Offset management required to directly offset clearing of habitat (refer to *Talison Offset Strategy*)
- Management of disease hygiene (refer to *ENV-MP-0003 Disease Hygiene Management Plan*)
- Global Advanced Metals Greenbushes Tantalum Operations.

3.2. Key Environmental Factors

The key environmental factor relevant to the Plan is terrestrial fauna. The EPA's objective for protection of terrestrial fauna is "to protect terrestrial fauna so that biological diversity and ecological integrity are maintained".

The key environmental values relating to terrestrial fauna for the Project are conservation significant fauna species, and their associated habitats, within the MDE. The conservation significant fauna species identified as being present, or unconfirmed present, and their habitat (ecological attributes) are listed in Table 3.

Table 3: Conservation significant species identified as being present, or unconfirmed present, within the MDE

Species	Conservation Status	Ecological Attributes
Carnaby's Cockatoo <i>(Calyptorhynchus latirostris)</i> Confirmed present	EN (EPBC Act, BC Act)	Occur in eucalypt woodlands, forest and in shrubland dominated by proteaceous species. Breeding activity is documented in the wheatbelt, the jarrah-marri forests of the Darling Scarp and the tuart forests of the Swan Coastal Plain. The species breeds in large eucalypt hollows from July to December. After breeding, flocks tend to migrate coastward in search of food.
Baudin's Cockatoo <i>(Calyptorhynchus baudinii)</i> Confirmed present	EN (EPBC Act, BC Act)	Occur in tall forests and woodlands, where it feeds mainly on marri seeds and various proteaceous species. Breeds in large hollows with peak breeding season occurring in October-December. Incubation lasts for about 29 days and chicks remain in the nest for up to 16 weeks. To be suitable, hollows need to have an entrance diameter of 30–40 cm.



Species	Conservation Status	Ecological Attributes
Forest Red-tailed Black (FRB) Cockatoo (<i>Calyptorhynchus banksii naso</i>) Confirmed present	VU (EPBC Act, BC Act)	Occurs in marri, karri and jarrah forests, woodlands and remnants in the south-west of Western Australia and feeds mainly on the seeds of marri, jarrah, sheoak, and persoonia. The species has an obligate dependence on hollows in live standing trees and birds tend to select hollows that are high and deep, with a mean entrance diameter of 30 cm. Breeding has been recorded in every month with peaks in April-June and August-October. The female incubates for about 29 days and chicks remain in the nest for about 48 days.
Chuditch (<i>Dasyurus geoffroii</i>) Confirmed present	VU (EPBC Act, BC Act)	Utilise horizontal hollow logs or earth burrows as dens or refuge. To be suitable as den sites, logs must have a diameter >30 cm and a hollow with 7-20 cm diameter and a minimum length of 1m. Annually, an adult female will utilise an estimated average of 66 logs and 110 burrows within her home range.
South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) Confirmed present	Conservation Dependent (BC Act)	A nocturnal, solitary, medium-sized dasyurid that forages mostly in the canopy between sunset and sunrise. Phascogales rarely forage on the ground. Individuals use multiple nest trees within their variable home range of 5-150 ha, with nests generally located in trees >80 cm diameter at breast height. Breeding season varies little throughout their range, with most births occurring in July. Young are carried with the mother for the first 48 days and are thereafter left in the nest.
Western Ringtail Possum (WRT) (<i>Pseudocheirus occidentalis</i>) Unconfirmed present / Scats - Possible	CE (EPBC Act, BC Act)	Occurs in the coastal strip between Bunbury and Albany. The species mostly feeds and moves in the canopy. In the southern forests it occurs mainly in jarrah, marri or karri dominated forests, where animals feed on myrtaceous leaves and occupy tree hollows.
Numbat (<i>Myrmecobius fasciatus</i>) Considered/ Not recorded	EN (EPBC Act, BC Act)	The numbat is a small termitivorous marsupial, with a distribution currently limited to two naturally occurring remnant populations in WA at Dryandra and Perup in the southwest of Western Australia (Friend 2008) and to several smaller re-introduced populations in NSW, SA and WA (Friend and Thomas 2003). This species nests in hollow logs or in burrows (Friend 1989) and an abundance of termites appears to be a prerequisite for the occurrence of this species (Friend and Thomas 2003).

Fauna habitat has been mapped across all ten mining leases held by Talison in the Greenbushes area, including the location of trees with suitable nesting hollows to support black cockatoos and potential high-quality Western Ringtail Possums (WRP) habitat (Figure 4). There are two fauna habitats represented within native vegetation areas that will be cleared as part of the Mine Expansion (Figure 4):

- Jarrah/Marri Forest; and
- Jarrah/Marri Forest over Banksia dominated midstorey.

Both of these fauna habitats have been historically logged and are considered to be widely represented within the Southern Jarrah Forest bioregion. Several black cockatoo breeding habitat surveys were undertaken to identify potential breeding hollows within the MDE (Biologic 2011, Kirby 2018, Harewood 2018). A total of 14 trees were positively identified as showing evidence of previous use by black cockatoos in the form of chew marks to varying degrees within retained native vegetation inside the MDE (Figure 4). An additional 16 trees were assessed as being possibly suitable but showed no conclusive evidence of actual use for nesting purposes (Figure 4).

The Western Ringtail Possum has not been recorded within the MDE during detailed and targeted surveying. However, the quality of potential WRP habitat within remnant vegetation surrounding the proposed MDE was classified and mapped (Onshore Environmental 2018). Remnant vegetation that was both long unburnt (i.e. last burnt prior to 1985) and not logged for at least 58 years (i.e. last logged prior to 1960) was inferred to support the highest quality habitat for the WRP (Figure 4). This included remnant situated north of the Greenbushes town site and outside the MDE.



This Numbat not recorded during any surveys at the site nor any habitat deemed suitable for the species. As per the requirement of condition 6-2(5) of MS 1111) the Numbat was considered in the in the development of the plan, specific actions were not applied due to the absence of the species in all fauna and surveys

There were no additional significant fauna habitats recorded from within the MDE.

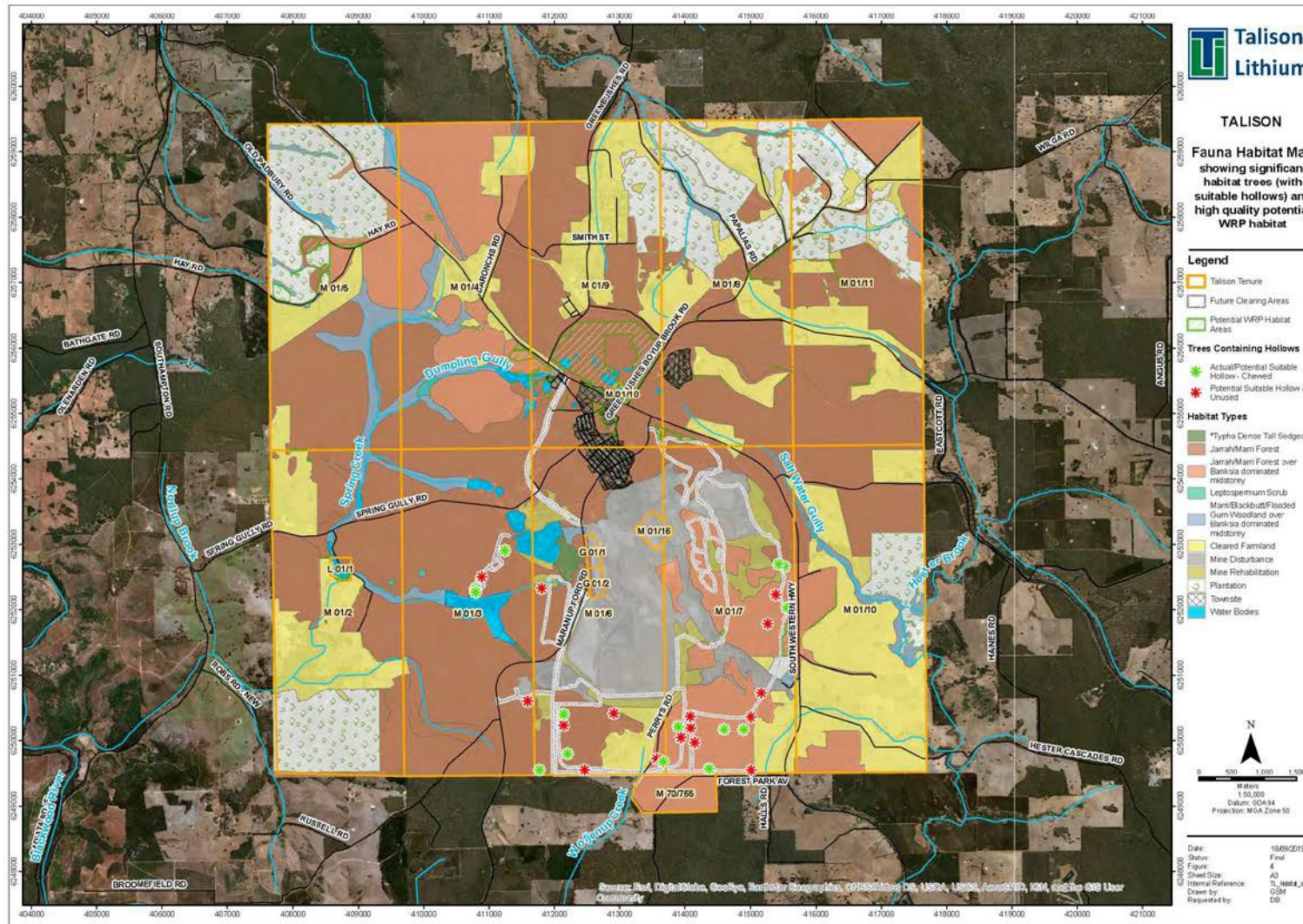


Figure 4: Fauna Habitat Map –significant habitat trees (with suitable hollows) and high quality potential WRP habitat.



3.3. Condition Requirements

The Plan has been developed to meet Condition 6 of MS1111 relating to conservation significant terrestrial fauna and associated habitat within the Project area. These condition 6 requirements are outlined in Table 4 following.

Table 4: Condition Requirements

Condition Reference	Condition Detail	Section in the Plan
6-1 (1)	<i>The Proponent shall implement the proposal to meet the following environmental objectives: (1) The Proponent shall avoid, where possible, and minimise direct and indirect impacts upon conservation significant fauna within the mine development envelope delineated in Figure 1 of Schedule 1 during ground disturbing activities and during all phases of mining activities, as far as practicable</i>	Section 3.4 Rational & Approach Section 5.2 Table 8
6-1 (2)	<i>The Proponent shall implement the proposal to meet the following environmental objectives: (2) The Proponent shall ensure there is no direct and indirect impact from the implementation of the proposal to conservation significant fauna habitat in the areas as defined in the Conservation Significant Terrestrial Fauna Management Plan.</i>	Section 3.4 Rational & Approach Section 5.2 Table 8
6-2	<i>In order to meet the requirements of condition 6-1, prior to ground disturbing activities within the mine development envelope delineated in Figure 1 of Schedule 1, unless otherwise agreed by the CEO, the proponent shall prepare a Conservation Significant Terrestrial Fauna Management Plan to the requirements of the CEO on advice of the Department of Biodiversity, Conservation and Attractions.</i>	
6-2 (1)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: when implemented, substantiate and ensure that Condition 6-1 is being met;</i>	Section 5.4 Reporting
6-2 (2)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: present objectives and monitoring protocols to identify conservation significant fauna and fauna habitat to ensure no direct or indirect impact occurs;</i>	Section 5.2 Management Actions & Responses Section 5.3 Monitoring Table 8
6-2 (3)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: specify criteria (trigger criteria) that will trigger the implementation of management and/or contingency actions to prevent direct or indirect impacts to conservation significant fauna and fauna habitat;</i>	Section 5.2 Management Actions & Responses Table 8
6-2 (4)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: specify management and/or contingency actions to be implemented if trigger criteria required by condition 6-2(3) have been reached;</i>	Section 5.2 Management Actions & Responses Table 8
6-2 (5)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: include a trapping and translocation program for target fauna species, which includes the Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>), Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>), Baudin's Black Cockatoo (<i>Calyptorhynchus baudinii</i>), Chuditch (<i>Dasyurus geoffroii</i>), Numbat (<i>Myrmecobius fasciatus</i>), Brush-tailed phascogale/wambenger (<i>Phascogale tapoatafa</i>) and Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>), or as otherwise agreed by the CEO;</i>	Section 5.2 Management Actions & Responses Table 8
6-2 (6)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: identify objectives and monitoring protocols to measure the success of trapping and translocation program required by condition 6-2(5) and;</i>	Section 5.2 Management Actions & Responses Table 8
6-2 (7)	<i>The Conservation Significant Terrestrial Fauna Management Plan shall: identify management and contingency measures, including timeframes for their implementation if the objectives of the trapping and translocation program in condition 6-2(5) are not being met.</i>	Section 5.2 Management Actions & Responses Table 7
6-3	<i>The proponent shall implement the most recent version of the Conservation Significant Fauna Terrestrial Management Plan which the CEO has confirmed by notice in writing, addresses the requirements of condition 6-1,</i>	Section 2 Roles & Responsibilities Commitment made by Talison in The Plan
6-4	<i>The proponent shall continue to implement the Conservation Significant Terrestrial Fauna Management Plan, or any subsequent revisions as approved by the CEO in condition 6-3, until the CEO has confirmed by notice in writing that the plan meets the objective specified in condition 6-1.</i>	Section 2 Roles & Responsibilities Section 6



3.4. Rationale and Approach

3.4.1. Surveys and Study Findings

Details of the fauna surveys that have been completed within the MDE are outlined in Table 5 Table 5. The findings of these surveys (summarised in Table 6) have informed the development of the Plan.

Table 5: Previous fauna surveys completed within the MDE

Date	Survey Type	Survey Method Details
October 2011	Greenbushes Level 1 Fauna Survey (Biologic 2011)	A comprehensive literature and database review of previous fauna surveys and records within the Greenbushes Mining Leases was completed. Fauna habitats present within the study area were mapped and described, including any of importance that may support conservation significant species. Additionally, a targeted survey for fauna of conservation significance was completed, including habitat tree assessments for three threatened Black Cockatoo species.
February 2018	Greenbushes Targeted Vertebrate and SRE Invertebrate Fauna Survey (Biologic 2018a)	The targeted survey included motion camera recording, targeted searches, opportunistic records and nocturnal surveys, as well as active foraging and leaf litter and soil sifting for short range endemic invertebrate fauna.
January / February 2018	Black Cockatoo Survey (Kirkby 2018)	A ground based targeted black cockatoo survey was undertaken by recognised black cockatoo Researcher Tony Kirkby in early 2018. The survey was undertaken within blocks of vegetation within the MDE to assess the suitability for foraging and breeding by the three Black Cockatoo species known from the Greenbushes area.
March 2018	Black Cockatoo Habitat Quality Assessment (Ennovate 2018)	An assessment of habitat quality (based on Kirkby 2018) was undertaken.
July 2018	Greenbushes Black Cockatoo Tree Hollow Review (Harewood 2018a)	Greg Harewood was engaged to undertake an aerial (drone) survey of recorded trees with hollows suitable for black cockatoo breeding (within and in close proximity to the MDE).
June 2018	Greenbushes Preliminary Western Ringtail Possum Surveys (Harewood 2018b)	Greg Harewood was engaged to undertake a preliminary Western Ringtail Possum assessment. This included searching for dreys and nocturnal surveying.
July 2018	Greenbushes Vertebrate Fauna, SRE and Subterranean Fauna Desktop Assessment (Biologic 2018b)	Biologic was commissioned to undertake a desktop assessment for terrestrial vertebrate fauna, short-range endemic (SRE) invertebrate fauna and subterranean fauna within and surrounding the Greenbushes Mine. The desktop assessment reviewed a total of seven literature sources and four databases were searched.
November 2018	Level 1 Vertebrate Fauna Survey Greenbushes Infrastructure Corridors (Onshore Environmental 2018a)	Onshore Environmental was commissioned to undertake a Level 1 vertebrate fauna survey within the proposed infrastructure corridors, which included the proposed mine access road.
November 2018	Targeted Western Ringtail Possum Survey Greenbushes Mine (Onshore Environmental 2018b)	Onshore Environmental was commissioned to undertake a targeted Western Ringtail Possum survey within the expanded MDE.



Table 6: Summary of results from fauna surveys previously completed within the Mine Development Envelope.

Report	Type	Species recorded	Conservation significant species recorded	Tree hollows
Greenbushes Level 1 Fauna Survey (Biologic Environmental 2011)	Level 1	NA	South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) Baudin's Cockatoo (<i>Calyptorhynchus baudinii</i>) Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>)	75 trees with suitable breeding hollows for Black Cockatoos
Greenbushes Targeted Vertebrate and SRE Invertebrate Fauna Survey (Biologic 2018)	Targeted	43 species including 14 mammals, 30 birds, 7 reptiles, 2 amphibians	Western Ringtail Possum (<i>Pseudocheirus occidentalis</i>) (possible scat) Chuditch (<i>Dasyurus geoffroii</i>) Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) Southern Brown Bandicoot (<i>Isodon obesulus fusciventer</i>) Western Brush Wallaby (<i>Notamacropus irma</i>)	NA
Black Cockatoo Survey (Kirby 2018)	Targeted	NA	Forest Red-tailed Black Cockatoo (<i>Calyptorhynchus banksii naso</i>) Baudin's Cockatoo (<i>Calyptorhynchus baudinii</i>) Carnaby's Cockatoo (<i>Calyptorhynchus latirostris</i>)	50 trees with suitable breeding hollows for Black Cockatoos (24 showed signs of use)
Black Cockatoo Habitat Quality Assessment (Ennovate 2018)	Desktop assessment	NA	NA	NA
Greenbushes Black Cockatoo Tree Hollow Review (Harewood 2018a)	Review of hollows assessed by Biologic (2011) and Kirby (2018)	NA	None	70 trees re-assessed (of 47 from Kirby 2018 and 36 from Biologic 2011), 14 previously or currently utilised by Black Cockatoos, 16 suitable but not currently in use, 40 not suitable
Greenbushes Preliminary Western Ringtail Possum Surveys (Harewood 2018b)	Targeted	NA	South-western Brush-tailed Phascogale (<i>Phascogale tapoatafa wambenger</i>) Three unmaintained and unoccupied Western Ringtail Possum dreys were identified at Schwenke's Dam (outside the MDE) and Greenbushes Pool (Norm Lyndsay Reserve). Noted that the habitat throughout the MDE represents poor to marginal habitat for Western Ringtail Possum.	NA
Greenbushes Vertebrate Fauna, SRE and Subterranean Fauna Desktop Assessment (Biologic 2018b)	Desktop assessment	NA	NA	NA



Report	Type	Species recorded	Conservation significant species recorded	Tree hollows
Level 1 Vertebrate Fauna Survey Greenbushes Infrastructure Corridors (Onshore Environmental 2018)	Level 1	NA	None	8 hollows identified, one suitable for use by black cockatoos
Targeted Western Ringtail Possum Survey Greenbushes Mine (Onshore Environmental 2018b)	Targeted	NA	None	NA



3.4.2. Key Assumptions and Uncertainties

The key assumption, uncertainties and limitations that relate to the information outlined in Section 1.4.1 that Talison used to develop the Plan include:

- The fauna surveys undertaken to date have observed and identified all species of conservation significance potentially or actually present within the MDE;
- Direct impacts to fauna during construction are limited to mortality during pre-mining and construction activities (clearing and plant movement);
- Most fauna will disperse in front of the clearing front where they are able; and
- Previously cleared areas within the MDE do not contain habitat requirements or known records of conservation significant species. Conservation significant fauna are not expected to occur within previously cleared areas, therefore these areas do not require management during the construction of the proposal.

Conservation significant species were assessed for their likelihood to occur within the proposal footprint, by reviewing current distribution, habitat requirement and location and age of previous records in the vicinity of the study area. If any conservation significant species assumed not to occur in the proposal footprint is subsequently recorded, the proposed management actions will ensure there is no additional impact. Current management actions ensure conservation significant ground dwelling fauna such as the Chuditch would be trapped and relocated in the trapping program.

3.4.3. Management Approach

The management approach has been informed by best practice and recent experience on mine and construction projects in Western Australia. Findings from multiple previous fauna surveys and the advice of specialist consultants has also informed the management approach.

The hierarchical approach taken focuses on:

- avoiding clearing of habitat suitable for conservation significant fauna by locating mine expansion developments on previously disturbed or cleared areas, where possible.
- Where habitat clearing cannot be avoided, minimise the duration, intensity and/or extent of impacts on fauna during clearing, pre-mining and construction activities.
- Any significant unavoidable residual impacts on conservation significant fauna will be addressed through implementation of the Talison Offset Strategy.

The management approach taken in the Plan is risk-based and developed around the mitigation hierarchy of avoid, minimise, monitor and rehabilitate such that the risk to conservation significant fauna is reduced to as low as reasonably practicable. Management actions detailed in the Plan have been specifically designed to ensure the proposed Mine Expansion activities meet the environmental objectives for the key environmental factors. Risks and management actions were identified and prioritised using information gained from surveys, process data, and other regional and local information.



3.4.4. Rationale for Choice of Provisions

The management approach is informed by the results of previous fauna surveys and follow up targeted species surveys, and the extent of the Project, in order to minimise the potential impacts.

The disturbance footprint and associated clearing will be minimised by the preferential use of existing disturbed areas and progressive rehabilitation over the 20-year expected mine life. The mitigation measures have been designed for the approximately 20-year life of mine and as such the Plan may require revisions and adaptation through the course of the mine life.

The key environmental values (i.e. conservation significant fauna species) were selected due to their known occurrence in the MDE, or their potential to occur based on the suitability of habitat present. The key management targets were selected with the aim to minimise the potential impacts from the Mine Expansion, and are based on:

- review of available data for the region and the existing site;
- previous management plans and current practices for terrestrial fauna management; and
- industry standards, legislative requirements and best practice procedures.

4. Risk Assessment

4.1. Sources

Potential sources of risk (facilities or activities) associated with the MDE are:

- General mining and mineral processing activities (normal operations);
- Clearing and construction activities (Mine Expansion);
- Roads and vehicle movements.

4.2. Potential Adverse Impacts

The potential impacts to conservation significant fauna arising from the Mine Expansion are summarised in Table 7.

Out of scope of this Plan are the potential impacts related to the introduction or spread of *Phytophthora cinnamomi* (dieback) and *Quambalaria coyrecup* (marri canker), and the offset of residual impacts on conservation significant fauna. The management of these impacts are discussed in the *Disease Hygiene Management Plan* and the *Offset Strategy*, respectively.

Table 7: Potential Impacts to Conservation Significant Fauna

Potential Impacts	Details
Habitat loss – clearing	Direct loss of suitable habitat for conservation significant fauna species (including foraging and dispersal habitat).
Habitat loss - altered fire regimes	Increased likelihood of accidental fires due to the increased presence of people and machinery in the area. Reduced occurrences of widespread cool, controlled burns across the MDE may increase the likelihood of uncontrolled, hot burns for small areas within the MDE.
Fragmentation of habitat	Fragmentation of habitat areas normally associated with linear infrastructure or infrastructure construction.
Direct mortality	Direct mortality or injury of conservation significant fauna species from Mine Expansion activities, including: <ul style="list-style-type: none"> • vehicle strike • interactions with humans and machinery during clearing • entrapment in trenches, excavation and water storages.
Indirect mortality - Introduction of feral predators	Introduced predators (e.g. cats, foxes, wild pigs) are recognised as a threat to the survival of a number of conservation significant species. Mining activities can contribute to an increase in these feral predator populations through an increase in available food and water.
Behavioural changes	Light and noise emissions may result in changes to behaviour or movement of conservation significant species.

4.3. Assessment and Risk Management

The risk to conservation significant fauna from Mine Expansion activities will be reduced to as low as reasonably practicable by implementing the management measures (controls) identified in Section 5. The management measures identified have been applied using the hierarchy of eliminate, substitute, isolate, engineer, and administration.

5. Conservation Significant Fauna Management Plan Provisions

This section of the Plan outlines the outcome-based provisions that will be implemented to ensure the protection of conservation significant terrestrial fauna and associated habitat, and management actions to minimise potential impacts from the implementation of the Project.

5.1. Management Outcomes and Performance Indicators

Management outcomes and performance indicators have been developed to meet the environmental objectives for the Plan. The performance indicators will be used to measure the performance of the provisions (management actions) against the environmental outcomes. Table 8 details the environmental outcomes and performance indicators that have been developed for the Plan.

Table 8: Management Outcomes and Performance Indicators

Management Outcomes	Performance Indicators
Minimise the potential for clearing activities to cause injury or death to conservation significant fauna	No death of conservation significant fauna due to direct interaction with equipment and machinery.
Avoid direct impact to breeding Black Cockatoos as a result of hollow loss during breeding activity	No Black Cockatoo deaths due to direct interaction with equipment and machinery and no unintentional clearing of habitat.
Avoid entrapment of conservation significant fauna leading to injury or death	Minimal mammal deaths due to entrapment in drill holes, containers, bins, open excavations, trenches, landfill or water holding facilities.
Avoid vehicle strike causing injury or death or population loss to conservation significant fauna	Minimal mammal death attributable to mining vehicle strike.
Minimise requirements for clearing and associated loss/fragmentation of habitat that may displace conservation significant fauna	Minimise requirements for clearing which results in habitat loss and fragmentation. No clearing outside approved clearing areas.
Minimise light and noise pollution	No disruptions to conservation significant fauna outside the Project area from noise and light emissions.
Prevent increased feral predator abundance within the Mine Development Envelope	Minimal increase in feral predator abundance.
No net increase in fire frequency.	No fires attributed to mining and associated activities.
Avoid indirect impact to conservation significant terrestrial fauna habitat outside of clearing areas	No loss or reduction in condition of fauna habitat within the MDE (retained remnants) or surrounding state forest related to mining operations

5.2. Management and Response Actions

The Project has been designed with the aim to avoid disturbance to fauna habitats in the MDE, and specifically to retain Black Cockatoo habitat where possible. Works will be undertaken in previously cleared/disturbed areas and will avoid clearing of native vegetation wherever possible. Where it is not possible to retain habitat due to project requirements, management measures will be implemented to minimise impacts to conservation significant fauna species and response actions implemented to achieve the environment outcomes for the Project (Table 9).



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Table 9: Management and Response Actions

Environmental Criteria	Management Actions	Monitoring	Reporting
Outcome: Minimise the potential for clearing activities to cause injury or death to conservation significant fauna			
Performance Indicator: No death of conservation significant fauna due to direct interaction with equipment and machinery.			
<p>Trigger criteria: Conservation significant terrestrial fauna are trapped for the last two consecutive nights of the trapping program ahead of clearing activities.</p> <p>Threshold criteria: Injury or death to conservation significant fauna during clearing activities.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Minimise disturbance to fauna by locating infrastructure, where possible, in existing disturbed areas. Undertaking clearing in a progressive manner, with the area of active disturbance minimised. Clearing to be undertaken during the day. Clearing to be undertaken under a work permit ENV - PR - 5003 GDP Permit.</p> <p>Trapping and Translocation Program will be implemented to relocate conservation significant fauna from area to be cleared. ENV - PR- 0005 - Trapping and Translocation Procedure.</p> <p>A qualified fauna spotter will be present during all clearing activities. The person will hold a permit to handle and move significant fauna under Section 40 of the <i>Biodiversity Conservation Act 2016</i>, have suitable equipment to administer emergency care to injured and or displaced fauna, and have access to a care facility that can be used to rehabilitate injured fauna. ENV - PR- 0004 - Fauna Trapping & Translocation, Fauna Spotting.</p> <p>Staff inductions, training and awareness to provide information on conservation significant fauna via internal communications and inductions (e.g. how to identify species, conservation status, the importance of minimising impacts on the species, adherence to speed limits, reporting to Environmental Department).</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> Implement further trapping program for key species of conservation significance until there are two consecutive trap nights where conservation fauna is not captured. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Cease clearing activities; and In the event if an injury, trained fauna handlers will administer ENV - PR - 9001 - Management of Injured Fauna and contact details for local wildlife carers/vets. Incident investigation and review of management actions. 	<p>Trapping and Translocation Program Fauna Spotting Program Incident Investigations</p>	<p>Post trapping and translocation report detailing daily trapping results, and translocation release points. Daily Fauna Spotter observation reports. Incident reports. Compliance Assessment Report.</p>
Outcome: Avoid direct impact to breeding Black Cockatoos as a result of hollow loss during breeding activity			
Performance Indicator: No Black Cockatoo deaths due to direct interaction with equipment and machinery and no unintentional clearing of habitat.			



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Environmental Criteria	Management Actions	Monitoring	Reporting
<p>Trigger criteria: Identification of active breeding hollows for Black Cockatoo within designated clearing area.</p> <p>Threshold criteria: Damage or clearing of active breeding hollows for Black Cockatoos.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Mapping of significant habitat trees with suitable hollows recorded within the MDE</p> <p>Significant Black Cockatoo Habitat Monitoring Program will be implemented to identify signs of breeding activity prior to clearing.</p> <p>A qualified fauna spotter will be present during all clearing activities ENV - PR- 0004 - Fauna Trapping & Translocation, Fauna Spotting</p> <p>Staff inductions, training and awareness to provide information on conservation significant fauna via internal communications and inductions (e.g. how to identify species, conservation status, the importance of minimising impacts on the species, adherence to speed limits, reporting to Environmental Department).</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> • Trees identified as being actively used for breeding will be protected in accordance with Talison Procedure ENV-PR-9007-Tree Protection Procedure which involves but is not limited to: <ul style="list-style-type: none"> ○ Establishing a Black Cockatoo Tree Protection Zone (TPZ) and prohibiting threatening activities within the TPZ; ○ Clearly demarcating the TPZ; and ○ Ground protection within the TPZ where necessary. ○ The tree and nest will be left undisturbed until fledglings have left the nest. <p>Threshold level actions:</p> <ul style="list-style-type: none"> • Cease clearing activities; • In the event if an injury, trained fauna handlers will administer care ENV - PR - 9001 - Management of Injured Fauna and contact details for local wildlife carers/vets; and • Incident investigation and review of management actions. 	<p>Significant Black Cockatoo Habitat Monitoring Program</p> <p>Fauna Spotting Program</p> <p>Incident Investigations</p>	<p>Daily observation reports to be filed by Fauna Spotter</p> <p>Incident reports</p> <p>Compliance Assessment Report</p>
<p>Outcome: Avoid entrapment of conservation significant fauna leading to injury or death.</p>			
<p>Performance Indicator: Minimal conservation significant fauna deaths due to entrapment.</p>			
<p>Trigger criteria: Fauna entrapped but released uninjured.</p> <p>Threshold criteria: Fauna injured or killed due to entrapment.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Fauna egress points and/or fauna ladders will be installed where there is a risk of entrapment of conservation significant fauna.</p> <p>Open excavations and trenches will be inspected at the start of each day.</p> <p>Open holes, including drill holes, to be covered or capped during construction, and rehabilitated when they are no longer required or are outside active areas.</p> <p>Domestic waste facilities will be fenced, and putrescible wastes will be covered.</p> <p>Shipping containers/intermodal containers to have doors closed securely when not in use.</p> <p>Nominated onsite personnel are trained fauna handlers.</p>	<p>Excavation inspections</p> <p>Incident Investigations</p>	<p>Incident reports</p> <p>Compliance Assessment Report</p>



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Environmental Criteria	Management Actions	Monitoring	Reporting
	<p>Staff inductions, training and awareness to provide information on conservation significant fauna via internal communications and inductions (e.g. how to identify species, conservation status, the importance of minimising impacts on the species, adherence to speed limits, reporting to Environmental Department).</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> Incident investigation and review of management actions. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Cease relevant activities associated with fauna injury or death. In the event if an injury, trained fauna handlers will administer care ENV - PR - 9001 - Management of Injured Fauna and contact details for local wildlife carers/vets. Incident investigation and review of management actions. 		
Outcome: Avoid vehicle strike causing injury or death or population loss			
Performance Indicator: Minimal conservation significant fauna deaths attributable to vehicle strike within the MDE.			
<p>Trigger criteria: Near miss or injury involving a species of conservation significance.</p> <p>Threshold criteria: Death of species of conservation significance due to vehicle strike.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Driving restricted to designated tracks unless approved for an exempt purpose (including but not limited to exploration or biological surveys).</p> <p>Implementation and enforcement of speed limits.</p> <p>All sightings and interactions with conservation significant fauna species reported.</p> <p>Nominated onsite personnel are trained fauna handlers.</p> <p>Staff inductions, training and awareness to provide information on conservation significant fauna via internal communications and inductions (e.g. how to identify species, conservation status, the importance of minimising impacts on the species, adherence to speed limits, reporting to Environmental Department).</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> In the event if an injury, trained fauna handlers will administer care ENV - PR - 9001 - Management of Injured Fauna and contact details for local wildlife carers/vets. Review of road condition and traffic management in the area where the near miss occurred, and implement additional controls (i.e. signage, driving limits, reduced hours) if required. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Cease clearing activities, if vehicle strike death is related to clearing activities. Incident investigation and review of management actions. 	Incident Investigations	Incident reports Compliance Assessment Report
Outcome: Minimise requirements for clearing and associated loss/fragmentation of habitat that may displace conservation significant fauna.			
Performance Indicator: Minimise requirements for clearing which results in habitat loss and fragmentation. No clearing outside approved clearing areas.			



Conservation Significant Terrestrial Fauna Management Plan

Environmental Criteria	Management Actions	Monitoring	Reporting
<p>Trigger criteria: Area incorrectly identified for clearing but not cleared (near miss).</p> <p>Threshold criteria: Clearing outside approved clearing areas.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Minimise disturbance to fauna habitat by locating infrastructure, where possible, in existing disturbed areas.</p> <p>Undertaking clearing in a progressive manner, with the area of active disturbance minimised.</p> <p>Clearing to be undertaken under a work permit ENV - PR - 5003 GDP Permit.</p> <p>Progressive rehabilitation of disturbed areas which are at their final state, as part of the site's ongoing rehabilitation program. Completion criteria will incorporate fauna and habitat restoration objectives.</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> • Cease clearing activities. • Incident investigation and review of management actions. <p>Threshold level actions:</p> <ul style="list-style-type: none"> • Cease clearing activities. • Incident investigation and review of management actions. 	<p>Ground Disturbance Register</p>	<p>Compliance Assessment Report</p> <p>Ground disturbance register and internal clearing permits.</p>
<p>Outcome: Minimise light and noise pollution.</p>			
<p>Performance Indicator: No disruptions to conservation significant fauna outside the MDE from noise and light emissions.</p>			
<p>Trigger criteria: Detection of light or noise overspill from MDE at an unexpected level that may disrupt fauna.</p> <p>Threshold criteria: Detection of significant light or noise overspill from MDE that have caused disruption to fauna.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Lights will be strategically placed and designed to shine towards plant operations and minimise light spill to the surrounding environment.</p> <p>Equipment design will specify compliance with Australian Standard noise limits. Noise emissions will comply with the Regulation 17 permit.</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> • Incident investigation and review of management actions. • Reduce hours of operation and/or activities to lower noise levels. • Re-design or redirect lighting to reduce light spill level. <p>Threshold level actions:</p> <ul style="list-style-type: none"> • Cease noise and light generating activities. • Incident investigation and review of management actions. 	<p>Noise Monitoring Program</p> <p>Incident Investigations</p>	<p>Compliance Assessment Report</p> <p>Incident Reports</p>
<p>Outcome: Prevent increased feral predator abundance within the MDE.</p>			
<p>Performance Indicator: Minimal increase in feral predator abundance.</p>			



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Environmental Criteria	Management Actions	Monitoring	Reporting
<p>Trigger criteria: Detected increase in populations of feral abundance.</p> <p>Threshold criteria: Detected death of conservation significant fauna from feral predator predation.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Implement a waste removal schedule. Putrescible waste bins will have secure lids.</p> <p>Implement a feral animal monitoring and control program in cooperation with regional control programs, where appropriate.</p> <p>Staff training and awareness to include information on feral species via induction and internal communications (i.e. impacts feral animals have on conservation significant fauna, no feeding of feral species and all sightings of feral species to be reported).</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> Predator control program review. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Incident investigation and review of management actions. 	<p>Feral animal monitoring and control program</p>	<p>Compliance Assessment Report Incident Reports</p>
<p>Outcome: No net increase in fire frequency attributable to activities within the MDE.</p>			
<p>Performance Indicator: No fires attributed to mining and associated activities.</p>			
<p>Trigger criteria: Fire incident reported but contained, no loss of fauna habitat.</p> <p>Threshold criteria: Fire incident reported with loss of conservation significant fauna habitat.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE:</p> <p>Maintenance of fire breaks. Implement fire management procedures (e.g. Hot Work Permit system, fire-fighting training, Emergency Response Plan).</p> <p>Firefighting equipment will be located on site, in machinery and vehicles. Lightning protection equipment will be installed as part of Project design where necessary. Talison will consult with DBCA and DFES to undertake prescribed burns. Staff training, inductions and awareness to include information on the prevention and management of fires.</p> <p>The site emergency response plan will be implemented in the event of a fire, with Emergency Response Personnel will be trained in Fire Fighting and Response ERT2002 - Initial Response to Fire (Surface)</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> The site emergency response plan will be implemented in the event of a fire. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Incident investigation and review of management actions. 	<p>Incident Investigations</p>	<p>Compliance Assessment Report Incident Reports</p>
<p>Outcome: Avoid indirect impact to conservation significant terrestrial fauna habitat outside of clearing areas</p>			
<p>Performance Indicator: No loss or reduction in condition of fauna habitat within the MDE (retained remnants) or surrounding state forest related to mining operations</p>			



Conservation Significant Terrestrial Fauna Management Plan

Environmental Criteria	Management Actions	Monitoring	Reporting
<p>Trigger criteria: NDVI value within reference vegetation monitoring plots falls below the baseline average (0.20 standard deviation), reflecting possible evidence of vegetation decline.</p> <p>Threshold criteria: NDVI value within reference vegetation monitoring plots falls below the baseline average (0.33 standard deviation), reflecting a change in vegetation health class.</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE: Implement Native Vegetation Reference Sites Monitoring Program for early detection of differential changes in vegetation health at 12 reference sites in state forest surrounding the MDE.</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> Assessment of plant biodiversity parameters within monitoring plots (on-ground) to confirm cause of change at the species level. Discuss potential management actions with DBCA. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Cease all activities associated with vegetation decline. Incident investigation and review of management actions. 	<p>Native Vegetation Reference Site Monitoring Program (NDRE/NDVI)</p>	<p>Compliance Assessment Report</p>
<p>Trigger criteria: Health score for any significant habitat tree (with hollows) decreases by two or more classes.</p> <p>Threshold criteria: Health score for any significant habitat tree (with hollows) decreases to zero (reflecting tree death).</p>	<p>Management actions to avoid, where possible, and minimise impacts upon conservation significant fauna within the MDE: Implement Significant Habitat Tree Monitoring Program for early detection of changes in tree health for 16 significant habitat trees (with hollows) within the MDE.</p> <p>Trigger level actions:</p> <ul style="list-style-type: none"> Determine the cause of tree health decline. Discuss potential management actions with DBCA. <p>Threshold level actions:</p> <ul style="list-style-type: none"> Cease activities associated with tree health decline. Incident investigation and review of management actions. 	<p>Significant Habitat Tree Monitoring Program</p>	<p>Compliance Assessment Report</p>



5.3. Monitoring

To monitor performance against the performance indicators, the monitoring programs detailed in Table 10 will be implemented.

Table 10: Monitoring Programs

Monitoring Program	Summary of Monitoring Program
Trapping and translocation program (prior to clearing)	<p>For 5-nights prior to clearing commencing, a trapping and translocation program will be implemented by suitably qualified and licenced environmental professional.</p> <p>Where conservation significant fauna is trapped for two consecutive trap nights prior to the commencement of clearing (i.e. on night number 4 and 5 of the 5-night trapping program), trapping will continue nightly until conservation significant fauna are not trapped for two consecutive trap nights . This extended program may also be reviewed with consideration to increase the trap density.</p> <p>The 5-night trapping and translocation program will continue at three weekly intervals until clearing within each block has ceased.</p> <p>The specific design and methodology of the trapping and translocation program is subject to consultation and licencing with DBCA.</p>
Significant Black Cockatoo habitat program (prior to clearing)	<p>Within 48-hours prior to clearing, significant habitat trees with suitable hollows recorded within the clearing block will be inspected by a suitably qualified and licenced environmental professional. Monitoring and inspection will include:</p> <ul style="list-style-type: none"> • Camera and / or drone Inspections to allow for augmented hollow inspections; • Visual observation of feeding signs, scratching's, faeces; and • Any direct observation or audible sounds of black cockatoos. <p>If black cockatoo breeding activity is identified the Talison Environment Department will establish a Black Cockatoo Tree Protection Zone (TPZ) prior to clearing commencing. The TPZ will comprise a clearly demarcated 10-metre radius around the habitat tree using star pickets and sighter wire. The GPS coordinates of the TPZ will be recorded and mapped. All persons involved in the clearing activity are responsible for protecting the TPZ. No clearing or ground disturbing activity is to occur within the TPZ. The suitably qualified and licenced environmental professional will verify all clearing activities are conducted outside of the TPZ.</p> <p>The qualified and licenced environmental professional will confirm that the black cockatoo chicks have fledged before the TPZ can be removed and clearing and ground disturbance activities can commence. This is outlined in detail ENV-PR-9007-Tree Protection Procedure, where nesting activity is identified, trees will be protected in accordance with <i>ENV-PR-9007-Tree Protection Procedure</i>.</p>
Fauna spotting program (during clearing)	<p>A suitably qualified and licenced fauna spotter will be present during all land clearing activities. The person will hold a current licence to handle and move significant fauna under Section 40 of the Biodiversity Conservation Act 2016, have suitable equipment to administer emergency care to injured and or displaced fauna, and have access to a care facility that can be used to rehabilitate injured fauna.</p>
Feral Animal Monitoring and Control Program	<p>The abundance of feral predators and herbivores will be monitored on an ongoing basis (focussing primarily on the fox, but also considers pig, rabbit and cat populations) at high risk sites within the MDE. This data will inform performance against the outcomes of the Plan, and will guide any feral control programs implemented in the area.</p>
Native Vegetation Reference Site Monitoring Program	<p>The potential impact on flora, vegetation and fauna habitat from expanded mining operations will be managed through implementation of a suitable monitoring program for native vegetation retained within, and surrounding, the MDE.</p> <p>Native vegetation will be assessed by combining conventional quantitative monitoring of plant biodiversity parameters and tree health, with multispectral analysis (NDRE/NDVI). The application of multispectral analysis within vegetation health monitoring programs improves the ability to identify changes in vegetation health sooner and more accurately over larger more representative areas.</p>
Significant Habitat Tree Monitoring Program	<p>Fourteen significant habitat trees (possessing suitable hollows) will be retained within the MDE and a monitoring program will be completed biannually in April and September to ensure tree health is not in decline, and fauna habitat quality is being appropriately retained.</p>

5.4. Reporting

Talison uses several routine internal reporting formats to effectively implement the requirements of the Plan. Routine reporting includes daily, weekly and/or monthly HES reports for specific scopes of work and include incident reports (if any), environmental statistics and records, records of inspections and audits, status of monitoring programs, performance reports, etc.

At a minimum, reporting will comply with MS1111 reporting conditions and, including:

- An annual Compliance Assessment Report prepared in accordance with the Compliance Assessment Plan (as required by Condition 4 of the MS1111).
- Incident reporting in accordance with the Compliance Assessment Plan (as required by Condition 4 of the MS1111).

6. Adaptive Management and Review of the Management Plan

The Plan has defined the purpose, outlined specific management and mitigation measures to address the issue related to preservation of habitat and conservation significant fauna, and introduced methods for monitoring and the evaluation of these measures.

The management approach for the conservation significant fauna will be adaptive through ongoing review and reporting measures, to ensure that it achieves the identified purpose, environmental objectives and meets Ministerial Statement condition (where relevant).

The Plan will be formally reviewed annually by a suitably qualified experienced person. In addition to the annual review, the Plan will be reviewed if:

- New information is learned from monitoring, or monitoring indicates that management targets are not being achieved;
- New information becomes available about the conservation significant fauna species (e.g. a change in conservation status of a species); and
- New requirements need to be included as a consequence of approvals being issued or modified.

Talison implement adaptive management to respond to any issues identified in implementation of management measures, monitoring and evaluation against the management targets, to more effectively meet the environmental objective of the Plan.

Environmental management is undertaken in accordance with an Environmental Management System (EMS) developed to meet the requirements of ISO14001, relevant legislation and regulations and Australian Standards and other requirements. The EMS is certified to ISO14001 and the integrated management system is certified to ISO 9001. Environmental measurement and monitoring is undertaken in accordance with the relevant environmental work procedures by Environmental Officers on site and the results recorded in accordance with the Filing Register.

Environmental Work Procedures have been developed to ensure that statutory monitoring requirements are met and to ensure that monitoring is undertaken in a controlled manner. Analysis and evaluation of the monitoring and measurement data is conducted and communicated in accordance with procedure ENV5001 Environmental Statutory Reporting.

The following potential adaptive management actions have been developed to respond in the event of mortality of conservation significant fauna:

Investigate cause;



- Review site speed limit and decrease;
- Assess the effectiveness of training on management of fauna and amend training method if required and implement more training;
- Review design of the pre-clearing trapping and translocation program including trap frequency and number of trapping nights;
- Review feral animal control program and increase frequency; and
- Investigate fauna fencing.

The following potential adaptive management actions have been developed to respond in the event of disturbance of Black Cockatoo nesting sites:

- Investigate cause;
- Review and revise as required methods used for locating and marking breeding trees;
- Assess the effectiveness of training on management of fauna and amend training method if required and implement more training;
- Increase buffer distance around breeding trees; and
- Assess the effectiveness of temporary fencing around breeding trees and adjust temporary fencing if required.



7. Stakeholder Consultation

Talison consulted with key stakeholders while developing the Plan, which is consistent with the EPA's expectations to align the plan with the principles of environmental impact assessment. This section provides a summary of the consultation that has occurred. The comments raised during consultations with stakeholders were considered in preparing the Plan. A summary of the consultation and Talison response is included in Table 11.

Table 11: Stakeholder Consultation

Date	Organisation	Summary of Consultation	Talison Response to Comments /Concerns
19/8/18	DoTEE	Describe and assess the likely effectiveness of measures proposed to avoid and/or mitigate the direct and indirect impacts of the proposed action on Black Cockatoos. This information must include, but is not limited to, measures proposed to avoid or mitigate: (a) the clearance of known and suitable nesting hollows including potential engineering or design controls that can be implemented to avoid the clearance of hollows and mitigation measures to be applied for the hollows that are proposed to be cleared; (b) introduction and/or spread of weeds and <i>Phytophthora cinnamoni</i> (dieback); (c) any impact on the supply of permanent water or decrease to the quality of the permanent water for fauna; and (d) noise, vibration and vehicle strike that could impact the Black Cockatoos utilising the known breeding hollow/s in proximity to the mine site.	Talison has considered and aimed to address all of these concerns through management targets and actions outlined in the Plan. Advice will be sought from suitably qualified consultants on the fauna trapping and relocation program during development of the program.
19/8/18	DoTEE	Describe and assess the likely effectiveness of measures proposed to avoid and/or mitigate the direct and indirect impacts of the proposed action on the Western Ringtail Possum. This information must include, but is not limited to, measures proposed to avoid or mitigate impacts of: (a) feral animals (cat and fox); and (b) introduction and/or spread of weeds and <i>Phytophthora cinnamoni</i> (Dieback).	Talison has considered the potential impacts to the Western Ringtail Possum in the Plan and has suitable procedures and management actions in place to manage these risks appropriately.
19/8/18	DoTEE	Describe and assess the likely effectiveness of measures proposed to avoid and/or mitigate the direct and indirect impacts of the proposed action on Chuditch. This information must include, but is not limited to, measures proposed to avoid or mitigate impacts of: (a) feral animals (cat and fox).	Talison has considered the potential impacts to the Chuditch within the Plan and has suitable procedures and management actions in place to manage these risks appropriately.
31/8/18	EPA	Management and mitigation for black cockatoos should include clearing during nonbreeding periods and the use of buffers around confirmed nesting hollows that will be retained.	Management and mitigation for black cockatoo hollows are outlined within the Plan and include clearing during non-breeding periods where practicable. The advice of specialist consultants had been sought to identify measures to reduce the impacts on these species.



Date	Organisation	Summary of Consultation	Talison Response to Comments /Concerns
12/9/19	DBCA	Management and mitigation for Conservation of Significant Fauna at the Greenbushes Site. A document review and comments sheet was received from the DBCA as per their requirement for inclusion into the plan.	The comments were reviewed, and advice of specialist consultants had been sought to add this advice into the plan.
18/9/19	DBCA	Site Visit and discussion of Management Plans. Describe and assess the likely effectiveness of measures proposed to avoid and/or mitigate the direct and indirect impacts of the proposed action on Conservation Significant Fauna, impacts of Dieback and site dieback management procedures.	The advice of specialist consultants had been sought to identify measures to reduce the impacts and plans have been updated as per the advice of the department.

8. References

- Australian Government. (2009). *Significant impact guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia*. Barton: Commonwealth of Australia.
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9. Appendices



Appendix A – Talison Procedure ENV - PR - 9001 - Management of Injured Fauna



Management of Injured Fauna Procedure

TASK & PURPOSE

This procedure supports the implementation of *ENV-MP-0002 Conservation Significant Terrestrial Fauna Management Plan (CSTFMP)*. The objective of the CSTFMP is to protect terrestrial fauna – specifically conservation significant fauna – so that biological diversity and ecological integrity are maintained.

Conservation significant fauna, as well as other fauna species, have the potential to be directly impacted by Greenbushes Lithium Mine activities, including via:

- Vehicle strike;
- Interactions with humans and machinery during clearing;
- Entrapment in trenches, excavations and water storages.

This procedure ensures that best practice and safe handling, first aid and euthanasia techniques are used to manage injuries to fauna at the Greenbushes Lithium Mine.

This procedure has been written to be consistent with the following Standard Operating Procedures published by the Department of Biodiversity, Conservation and Attractions (DBCA):

- Standard Operating Procedure: Transport and Temporary Holding of Wildlife (DBCA, 2017a)
- Standard Operating Procedure: Managing Disease Risk in Wildlife Management (DBCA, 2017b)
- Standard Operating Procedure: Humane Killing of Animals under Field Conditions (DBCA, 2017c)
- Standard Operating Procedure: First Aid for Animals (DBCA, 2017d)

ASSOCIATED DOCUMENTS

Other fauna and habitat procedures that have been developed to support the implementation of the CSTFMP include:

- ENV-PR-0005 Fauna Trapping and Translocation, Fauna Spotting Procedure
- ENV-PR-5003 Disturbance of Ground Permit
- ENV-PR-9007 Tree Protection Procedure

IDENTIFYING CONSERVATION SIGNIFICANT FAUNA SPECIES

Interactions with conservation significant fauna requires an increased level of awareness and reporting and the identification of these species is important in the implementation of this procedure. There are six (6) conservation significant fauna species that may be encountered at Greenbushes Lithium Mine:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*)
- Baudin's Cockatoo (*Calyptorhynchus baudinii*)
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*)
- Chudich (*Dasyurus geoffroii*)
- South-western Brush-tailed Phascogale (*Phascogale tapoatafa wambenger*)
- Western Ringtail Possum (*Pseudocheirus occidentalis*)

Fauna profiles (DBCA 2017e-j), including photographs, biology and behaviour, for these species are provided in Appendix A.



Management of Injured Fauna Procedure

OTHER FAUNA SPECIES

Many species of fauna that not conservation significant may also require safe handling, first aid and euthanasia. Other fauna species that are commonly encountered on the Greenbushes Lithium Mine include:

- Mammals: including kangaroos, wallabies, brushtail possums, echidnas, small marsupials and rodents
- Reptiles: including lizards, non-venemous snakes and venemous snakes
- Birds: including magpies, ravens and ring-necked parrots.

SAFETY AND EQUIPMENT

Only trained and qualified personnel should attempt to handle and provide first aid to any animal.

Wild animals can pose a risk to people especially when they are injured or feel threatened. Always remain cautious and aware when aproaching a sick/injured animal and ensure you are wearing the correct PPE and carrying appropriate fauna response equipment before attempting to handle animals.

PPE

- Standard site PPE (long sleeves, long trousers and steel capped, fully enclosed boots)
- Leather riggers gloves for handling animals

FAUNA RESPONSE EQUIPMENT

- Snake handling kit, including tongs, calico bag and compression bandages
- Pillow case / calico bag
- Towels
- Cat carrier, plastic tub or cardboard box
- Blunt instrument

SPECIALIST FAUNA CARE

Talison and contractor trained fauna handlers are available to provide immediate response to fauna injuries and to render basic first aid. Any ongoing care or rehabilitation will be provided by appropriate wildlife carers or veterinarians. Muiltple organisations are located close to the Greenbushes Lithium Mine that can provide specialist care or rehabilitation to injured fauna if required and will be contacted in the event of an injury to a black cockatoo. The Shire Ranger is also a resource for fauna handling and euthanasia services. The contact details for these organisations are:

- Blackwood Veterinary Centre (Bridgetown and Manjimup)
 - o 9761 1905
- Maroo Wildlife Refuge (Manjimup)
 - o 0409 086 973
 - o 0429 727 837
- F.A.W.N.A. (Boyanup, Bunbury and Busselton)
 - o 0438 526 660
- Wildcare Helpline
 - o 9474 9055
- Shire Ranger (Bridgetown)
 - o 0428 911 847



INJURY RESPONSE PROCEDURE

Notification

Any direct human interaction with fauna that results in death or injury must be reported immediately to the Environment Department. This includes interactions on Maranup Ford Road. Persons at the scene of the incident should make the scene safe and maintain visual contact with the injured fauna and take any advice from the Environment Department until first responders arrive.

First Responders

For injuries that occur during clearing activities, the trained fauna spotter will be equipped to provide immediate fauna handling and first aid assistance. For all other injuries, the Environment Department or trained delegates will be the first responder to provide fauna handling and first aid assistance.

Assessing the Situation

When an injured animal is encountered the assessment steps to be followed by the fauna handler are:

1. *Is it safe to approach the animal?*

If it is not safe to approach the animal, observe from a distance and seek additional assistance (e.g. from another fauna handler, Shire Ranger or DBCA Wildlife Officer) as required.

2. *Is the animal feral or native?*

All feral animal species that are caught on site need to be euthanised. It is illegal to catch and re-release feral animals.

3. *Is the animal showing signs of injury, illness or unusual behaviour?*

Observe the animal from a distance for signs of injury, illness or unusual behavior. This assessment could include:

- Are there any obviously damaged or misshapen body parts (indicating fractures, etc.)?
- Is the animal bright, alert and responsive, or is it quiet and dull?
- Is the animal standing or up in its normal posture, or is it lying down?
- If the animal can move, is it moving as it should?
- Is the animal breathing with an open mouth or gasping for air?
- Is respiration loud?
- Is there any discharge from the nose?
- Are there any obvious signs of damage to the animal's coat (such as bald patches) or feathers?
- Are the feathers fluffed up?
- Are there any obvious signs of injury (blood, wounds)?

4. *If it is required, is it possible to contain and handle the animal?*

If it is not possible (e.g. the animal is in a tree and out of reach) then observe from a distance and seek additional assistance as required.



Management of Injured Fauna Procedure

If it is possible to contain the animal, handling will be conducted by trained fauna handlers, will be kept to a minimum and will be conducted only for the purpose of restraining the animal to allow for a preliminary assessment of the animal's injuries, or so that the animal can be relocated to a safe place. If required, handling may also be conducted to render basic care and to transfer the animal into a container for transport to a care facility.

Fauna handlers are trained in how to capture an animal in a way that is safe for the handler and the animal. The methods used will be dependent on the animal, the environment and the animals injuries.

5. *Does the animal require basic care, expert care or does not have a reasonable chance of survival and potential for release?*

Observe the animal for signs of injury or illness (initially from a distance, later by manual manipulation if handling is required). Render immediate first aid treatment to the animal as appropriate (e.g. stem bleeding from wounds, stabilise fractures). Any expert care, ongoing care or rehabilitation will be provided by appropriate wildlife carers or veterinarians.

Temporary Containment

Temporary containment will be of the shortest duration possible and will only be conducted if an animal is injured and requires transportation to a care facility, or if an animal requires relocation to a safe place (e.g. relocating a snake).

Transport

Upon advice from the wildlife carer / veterinarian, and depending on the particular injury to the animal, secure and ventilated containers will be used for transport. Examples of containers include hung up cotton bags (e.g. for cockatoos and juvenile macropods) and boxes with lids (for small marsupials and birds).

Euthanasia

If the trained fauna handler, veterinarian or wildlife carer assesses that there is a poor chance of survival and suitability for release, or that the level of pain or distress to the animal is too high to warrant further prolonged suffering, euthanasia of the animal may be required. Euthanasia conducted in the field will be conducted in accordance with *Standard Operating Procedure: Humane Killing of Animals under Field Conditions (DBCA, 2017c)*.

There are three methods of euthanasia that can be used on the Greenbushes Lithium Mine – blunt force trauma, cervical dislocation and shooting method. Trained fauna handlers can use blunt force trauma and cervical dislocation methods, but only individuals who hold a valid firearm license, have completed official firearms training and are authorised to shoot on site by the General Manager can operate a firearm on site. Veterinarians or wildlife carers may adopt alternative euthanasia methods as appropriate.

Animal Death

In the event that a conservation significant animal dies as a result of its injuries or by euthanasia (either onsite or later at a care facility), the specimen will be offered to the WA Museum or other research/educational institution. If the specimen is not required by these institutions, the body will be wrapped and disposed of at a suitable waste facility or will be taken to a nearby safe location to naturally



Management of Injured Fauna Procedure

decompose (e.g. kangaroos killed by vehicle strike will be dragged from the roadside to prevent further injuries to scavengers).

Reporting

After initially notifying the Environment Department, the person(s) involved in an incident that results in the injury or death of an animal is required to raise an incident report in I-Systain (for Talison employees) or the Contractor incident reporting system.

Incidents relating to conservation significant fauna will be externally reported in the annual Compliance Assessment Report required by Ministerial Statement 1111 (Condition 4-6). Annual reporting to DBCA and Department of Water and Environmental Regulation (DWER) may also include notification of incidents.

REFERENCES

- Department of Biodiversity, Conservation and Attractions (DBCA)(2017a). Standard Operating Procedure: Transport and Temporary Holding of Wildlife. Perth, WA: Department of Biodiversity, Conservation and Attractions.
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Management of Injured Fauna Procedure

APPENDIX A – FAUNA PROFILES AND FACT SHEETS

Fauna Profile - Carnaby's cockatoo *Calyptorhynchus latirostris*.

Fauna Profile - Forest red-tailed black cockatoo *Calyptorhynchus banksii naso*.

Fauna Profile - Baudin's cockatoo *Calyptorhynchus baudinii*.

Fauna profiles - Chuditch *Dasyurus geoffroii*.

Fauna Profile - Western Ringtail Possum *Pseudocheirus occidentalis*.

Fauna Facts – Brush-tailed Phascogales.



Appendix B – Talison Procedure ENV - PR - 9007 - Tree Protection Procedure



TASK & PURPOSE

This procedure supports the implementation of *ENV-MP-0002 Conservation Significant Terrestrial Fauna Management Plan (CSTFMP)*. The objective of the CSTFMP is to protect terrestrial fauna – including Black Cockatoo species – so that biological diversity and ecological integrity are maintained.

Black cockatoo species have the potential to be directly impacted by Greenbushes Lithium Mine activities, including via:

- Interactions with humans and machinery during clearing.

This procedure ensures that active nesting hollows identified within areas designated for clearing are identified, protected and left undisturbed until fledglings have left the nest.

ASSOCIATED DOCUMENTS

Other fauna and habitat procedures that have been developed to support the implementation of the CSTFMP include:

- ENV- PR - 9001 Management of Injured Fauna
- ENV-PR-0005 Fauna Trapping and Translocation, Fauna Spotting Procedure
- ENV-PR-5003 Disturbance of Ground Permit

BLACK COCKATOO IDENTIFICATION

There are three (3) black cockatoo species (*Calyptorhynchus* sp.) that may be encountered at Greenbushes Lithium Mine:

- Carnaby's Cockatoo (*C. latirostris*)
- Baudin's Cockatoo (*C. baudinii*)
- Forest Red-tailed Black (FRB) Cockatoo (*C. banksii naso*)

Fauna profiles (DBCA 2017a/b/c), including photographs, biology and behaviour, for these black cockatoo species are provided in Appendix A.

The processes described in this procedure apply equally to all black cockatoo species.

TREE PROTECTION PROCEDURE

Identification and Notification

Prior to land clearing commencing, the Fauna Spotter will verify if there is black cockatoo breeding activity within the area designated for clearing in accordance with *ENV-PR-0005 Fauna Trapping and Translocation, Fauna Spotting Procedure*. The fauna spotter will notify the Environment Department if any activity is identified.

Establishing a Tree Protection Zone

If black cockatoo breeding activity is identified by the Fauna Spotter at a location, the Environment Department will establish a Black Cockatoo Tree Protection Zone (**TPZ**) prior to clearing commencing. The TPZ will comprise a clearly demarcated 10 meter (or greater) radius around the habitat tree using star pickets and sighter wire. The GPS coordinates of the TPZ will be recorded and mapped.



Communicating the TPZ

All persons involved in the clearing activity will be made aware of any TPZs within or adjacent to the area to be cleared via the Disturbance of Ground (DoG) Permit (refer to *ENV-PR-5003 Disturbance of Ground (DoG) Permit Procedure*) and in the Pre-Works Meeting. People at this meeting will include the clearing project manager, site foreman, plant operators and Fauna Spotter.

Protecting the TPZ

All persons involved in the clearing activity are responsible for protecting the TPZ. No clearing or ground disturbing activity is to occur within the TPZ. The Fauna Spotter will verify all clearing activities are conducted outside of the TPZ. The Fauna Spotter will confirm that the black cockatoo chicks have fledged before the TPZ can be removed, and clearing and ground disturbance activities can commence.

Breach of TPZ

If the TPZ is breached, clearing activities will cease and an incident investigation will commence. The Environment Department will be notified immediately. In the event that the breach also results in the injury of a black cockatoo, the Fauna Spotter will administer care in accordance with *ENV-PR-9001 Management of Injured Fauna* and *ENV-PR-9002 Black Cockatoo Handling Procedure*.

Reporting

After initially notifying the Environment Department, the person(s) involved in an incident that results in the breach of a TPZ and/or injury or death of a black cockatoo is required to raise an incident report in I-Systain (for Talison employees) or the Contractor incident reporting system.

Incidents relating to the breach of a TPZ and/or injury or death of a black cockatoo will be externally reported in the annual Compliance Assessment Report required by Ministerial Statement 1111 (Condition 4-6).

REFERENCES

Department of Biodiversity, Conservation and Attractions (DBCA) (2017a). Fauna Profile - Carnaby's cockatoo *Calyptorhynchus latirostris*. Retrieved from <http://www.dbca.wa.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA) (2017b). Fauna Profile - Forest red-tailed black cockatoo *Calyptorhynchus banksii naso*. Retrieved from <http://www.dbca.wa.gov.au/>

Department of Biodiversity, Conservation and Attractions (DBCA) (2017c). Fauna Profile - Baudin's cockatoo *Calyptorhynchus baudinii*. Retrieved from <http://www.dbca.wa.gov.au/>



APPENDIX A – FAUNA PROFILES

Fauna Profile - Carnaby's cockatoo *Calyptorhynchus latirostris*.

Fauna Profile - Forest red-tailed black cockatoo *Calyptorhynchus banksii naso*.

Fauna Profile - Baudin's cockatoo *Calyptorhynchus baudinii*.



Appendix C – Talison Procedure ENV - PR- 0005 - Trapping and Translocation Procedure

Fauna Trapping & Translocation, Fauna Spotting

TASK & PURPOSE

This procedure supports the implementation of *ENV-MP-0002 Conservation Significant Terrestrial Fauna Management Plan (CSTFMP)*. The objective of the CSTFMP is to protect terrestrial fauna – specifically conservation significant fauna – so that biological diversity and ecological integrity are maintained.

Conservation significant fauna, as well as other fauna species, have the potential to be directly impacted by Greenbushes Lithium Mine clearing activities, including via:

- Interactions with humans and machinery during clearing.

This procedure ensures that best practice and safe fauna trapping, translocation and fauna spotting techniques are used during clearing activities at the Greenbushes Lithium Mine.

This procedure has been written to be consistent with the suite of Standard Operating Procedures published by the Department of Biodiversity, Conservation and Attractions (DBCA) for the carrying out of fauna monitoring and surveys, including:

- Standard Operating Procedure: Cage Traps for Live Capture of Terrestrial Vertebrates (DBCA, 2018)
- Standard Operating Procedure: Transport and Temporary Holding of Wildlife (DBCA, 2017a)
- Standard Operating Procedure: Managing Disease Risk in Wildlife Management (DBCA, 2017b)
- Standard Operating Procedure: Humane Killing of Animals under Field Conditions (DBCA, 2017c)
- Standard Operating Procedure: First Aid for Animals (DBCA, 2017d)
- Standard Operating Procedure: Care of Evicted Pouch Young (DBCA, 2017e)

ASSOCIATED DOCUMENTS

Other fauna and habitat procedures that have been developed to support the implementation of the CSTFMP include:

- ENV-PR-9001 Management of Injured Fauna Procedure
- ENV-PR-5003 Disturbance of Ground Permit
- ENV-PR-9007 Tree Protection Procedure

Fauna Trapping & Translocation, Fauna Spotting

PRE-CLEARING TRAPPING AND TRANSLOCATION PROGRAM

The removal of wildlife shortly prior to vegetation clearing represents the most effective mechanism for reducing wildlife injury and mortality associated with land clearing. This process will involve hiring specialist “fauna trappers and handlers” with a zoological background trained and licenced in the detection, trapping, handling, relocation and first aid of wildlife from terrestrial habitats. The person(s) will hold a permit to handle and move significant fauna under Section 40 of the *Biodiversity Conservation Act 2016*, have suitable equipment to administer emergency care to injured and or displaced fauna and have access to a care facility that can be used to rehabilitate injured fauna.

The specialists will operate using protocols and procedures consistent with the suite of DBCA Standard Operating Procedures.

More specifically, the specialist fauna handlers will be suitably trained and licenced to:

- Accurately identify fauna species;
- Identify habitat and or habitat resources of conservation significant fauna;
- Undertake animal trapping, capture and handling;
- Assess animal health and injuries;
- Possess skills required for husbandry of captured native animals;
- Identify suitable wildlife release sites; and
- Implement (or have arranged for) emergency management and/or euthanasia of injured or sick animals.

Timing and Frequency

The fauna trapping and translocation program will be implemented over a five-night (six-day) period immediately prior to the onset of operational clearing works. The trapping and translocation program will be repeated at three-weekly intervals within the immediate clearing front for larger areas of vegetation.

Where conservation significant fauna is trapped for two consecutive trap nights prior to the commencement of clearing (i.e. on night number 4 and 5 of the five-night trapping program), trapping will continue nightly until two consecutive trap nights trap with no conservation significant fauna. This extended program may also be reviewed with consideration to increase the trap density.

Trapping Method

The trapping program will utilise cage traps to target medium to large arboreal and terrestrial mammals. These traps will be cleared each morning by 7:00 am and reset late in the afternoon after 5:00 pm. Trap placement will be influenced by vegetation diversity, the size and shape of the habitat area and by naturally occurring features such as logs, rock outcrops, tree bases and clumping vegetation. As a guide, all distinctly different broad vegetation communities should be surveyed, informed by a site reconnaissance.

The minimum trapping effort will involve 20 traps over the five-night period, arranged in five transects with trap placement 5 to 20 m apart.

The trapping program will also ensure the following habitats are appropriately searched prior to clearing activities commencing:

- hollow-bearing trees (for signs of black cockatoo breeding activity); and
- vegetative material in windrows prior to mulching.



Fauna Trapping & Translocation, Fauna Spotting

Where black cockatoo breeding activity is identified within the area to be cleared, the Environment Department will be notified, and a Tree Protection Zone will be established prior to clearing commencing (refer to *ENV-PR-9007 Tree Protection Procedure*).

Translocation Before Clearing Method

The clearing areas at the Greenbushes site are surrounded by large blocks of state forest that support similar habitat. These are the most appropriate areas for translocation of native animals trapped from within clearing areas.

Prior to translocation occurring, consideration should be given to:

- the health of the animal (i.e. translocated animals should show no signs of infectious/contagious disease and must be in good health and body condition);
- the impacts on resident animals in the adjacent habitat (i.e. is it at carrying capacity);
- the size of the adjacent habitat (i.e. is it sufficient to allow for dispersal of individuals from the point of release);
- the habitat type (i.e. is it the same or very similar in type to the cleared habitat and does it contain appropriate and sufficient sources of shelter, food and water);
- for species utilising tree hollows, are appropriate numbers and types of natural hollows present in the new habitat to provide for the nesting requirements of translocated animals, or are additional artificial hollows or nest boxes required;
- the species composition of the adjacent habitat (i.e. does it contain the translocated species);
- the conservation status of the adjacent habitat (i.e. does it possess reservation status).

Temporary containment will be of the shortest duration possible and will only be conducted to facilitate the translocation of the animal, or to transport an injured animal to a care facility.

Fauna to be translocated will be placed in clean calico bags and released at points outside of the clearing boundary at a suitable time dependent on the fauna species.

Care of evicted pouch young will be conducted in accordance with *Standard Operating Procedure: Care of Evicted Pouch Young* (DBCA, 2017e).

Care for injured animals and any requirement for euthanasia will be conducted in accordance with *Talisson procedure Management of Injured Fauna Procedure*.

FAUNA SPOTTING PROGRAM

The identification of wildlife in danger of injury during vegetation clearing is an effective mechanism for reducing wildlife injury and mortality associated with land clearing. This process will involve hiring specialist "fauna spotters" with a zoological background trained and licenced in the detection, handling, relocation and first aid of wildlife from terrestrial habitats. The specialists will operate using protocols and procedures consistent with the suite of DBCA Standard Operating Procedures.

The person will hold a permit to handle and move significant fauna under Section 40 of the *Biodiversity Conservation Act 2016*, have suitable equipment to administer emergency care to injured and or displaced fauna and have access to a care facility that can be used to rehabilitate injured fauna.

More specifically, a fauna spotter will be suitably trained and licenced to:

- Accurately identify fauna species;
- Identify habitat and or habitat resources of conservation significant fauna;



Fauna Trapping & Translocation, Fauna Spotting

- Undertake animal trapping, capture and handling;
- Assess animal health and injuries;
- Possess skills required for husbandry of captured native animals;
- Identify suitable wildlife release sites; and
- Implement (or have arranged for) emergency management and/or euthanasia of injured or sick animals.

Timing and Frequency

A qualified “fauna spotter” will be present during all land clearing activities.

Fauna Spotting Methodology

Prior to land-clearing commencing, the fauna spotter will have a pre-works briefing meeting with the project manager, site foreman and plant operators, to discuss their role and the responsibility of individual operators. Any high-risk activities or areas will be discussed, including Tree Protection Zones.

During clearing activities, the fauna spotter will maintain a clear view of the vegetation being cleared and two-way radio contact with machinery operators during clearing, such that disturbed or uncovered animals can be rapidly detected, and the operators alerted to cease work until the animal is removed from danger.

Translocation During Clearing Methodology

Clearing of vegetation will occur segmentally commencing from existing disturbed areas and moving progressively towards retained vegetation blocks where practicable. This will encourage the unassisted translocation of animals into adjacent retained habitat.

Where animals are spotted and require intervention to be removed, non-handling techniques will be preferentially deployed to ‘guide’ the animal from the area to be cleared. Where non-handling methods are ineffective or impractical, trapping or capture may be required. Any trapping conducted during clearing will be done using the same methods described in the Pre-Clearing Trapping and Translocation Program section.

Care for injured animals and any requirement for euthanasia will be conducted in accordance with *Talison Procedure Management of Injured Fauna Procedure*.

REPORTING

The fauna trappers and handlers will keep daily records of all traps deployed, number and species of animals captured and release sites. Any daily incidents and disposals will also be recorded. Following each trapping or clearing phase, a summary report will be provided to DBCA.

Fauna spotters will keep daily records of any fauna sightings and their relocation methods. Any daily incidents and disposals will also be recorded.

Incidents relating to conservation significant fauna will be externally reported in the annual Compliance Assessment Report required by Ministerial Statement 1111 (Condition 4-6). Annual reporting to DBCA and Department of Water and Environmental Regulation (DWER) may also include notification of incidents.

REFERENCES

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Fauna Trapping & Translocation, Fauna Spotting

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Department of Biodiversity, Conservation and Attractions (DBCA)(2017b). Standard Operating Procedure: Managing Disease Risk in Wildlife Management. Perth, WA: Department of Biodiversity, Conservation and Attractions.

Department of Biodiversity, Conservation and Attractions (DBCA)(2017c). Standard Operating Procedure: Humane Killing of Animals under Field Conditions. Perth, WA: Department of Biodiversity, Conservation and Attractions.

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Appendix D – Talison Procedure ERT2002 - Initial Response to Fire (Surface)



Initial Response to Fire (Surface)

OVERVIEW OR PURPOSE

Preparation for combating a surface fire can begin before arrival on scene. By giving tasks to the responding crews prior to arrival, the ERT Coordinator/Team Captain can ensure that on arrival the crew will get to work without any further input from him/her till the initial recce has been completed.

SAFETY

These rules and procedures must be followed to ensure adequate response measures are taken to mitigate the impact of any fire impinging on the Operation.

EQUIPMENT REQUIRED

- F.A.T (Fast Attach Tender)
- Talison 2.4 Appliance
- P.A.T (Patient Assistance Tender)
- ERT Trailer
- Greenbushes BFB 3.4 (if required)

PROCEDURE

1. The ERT Coordinator/Team Captain should be considering the following on route:

- type and size of fire or incident from initial information;
- best route to the incident;
- evacuations/rescue if necessary;
- wind direction;
- methods of entry;
- water supply
- Potential for offsite assistance

**Initial Response to Fire (Surface)**

2. On route the ERT Coordinator/Team Captain should also delegate the following -

- Water Supply

The ERT Coordinator/Team Captain shall contact the relevant Plant Team Leader to ensure the Diesel Fire Pump is operational and water supply available

For areas outside of coverage of the reticulated fire system: Notify SG Mining of the requirement to utilise a Water Cart. The Talison Site Water Cart may also be used. The Site Water Pump trailer can also be utilised to provide fill points at Site Water Dams.

- Off Site Assistance: for bushfire emergencies, external emergency assistance should be notified by contacting:
 - Duty Officer – DFES Southwest Regional Office – Manjimup (9771 6800)
 - Shire Emergency Services Manager (9761 1711)
 - District Duty Officer -Department of Biodiversity, Conservation & Attractions, Kirup (9731 6236)
- Off Site Assistance: for other emergency situations, call 000

3. If other ERT members are available, detail them to assist the working crew;

4. On arrival at the scene the ERT Coordinator/Team Captain will size up the incident, site the appliance in an appropriate area, set up a safe area and identify the boundary of control. Allocate tasks to responding crews in the following priority:

- R Rescue
- E Exposures

**Initial Response to Fire (Surface)**

- C Contain
 - E Extinguish
 - O Overhaul
 - V Ventilate (if and when required)
 - S Salvage (if and when required)
5. By the time the ERT Coordinator/Team Captain has completed his assessment of the situation at the fireground the crew should be prepared to fight the fire. Specialised duties may also be nominated at this time;
- breathing apparatus to be worn
 - breathing apparatus ECO;
 - salvage relief; and
 - medical support

DEFINITIONS

Emergency: Incident where the site ERT responds, including: medical incident, fire, rescue. Does not include urgent Production or Maintenance issues.

ATTACHMENTS

SOP003 – Liquid Petroleum Gas (LPG) Incidents

REFERENCES

WA Bushfire Act (1954)



Talison Lithium Pty Ltd
GREENBUSHES OPERATIONS

SITE MANAGEMENT PLAN
ENVIRONMENT ENV-MP-0002

Conservation Significant Terrestrial Fauna

Appendix E – Talison Procedure ENV - PR - 5003 GDP Permit



Greenbushes Ground Disturbance (GDP) Permit

1. Purpose and Scope

This procedure outlines ground disturbance management at the Talison Greenbushes Minesite.

This document specifies the steps required to gain authorisation to conduct any ground disturbing activities across all project areas of the Mine to prevent unauthorised clearing.

A Ground Disturbance Permit is required for;

- Any work that will cause change or disturbance to the ground surface
- A change of land use in a previously cleared area.

The Ground Disturbance Permit process allows checks to be made to determine if the proposed works conflict with any previous or proposed works. The permit process acts as a safeguard to ensure;

- That disturbance is not conducted in areas which have been dedicated to another function/purpose
- That any rehabilitation is not conducted in areas which may be required for continued operational use
- Compliance with regulatory requirements.

2. Procedure

2.1 Ground Disturbance Permit

2.1.1 Submitting a GDP

It is the responsibility of the Department Manager (or delegate) proposing the ground disturbance and the delegated applicant to ensure all steps outlined in this section are adhered to.

1. Lodge an Application for a GDP by completing the application form (ENV F015).
2. Submit the GDP Application at least one week prior to proposed disturbance of ground.
3. Apply for a GDP in areas for which Talison currently have approvals and tenure.
Any area outside the current approval areas is influenced by external authorities and their approval timeframes.
4. Identify any interface issues before a CGP is lodged and provide evidence at time of submitting the GDP Application.
5. Ensure the following is considered when creating the GDP boundary:
 - i. accessibility to the area to be disturbed, including access into and out of an area;
 - ii. an area for machine mobilisation;
 - iii. laydown requirements;
 - iv. topsoil storage; and
 - v. larger areas for windrowing of material where windrowing is permitted.
6. Include the following information for all applications submitted through GDP. If any of the details below are incorrect, unclear or lacking information then the GDP can potentially be delayed or rejected by returning the form to the Applicant for more information.
 - a. General Details
 - i. GDP Name, Location, Commencement & Completion Dates
 - ii. Area Details - This figure is the proposed area of the GDP in hectares.
 - iii. Location where works are to be conducted.
 - iv. Purpose & Outline of Work - Include a detailed description of the works to be undertaken providing information on access to the area by using existing tracks or the



Greenbushes Ground Disturbance (GDP) Permit

requirement to create new access tracks or haul roads, the methodology used and the type of works to be undertaken including but not limited to:

- Vegetation and topsoil clearing
 - Ore definition drilling
 - Mine pit development (including name of pit area)
 - Drill & Blast activities
 - Establishment of waste rock dump (including WRD name)
 - Backfilling
 - Establishment of topsoil stockpile (including TS stockpile name)
 - Access tracks
 - Installation of infrastructure (include building type)
 - Installation of water bores (monitoring, production, dewatering)
- v. Volume and Type of Material to be removed - Enter the volumes that are expected to be removed during the lifecycle of the GDP and indicate the type of material, e.g. topsoil, subsoil, vegetation, weed burden etc.
- vi. Topsoil stockpile location - Enter the location of the topsoil stockpile location where the topsoil will be taken to. This must be topsoil stockpile location approved in the current mining proposal. Any topsoil stripped for access tracks, pipelines or ore definition activities and windrowed within the GDP must state so.
- b. Project Area Details
- i. Project Area. Project areas approved for disturbance.
 - ii. Area to be disturbed - This number is the proposed amount of clearing to be undertaken under the GDP. This will be the maximum amount of clearing allowed to be undertaken within the GDP boundary (in many cases this will be less than the total GDP area).

2.1.2 Reviewing a GDP

It is the responsibility of the Environmental Team to ensure the GDP reviewing process is adhered to as outlined in this section.

1. Review by the Environmental Data Analyst to ensure adequate information is provided to accept the ENV - FM – 015, any incorrect form will be rejected or returned to the Applicant for more information, and upon re-lodgement will be automatically assigned a new lodgement date in the GDP permitting system.
2. Review by the relevant site environmental team to approve or reject the GDP.
3. Review by the relevant site environmental team to place appropriate conditions on the GDP.
4. Review by the Environmental Data Analyst to add relevant conditions, permit spatial data, maps and forms to the GDP.
5. GDP to be circulated to relevant internal stakeholders for initial signature approval.
6. Environmental Data Analyst to issue GDP to applicant along with relevant spatial data, maps and forms for acceptance of all permit conditions and final signature approval.

2.2 Greenbushes Ground Disturbance (GDP) Permit

2.2.1 GDP Release

It is the responsibility of the Applicant (or delegate) conducting the ground disturbance works and the delegated applicant to ensure all steps outlined in this section are adhered to.

1. Do not commence any ground disturbing activities before a GDP release has been undertaken by a Site Environmental Representative.



Greenbushes Ground Disturbance (GDP) Permit

2. Survey, peg and flag (with blue and white flagging) the boundary of the area approved under the GDP by an approved Surveyor using appropriate survey methods.
3. Peg the boundary at intervals no more than 30m apart or within line of sight between points.
4. Undertake a GDP release with the Site Environmental Representative. The release must include the works Supervisor, contractor Supervisors (where applicable), Talison contractor representative (where applicable) and Talison Environmental Representative.
If possible, it is ideal for the equipment operator to also be present.
Note: The Environmental representative may add additional conditions to the GDP Permit release form if they do not believe issues have been adequately covered in the GDP conditions. These conditions will be treated like all ground disturbance conditions and must be complied with.
5. Sign the Ground Disturbance Permit Release Form by all parties (Site Environmental Advisor, Supervisor and Superintendent) which states that the area has been pegged and all conditions of the GDP are understood. Note: The Superintendent is not required to attend the release, however, is required to sign the release confirming that they understand and are willing to comply with all conditions.
6. Upload the signed GDP release form by the applicant onto Talison ENV GDP Register within 7 days of the release signoff.

2.2.2 Working under a GDP

It is the responsibility of the Applicant (or delegate) conducting the ground disturbance works and the delegated applicant to ensure all steps outlined in this section are adhered to.

1. Ensure all conditions specified within the GDP are complied with. Any non-compliances shall be recorded as incidents.
2. Ensure GDP is used for the specified works and stated location only, defined by the GDP map & spatial data issued with the permit.
3. Ensure all personal working under the GDP understand all GDP conditions and have copies of the GDP, associated maps and release form.
4. Ensure a fauna spotter is present during all native vegetation clearing works where clearing is being conducted
5. Access the approved GDP areas on existing tracks or within previously cleared approved GDP areas.
6. Ensure all clearing and disturbance works are undertaken within the GDP boundary.
7. Manage topsoil in accordance with the condition set out in the GDP and the Integrated Mining and Rehabilitation Management Plan.
8. Do not enter or disturb Tree Protection Zones (TPZ) or environmental restricted areas unless permission has been granted prior.
9. The Applicant shall contact the Talison Survey Team and the Applicant shall provide confirmation to the Environmental Data Analyst that the GDP area was included in the End of Month pickup by the Survey Team and the clearing file is available for loading to the GIS clearing database.

2.2.3 GDP Closeout

A GDP shall be closed out once all clearing and / or activities identified in the Outline of activities of Work on the GDP have been completed and the following steps shall be undertaken.

1. The Environmental Data Analyst will send the unfilled Completion Notice to the Applicant.
2. The Applicant shall sign the Completion Notice to confirm that disturbance work has been completed.



Greenbushes Ground Disturbance (GDP) Permit

3. The Completion Notice will be forwarded to the Talison Survey Team, the Survey Team will sign the Completion Notice confirming that the final disturbed area has been picked-up and attached the final string file to the Completion Notice.
4. The completed form will be sent to the Environmental Administrator for filing.

2.3 Training and Awareness

1. Training will be provided for applicants and supervisors in which the GDP and GDP process is applicable.
2. Awareness material will be rolled out to all Talison employees regarding the GDP process.
3. Incidents, Audits and Inspections Compliance audits shall be performed against this procedure in accordance with the Continual Improvement Procedure
4. The GDP Applicant to report incidents in accordance with the Incident, Non-conformance and Action Management Procedure and Incident Investigation Procedure
5. The Environmental Data Analyst (or delegate) will:
 - a. Conduct desktop audits of GDP's to ensure GDP's are compliant (where applicable)
 - b. Validate the returned data against the proposed clearing data and the latest aerial imagery.
6. The Manager Environment (or delegate) will:
 - c. Conduct GDP Site Inspections to ensure all works have complied with the associated GDP conditions
 - d. Conduct site GDP Close-Out Inspection via the GDP Permitting system.
7. The applicant/contractor shall ensure an adequate inspection/program is in place to manage compliance with this procedure.

2.4 Contingency Actions

1. Contingency/remedial actions relating to non-conformances of a GDP identified during inspections, audits and incident reporting must be implemented.

2.5 Reporting Requirements

1. Report and close out incidents in accordance with the Incident, Non-conformance and Action Management Procedure and Incident Investigation Procedure.
2. The Department manager and the delegated applicant are required to ensure all maps, shapefiles, survey data and forms required as part of this procedure are uploaded to GDP system within the relevant time frames.
3. Report areas cleared and areas rehabilitated in the Annual Environmental Report (AER) to the Department of Mines, Industry Regulation and Safety (DMIRS) and the Greenbushes Mine Expansion Compliance Assessment Reports.

3. Review

This Procedure is to be reviewed as follows:

1. Following the grant of or modification to relevant approvals;
2. Annually; or

As a result of findings or actions identified through inspections, audits and incident reporting. Reviews are to examine the appropriateness of the procedure, taking into consideration corporate, system and compliance requirements and legislative changes since the last review was undertaken.