Earl Grey Lithium Project

Environmental Protection and Biodiversity Conservation Act 1999

EPBC Decision 2017/7950 Approval

Annual Compliance Report (2023) - Appendices

JBS&G Australia Pty Ltd | 66747 | Rev 0

25 June 2024

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

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

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

Appendix A EPBC 2017/7950 Final Approval Decision Notice

Australian Government

Department of Agriculture, Water and the Environment

APPROVAL

Earl Grey Lithium Project (EPBC 2017/7950)

This decision is made under sections 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth).* Note that section 134(1A) of the **EPBC Act** applies to this approval, which provides in general terms that if the approval holder authorises another person to undertake any part of the action, the approval holder must take all reasonable steps to ensure that the other person is informed of any conditions attached to this approval, and that the other person complies with any such condition.

Details

Person to whom the approval is granted (approval holder)	Covalent Lithium Pty Ltd
ACN or ABN of approval holder	ACN: 623 090 139
Action	To clear native vegetation to undertake open cut mining and processing of lithium ore, at the abandoned Mt Holland Mine Site, WA, with transport of a lithium concentrate to an existing Western Australian port for export to overseas markets, subject to the variations of the action accepted by the Minister under section 156 B on 11 February 2018 and 14 November 2019.

Proposed Approval decision

My decision on whether or not to approve the taking of the action for the purposes of the controlling provision for the action is as follows.

Controlling Provisions

Listed Threatened Species and Communities	
Section 18	Approve
Section 18A	Approve

Period for which the approval has effect

This approval has effect until 31 December 2069

Decision-maker

Name and position	Declan O'Connor-Cox A/g Assistant Secretary, Environment Approvals Division Department of Agriculture, Water and the Environment
Signature	
Date of decision	21/2/2020

Conditions of approval

This approval is subject to the conditions under the EPBC Act as set out in ANNEXURE A.

ANNEXURE A – CONDITIONS OF APPROVAL

Part A – Conditions specific to the action

1. To minimise impacts to the Malleefowl (*Leipoa ocellata*) and Chuditch (*Dasyurus geoffroii*) the approval holder must not **clear** more than 386 ha of native vegetation within the 1,984 ha development envelope shown at **Attachment A**.
2. To minimise impacts to Ironcaps Banksia (*Banksia sphaerocarpa var. dolichostyla*), the approval holder must not **clear** more than 69 Ironcaps Banksia individuals.
3. To minimise impacts to **EPBC Act listed threatened species**, the approval holder must comply with Condition 6 (Flora and Vegetation Environmental Management Plan) and Condition 7 (Terrestrial Fauna Environmental Management Plan) of the **Western Australia approval**, where relevant to **EPBC Act listed threatened species.**
4. To compensate for the residual significant impacts to the Malleefowl and Chuditch, the approval holder must submit for the **Minister's** written approval a Fauna Offset Plan. The Fauna Offset Plan must include the following:
   a) Identification of the specific offset area(s) to be acquired and protected for enduring conservation that comprise existing Malleefowl and Chuditch foraging and breeding habitat.
   b) Identification of the environmental values of the offset area(s) including:
      a. relevant baseline information regarding the offset area(s), including results from field validation surveys, and quantifiable ecological data on **habitat quality** for the Malleefowl and Chuditch currently in the offset areas,
      b. how the offset area(s) will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the **total quantum of impact**,
      c. a description and maps (including **shapefiles**) to clearly define the location and boundaries of the offset area(s), accompanied by the offset attributes (including physical address of the offset area(s), coordinates of the boundary points in decimal degrees, the **EPBC Act Listed threatened species** that the environmental offset area(s) compensate for, and the size of the environmental offset area(s) in hectares, and
      d. evidence of how the proposed offset site will meet the requirements of the **EPBC Act Environmental Offsets Policy.**
   c) Commitment to measureable, defined ecological outcomes to protect the baseline **habitat quality** for the Malleefowl and Chuditch for which the offset area(s) are being provided and the period for which these will be achieved.
   d) Offset completion criteria and an explanation of how the proposed ecological outcomes will be achieved.
   e) The management measures (including timing, frequency, duration and method of outcome measurement) that will be implemented to achieve the following:
      a. the ecological outcomes for the protection of the Malleefowl and Chuditch for which the offset area(s) is(are) being provided, and
      b. the protection of the **habitat quality scores** for the Malleefowl and Chuditch.
   f) The management measures and land uses that will be prohibited in the offset area(s), including, for example, mining/exploration, grazing or development.

g) Evidence that the management measures proposed are consistent with **environmental management plan guidelines** and relevant **conservation advices**, **recovery plans** and **threat abatement plans**.

h) Criteria for triggering corrective actions and the proposed time-bound corrective actions or process for determining these.

i) A monitoring program designed to detect triggers and track progress against performance criteria in a timely manner.

j) A risk analysis of the potential risks to the offset area(s) that may prevent them from achieving the performance and completion criteria, including for if the offset area(s) fail to achieve and maintain the completion criteria.

k) A schedule for evaluating and reporting, at least annually, on the effectiveness of management measures and progress against completion criteria.

l) The proposed legal mechanism(s) for securing the offset area(s), the timing for implementation of the legal mechanism(s) and contingency measures in the event the specified legal mechanisms can not proceed in a timely manner.

m) The role of the approval holder in relation to the management and ownership of the offset area(s) and the identity and role(s) of any other involved party.

The approval holder must not **commence** the action until the Fauna Offset Plan is approved by the **Minister** in writing. The approved Fauna Offset Plan must be implemented at least until the end date of the period of effect of the approval.

5. To compensate for the residual significant impacts to the Ironcaps Banksia, the approval holder must submit for the **Minister's** written approval a Flora Offset Plan. The Flora Offset Plan must include the following:

a) Identification of offset area(s) to be protected, managed and/or rehabilitated for enduring conservation that contains Ironcaps Banksia.

b) Identification of the environmental values of the offset area(s), including:

   a. relevant baseline information regarding the offset area(s), including results from field validation surveys, and quantifiable ecological data on **habitat quality** and the number of Ironcaps Banksia individuals currently in the offset areas,

   b. how the offset area(s) will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the **total quantum of impact**, and

   c. a description and maps (including **shapefiles**) to clearly define the location and boundaries of the offset area(s), accompanied by the offset attributes (including physical address of the offset area(s), coordinates of the boundary points in decimal degrees, the **EPBC Act Listed threatened species** that the environmental offset area(s) compensate for, and the size of the environmental offset area(s) in hectares, and

   d. evidence of how the proposed offset site will meet the requirements of the **EPBC Act Environmental Offsets Policy.**

c) Commitment to measureable, defined ecological outcomes to protect the baseline **habitat quality** and number of Ironcaps Banksia individuals for which the offset area(s) are being provided and the period for which these will be achieved.

d) Offset completion criteria and an explanation of how the proposed ecological outcomes will be achieved.

e) The management and/or rehabilitation measures (including timing, frequency, duration and method of outcome measurement) that will be implemented to achieve the following:

   a. the ecological outcomes for the protection of the Ironcaps Banksia for which the offset area(s) is(are) being provided, and

f) The management measures and land uses that will be prohibited in the offset area(s), including, for example, mining/exploration, grazing or development.

g) Evidence that the management measures proposed are consistent with **environmental management plan guidelines** and relevant **conservation advices**, **recovery plans** and **threat abatement plans**.

h) Criteria for triggering corrective actions and the proposed time-bound corrective actions or process for determining these.

i) A monitoring program designed to detect triggers and track progress against completion criteria in a timely manner.

j) A risk analysis of the potential risks to the offset area(s) that may prevent them from achieving the performance and completion criteria, including for if the offset area(s) fail to achieve and maintain the completion criteria.

k) A schedule for evaluating and reporting, at least annually, on the effectiveness of management measures and progress against completion criteria.

l) The proposed legal mechanism(s) for securing the offset area(s), the timing for implementation of the legal mechanism(s) and contingency measures in the event the specified legal mechanisms can not proceed in a timely manner.

m) The role of the approval holder in relation to the management and ownership of the offset area(s) and the identity and role(s) of any other involved party, and

n) Detail any funding arrangements and timing of funding for conservation activities.

The approval holder must not **commence** the action until the Flora Offset Plan is approved by the **Minister** in writing. The Flora Offset Plan must be implemented at least until the end date of the period of effect of the approval.

Part B – Standard administrative conditions

Notification of date of commencement of the action

6. The approval holder must notify the **Department** in writing of the date of **commencement of the action** within 10 **business days** after the date of **commencement of the action**.

Compliance records

7. The approval holder must maintain accurate and complete **compliance records**.

8. If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request.

Note: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.

Preparation and publication of plans

9. The approval holder may, at any time, apply to the **Minister** for a variation to an action management plan approved by the **Minister**, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the **EPBC Act**. If the **Minister** approves a revised action management plan (RAMP) then, from the

date specified, the approval holder must implement the RAMP in place of the previous action management plan.

10. The approval holder must:
    a. submit **plans** electronically to the **Department** for approval by the **Minister**;
    b. publish each **plan** on the **website** within 20 **business days** of the date the **plan** is approved by the **Minister** or of the date a revised action management plan is submitted to the **Minister** or the **Department**, unless otherwise agreed to in writing by the **Minister**;
    c. exclude or redact **sensitive ecological data** from **plans** published on the **website** or provided to a member of the public; and
    d. keep **plans** published on the **website** until the end date of this approval.
11. The approval holder must ensure that any **monitoring data** (including **sensitive ecological data**), surveys, maps, and other spatial and metadata required under a plan, is prepared in accordance with the **Department's** *Guidelines for biological survey and mapped data* (2018) and submitted electronically to the **Department** in accordance with the requirements of the plan.

Annual compliance reporting

12. The approval holder must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or otherwise in accordance with an annual date that has been agreed to in writing by the **Minister**. The approval holder must:
    a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;
    b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **compliance report** within five **business days** of the date of publication;
    c. keep all **compliance reports** publicly available on the **website** until this approval expires;
    d. exclude or redact **sensitive ecological data** from **compliance reports** published on the **website**; and
    e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: **Compliance reports** may be published on the **Department**'s website.

Reporting non-compliance

13. The approval holder must notify the **Department** in writing of any: **incident;** non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than two **business days** after becoming aware of the **incident** or non-compliance. The notification must specify:
    a. any condition which is or may be in breach;
    b. a short description of the **incident** and/or non-compliance; and
    c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.
14. The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 10 **business days** after becoming aware of the **incident** or non-compliance, specifying:
    a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;

b. the potential impacts of the **incident** or non-compliance; and

c. the method and timing of any remedial action that will be undertaken by the approval holder.

Independent audit

15. The approval holder must ensure that **independent audits** of compliance with the conditions are conducted as requested in writing by the **Minister**.

16. For each **independent audit**, the approval holder must:

    a. provide the name and qualifications of the independent auditor and the draft audit criteria to the **Department**;

    b. only commence the **independent audit** once the audit criteria have been approved in writing by the **Department**; and

    c. submit an audit report to the **Department** within the timeframe specified in the approved audit criteria.

17. The approval holder must publish the audit report on the **website** within 10 **business days** of receiving the **Department's** approval of the audit report and keep the audit report published on the **website** until the end date of this approval.

Completion of the action

18. Within 30 days after the **completion of the action**, the approval holder must notify the **Department** in writing and provide **completion data**.

Part C - Definitions

19. In these conditions, except where contrary intention is expressed, the following definitions are used:

    Approved conservation advice means a conservation advice approved by the **Minister** under section 266B(2) of the **EPBC Act**. Where relevant, this includes the approved Conservation Advice for *Banksia sphaerocarpa* var. *dolichostyla* (Ironcaps Banksia).

    Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.

    Clear / Clearing means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation (but not including weeds – see the *Australian weeds strategy 2017 to 2027* for further guidance).

    Commencement of the action means the first instance of any specified activity associated with the action including **clearing** and **construction**. **Commencement of the action** does not include minor physical disturbance necessary to:

    i. undertake pre-clearance surveys or monitoring programs;

    ii. install signage and /or temporary fencing to prevent unapproved use of the project area;

    iii. protect environmental and property assets from fire, weeds and pests, including use of existing surface access tracks; and

    iv. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no impact on the **EPBC Act Listed threatened species**.

    Completion data means an environmental report and spatial data clearly detailing how the conditions of this approval have been met. The **Department**'s preferred spatial data format is **shapefile**.

Completion of the action means all specified activities associated with the action have permanently ceased.

Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the approval holder's power to obtain lawfully.

Compliance reports means written reports:

i. providing accurate and complete details of compliance, **incidents**, and non-compliance with the conditions and the **plans**;

ii. consistent with the **Department's** *Annual Compliance Report Guidelines* (2014);

iii. include a **shapefile** of any clearance of any **protected matters**, or their habitat, undertaken within the relevant 12 month period; and

iv. annexing a schedule of all **plans** prepared and in existence in relation to the conditions during the relevant 12 month period.

Construction means the erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

EPBC Act Environmental Offsets Policy is the *Environment Protection and Biodiversity Conservation Act* 1999 *Environmental Offsets Policy (October 2012),* or subsequent revision, including the Offsets Assessment Guide. Available at: https:llwww.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offsets-policy 2.pdf

EPBC Act Listed threatened species means the **EPBC Act** listed Malleefowl (*Leipoa ocellata*), Chuditch (*Dasyurus geoffroii*) and Ironcaps Banksia (*Banksia sphaerocarpa var. dolichostyla*).

Habitat quality means the baseline condition of suitable habitat for **EPBC Act Listed threatened species** determined from ecological surveys and with consideration of relevant **Departmental** documents including, but not be limited to, the **EPBC Act Environmental Offsets Policy**, **EPBC Act** referral guidelines, listing advices, **approved conservation advices** and **recovery plans**.

Incident means any event which has the potential to, or does, impact on one or more **protected matter(s)**.

Independent audit: means an audit conducted by an independent and **suitably qualified person** as detailed in the *Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines* (2019).

Minister means the Australian Government Minister administering the **EPBC Act** including any delegate thereof.

Plan(s) means any of the documents required to be prepared, approved by the **Minister**, published on the **website** and/or implemented by the approval holder in accordance with these conditions (includes action management plans and/or strategies).

Protected matter means a matter protected under a controlling provision in Part 3 of the **EPBC Act** for which this approval has effect.

Recovery Plan means a recovery plan made or adopted by the **Minister** under the **EPBC Act**, including the *National Recovery Plan for Malleefowl Leipoa ocellata* and the *Chuditch (Dasyurus geoffroii) Recovery Plan*.

Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) *Sensitive Ecological Data – Access and Management Policy V1.0.*

Shapefile means location and attribute information of the action provided in an Esri shapefile format. Shapefiles must contain '.shp', '.shx' , '.dbf' files and a '.prj' file that specifies the projection/geographic coordinate system used. Shapefiles must also include an '.xml' metadata file that describes the shapefile for discovery and identification purposes.

Suitably qualified person means a person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.

Threat abatement plan means a threat abatement plan made or adopted by the **Minister** under the **EPBC Act**.

Total quantum of impact has the same meaning as in the Offset Assessment Guide of the **EPBC Act Environmental Offsets Policy**. It is a measure of the adjusted hectares based on an assessment of the maximum impact area specified in Conditions 1 and 2, measured against the of **habitat quality** for that area.

Website means a set of related web pages located under a single domain name attributed to the approval holder and available to the public.

Western Australia approval means the WA Ministerial statement issued under the *Environmental Protection Act* 1986 - Statement No. 1118 published on 21 November 2019.

Attachment A – Development Envelope

Appendix B EPBC 2017/7950 Correction Notice

CORRECTION NOTIFICATION

EPBC No 2017/7950 – Earl Grey Lithium Project

Correction notice - Condition 5 attached to the approval dated 21 February 2020

Subcondition 5 e) of the conditions attached to the approval notice signed on 21 February 2020 appears to be missing subconditions after 5 e) a. because it is followed by the word 'and'.

This notice is published to confirm that there is no subcondition of 5 e), such as a 5 e) b., after 5 e) a.

Subcondition 5 e) should read as follows:

5 e) The management and/or rehabilitation measures (including timing, frequency, duration and method of outcome measurement) that will be implemented to achieve the ecological outcomes for the protection of the Ironcaps Banksia for which the offset area(s) is (are) being provided.

Person making correction

Name and position	Dwaine McMaugh A/g Director Post Approvals Section
Date of correction	23 July 2020

Appendix C EPBC 2017/7950 Variation of Conditions

Australian Government

Department of Agriculture, Water and the Environment

Variation of Conditions Attached to Approval

Earl Grey Lithium Project (EPBC 2017/7950)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999*.

Approved action

Person to whom the approval is granted	Covalent Lithium Pty Ltd ACN: 623 090 139
Approved action	To clear native vegetation to undertake open cut mining and processing of lithium ore, at the abandoned Mt Holland Mine Site, WA, with transport of a lithium concentrate to an existing Western Australian port for export to overseas markets, subject to the variations of the action accepted by the Minister under section 156 B on 11 February 2018 and 14 November 2019.

Variation

Variation of conditions of approval	The variation is: Delete conditions 2, 3, 4 and 5 of the approval and replace with conditions 2, 3, 4, 4A, 4B, 4C and 5 specified below. Add the definitions of **development envelope** and **environmental management plan guidelines** specified below.
Date of effect	This variation has effect on the date the instrument is signed

Person authorised to make decision

Name and position	Declan O'Connor-Cox Acting Assistant Secretary Environment Assessments (Vic, Tas) and Post Approvals Branch
Signature	
Date of decision	23 December 2020

Conditions attached to the approval:

2. To minimise impacts to Ironcaps Banksia (*Banksia sphaerocarpa var. dolichostyla*)*,* the approval holder must not **clear** more than 2 Ironcaps Banksia plants.

3. To minimise impacts to the Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii*), the approval holder must comply with Condition 7 (Terrestrial Fauna Environmental Management Plan) of the **Western Australia approval**, where relevant to Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii*).

4. To compensate for residual significant impacts to the Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii)*, the approval holder must:

a) acquire, manage and protect for enduring conservation offset area(s) that comprise existing Malleefowl and Chuditch foraging and breeding habitat and that collectively offset the residual significant impacts to the Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii)* of the action in accordance with the **EPBC Act Environmental Offsets Policy**;

b) submit for the **Minister's** written approval a Fauna Offset Management Plan in respect of each offset area required to meet Condition 4(a); and

c) implement each approved Fauna Offset Management Plan(s) at least until the end date of the period of effect of the approval.

4A. Each Fauna Offset Management Plan required under Condition 4 must be prepared in accordance with the **environmental management plan guidelines**, and include the following:

a) the residual significant impacts to the Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii)* quantified as the area of **clearing** of native vegetation within the **development envelope**) that will be offset by implementing the plan;

b) the environmental values of the proposed offset area, including results from field validation surveys, quantifiable ecological data on **habitat quality** and how the offset area will provide habitat connectivity with adjacent vegetation communities and biodiversity corridors,

c) the size of the offset area in hectares, and maps that define the location and boundaries of the offset area;

d) measurable ecological outcomes for **habitat quality**, when these will be achieved and the period for which these will be maintained;

e) offset completion criteria to demonstrate attainment of the ecological outcomes and an explanation of how the proposed offset completion criteria will be achieved;

f) management measures (including timing, frequency, duration and method of outcome measurement) that will be implemented to achieve the ecological outcomes for Malleefowl (*Leipoa ocellate*) and Chuditch (*Dasyurus geoffroii)*;

g) evidence that the management measures are consistent with relevant **conservation advices**, **recovery plans** and **threat abatement plans**;

h) an analysis of potential risks of the plan, if implemented, failing to attain and/or maintain the offset completion criteria;

i) criteria for triggering corrective actions should risks be realised, and a monitoring program designed to detect the criteria and track progress against offset completion criteria;

j) the activities and land uses that will be prohibited in the offset area, including, for example, mining, exploration or grazing;

k) a schedule for evaluating and reporting, at least annually, on the effectiveness of management measures and progress against offset completion criteria;

l) the nature and timing of the proposed legal mechanism for securing the offset area, and contingency measures if the specified legal mechanism is not established in a timely manner;

m) an explanation of how the offset area and offset area management addresses the principles of the **EPBC Act Environmental Offsets Policy**; and

n) the role of the approval holder in controlling and managing the offset area and the identity and offset management role(s) of any other involved party.

Each Fauna Offset Management Plan submitted in accordance with Condition 4(b) must be accompanied by **shapefiles** that define the location and boundaries of the offset area, the offset attributes (including physical address of the offset area(s), coordinates of the boundary points in decimal degrees, the **EPBC Act Listed threatened species** that the environmental offset area(s) compensate for, and the size of the offset area(s) in hectares

4B. The approval holder must not **commence** the action until a Fauna Offset Management Plan is approved by the **Minister** in writing.

4C. The approval holder must not **clear** more than the area of **clearing** within the **development envelope** specified (in accordance with Condition 4A(a)) in all approved Fauna Offset Management Plans.

5. To mitigate significant impacts to the Ironcaps Banksia (*Banksia sphaerocarpa var. dolichostyla*), the approval holder must prevent impacts to Ironcaps Banksia other than as permitted under Condition 2 and, within 10 years from **commencement of the action**, establish at least 69 Ironcaps Banksia plants within the **development envelope**.

The approval holder must submit for the **Minister's** written approval an Ironcaps Banksia Conservation Plan (the Plan) to specify how it will achieve these requirements. The Plan must be prepared consistent with the **environmental management plan guidelines**, and must:

a) show how the approval holder will prevent impacts to Ironcaps Banksia, other than as permitted under Condition 2:

i. include maps that clearly show the location of Ironcaps Banksia within the **development envelope** and in relation to native vegetation to be **cleared** or otherwise disturbed;

ii. specify the total number and location of Ironcaps Banksia plants within the **development envelope**;

iii. identify potential impacts to Ironcaps Banksia from the action, and describe management measures to avoid and/or mitigate those impacts and corrective actions to be implemented if impacts are detected;

iv. include management triggers for detecting potential impacts to Ironcaps Banksia from the action;

v. demonstrate that management measures are consistent with relevant **approved conservation advices**, **recovery plans** and **threat abatement plans;**

b) show how the approval holder will, within 10 years from **commencement of the action**, establish at least 69 Ironcaps Banksia plants within the **development envelope**:

   i. specify a portion of the **development envelope,** that is contained within an exclusion zone specified in Condition 6-1 of the **Western Australia approval,** in which Ironcaps Banksia can be established and protected;

   ii. include **shapefiles** to clearly define the location and boundaries of the Ironcaps Banksia establishment site(s), coordinates of the boundary points in decimal degrees, and the area of the establishment site(s) in hectares;

   iii. include establishment criteria for Ironcaps Banksia plants;

   iv. include an analysis of the potential risks that may prevent Ironcaps Banksia plants being established and self-sustaining at the proposed establishment site(s);

   v. describe management measures to achieve the establishment criteria, and corrective actions to be implemented if establishment criteria have not been, or are unlikely to be, achieved or maintained;

   vi. describe how establishment criteria will be maintained for the period of approval;

c) include a program that monitors the health of Ironcaps Banksia plants and is designed to detect management triggers and attainment of establishment criteria;

d) contain a schedule for evaluating and reporting, at least annually, on the health of Ironcaps Banksia plants, the detection of management triggers, progress against establishment criteria, and the effectiveness of management measures; and

e) include timeframes for implementing corrective actions.

The approval holder must not **commence the action** until the Plan is approved by the **Minister** in writing. The Plan must be implemented at least until the end date of the period of effect of the approval.

Definition attached to the approval:

Development envelope means the area enclosed by the blue line designated as 'Development Envelope' in the map at **Attachment A**.

Environmental management plan guidelines means the Environmental Management Plan Guidelines, Commonwealth of Australia 2014, available at http://www.environment.gov.au/system/files/resources/21b0925f-ea74-4b9e-942e-a097391a77fd/files/environmental-management-plan-guidelines.pdf.

Appendix D Terrestrial Fauna Management Plan Compliance Assessment

Table D.1: Terrestrial Fauna Environmental Management Plan Audit Table (Rev 5)

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 01	Management targets: • Avoid removal of any active malleefowl mounds.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring E03_GDP60_V7_SWRL Fauna Preclearance E29_GDP0060_V9_SWRL_ExistingTSF2 E30_GDP0071_TSFConstruction_V1	No removal of active Malleefowl mounds occurred during the reporting period.	Compliant
TFEMP 02	Management targets: • Avoid clearing of vegetation within 100 m of malleefowl mounds.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance R04_20230725 ECO 2022_23 Malleefowl Monitoring	Pre-clearance surveys are undertaken prior to clearing to determine the presence of malleefowl mounds. Annual monitoring of known malleefowl nests is undertaken. There was no disturbance within 100m of malleefowl mounds in the audit period.	Compliant
TFEMP 03	Management targets: • Minimise mortality of malleefowl or Chuditch from clearing activity, entrapment, vehicle strike or mining related fire.	Ongoing	R09_Terrestrial Fauna Management Plan Rev 5 E22_2023-2024 MTH Environmental Incident Register from INX	The TFEMP is implemented to minimise mortality of malleefowl or Chuditch from clearing activity, entrapment, vehicle strike or mining related fire. There were no records of mortality of malleefowl or Chuditch from clearing activity, entrapment, vehicle strike or mining related fire in the reporting period.	Compliant
TFEMP 04	Management targets: • Minimise decline of Malleefowl and Chuditch population due to predation from introduced predators.	Ongoing	R16_20230425_APAS_Feral Cat Control Program Report R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Monitoring has not indicated a change in malleefowl or Chuditch population. Introduced predator monitoring indicates that numbers of predators are not increasing.	Compliant
TFEMP 05	Management targets: • Minimise decline of Malleefowl and Chuditch population due to dust, noise, light, vibration and displacement.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Monitoring has not indicated a change in malleefowl or Chuditch population.	Compliant
TFEMP 06	Management targets: • Minimise potential risk of a decline in fauna habitat condition due to change in fire regime.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	There were no fires in the development envelope in the audit period.	Compliant
TFEMP 07	If Trigger Criteria is met: • Report internally as an incident in accordance with internal procedures. • Review management strategies and implement changes to prevent future occurrences which may include the following: o Audit and review of training and staff inductions (i.e. increase in staff training and awareness to include information on MMEZ, legislative requirements, appropriate clearing procedures). o Ground Disturbance Permit competency training. o Installation of signage where appropriate. o Review of effectiveness of 10 m trigger response criteria for unauthorised clearing approaching a MMEZ and update FMP appropriately. • Review impact of unauthorised clearing and report as a potential non-compliance to CEO DWER within 7 days of identification. • Undertake rehabilitation of unauthorised clearing (i.e. disturbance from vehicle tracks, vegetation clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedures.	Ongoing	E22_2023-2024 MTH Environmental Incident Register from INX M02_Covalent ACR Evidence Request Response Rev 0	There were no incidents of unauthorised clearing in the audit period.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 08	If Trigger Criteria is met: • Unauthorised access by personnel to a MMEZ Proponent will take response actions: • Report internally as an incident in accordance with internal procedures. • Consult with a fauna specialist to review management strategies and implement changes to prevent future occurrences which may include the following: o Review proximity of potential of disturbance to Malleefowl mounds within the MMEZ. o Should disturbance occur to an active Malleefowl mound as a result of unauthorised access, report to CEO DWER within 7 days of identification. • Undertake rehabilitation of unauthorised access (i.e. disturbance from vehicle tracks) as required in accordance with internal rehabilitation procedures.	Ongoing	E22_2023-2024 MTH Environmental Incident Register from INX	No unauthorised access to a Malleefowl mound exclusion zone occurred during the reporting period.	Not applicable
TFEMP 09	If Trigger Criteria is met: • Clearing or disturbance of vegetation within 100 m of any newly identified active malleefowl mounds and / or the MMEZs. Proponent will take response actions: • Cease clearing activities. • Undertake investigation to determine source of disturbance. • If disturbance is attributed to Project activities, undertake a review of Indicative Site Layout to determine if impact can be minimised, development actions to prevent a recurrence and communicate findings to relevant personnel. • Suitably qualified fauna specialist to undertake an assessment of impact. • If potential impacts to eggs are expected, consultation with DBCA will occur to determine if egg removal is required. • Rehabilitation of vegetation disturbance to be considered to restore fauna habitat. • Any impacts to Malleefowl nest mounds to be rehabilitated following consultation with DBCA and a suitably qualified fauna specialist. • Report as a potential non-compliance to CEO DWER within 7 days of identification. • Investigate and report in accordance with Condition 3-1(3) to Condition 3-1(6) of MS1199. Report submitted to CEO DWER with remediation actions proposed.	Ongoing	E22_2023-2024 MTH Environmental Incident Register from INX	There was no clearing and/or disturbance of vegetation within 100m of a newly identified active malleefowl mound occurred during the reporting period.	Not applicable
TFEMP 10	Conduct internal audit of recorded malleefowl mounds against areas of clearing.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring E03_GDP60_V7_SWRL Fauna Preclearance E29_GDP0060_V9_SWRL_ExistingTSF2 E30_GDP0071_TSFConstruction_V1	No clearing of active Malleefowl mounds occurred during the reporting period.	Compliant
TFEMP 11	Undertake monitoring of incident reports for over clearing light and noise disturbance and fire.	Ongoing	E22_2023-2024 MTH Environmental Incident Register from INX	No incidents of over clearing, light or noise disturbance or fire.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 12	If Trigger Criteria is met: Chuditch Trigger Criteria: A 25% decrease at impact sites in female abundance for two consecutive monitoring events. Malleefowl Trigger Criteria: A 25% decrease in the estimated local population number (based on temporal analysis) over a consecutive two year period. Proponent will take response actions: • Report internally as an incident. • Review all monitoring data (including control sites) in relation to management measures (Table 2-3Table 2-4) and any other available data such as weather and climate to determine if the decrease is due to Project-related impacts. • Determine whether the changes observed within the Development Envelope for Chuditch are comparable to the observations in the reference sites. • Investigate potential causes for the observed decrease in female Chuditch abundance or decrease in local Malleefowl population which may include, but are not limited to: o Seasonal conditions (e.g. rainfall and temperatures). o Effectiveness of introduced predator control. o Changes in nest mound usage patterns by Malleefowl (i.e. use of mounds that are not surveyed). o Spatial variation (near-impact areas) versus sites located further from impact. o Reliability of observations obtained from the sightings register. o Fauna deaths reported. • Seek advice from a suitably qualified fauna specialist, as required. • If a Project-related impact is suspected, review management measures on advice from a suitably qualified fauna specialist. Management measures may include the following: o Review of annual Malleefowl and Chuditch monitoring, where required. o Review and increase effectiveness of pre-clearance monitoring (for example timing/duration of surveys). o Review and refine remote camera monitoring for introduced predator fauna (foxes and cats). o A proportionate increase in trapping/ baiting intensity may be required for introduced predator control in areas where increased sightings occur. o Increase in the frequency of introduced predator control undertaken may be required. o Increase internal audits and inspections for incident reports relating to vehicle interactions, unauthorised clearing, light and noise disturbance and fire. o Fauna mortality register may require review and locations of mortalities examined to identify areas where a decrease in speed limits, alteration to roads and/or extra signage may be required. o Increase in staff training and awareness to include information on introduced predator fauna (foxes and cats), for example the impact of predator fauna on Malleefowl and Chuditch populations, no feeding of predator fauna, reducing availability of food waste to predator fauna and all sightings of predator fauna to be reported. • Consider changes to the mining operations (for example, change in the location, duration and/or method(s) of mining operations). • Consider changes in land disturbance (for example, change in location of disturbance or the method of vegetation clearing, or a reduction in the extent of disturbance).	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger criteria was not met.	Not applicable
TFEMP 13	Undertake pre-clearance monitoring	Prior to clearing	E03_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance monitoring was undertaken in the reporting period.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 14	Annual monitoring of malleefowl activity using motion sensor cameras	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring	Annual monitoring with motion sensor cameras undertaken in the reporting period.	Compliant
TFEMP 15	Annual monitoring of malleefowl as per NMRT (2019) guidelines	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring	Annual monitoring of malleefowl undertaken as per NMRT Monitoring Manual (2022).	Compliant
TFEMP 16	Annual monitoring of Chuditch using cage trapping	Ongoing	R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Annual monitoring of Chuditch using cage trapping undertaken in the reporting period.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 17	If Trigger Criteria is met: Chuditch Threshold Criteria: A 50% decrease at impact sites in female abundance for two consecutive monitoring events. Malleefowl Threshold Criteria: A project related 50% decrease in the estimated local population (based on temporal analysis) over a consecutive two year period. Proponent will take response actions: • Report as a potential non-compliance to CEO DWER within 7 days of identification • Investigate and report in accordance with Condition 3-1(3) to Condition 3-1(6) of MS1199. Report submitted to CEO DWER with remediation actions proposed. • Review all monitoring data (including control sites) in relation to management measures (Table 2-3) and any other available data such as weather and climate to determine if the decrease is due to Project-related impacts. • Seek advice from a suitably qualified fauna specialist, as required. • If Project-related impact is suspected, increase management measures on advice from a suitably qualified fauna specialist to reduce the exceedance below threshold criteria. • Management measures may include, but are not limited to, the following: o Review of annual Malleefowl and Chuditch monitoring where required and threshold criteria and early response triggers. o Review and increase effectiveness of pre-clearance monitoring (for example timing/duration of surveys). o Review and refine remote camera monitoring for introduced predator fauna (foxes and cats), for example trapping effort, survey timing and frequency, location and placement of cameras. o A proportionate increase in trapping/baiting intensity may be required for introduced fauna control in collaboration with DBCA regional control programs. o Increase in the frequency of introduced predator fauna control undertaken may be required. o Increased frequency of internal audits and inspections for incident reports relating to vehicle interactions, unauthorised clearing, light and noise disturbance and fire. o Fauna mortality register may require review and locations of mortalities examined to identify areas where a decrease in speed limits, alteration to roads and/or extra signage may be required. o Increase in staff training and awareness to include information on introduced predator fauna (foxes and cats), for example the impact of predator fauna on Malleefowl and Chuditch populations, no feeding of predator fauna, reducing availability of food waste to predator fauna and all sightings of predator fauna to be reported. o Further regional surveys and monitoring to determine impacts to population. • Consider changes to the mining operations (for example, change in the location, duration and/or method(s) of mining operations). • Consider changes in land disturbance (for example, change in location of disturbance or the method of vegetation clearing, or a reduction in the extent of disturbance).	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger criteria was not met.	Not applicable
TFEMP 18	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Implementation of an internal clearing permit procedure, including onsite demarcation and notification procedures, that limits access to the MMEZs by foot only or only by car where there is an existing track.	Ongoing	P01_COV-000-EN-PRO-0012.2.IFU GDP Procedure E29_GDP0060_V9_SWRL_ExistingTSF2 E30_GDP0071_TSFConstruction_V1	Implementation of GDP Procedure requires demarcation and notification and limits access to MMEZ.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 19	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): MMEZs within close proximity to operational areas to be delineated with flagging tape, signage or similar to alert all personnel of their location.	Ongoing	E04_Exclusion Signage 1 E05_Exclusion Signage 2 E06_Exclusion Signage 3	MMEZ is delineated by signage and / or tape to prevent unauthorised access.	Compliant
TFEMP 20	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Inductions of all site personnel to include information on the location of MMEZs, management targets, measures and expectations.	Ongoing	E25_2023_MtHollandGDPAwarenessScript	Slide 6 of the GDP Awareness covers exclusion zones and requirements to avoid them. The presentation covers management targets, measures and expectations.	Compliant
TFEMP 21	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Undertake progressive clearing, minimising the amount of active disturbance present.	Ongoing	P01_COV-000-EN-PRO-0012.2.IFU GDP Procedure E29_GDP0060_V9_SWRL_ExistingTSF2 E30_GDP0071_TSFConstruction_V1	Item 38 of the GDP60 v9 and 31 of GDP 71 cover conducting activities to minimise harm to fauna.	Compliant
TFEMP 22	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Progressively rehabilitate areas as appropriate.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Mining areas ready for rehabilitation will not be available until Q4 2024.	Not applicable
TFEMP 23	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Preferential clearing outside of the egg incubation season (September to February) and potentially the mound building season (June to August).	Ongoing	M02_Covalent ACR Evidence Request Response Rev 0 E03_GDP60_V7_SWRL Fauna Preclearance	Clearing in the reporting period was undertaken 13th to 19th March 2023; outside of the egg incubation season (September to February) and potentially the mound building season (June to August).	Compliant
TFEMP 24	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Clearing of the Malleefowl nest mounds within the Indicative Site Layout will occur between March to May, outside of the mound building, breeding and incubation season (June to February).	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0 E03_GDP60_V7_SWRL Fauna Preclearance	No mounds were removed in the reporting period.	Not applicable
TFEMP 25	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (clearing management controls): Where a recently 'active' Malleefowl nest mound coincides with the Indicative Site Layout, and removal of the nest mound cannot be avoided, the Malleefowl nest mound will be removed only during the non-breeding period (i.e. when the nest mound is not being actively used for Malleefowl breeding). Alternatively, the nest mound may be covered during the non-breeding period to exclude the potential for Malleefowl breeding occurring during the breeding period; such that the nest mound can then be removed during either the breeding or non-breeding periods. This approach will ensure that no 'active' Malleefowl nest mounds are removed during implementation of the Project.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	No mounds were removed in the reporting period.	Not applicable
TFEMP 26	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (malleefowl management controls): All malleefowl sightings, active and inactive mounds will be recorded including date, observer, status of mound/malleefowl and a location description. This information will be assessed as part of annual monitoring.	Ongoing	E21_Fauna Register as at 240531	The fauna register includes malleefowl sightings. **OFI** The fauna register does not include observer name. If this is not relevant, amend the TFEMP to take out this requirement.	Compliant
TFEMP 27	Pre-clearance surveys will be undertaken as described by Section 2.5.2 Pre-clearance Survey Monitoring. Pre-clearance surveys will be conducted in accordance with the NMRT (2019) National Malleefowl Mound Monitoring Manual and utilise LiDAR technology.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance surveys were undertaken as described by Section 2.5.2 and in accordance with the NMRT.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 28	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): Pre-clearance surveys will only be undertaken during the incubation period when mounds are likely to be active from September to February and occur a minimum of two weeks prior to clearing, to identify any malleefowl mounds and determine their status. Outside of this incubation period, annual and 5 year population monitoring will be adequate to determine the presence of mounds and their status.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance R04_20230725 ECO 2022_23 Malleefowl Monitoring	Pre-clearance surveys and annual surveys are being undertaken. Five year population monitoring is due in 2025.	Compliant
TFEMP 29	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): LiDAR survey of areas planned for clearing will be undertaken to inform pre-clearance surveys annually for the first year during the construction period and any potential mounds checked to determine if they are active, and the monitoring period defined.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance R04_20230725 ECO 2022_23 Malleefowl Monitoring	Monitoring post initial LiDAR survey is being undertaken.	Compliant
TFEMP 30	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): Following the initial one-year period, LiDAR surveys will be undertaken as required depending on the size and scale of the clearing area. If it is more practical and effective to search an area on foot as opposed to LiDAR, 10 m wide transects across the entire area will be employed to determine the presence of mounds and their status.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance survey employs LiDAR.	Compliant
TFEMP 31	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): Pre-clearance walk throughs will be undertaken to identify and disperse Malleefowl individuals prior to clearing. Pre-clearance walk throughs will be undertaken the morning before clearing / disturbance to disperse individuals and will include searching and checking refugia sites. In the event that Malleefowl are found in the area to be cleared and there are no new active mounds, fauna specialists will implement a dispersal method to allow the Malleefowl to egress on their own but remain within their home range.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance R04_20230725 ECO 2022_23 Malleefowl Monitoring	The fauna preclearance documents Chuditch trapping undertaken for one night prior to vegetation clearing. It does not specifically state that pre-clearance walk throughs were undertaken for Malleefowl however, the pre-clearance walk throughs would have been undertaken in conjunction with the collection of the traps.	Compliant
TFEMP 32	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): Active nest mounds will be avoided as per MS1199 Condition 3-1(3) and a 100m buffer will be applied to any active mounds to be flagged in the field as no–go zones (consistent with Figure 2.1).	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance R04_20230725 ECO 2022_23 Malleefowl Monitoring	No active mounds were cleared.	Compliant
TFEMP 33	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - malleefowl): Suitably qualified fauna personnel will be present during clearing activities. Covalent personnel hold a Fauna Taking (Relocation) Licence granted under Regulation 28 of the Biodiversity Conservation Regulations 2018 (WA) to allow for the handling and movement of conservation significant fauna, if encountered. Any required handling or movement of conservation significant fauna is undertaken subject to the guidance of consulting ecologists. Covalent will have access to a care facility that can be used to rehabilitate any injured fauna and a procedure in place developed in consultation with DBCA.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	Fauna Pre-clearance surveys were completed by licence fauna handlers from ecoscape during the reporting period.	Compliant
TFEMP 34	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (Chuditch controls): Clearing will be avoided between the months of September to November where possible to mitigate impacts to denning females.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0 E30_GDP0071_TSFConstruction_V1	Clearing has been undertaken during periods operationally suitable. The clearing for TSF was undertaken 13th to 19th March 2023.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 35	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (Chuditch controls): Vegetation clearing will be undertaken during the daytime only, when Chuditch are generally less active.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Ground disturbance clearing activities are undertaken during dayshift hours only. Fauna traps are collected at first daylight in the morning and a walk through of the clearing area undertaken prior to approval being given for clearing to commence.	Compliant
TFEMP 36	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - Chuditch): Pre-clearance surveys will be undertaken as described by Section 2.5.2 Pre-clearance Survey Monitoring to record the presence/absence of Chuditch in the area to be cleared.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	The results of the pre-clearance fauna trapping are collated at the end of each clearance event and a copy of the report is saved against the GDP. An example of a pre-clearance survey is attached as E03.	Compliant
TFEMP 37	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - Chuditch): The procedure will involve pre-clearance walk throughs to be undertaken the morning before clearing / disturbance to disperse Chuditch individuals and will include searching and checking refugia sites and trapping for Chuditch the night immediately prior to clearing and holding the Chuditch for no more than one night. Chuditch will be released into a nearby area from where it was caught following the completion of daytime clearing activities.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0 E03_GDP60_V7_SWRL Fauna Preclearance	Fauna traps are set in the evening and collected at first daylight in the morning. A walk through of the clearing area is undertaken prior to approval being given for clearing to commence. If Chuditch are trapped, then they are released into nearby area following the completion of daytime clearing activities.	Compliant
TFEMP 38	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - Chuditch): Should clearing be undertaken during September to November then the pre-clearance survey procedure for the months of September, October and November will be modified to further mitigate the risk to breeding and denning females. During these months, in the event a female is captured it will be held during the day and released during the evening with a radio collar. The radio-collared female will be tracked to identify the location of the den. Once the den location identified, trail cameras will be installed to monitor den activity and an exclusion radius of 100 m applied for clearing activity. The exclusion radius area will be maintained until the female and young have left the den. A fauna handling procedure will be developed in consultation with DBCA.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Clearing was not undertaken during the September to November period.	Not applicable
TFEMP 39	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (pre-clearance surveys - Chuditch): Suitably qualified fauna personnel will be present for clearing activities. The person will hold a Fauna Taking (Relocation) Licence granted under Regulation 28 of the Biodiversity Conservation Regulations 2018 (WA) to allow for the handling and movement of conservation significant fauna, if encountered. Any required handling or movement of conservation significant fauna is undertaken subject to the guidance of consulting ecologists. The person will have access to a care facility that can be used to rehabilitate any injured fauna and a procedure in place developed in consultation with DBCA.	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	Fauna pre-clearance surveys were completed by licence fauna handlers from Ecoscape during the reporting period.	Compliant
TFEMP 40	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (traffic management controls): Avoid accidental disturbance to fauna and habitat by enforcing strict traffic management rules (e.g. keeping to designated tracks, limited driving between dusk and dawn, driving to road and weather conditions, reduced speed limits within suitable habitat, malleefowl and Chuditch signage).	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Personnel are made aware of the requirement to keep to designated tracks, limit driving between dusk and dawn, drive to road and weather conditions and limiting speeds to protect conservation significant fauna.	Compliant
TFEMP 41	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (traffic management controls): All sightings and interactions with malleefowl and Chuditch to be reported to Environmental personnel.	Ongoing	E21_Fauna Register as at 240531	There is a fauna register which includes malleefowl Chuditch sightings in the reporting period.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 42	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (traffic management controls): Environmental personnel to identify and establish working relationships with local wildlife carers/vets for injured malleefowl and Chuditch.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Covalent liaises with the Parnana Pikurtu Wildlife Sanctuary located at the Nulla Nulla Farm Retreat approximately 130km drive North-West of the Mt Holland Project.	Compliant
TFEMP 43	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (traffic management controls): Worker awareness training.	Ongoing	E25_2023_MtHollandGDPAwarenessScript	Personnel undergo GDP Awareness Training which includes information on Malleefowl and Chuditch and the requirements for fauna clearance.	Compliant
TFEMP 44	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): During construction, all construction pipes, culverts, or similar structures stored on–site overnight will be inspected for wildlife by a qualified fauna specialist or properly trained on–site personnel before the pipe is buried, capped, used, or moved.	Ongoing	P02_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing E22_2023-2024 MTH Environmental Incident Register from INX	The fauna management and trench clearing procedure outlines the requirements for inspection by personnel before the pipe is buried, capped, used, or moved. There were no reports of mortality from pipes, culverts, or similar structures.	Compliant
TFEMP 45	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): If the inspection indicates presence of conservation significant species inside stored materials or equipment, work on those materials will cease until a suitably qualified fauna specialist determines the appropriate course of action.	Ongoing	P02_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing	The fauna management and trench clearing procedure outlines in Section 3.7 the requirements for conservation significant fauna.	Compliant
TFEMP 46	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): To prevent entrapment of animals, all excavations, steep-walled holes or trenches ≥ 1 m depth will be secured against animal entry at the close of each day, where possible. Any of the following measures may be employed, depending on the size of the hole and method feasibility: o Construction holes and trenches will be securely covered (no gaps) with plywood or similar materials at the close of each working day, or any time the opening will be left unattended for more than one hour. o In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 100 m apart. o In situations where escape ramps are unfeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry as appropriate, or o If a trench with a greater distance than 100 m is required to be left open for > 1 day, trench inspections shall be undertaken to identify any entrapped fauna and relocation completed. The requirement and specifics (frequency and timing) for trench inspections will be determined by environmental personnel, however inspections after sunrise, before sunset and prior to backfilling may be required.	Ongoing	P02_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing E31_DMIRS 2023_Fauna Egress	Steep walled holes and trenches are secured against animal entry or provided with fauna egress.	Compliant
TFEMP 47	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): Domestic waste facilities will be fenced, and putrescible waste receptacles will be covered.	Ongoing	E23_Landfill inspection Nov 2023 P03_COV-M000-EN-PRO-0003.1.IFU Landfill Facility Management Procedure E26_Landfill Fencing E27_Landfill Fencing E28_Landfill Fencing	Waste is taken to the onsite landfill. The November 2023 inspection report identifies that the perimeter fence is not adequate to keep waste in and feral animals out. No actions were proposed on the inspection record (E23). Actions are entered into INX system and assigned. Photos of the fencing 26/04/2024 show that issue has been rectified.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 48	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): Containers to have doors closed securely when not in use.	Ongoing	E24_Putrescible skip	Skip bins are closed when not in use (E24).	Compliant
TFEMP 49	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): Permanent water sources (tanks, ponds and dams) to be fenced and / or have fauna egress mats installed.	Ongoing	E31_DMIRS 2023_Fauna Egress	Permanent water sources (tanks, ponds and dams) are fenced and / or have fauna egress mats installed.	Compliant
TFEMP 50	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike. Action (fauna entrapment controls): To prevent entrapment within the Mine Pit(s) at mine closure, a ramp will be put in place during closure to enable fauna to exit and avoid entrapment.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Site is not under closure.	Not applicable
TFEMP 51	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Introduced predator fauna identified will be reported to Environmental personnel and recorded to monitor occurrences.	Ongoing	E21_Fauna Register as at 240531	Introduced predators are recorded on the fauna register.	Compliant
TFEMP 52	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Avoid attraction of introduced predators to the Development Envelope by implementing domestic waste management procedures (e.g. fencing of landfills, regularly covering putrescible waste, secure lids on bins).	Ongoing	E24_Putrescible skip E23_Landfill inspection Nov 2023 E26_Landfill Fencing E27_Landfill Fencing E28_Landfill Fencing	The landfill is fenced (E26, E27, E28) and checked regularly (E23), putrescible waste is covered with secure lids on bins (E24).	Compliant
TFEMP 53	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Introduced predator control will be undertaken within the Development Envelope plus a 3 km area surrounding the Development Envelope, and in collaboration with DBCA regional control programs where practicable.	Ongoing	R16_20230425_APAS_Feral Cat Control Program Report	Feral animal control was undertaken in April 2023 in cooperation with a mine 100km south of Covalent.	Compliant
TFEMP 54	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Induct personnel on waste management and introduced predator control measures.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Personnel are inducted on waste management.	Compliant
TFEMP 55	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Introduced predator monitoring to be undertaken in accordance with methodology outlined in Section 2.5 Monitoring.	Ongoing	R16_20230425_APAS_Feral Cat Control Program Report R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Monitoring has not indicated a change in malleefowl or Chuditch population. Introduced predator monitoring has not indicated that numbers of predators are increasing.	Compliant
TFEMP 56	Management Target: Minimise decline in population due to predation from introduced predators. Action (introduced predator control management): Predator density by monitoring activity will be assessed and any causal factors identified to ensure appropriate management measures are undertaken. Consideration shall be given to local and regional baiting or a review of food sources at camp or the landfill.	Ongoing	R16_20230425_APAS_Feral Cat Control Program Report R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Monitoring has not indicated a change in malleefowl or Chuditch population. Introduced predator monitoring has not indicated that numbers of predators are increasing.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 57	Management Target: Minimise decline in population due to dust, light, noise, vibration and displacement. Action (dust, noise, light and vibration management): Dust suppression measures that include good house–keeping practices for vehicles, cleared areas, and active stockpiles.	Ongoing	E12_Dust Suppression FY23	Dust suppression of cleared unsealed roads, cleared areas and active stockpiles was undertaken by water carts as per water volumes (E12).	Compliant
TFEMP 58	Management Target: Minimise decline in population due to dust, light, noise, vibration and displacement. Action (dust, noise, light and vibration management): Dust suppression measures such as the use of watercarts will be used during dry and windy conditions, as required.	Ongoing	E12_Dust Suppression FY23	Dust suppression of cleared unsealed roads and laydown areas was undertaken by water carts in the audit period.	Compliant
TFEMP 59	Management Target: Minimise decline in population due to dust, light, noise, vibration and displacement. Action (noise, light and vibration management): Machinery and equipment will be fitted with noise attenuation measures to meet personnel safety requirements.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Machinery and equipment meet health and safety requirements for noise and vibration.	Compliant
TFEMP 60	Management Target: Minimise decline in population due to dust, light, noise, vibration and displacement. Action (noise, light and vibration management): Installation of lighting that direct lights toward plant areas to minimise light spill into adjacent vegetated areas.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Lighting towers both fixed and temporary are utilised in operational areas of the Mine and roads only, lighting is only directed on operational areas and not into adjacent vegetated areas.	Compliant
TFEMP 61	Management Target: Minimise decline in population due to dust, light, noise, vibration and displacement. Action (noise, light and vibration management): Equipment design will specify compliance with Australian Standard noise limits.	Ongoing	R03_Covalent Lithium CAR 2023 (Rev 0)	All equipment and machinery are designed and tested to comply with Australian Noise Limit Standards. Periodical Occupational Noise and Dust exposure monitoring is conducted by Occupational Hygiene Consultants.	Compliant
TFEMP 62	Management Target: Minimise decline in fauna habitat condition due to changed fire regimes. Action: Implementation of fire management procedures (e.g. maintenance of fire breaks, Hot Work Permit system, firefighting training, Emergency Response Plan).	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	Fire management procedures are in place including the Hot Work Permit system, firefighting training and Emergency Response Plan.	Compliant
TFEMP 63	Management Target: Minimise decline in fauna habitat condition due to changed fire regimes. Action: Firefighting equipment will be located on site and in vehicles.	Ongoing	E20_Fire Hydrants_Hose Reels E19_Fire Extinguisher Workshop E16_Fire Equipment Service register E13_Truck Example Fire Suppression System Photo 1 E14_Dozer Example Fire Suppression System Photo 1 E15_Dozer Example Fire Suppression System Photo 2 E17_Fire Extinguisher Workshop Vehicle Example E18_Fire Extinguisher Workshop Vehicles Tag	Firefighting equipment is located on site (E20, E19, E16) and in vehicles (E13, E14, E15, E17, E18).	Compliant
TFEMP 64	Management Target: Minimise decline in fauna habitat condition due to changed fire regimes. Action: Lightning protection equipment will be installed as part of Project design where necessary.	Ongoing	E02_Lightning Protection Infrastructure	Lightning protection infrastructure is installed on buildings and infrastructure (E02) to redirect and minimise potential lightning caused fires.	Compliant
TFEMP 65	Management Target: Minimise decline in fauna habitat condition due to changed fire regimes. Action: Vehicles will not be permitted to leave access tracks or cleared areas.	Ongoing	E22_2023-2024 MTH Environmental Incident Register from INX	There were no incidents of vehicles leaving access tracks or cleared areas.	Compliant

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 66	Management Target: Minimise decline in fauna habitat condition due to changed fire regimes. Action: Coordination with DBCA and Department of Fire and Emergency Services (DFES) to undertake prescribed burns.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	No prescribed burns were undertaken during the audit period.	Compliant
TFEMP 67	Covalent will require all workers, both during construction and operation of the mine, to attend a worker awareness training/environmental induction covering the following topics. • Malleefowl and Chuditch (e.g. how to identify, conservation status, the importance of minimising impacts on the species, requirements of personnel including adherence to speed limits and staying on roads as well as locations and incidents, reporting to Environmental personnel). • Information on other conservation-significant fauna recorded within the Development Envelope. • Information on introduced predator fauna controls (no feeding of introduced predators and all sightings to be reported) and their potential to impact to Malleefowl and Chuditch. • Information on the prevention and management of fires to protect fauna habitat.	Ongoing	E07_Mt Holland Environmental Induction E34_20230116 TBT Reporting Fauna Sightings E35_20230823 Reporting Fauna Sightings E36_20230912 TBT Site Speed Limits E37_20231203 TBT Protect Our Malleefowl E38_20230418 Introduced Predator Control E39_20230809 TBT Malleefowl Breeding Season E40_20230903 TBT Snake Awareness E41_20230907 TBT Threatened Species Day	The induction includes: • Identification and conservation status of Malleefowl and Chuditch (Slide 81 including 81 a and b) • Requirements of personnel (Slide 82) • Reporting injury or mortality of conservation significant fauna (slide 88a) • Impact of introduced predator fauna on Chuditch (slide 81b) (not Malleefowl) Toolbox talks are utilised to convey worker awareness of topics such as: • Conservation-significant fauna in the Development Envelope (E53) • Information on the prevention and management of fires to protect fauna habitat Site Notices include: Sightings of introduced predators should be recorded and that they not to be fed (E50)	Compliant
TFEMP 68	Environmental incidents are defined as breaches or non-adherences to objectives and procedures applied to the Project and prescribed in the TFEMP. Environmental incidents are to be reported to the Covalent Environmental Manager by the person responsible for the incident or the first person at the site of an incident.	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0 E22_2023-2024 MTH Environmental Incident Register from INX M02_Covalent ACR Evidence Request Response Rev 0	There were no breaches or non-adherences to objectives and procedures.	Compliant
TFEMP 69	The Covalent Environmental Manager will assess the type and severity of the incident in accordance with internal procedures. Relevant personnel shall be notified and consulted whether the incident requires notification to regulatory agencies.	Ongoing	Refer to TFEMP 68	Refer to TFEMP 68	Compliant
TFEMP 70	Annual Population monitoring of Malleefowl and Chuditch as per Section 2.51	Annual	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Annual monitoring is undertaken in accordance with Section 2.51.	Compliant
TFEMP 71	Pre-Clearance Surveys • Malleefowl pre-clearance surveys during incubation period of September to February • Chuditch pre-clearance surveys the night immediately prior to ground disturbing activities • As described by section 2.5.2	Ongoing	E03_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance surveys undertaken as per Section 2.5.2.	Compliant
TFEMP 72	Mortality monitoring Monitoring of incident reports for malleefowl and Chuditch predation, vehicle strike, speeding and night driving.	Ongoing and annual review	M01_Covalent CAR Evidence Request Response Rev 0 E22_2023-2024 MTH Environmental Incident Register from INX	No records of predation, vehicle strike, speeding and night driving incidents with malleefowl and Chuditch.	Not applicable

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 73	Introduced predator monitoring Monitoring of the existing introduced predator populations (focussing on the fox and cat populations). This information is intended to provide a baseline for comparison of introduced predator populations over the life of mine. The information will also guide any introduced predator control programs implemented in the Proposal area.	Ongoing and annual review	R17_IntroducedPredatorMonitoring 2021 R07_20230720_ECO_2022PredatorMonitoring R16_20230425_APAS_Feral Cat Control Program Report	Baseline introduced predator monitoring has been undertaken in 2021 and 2022. Predator control program was implemented in April 2023.	Compliant
TFEMP 74	Clearing monitoring • Monitoring of clearing register for compliance to approvals. • Review of clearing footprint to determine clearing proximity to active malleefowl mounds.	Ongoing and annual review	G01_a2765 CAR23 f01 03 - Fig3 Clearing E29_GDP0060_V9_SWRL_ExistingTSF2 E30_GDP0071_TSFConstruction_V1	Monitoring of clearing is being undertaken.	Compliant
TFEMP 75	Clearing monitoring Internal audit and inspection of areas of clearing, areas of potential entrapment, speeding and night driving.	Ongoing and annual review	E32_20230321_Environmental Inspection E33_20230903_Environmental Inspection	Internal auditing and inspections being undertaken.	Compliant
TFEMP 76	Fauna habitat monitoring Annual monitoring of vegetation condition as an indicator of fauna habitat quality.	As FVEMP	R06_Mattiske Veg Condition Monitoring Spring 2023	Vegetation health is reported in the vegetation monitoring report (R06).	Compliant
TFEMP 77	Covalent is required to prepare and submit annually of a Compliance Assessment Report (CAR) to CEO DWER in accordance with Condition 8 of MS1199. The CAR will include: • A summary of compliance requirements. • Summary of compliance during the reporting period. • Non-compliances and corrective / preventative actions. • Compliance assessment table. • Documentary evidence. • Provision of data (annually) from monitoring programs to relevant regulatory authorities	Annually	R03_Covalent Lithium CAR 2023 (Rev 0)	Submission receipt for CAR (R03) received from DWER 03/05/2024. The CAR included: • A summary of compliance requirements. • Summary of compliance during the reporting period. • Non-compliances and corrective / preventative actions. • Compliance assessment table. • Documentary evidence. • Provision of data (annually) from monitoring programs to relevant regulatory authorities	Compliant
TFEMP 78	If a trigger is exceeded then action will be: Internal incident report and investigation to prevent a recurrence and reduce the exceedance below trigger criteria.	At time of event	M01_Covalent CAR Evidence Request Response Rev 0	No trigger was exceeded	Compliant
TFEMP 79	In the event a Threshold criteria is met, Covalent will notify the CEO DWER within 7 days of identification of the Threshold criteria being met, including information on remediation actions that have been or will be implemented, in accordance with Condition 3-5(1) of MS1199.	Within 7 days of event	M01_Covalent CAR Evidence Request Response Rev 0	No threshold was exceeded	Compliant
TFEMP 80	Covalent will investigate the cause of the Threshold criteria being met and prepare and submit a report to CEO DWER within 21 days of the exceedance in accordance with Condition 3-5(3) to Condition 3-5(5) of MS1199. The report will include: • Details of contingency actions implemented. • Effectiveness of the actions implemented, measured against the threshold criteria. • Findings of investigations. • Measures to prevent the Threshold criteria being exceeded in the future. • Measures to prevent, control or abate any environmental harm which may have occurred. • Justification the Threshold criteria remaining, or being adjusted based on a better understanding, demonstrating that objectives will continue to be met	Within 21 days of event	M01_Covalent CAR Evidence Request Response Rev 0	No threshold was exceeded	Not applicable

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 81	If there is fauna injury or abandonment, then action will be: The relevant regulatory authorities (DBCA) will be notified annually within the CAR of threatened and specifically protected fauna being injured or abandoned.	Annually	M01_Covalent CAR Evidence Request Response Rev 0 E21_Fauna Register as at 240531	No specially protected fauna injured or abandoned. Fauna injuries as follows: • Lesser Long-Eared Bat (27/01/2023) Found at Village Camp - Kept overnight and taken to wildlife carers at Nulla Nulla Farm Retreat • Lesser Long-Eared Bat (18/04/2023) Found at Primero Concentrator Area - Bat cared for overnight and taken to carer Fauna mortalities as follows: • Wallaby (30/01/2023) Vehicle strike • Goanna (31/01/2023) Vehicle strike • Snake (12/02/2023) Vehicle strike • Snake - Dugite (28/09/2023) Vehicle strike • Yellow Spotted Monitor (18/10/2023) Vehicle strike • Sand Monitor (9/12/2023) Vehicle strike	Compliant
TFEMP 82	If there is mortality of conservation significant fauna, then action will be: The relevant regulatory authorities (including DBCA and DAWE) will be notified annually within CAR. Any fauna found deceased, accidentally killed or euthanised due to injury will be offered to the Western Australian Museum as specimens.	Annually	M01_Covalent CAR Evidence Request Response Rev 0 E21_Fauna Register as at 240531	No conservation significant fauna deaths in 2023.	Compliant
TFEMP 83	Evaluation and revision of the TFEMP Review and submit to CEO DWER as per Condition 3-6 of MS1199.	As required.	Refer to MS1199:3-6	Refer to MS1199:3-6	Compliant
TFEMP 84	Trigger: 25% increase in malleefowl or Chuditch sightings within or adjacent to mining activity areas over two consecutive years. Action: Report internally that early response trigger has been met in accordance with internal procedures.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable
TFEMP 85	Trigger: 25% increase in malleefowl or Chuditch sightings within or adjacent to mining activity areas over two consecutive years. Action: Due diligence checks to ensure the following is adequate: • Internal audit of waste management facilities • Review of traffic management controls to determine management action amendments • Refresher training on malleefowl, Chuditch and associated controls and injured animal management.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 86	Trigger: 25% increase in malleefowl or Chuditch sightings within or adjacent to mining activity areas over two consecutive years. Early response trigger contingency actions may include but are not limited to: • Avoid clearing September to November to mitigate any potential risk to breeding and denning female Chuditch. • Near miss of fauna on roads or during clearing and mining activities reported. • Warning signs erected in areas of increased malleefowl or Chuditch records • Increase in frequency of internal audits and inspections of vehicle speeds. • Increased presence of malleefowl or Chuditch on site discussed in staff induction programs • Staff training and awareness to provide information on malleefowl (e.g. how to identify adults, chicks and mounds, conservation status, the importance of minimising impacts on the species, adherence to speed limits, reporting to Environmental personnel). • Staff training and awareness to include information on the prevention and management of fires. • Domestic waste facilities will be fenced, and putrescible wastes will be regularly covered. • Containers to have doors closed securely when not in use.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable
TFEMP 87	Trigger: 25% increase in introduced predators (fox or cat) sightings (opportunistic sightings and remote camera) over two consecutive years. Action: Report internally that early response trigger has been met in accordance with internal procedures.	Ongoing	R16_20230425_APAS_Feral Cat Control Program Report	Monitoring in April 2023 did not identify any feral cats or dogs. Monitoring occurred prior to landfill commissioning.	Not applicable
TFEMP 88	Trigger: 25% increase in introduced predators (fox or cat) sightings (opportunistic sightings and remote camera) over two consecutive years. Action: Review introduced predators control programme and amend as required.	Ongoing	R07_20230720_ECO_2022 Predator Monitoring R17_IntroducedPredatorMonitoring 2021 R16_20230425_APAS_Feral Cat Control Program Report	Monitoring in April 2023 showed predator numbers reduced from monitoring undertaken in 2022 and 2021.	Not applicable
TFEMP 89	Trigger: 25% increase in introduced predators (fox or cat) sightings (opportunistic sightings and remote camera) over two consecutive years. Trigger contingency actions may include but are not limited to the following: • A proportionate increase in trapping/ baiting intensity for introduced predators in areas where increased sightings of foxes and/ or cats have occurred. • If after the two consecutive monitoring events, a threshold exceedance has not been identified, resume standard monitoring. • Installation of signage: Feeding animals prohibited, minimise availability of food waste. • Review and refine remote camera monitoring for introduced predators (foxes and cats) across the DE should it be required. • Staff training and awareness to include information on feral species (e.g. impact of feral animals on malleefowl and Chuditch populations, no feeding of feral species, reducing availability of food waste to feral animals and all sightings of feral species to be reported).	Ongoing	Refer to TFEMP 87	Refer to TFEMP 87	Not applicable
TFEMP 90	Trigger: 25% decrease in malleefowl or Chuditch (camera sightings or trapping results) that are statistically different from previous monitoring results but do not breach trigger criteria as it has not been consecutive for two years. Review monitoring program for adequacy: Determine whether the changes observed in the impact sites are comparable to the observations in the reference sites.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable

Commitment	Requirement	Timing	Evidence	Assessment	Status
TFEMP 91	Trigger: 25% decrease in malleefowl or Chuditch (camera sightings or trapping results) that are statistically different from previous monitoring results but do not breach trigger criteria as it has not been consecutive for two years. Consider changes to the mining operations (for example, change in the location, duration and/or method(s) of mining operations).	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable
TFEMP 92	Trigger: 25% decrease in malleefowl or Chuditch (camera sightings or trapping results) that are statistically different from previous monitoring results but do not breach trigger criteria as it has not been consecutive for two years. Consider changes in land disturbance (for example, change in location of disturbance or the method of vegetation clearing, or a reduction in the extent of disturbance).	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable
TFEMP 93	Trigger: 25% decrease in malleefowl or Chuditch (camera sightings or trapping results) that are statistically different from previous monitoring results but do not breach trigger criteria as it has not been consecutive for two years: Action: Investigate potential causes for population decrease: Factors that may affect populations of threatened fauna are varied and it is difficult to determine the exact factors as a decline in sightings could be associated with • seasonal conditions (e.g. rainfall and temperatures) • changes in mound usage patterns by malleefowl (i.e., use of mounds that are not surveyed) • effectiveness of introduced predator control • spatial variation (near-impact areas) versus sites located further from impact); and • reliability of the results obtained from the fauna sightings register • attributable to clearing, construction, operation activities. Where the trigger is attributed to clearing, construction or operational activities, report the exceedance to DWER within 7 days of the exceedance being identified.	Ongoing	R04_20230725 ECO 2022_23 Malleefowl Monitoring R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.	Not applicable
TFEMP 94	Covalent will amend this TFEMP as required to include any adaptive management updates based on information gathered from monitoring results. These amendments will involve regulatory consultation and be submitted to CEO DWER for review. If Covalent has gathered sufficient information through research and long-term monitoring to propose revisions to management targets, this TFEMP may be amended and resubmitted to the CEO DWER for approval in accordance with Condition 3-6(1) of MS1199.	Ongoing	Refer to M1199:3.2	Refer to M1199:3.2	Compliant
TFEMP 95	Furthermore, in accordance with Condition 3-6 (2) of MS1199, Covalent will update this TFEMP as and when directed by notice in writing by CEO DWER	Ongoing	Refer to M1199:3.2	Refer to M1199:3.2	Compliant

Appendix E Ironcaps Banksia Conservation Plan Compliance Assessment

Table E.2: Ironcaps Banksia Conservation Plan Audit Table (Rev 2)

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
Management Actions						
IBCP 01	Section 3.2	Ensuring no proposal-related direct or adverse indirect impacts to flora and vegetation within the VEZs	Overall	R06_Mattiske Veg Condition Monitoring Spring 2023	Spring monitoring (R06) does not report proposal related direct impact to flora and vegetation within a VEZ	Compliant
IBCP 02	Section 3.2	Ensure a Flora and Vegetation Environmental Management Plan is developed, approved and implemented. The Flora and Vegetation Environmental Management Plan includes trigger and threshold criteria to ensure no proposal related impact to the VEZs occurs.	Overall	R11_Flora and Vegetation Management Plan C04_MS1199 - FVEMP Rev 7 approval	As specified in the FVEMP approval (C04) the FVEMP (R11) contains threshold criteria and trigger criteria that must provide an early warning that the threshold criteria may not be met.	Compliant
IBCP 03	Section 3.2	Reporting and investigations of any threshold criteria exceedance of the Flora and Vegetation Environmental Management Plan	Overall	R03_Covalent Lithium CAR 2023 (Rev 0) M02_Covalent ACR Evidence Request Response Rev 0	No trigger criteria or threshold criteria has been exceeded in the reporting year.	Not applicable
IBCP 04	Section 3.2	Clear no more than the approved two (2) *Banksia dolichostyla* individuals by direct effects (clearing for mining operations).	Clearing	R03_Covalent Lithium CAR 2023 (Rev 0) G02_CAR23 Calcs 20240429 M02_Covalent ACR Evidence Request Response Rev 0 E22_2023-2024 MTH Environmental Incident Register from INX	No Ironcaps Banksia (*Banksia dolichostyla*) individuals had been cleared within the Development Envelope since commencement of the project.	Compliant
IBCP 05	Section 3.2	Have indirect impact on no more than 67 known individuals of *B. sphaerocarpa var. dolichostyla* located in close proximity (≤ 50 meters (m)) to the Project. Indirect effects may include: • fire • introduction / spread of weeds and dieback (Phytophthora cinnamomi) • changed hydrology / salinisation. • fragmentation • dust generation. • spills of hydrocarbons or hypersaline water	Overall	R06_Mattiske Veg Condition Monitoring Spring 2023 E22_2023-2024 MTH Environmental Incident Register from INX M02_Covalent ACR Evidence Request Response Rev 0	Monitoring of indirect impacts has shown: • No fire in the reporting period • No introduction/spread of weeds in the reporting period (R06) • No suspect plant deaths (potential dieback) • No changes in hydrology • No fragmentation • Vegetation health within 20% (nil effect from dust deposition) • Spring vegetation monitoring report (R06) has not detected any indirect impact on *B. sphaerocarpa var. dolichostyla* from reported incident on 8 May 2023 "Salts from hypersaline water applied to TSF construction materials (material conditioning) has leached out during rainfall and impacted vegetation outside of Mining Proposal disturbance footprint."	Compliant
IBCP 06	Table 3.1	Management Objective: No proposal related direct impact to flora and vegetation within a VEZ. Avoidance: **implementation of an internal clearing permit procedure** Management Target: • No unauthorized clearing within the Development Envelope or VEZs. • No unauthorized access to a VEZ. Monitoring: • Clearing register. • Survey records of all clearing undertaken during operation of the Project.	Ongoing	P01_COV-000-EN-PRO-0012.2.IFU GDP Procedure E29_GDP0060_V9_SWRL_ExistingTSF2	Vegetation clearing for the development of SWRL was undertaken in accordance with the Covalent Lithium Ground Disturbance Procedure (GDP0060).	Compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 07	Table 3.1	Management Objective: No proposal related direct impact to flora and vegetation within a VEZ. Avoidance: **implementation of an internal procedure limiting access to VEZs by foot only or only by car where there is an existing track.** Management Target: • No unauthorized clearing within the Development Envelope or VEZs. • No unauthorized access to a VEZ. Monitoring: • Clearing register. • Survey records of all clearing undertaken during operation of the Project.	Ongoing	E07_Mt Holland Environmental Induction E22_2023-2024 MTH Environmental Incident Register from INX	Slide 78 of the Earl Grey Lithium Project induction highlights the Vegetation Exclusion Zones. The incident register does not report any unauthorized access to a vegetation exclusion zone in the reporting period.	Compliant
IBCP 08	Table 3.1	Management Objective: No proposal related direct impact to flora and vegetation within a VEZ. Avoidance: **VEZs to be delineated with flagging tape, physical barrier, signage or similar to alert all personnel of their location** Management Target: • No unauthorized clearing within the Development Envelope or VEZs. • No unauthorized access to a VEZ. Monitoring: • Clearing register. • Survey records of all clearing undertaken during operation of the Project.	Overall	E07_Mt Holland Environmental Induction E04_Exclusion Signage 1 E05_Exclusion Signage 2 E06_Exclusion Signage 3 E22_2023-2024 MTH Environmental Incident Register from INX	Vegetation Exclusion Zones are delineated via bunting and signage within the Development Envelope (E04, E05, E06). Slide 78 of the Earl Grey Lithium Project induction highlights the Vegetation Exclusion Zones. The incident register does not report any unauthorized access to a vegetation exclusion zone in the reporting period.	Compliant
IBCP 09	Table 3.1	Management Objective: No proposal related direct impact to flora and vegetation within a VEZ. Avoidance: **Inductions of all site personnel to include information on the location of VEZs, management targets, measures and expectations** Management Target: • No unauthorized clearing within the Development Envelope or VEZs. • No unauthorized access to a VEZ. Monitoring: • Clearing register. • Survey records of all clearing undertaken during operation of the Project.	Ongoing	E07_Mt Holland Environmental Induction	Slide 78 of the Earl Grey Lithium Project induction highlights the Vegetation Exclusion Zones.	Compliant
IBCP 10	Table 3.1	Management Objective: Minimise dust deposition on vegetation from mining and related activities. Avoidance: **The Proponent will minimise dust deposition on vegetation through:** • **dust suppression on cleared areas** • **maximise efficiency of loads when transporting ore or concentrate (including haul trucks and conveyers)** • **use dust covers on machinery and dust suppressants on exposed areas where possible** • **minimise open area footprint and rehabilitate or cover (using vegetation, rock, water and/or dust suppressant) exposed areas as soon as practicable** • **design the mine layout to minimise dust emissions to VEZs where practicable** Management Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Monitoring: Dust deposition rates will be measured monthly using dust deposition gauges for the first 24 months from implementation of the proposal.	Monthly	R08_20230915_Maxy Engineering_Dust Report R06_Mattiske Veg Condition Monitoring Spring 2023 E12_Dust Suppression FY23	Dust deposition on vegetation has been minimised in the reporting period by: • Dust suppression of cleared unsealed roads, cleared areas and active stockpiles was undertaken by water carts as per water volumes (E12). • Haul trucks and road haulage trucks are operated at or near capacity to maximise efficiency. • The access road has been sealed in 2023. Note: • The use of dust covers is not yet applicable to the operation. • There are no areas that are no longer required for mining but yet to be rehabilitated.	Compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 11	Table 3.1	Management Objective: Minimise spread of weeds / dieback. Avoidance: **The Proponent will minimise the risk of introduction of invasive species and spread of dieback through implementation of a vehicle hygiene procedure, dieback management procedure and weed control** Management Target • Minimise new weeds introduced to site. • Prevent spread of weeds to VEZs. • Prevent spread of dieback onsite. Monitoring: • Annual weed monitoring across Development Envelope. • A Dieback Management Plan will be produced and provided to DBCA, following the completion of baseline monitoring. • Dieback monitoring programme to be developed. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. • Quarterly health monitoring at vegetation quadrats within VEZs and control sites to include observations for weeds and if the presence of weeds is having a potential indirect impact.		R14_COV-0000-EN-PLN-0001_1 Construction EMP E10_Weed Hygiene_Register E11_Example Vehicle Hygiene Record	All equipment, machinery and vehicles are required to be clean on entry from the Development Envelope which is documented on the hygiene record and hygiene register. Other management controls for introduced flora (weeds) and soil-borne pathogens such as *Phytophthora* sp. (Dieback) are detailed within the Covalent Lithium Construction Environmental Management Plan.	Compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 12	Table 3.1	Management Objective: Minimise spread of weeds / dieback. Avoidance: **The Proponent will minimise the risk of introduction of invasive species and spread of dieback through Development Envelope and VEZs will be surveyed for weeds periodically, so that any infestations of invasive species that establish can be eradicated before the plants can flower and set seed** Management Target • Minimise new weeds introduced to site. • Prevent spread of weeds to VEZs. • Prevent spread of dieback onsite. Monitoring: 1. Annual weed monitoring across Development Envelope. 2. A Dieback Management Plan will be produced and provided to DBCA, following the completion of baseline monitoring. 3. Dieback monitoring programme to be developed. 4. Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. 5. Quarterly health monitoring at vegetation quadrats within VEZs and control sites to include observations for weeds and if the presence of weeds is having a potential indirect impact.		R06_Mattiske Veg Condition Monitoring Spring 2023 R14_COV-0000-EN-PLN-0001_1 Construction EMP R03_Covalent Lithium CAR 2023 (Rev 0)	Compliance audit found that: 1. Annual weed monitoring found no weed species were identified in the Spring 2023 monitoring (R06). **2. Dieback monitoring (R03) was undertaken in 2019 and 2022 however the Dieback Management Plan has not been developed or provided to DBCA.** 3. The Weed and Pathogens Management section of the CEMP (R14) does not specify the requirement or timing for dieback monitoring (Dieback monitoring programme). 4. Baseline observations of plan health were made October 2020 to October 2021 (R03). Monitoring methodology, frequency and monitoring sites were reviewed with monitoring to be undertaken Spring and Summer. 5. Spring monitoring report (R06) includes observations for all taxa.	Potentially non-compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 13	Table 3.1	Management Objective: Minimise spread of weeds / dieback. Avoidance: **The Proponent will minimise the risk of introduction of invasive species and spread of dieback through Phytophthora (dieback) controls including signage, clean down points, vehicle hygiene shall be implemented.** Management Target • Minimise new weeds introduced to site. • Prevent spread of weeds to VEZs. • Prevent spread of dieback onsite. Monitoring: • Annual weed monitoring across Development Envelope. • A Dieback Management Plan will be produced and provided to DBCA, following the completion of baseline monitoring. • Dieback monitoring programme to be developed. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed. • Quarterly health monitoring at vegetation quadrats within VEZs and control sites to include observations for weeds and if the presence of weeds is having a potential indirect impact.	Construction	R14_COV-0000-EN-PLN-0001_1 Construction EMP E10_Weed Hygiene_Register E11_Example Vehicle Hygiene Record	Management Controls for Weeds and Pathogens are detailed in the Construction Environmental Management Plan (R05). Vehicle and Material hygiene inspections are conducted on all vehicles and materials prior to entry to the Mt Holland Project (E36). All equipment, machinery and vehicles are required to be clean on entry from the Development Envelope which is documented on the hygiene record and hygiene register. No Dieback signage or clean down points additional to site entry in place. Requirement for additional measures would be determined if there was a Dieback Management Plan in place.	Not applicable
IBCP 14	Table 3.1	Management Objective: Avoid alteration of fire regimes Avoidance: **The Proponent will contribute to fire management at the mine site and in the region through Internal procedures to prevent fires and manage the occurrence of fires due to operational activities (emergency response team, automated fire extinguishers on equipment, personnel trained to use firefighting equipment).** Management Target: Prevent fires attributed to mining and associated Project activities. Monitoring: • Incident reports of fire. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.	At all times	M02_Covalent ACR Evidence Request Response Rev 0 R15_COV-M000-HS-PLN-0005.1.IFU MTH Emergency Management Plan E20_Fire Hydrants_Hose Reels E19_Fire Extinguisher Workshop E16_Fire Equipment Service register E13_Truck Example Fire Suppression System Photo 1 E14_Dozer Example Fire Suppression System Photo 1 E15_Dozer Example Fire Suppression System Photo 2 E17_Fire Extinguisher Workshop Vehicle Example E18_Fire Extinguisher Workshop Vehicles Tag	No fire incidents attributable to proposal in the reporting period. The Emergency Management Plan is in place and Section 7 outlines emergency response including fire, emergency response teams and training. Firefighting equipment is located on site (E20, E19, E16) and in vehicles (E13, E14, E15, E17, E18).	Compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 15	Table 3.1	Management Objective: Avoid alteration of fire regimes Avoidance: **The Proponent will contribute to fire management at the mine site and in the region through the implementing fire management procedures (e.g. maintenance of fire breaks, Hot Work Permit system, firefighting training, Emergency Response Plan)** Management Target: Prevent fires attributed to mining and associated Project activities. Monitoring: • Incident reports of fire. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.	Ongoing	M02_Covalent ACR Evidence Request Response Rev 0 R15_COV-M000-HS-PLN-0005.1.IFU MTH Emergency Management Plan	Management controls for fire events are detailed within the Covalent Lithium Emergency Management Plan. Further to this, Covalent Lithium have a Hot Work Procedure, of which Section 4.1 stipulates that no (or minimal) combustible material is to enter or be stored within or in proximity to designated 'hot work' areas.	Compliant
IBCP 16	Table 3.1	Management Objective: Avoid alteration of fire regimes Avoidance: **The Proponent will contribute to fire management at the mine site and in the region with firefighting equipment to be located on site and in vehicles** Management Target: Prevent fires attributed to mining and associated Project activities. Monitoring: • Incident reports of fire. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.		E20_Fire Hydrants_Hose Reels E19_Fire Extinguisher Workshop E16_Fire Equipment Service register E13_Truck Example Fire Suppression System Photo 1 E14_Dozer Example Fire Suppression System Photo 1 E15_Dozer Example Fire Suppression System Photo 2 E17_Fire Extinguisher Workshop Vehicle Example E18_Fire Extinguisher Workshop Vehicles Tag	Firefighting equipment is located on site (E20, E19, E16) and in vehicles (E13, E14, E15, E17, E18).	Compliant
IBCP 17	Table 3.1	Management Objective: Avoid alteration of fire regimes Avoidance: **The Proponent will contribute to fire management at the mine site and in the region through the lightning protection equipment installation as part of Project design where necessary** Management Target: Prevent fires attributed to mining and associated Project activities. Monitoring: • Incident reports of fire. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.		E02_Lightning Protection Infrastructure	Lightning protection infrastructure is installed on buildings and infrastructure (E02) to redirect and minimise potential lightning caused fires.	Compliant
IBCP 18	Table 3.1	Management Objective: Avoid alteration of fire regimes Avoidance: **The Proponent will contribute to fire management at the mine site and in the region through the coordination with DBCA and Department of Fire and Emergency Services (DFES) to undertake prescribed burns.** Management Target: Prevent fires attributed to mining and associated Project activities. Monitoring: • Incident reports of fire. • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a strong dataset over this period, the monitoring methodology, frequency and monitoring sites will be reviewed.	As required	Not required	No prescribed burns within or in proximity to the Development Envelope occurred this reporting period.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 19	Table 3.1	Management Objective: Avoid alteration of surface hydrology Avoidance: The Proponent will ensure the appropriate design of infrastructure including: • Drainage measures designed and constructed to minimise changes to natural surface water flow, including diversion drains, rock cladding and contouring as required. • Rehabilitation and closure to follow contours of natural landforms. Management Target: Prevent changes to surface water hydrology attributed to mining and associated Project activities. Monitoring: • Quarterly observations of plant health on commencement of Proposal for first 12 months. Following the development of a robust dataset over this period, the monitoring methodology, frequency, and monitoring sites will be reviewed. • Quarterly health monitoring at vegetation quadrats within VEZs and control sites	Quarterly	M01_Covalent CAR Evidence Request Response Rev 0 R06_Mattiske Veg Condition Monitoring Spring 2023	Drainage measures have been designed and installed to maintain surface water hydrology and water quality across the project. Infrastructure includes culverts, basins, sediment traps, diversion drains and contouring. The water from the TSF diversion drain in the northern section is currently held in a sump. In a later phase it will be released to the environment which will include drainage with rock armoring. Vegetation monitoring did not identify any impacts associated with the alteration of surface hydrology.	Compliant
Management Triggers						
IBCP 20	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) reporting internally as a Management Trigger in accordance with internal procedures (within 24 hours of identification to the Covalent Environment Manager).	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 21	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) notification to DAWE and other stakeholders if considered a non-compliance or incident (potential to impact on *B. sphaerocarpa var. dolichostyla*) (as per Condition 13) within two business days of identification. Further details of the non-compliance or incident are to be provided within ten business days.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 22	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) review monitoring data.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 23	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) review management strategies and implement changes to prevent future occurrences, which will include: • Investigation (to identify cause) is completed within 21 days; • Audit and review of training and staff inductions (i.e. increase in staff training and awareness on vegetation exclusion zones, legislative requirements, appropriate clearing procedures; and • Review and upgrade signage/delineation.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 24	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) review/update of management and monitoring measures/frequency.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 25	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) establish additional *B. sphaerocarpa var. dolichostyla* in a VEZ to offset additional impacts, at a 35:1 ratio.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 26	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) reporting of monitoring outcomes against Management Targets with Annual Compliance Report to DAWE (as per Condition 12) within 12 months following date of commencement.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable
IBCP 27	Section 3.5	Where monitoring indicates that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be), Covalent will implement additional actions which may include (as appropriate) revise this plan and submit the revised plan for EPBC Act approval.	On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	Monitoring (R06) does not indicate that unauthorised impacts to *B. sphaerocarpa var. dolichostyla* are not being avoided (or are unlikely to be).	Not applicable

IBCP 28	Table 3.2	Management Targets:
		• No unauthorized clearing within the Development Envelope or VEZs.
		• No unauthorized access to a VEZ
		Management Trigger:
		• Vegetation clearing without an authorized internal permit within the Development Envelope, but outside of the VEZs.
		• Unauthorised access by personnel to a VEZ
		Corrective Action:
		• Report internally as Management Trigger Exceedance in accordance with internal procedures (within 24 hours of identification to the Covalent Environment Manager).
		• Review proximity of potential disturbance within/to VEZ.
		• Should disturbance or potential impact occur to *B. sphaerocarpa var. dolichostyla* as a result of Management Trigger Exceedance, report to DAWE within two business days of identification with further details within 10 business days.
		• Complete investigation within 21 days of identification
		• Review management strategies and implement changes to prevent future occurrences. Further management measures to be considered will include:
		  • Review and upgrade VEZ signage/delineation where appropriate.
		  • Audit and review of training and staff inductions (i.e. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures)
		  • Ground disturbance permit training competency training.
		  • Undertake rehabilitation of unauthorised clearing (i.e. disturbance from vehicle tracks, vegetation clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedure.
			On Trigger	M01_Covalent CAR Evidence Request Response Rev 0
				E22_2023-2024 MTH Environmental Incident Register from INX
					In the reporting period there was no reported unauthorised access to a VEZ.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 29	Table 3.2	Management Targets: Minimisation of dust emissions Management Trigger: Dust deposition results at a single VEZ site exceed 5 g/m2 for two consecutive months. Corrective Action: • Report internally that Management Trigger Exceedance has been met in accordance with internal procedures (within 24 hours of identification to the Covalent Environment Manager). • Should disturbance or potential impact occur to *B. sphaerocarpa var. dolichostyla* as a result of Management Trigger Exceedance, report to DAWE within two business days of identification with further details within 10 business days. • Complete investigation within 21 days of identification • Investigate and determine improvement strategy. • Investigate the cause of the exceedance to determine if it is attributable to proposal related activities. • Review dust monitoring program. Determine whether the changes observed in the VEZ are comparable with control monitoring sites. • Review dust mitigation measures	On Trigger	R08_20230915_Maxy Engineering_Dust Report E42_Dust Event16-01-2023 E43_Dust Event23-02-2023 E44_Dust Event20-03-2023 C06_DWER correspondence - Dust compliance query E12_Dust Suppression FY23	Dust deposition results at a single VEZ site exceeded 5 g/m2 on four occasions in 2023; 16/01/2023, 23/02/2023, 20/03/2023,26/04/2023. Trigger criteria (two consecutive months) were exceeded three times. Management actions were implemented: • Exceedance of trigger was reported internally as an incident. • Dust suppression at peak times was increased using fresh water. • The results of the Spring 2022 Vegetation Health Monitoring were reviewed and found that canopy health at D10 was still below the 20% trigger set out in the FVEMP • It was determined that there was no disturbance or potential impact to *B. sphaerocarpa var. dolichostyla* as a result of Management Trigger exceedance so report to DAWE within two business days of identification with further details within 10 business days was not required. • Cause was investigated and found to be traffic on Blue Vein Road • Planned road closure of Blue Vein Road was completed 30 March 2023	Compliant

IBCP 30	Table 3.2	Management Targets: Minimise new weeds introduced to site.
		Management Trigger: One new weed species sighted during annual monitoring but with limited to negligible coverage.
		Corrective Action:
		• Report internally that Management Trigger Exceedance has been met in accordance with internal procedures (within 24 hours of identification to the Covalent Environment Manager).
		• Should disturbance or potential impact occur to *B. sphaerocarpa var. dolichostyla* as a result of Management Trigger Exceedance, report to DAWE within two business days of identification with further details within 10 business days.
		• Complete investigation within 21 days of identification
		• Review weed monitoring and control program and amend as required.
		• Response actions to be considered will include the following:
		  • Review monitoring frequency (quarterly for initial 12 months then annually), adjust accordingly.
		  • Adjust timing of monitoring if appropriate, so that infestations of invasive species that establish can be eradicated before the plants can flower and set seed.
		  • Review suitability of weed monitoring locations, adjust accordingly.
		  • Determine whether the changes observed are comparable with control monitoring sites.
		  • If after the two consecutive monitoring events, a threshold exceedance has not been identified, resume standard monitoring.
		  • Develop and implement of a Weed Management Plan
		  • Staff training and awareness to include information on weed species and preventative measures such as vehicle/ weed hygiene procedures.
		  • Undertake further weed control
			On Trigger	R06_Mattiske Veg Condition Monitoring Spring 2023	No new weed species were sighted during annual monitoring (R06).	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 31	Table 3.2	Management Targets: Prevent fires attributed to mining and associated activities. Management Trigger: A fire occurrence within the Development Envelope that impacts on native vegetation. Corrective Action: • Report internally that Management Trigger Exceedance has been met in accordance with internal procedures (within 24 hours of identification to the Covalent Environment Manager). • Should disturbance or potential impact occur to *B. sphaerocarpa var. dolichostyla* as a result of Management Trigger Exceedance, report to DAWE within two business days of identification with further details within 10 business days. • Complete investigation within 21 days of identification • Internal audit of fire management plan • Review fire mitigation strategies to limit the spread of fire. • Staff training and awareness to include information on the prevention and management of fires. • Investigate the cause of the exceedance to determine if it is attributable to proposal related activities.	On Trigger	M01_Covalent CAR Evidence Request Response Rev 0	No fire incidents attributable to proposal in the reporting period.	Not applicable
Monitoring Actions						
IBCP 32	Section 3.6.1	Two baseline plant condition monitoring in spring and summer to provide a qualitative assessment of the vegetation condition will be undertaken at permanent representative sites within the VEZs and control sites away from any proposal related indirect effects.	Prior to commencement of construction	Not applicable	This was completed in a previous reporting period.	Compliant (complete)
IBCP 33	Section 3.6.1	Quarterly plant condition monitoring for first 12 months to during construction and operations to review monitoring and inform the frequency of future monitoring.	For first 12 months	Not applicable	Plant condition monitoring of Vegetation Exclusion Zones were undertaken on a quarterly basis for 12 months following the commencement of the Action. The results of the monitoring program informed the future plant condition monitoring requirements, which are presented below in Condition 30 (B).	Compliant (complete)
IBCP 34	Section 3.6.1	The data gained over quarterly plant condition monitoring period will be used to review monitoring and inform the methodology and frequency of future monitoring.	After 12 months of monitoring	Not applicable	The dataset was reviewed, and plant condition monitoring has been reduced to autumn and spring.	Compliant (complete)
IBCP 35	Section 3.6.1	Should triggers be exceeded at any point, monitoring intensity shall be reviewed, and potentially increased and remain increased until such time as the trigger is no longer exceeded.	Overall	R06_Mattiske Veg Condition Monitoring Spring 2023 R03_Covalent Lithium CAR 2023 (Rev 0)	Plant health triggers have not been exceeded.	Not applicable
IBCP 36	Section 3.6.1	The mean condition monitoring scores will be compared across species and sites and appropriate statistical analysis undertaken to determine if there is a statistically significant difference between VEZs and control sites.	Overall	R06_Mattiske Veg Condition Monitoring Spring 2023	The Spring monitoring report contains comparison across species and sites to determine statistically significant differences between VEZ and control sites.	Compliant
IBCP 37	Section 3.6.2	Within or adjacent to each of the monitoring quadrats detailed by section 3.6.1, 25 plants (five from each keystone species) will be selected for testing with a PEA quarterly.	For first 12 months	M01_Covalent CAR Evidence Request Response Rev 0 E45_PEA Order Confirmation OA00047164 E46_Kings Park Science Restoration Research	Testing of control sites with a plant pigment efficiency analyser has not been undertaken. Covalent have purchased PEA, however, have not found a consultant that supports the use of this equipment. Investigations are in progress to find a consultant who can use the PEA to demonstrate that objective can be achieved.	Not applicable
IBCP 38	Section 3.6.2	After the first 24 months the plant health monitoring dataset will be reviewed and used to inform future monitoring requirements.	After 12 months of monitoring	Refer to IBCP 34	Refer to IBCP 34	Compliant (complete)
IBCP 39	Section 3.6.3	Undertake dust deposition monitoring in accordance with AS/NZS 3580.10.1:2003 at nine DDGs on a monthly basis for 24-months following the commencement of the Action.	Monthly	R08_20230915_Maxy Engineering_Dust Report	Dust deposition monitoring is currently being undertaken on a monthly basis.	Compliant
IBCP 40	Section 3.6.3	Comparison dust deposition results between VEZs and control sites to determine any proposal related indirect effects.	As required	Refer to IBCP 29	Refer to IBCP 29	Compliant

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
Restoration Plan						
IBCP 41	Section 4.1	Establish at least 69 *B. sphaerocarpa var. dolichostyla* plants within the Development Envelope to mitigate significant impacts to the species	Within 10 years of Project commencement	M02_Covalent ACR Evidence Request Response Rev 0	The *B. sphaerocarpa var. dolichostyla* restoration program has not commenced.	Not applicable
IBCP 42	Section 4.3	The Establishment Site will be fenced to minimise the risk of herbivorous grazing (rabbits and kangaroos). The fence will be sufficient to exclude rabbits and kangaroos, therefore may be up to 2 m in height with lap wiring to prevent rabbit access. Fencing will be maintained until Establishment Criteria is met.	Year 2 (2022)	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 43	Section 4.3.1	Collect 1,340 *Banksia dolichostyla* seeds from more than 50 individuals to ensure genetic representation/variation.	Year 1 (2021)	M02_Covalent ACR Evidence Request Response Rev 0	No seed collection events have occurred since the commencement of the Action.	Not applicable
IBCP 44	Section 4.3.1	Germinate 400 *Banksia dolichostyla* seeds to plant 1-year after collection at a designated nursery.	Year 2+	Refer to IBCP 43	Refer to IBCP 43	Not applicable
IBCP 45	Section 4.3.1	Target *Banksia dolichostyla* seeds to be broadcast 1-year after collection.	Year 2+	Refer to IBCP 43	Refer to IBCP 43	Not applicable
IBCP 46	Section 4.3.2	Remove the airstrip hardstand.	Year 2 (2022)	M02_Covalent ACR Evidence Request Response Rev 0	As per the Ironcaps Banksia Conservation Plan, land that is currently a part of the abandoned Mt. Holland Mine Site airstrip will become a 'restoration site' for *Banksia dolichostyla*. The removal of the airstrip hardstand has not commenced at this stage; therefore, no restoration actions have been implemented.	Not applicable
IBCP 47	Section 4.3.2	Deep rip subsoil using a 'crosshatch' methodology following the removal of the airstrip hardstand to reduce subsoil compaction and facilitate water infiltration.	Year 2 (2022)	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 48	Section 4.3.2	Import and spread topsoil-subsoil mix from recently cleared areas (no stockpiling) to provide a growth medium and initial seed store for seeds and seedlings.	Year 2 (2022)	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 49	Section 4.3.2	Establishment and operation of the irrigation system (design to be confirmed as either broadcast spray or drip-feed)	Year 2 (2022)	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 50	Section 4.3.2	Signposting of the remainder of the boundary of the Restoration Site to minimise the risk of inadvertent access into the Restoration Site by personnel or machinery.	Year 2 (2022)	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 51	Section 4.3.3	Install guards around seedlings to prevent grazing	Planting	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 52	Section 4.3.4	Irrigate seeds and seedlings with fresh water for a period of 2-year period following planting, after which irrigation will cease.	As required for 2-years	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 53	Section 4.4	Inspection and maintenance of the fence to ensure exclusion of feral animals	Ongoing	Refer to IBCP 42	Refer to IBCP 46	Not applicable
IBCP 54	Section 4.4	Inspection and maintenance of irrigation infrastructure;	Ongoing	Refer to IBCP 46	Refer to IBCP 46	Not applicable
IBCP 55	Section 4.4	Weed inspection and weed control programmes are required	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0 E08_Weed Control Register	Weed control is undertaken based on inspections of disturbed areas undertaken by personnel.	Compliant
IBCP 56	Section 4.4	Maintenance of Project site fire breaks to minimise risk of fire	Ongoing	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 57	Section 4.5	Where monitoring indicates that the Establishment Criteria are unlikely to be met, Covalent will implement additional actions at the Restoration Site, which will include (as appropriate): • additional site preparation works. • additional seed collection, seeding and/or seedling planting; and/or • additional irrigation of seeds and seedlings. Additional actions will be taken as soon as practical; however, action implementation will occur within 12 months of confirming action requirement.	Overall	Refer to IBCP 41	Refer to IBCP 41	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 58	Section 4.5	If the above additional actions are considered unlikely to result in the Establishment Criteria being met, then Covalent will consult with DBCA and DAWE on other potential contingency actions which could be implemented. Other contingency actions could include, for example, a change to the location of the restoration works into areas of native vegetation known to support *B. sphaerocarpa var. dolichostyla* (i.e. supplement existing population within existing habitat). Under these circumstances Covalent will review and revise this plan and submit the revised plan for EPBC Act approval.	Overall	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 59	Table 4.2	Establishment Criteria: Establish at least 69 individuals of Banksia dolichostyla within the Development Envelope within ten (10) years of the implementation of the Action. Establishment criteria of the Banksia dolichostyla are as follows: • The health of vegetation is 'Good' (or higher) for at least two (2) consecutive years after irrigation has ceased; and • Reproductive capability is observed. Contingency Actions: • Additional seed collection and seeding/seedling planting. • Soil analysis to determine any soil deficiencies and development of a remediation plan (soil amelioration or further soil preparation trials) • Review of environmental conditions and investigate additional irrigation requirements	Ongoing	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 60	Table 4.3	Restoration Schedule • Collection of seed material (approximately September to December 2021) • Germination of seedlings in nursery	Year 1 (2021)	M02_Covalent ACR Evidence Request Response Rev 0	The IBCP is a standalone document approved under EPBC 2017/7950. The IBCP schedules seed collection for 2021. No seed collection events have occurred since the commencement of the Action. No correspondence or updated approval has been provided by the proponent altering the schedule for the seed collection.	Potentially non-compliant

IBCP 61	Table 4.3	Restoration Schedule
		• Restoration site preparation:
		  • fencing of adjacent vegetation
		  • removal of airstrip hard cap
		  • crosshatch deep ripping.
		• Site rehabilitation works (approximately March – April):
		  • spreading of topsoil/subsoil materials from mining area
		  • establishment and operation of irrigation system
		• Planting of seeds and seedlings (early winter)
		• Twice yearly monitoring of site rehabilitation success (to confirm site suitability)
		• Weed control of restoration site (if necessary)
		• Irrigation commences immediately after planting (as required)
		• *B. sphaerocarpa var. dolichostyla* monitoring commences every two months.
		• Collection of additional seed material
		• Germination of additional seedlings in nursery
			Year 2 (2022)	M02_Covalent ACR Evidence Request Response Rev 0	The IBCP is a standalone document approved under EPBC 2017/7950. The IBCP restoration program is scheduled to commence in 2022. It has not commenced. No correspondence or updated approval has been provided by the proponent altering the schedule for the restoration program.	Potentially non-compliant

IBCP 62	Table 4.3	Restoration Schedule • *B. sphaerocarpa var. dolichostyla* monitoring continues every four months. • Irrigation continues. • Weed control (if necessary) • Supplementary seeding / seedling planting (if necessary)	Year 3	Refer to IBCP 61	Refer to IBCP 61	Not applicable
IBCP 63	Table 4.3	Restoration Schedule • *B. sphaerocarpa var. dolichostyla* monitoring continues every six months. • Implementation of contingency actions (if necessary) • Irrigation ceases	Year 4	Refer to IBCP 61	Refer to IBCP 61	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 64	Table 4.3	Restoration Schedule • *B. sphaerocarpa var. dolichostyla* monitoring continues every six months. • Implementation of contingency actions (if necessary)	Year 5 +	Refer to IBCP 61	Refer to IBCP 61	Not applicable
IBCP 65	Section 4.7	For each restored individual of *B. sphaerocarpa var. dolichostyla* (whether from germinated seed or planted seedling) the following information will be recorded annually: • survival (number live/dead); • size (height/width); • health condition, similar to the methodology presented in Table 3-5; • reproductive status (flowering/fruiting/setting seed); • photograph; • GPS location (for future locating); and • observations of health/growth constraints (e.g. grazing, weeds). The purpose of the environmental monitoring will be to demonstrate if the Establishment Criteria have been met.	Annual	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 66	Table 4.4	Risk Factor: No or insufficient seed germination. Trigger: • Year 1 – 2: • Germination of <80% of seed • Year 2-3: Seed and tube stock survival <70% following one year after germination. Contingency Action / Response: • Review initial germination and survival numbers to determine if further seed collection is required. • If required, re-collect seed and undertake an investigation into potential seed germination failure and survival. • Consider other methods of germination to rehabilitate the species. • Consider alternate treatments. • Liaise with experts (e.g. Botanic Gardens and Parks Authority research division) to develop further trials trial. • Consider supplementary planting of seedlings.	On trigger	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 67	Table 4.4	Risk Factor: No or insufficient establishment. Trigger: Year 2-4: • Survival of <50% of each year's plants beyond their first summer • Survival of <40% of all plants planted beyond their first three summers. Contingency Action / Response: • Consider other methods of germination to rehabilitate the species. • Consider alternate treatments. • Liaise with experts (e.g. Botanic Gardens and Parks Authority research division) to develop further trials trial. • Consider supplementary planting of seedlings.	On trigger	Refer to IBCP 41	Refer to IBCP 41	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 68	Table 4.4	Risk Factor: Ongoing survival without irrigation does not occur. Trigger: Year 5+: • Survival of <30% of all plants planted. • <80% of surviving plants are producing viable seed at a rate similar to that of plants in natural populations. • Plant survivorship and fully formed (effectively pollinated) fruit production is statistically less than that of the adjacent established *B. sphaerocarpa var. dolichostyla* in undisturbed vegetation. Year 10+: • *B. sphaerocarpa var. dolichostyla* healthy individual average heights < 1 m in height after 10 years Contingency Action / Response: • Consider other methods of germination to rehabilitate the species. • Consider alternate treatments. • Liaise with experts (e.g. Botanic Gardens and Parks Authority research division) to develop further trials trial. • Consider supplementary planting of seedlings.	On trigger	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 69	Table 4.4	Risk Factor: Clearing impacts to established individuals. Triggers and Contingency Action / Response: Refer to Table 3-2. The Establishment Site is protected through the Vegetation Exclusion Zone associated with the Western Australian approval.	On trigger	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 70	Table 4.4	Risk Factor: Proposal related indirect impacts to established individuals. Triggers and Contingency Action / Response: Refer to Table 3-2. The Establishment Site is protected through the Vegetation Exclusion Zone associated with the Western Australian approval.	On trigger	Refer to IBCP 41	Refer to IBCP 41	Not applicable
IBCP 71	Table 5.1	All personnel (including employees, contractors, and/or subcontractors) must be inducted/reinducted on the key requirements of the Ironcaps Banksia Conservation Management Plan prior to commencement of work onsite.	Annual	E07_Mt Holland Environmental Induction	The environmental induction outlines conservation significant flora and the requirement for personnel to adhere to the GDP.	Compliant
IBCP 72	Section 5.2	Funding of the implementation of this Conservation Plan will be provided by Covalent as the proponent for the Project.	Overall	M02_Covalent ACR Evidence Request Response Rev 0	Covalent will fund the implementation of this plan.	Compliant
Reporting						
IBCP 73	Section 5.3	Environmental Management Report the implementation status of management actions to DAWE annually in the ACR.	Annual	R01_EGLP Annual Compliance Report (2024)(Rev 0) R02_EGLP Annual Compliance Report (2023)(Rev 0)	As part of this annual compliance report to the DCCEEW under EPBC Decision 2017/7950 (R01), this table documents the implementation status of management actions in relation to the Ironcaps Banksia Conservation Plan. The implementation status of the Ironcaps Banksia Conservation Plan for the period 1 January 2022 to 31 December 2022 was reported in 2023 (R02).	Compliant
IBCP 74	Section 5.3	Environmental Management Report the results of the environmental monitoring to DAWE annually in the ACR.	Annual	R06_Mattiske Veg Condition Monitoring Spring 2023 R08_20230915_Maxy Engineering Dust Report	As part of this annual compliance report to the DCCEEW under EPBC Decision 2017/7950, Appendix I (R06) and Appendix J (R08) contain the monitoring results presented in this table.	Compliant
IBCP 75	Section 5.3	Environmental Management Report the implementation of the outcomes of any contingency actions (if required) to DAWE annually in the ACR.	As required	Not applicable	No contingency actions were required to be implemented this reporting period.	Not applicable
IBCP 76	Section 5.3	Restoration Management Report the implementation of restoration actions to DAWE annually in the ACR.	Annual	Not applicable	No restoration actions (*i.e.*, seed collection events) have occurred since the commencement of the Action.	Not applicable
IBCP 77	Section 5.3	Restoration Management Report the results of the environmental monitoring to DAWE annually in the ACR.	Annual	Not applicable	There was no restoration management environmental monitoring in the reporting period.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
IBCP 78	Section 5.3	<u>Restoration Management</u> Report the implementation of the outcomes of any contingency actions (if required) to DAWE annually in the ACR.	As required	Not applicable	No restoration actions (*i.e.*, seed collection events) have occurred since the commencement of the Action.	Not applicable
IBCP 79	Section 5.3	Report any potential/non-compliances or incidents to the DCCEEW within two (2) business days, with further details provided within ten (10) business days as required under Condition 14 of the EPBC Decision 2017/7950 approval.	Annual	M02_Covalent ACR Evidence Request Response Rev 0	No potential/non-compliances or incidents related to the Ironcaps Banksia Conservation Plan occurred within the reporting period.	Not applicable

Appendix F Threatened Fauna Offset Management Plan Compliance Assessment

Table F.3: Threatened Fauna Offset Management Plan Audit Table (Rev 0)

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
Management Actions						
TFOMP 01	Section 1.2	Clear no more than the approved 386 ha of remnant native vegetation/fauna habitat within the Development Envelope.	Clearing	G01_a2765 CAR23 f01 03 - Fig3 Clearing	Spatial data provided by Covalent Lithium illustrating clearing to-date indicates that 384.7 ha of native vegetation had been cleared within the Development Envelope at this stage (20.5 ha during the reporting period).	Compliant
TFOMP 02	Table 1.2	Implement each approved Fauna Offset Management Plan(s) at least until the end date of the period of effect of the approval.	Upon approval	C02_DWER TFOS Review 20231026	The Fauna Offset Management Plan was submitted to the DCCEEW on 26 March 2021 and approved on 31 March 2021. As of 29 April 2024, Covalent Lithium are awaiting approval of the Fauna Offset Management Plan from the WA Minster for Environment; therefore, the management and monitoring components of the Fauna Offset Management Plan have not commenced at this stage. DWER have provided feedback (26/10/2023) on the offset strategy submission including the requirement to meet new conditions under an additional Ministerial Statement (MS1199) and Covalent are compiling an updated document. The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 03	Table 2.2	Retain and improve habitat critical to the survival of the Chuditch in-line with the '*Chuditch (Dasyurus geoffroii) National Recovery Plan*.'	Ongoing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 04	Table 2.2	Retain and improve habitat critical to the survival of the Malleefowl in-line with the '*National Recovery Plan for Malleefowl (Leipoa ocellata)*.'	Ongoing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 05	Table 2.2	Undertake European Red Fox (*Vulpes vulpes*) control activities in-line with the '*Threat Abatement Plan for predation by the European red fox*.'	Ongoing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 06	Table 2.2	Undertake feral cat (*Felis catus*) control activities in-line with the *'Threat Abatement Plan for predation by feral cats*.'	Ongoing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 07	Section 3.2.1	Acquire and manage a 1,645 ha offset area(s) that consists of Chuditch and Malleefowl foraging and breeding habitat to offset the residual significant impacts of the Action.	Pre-clearing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 08	Table 3.2	Detect Chuditch within the acquired offset area(s), between May and July, each year over three (3) consecutive years. Performance and completion criteria include: • In 0 to 5 years, Chuditch are detected in two (2) annual monitoring events; • In 5 to 10 years, Chuditch are in two (2) consecutive annual monitoring events; and • In 10 to 15 years, Chuditch are detected in three (3) consecutive annual monitoring events.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 09	Table 3.2	Detect Malleefowl within the acquired offset area(s), each year, over three (3) consecutive years. Performance and completion criteria include: • In 0 to 5 years, Malleefowl are detected in two (2) annual monitoring events; • In 5 to 10 years, Malleefowl are detected in over two (2) consecutive annual monitoring events; and • In 10 to 15 years, Malleefowl are detected in over three (3) consecutive annual monitoring events.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 10	Table 3.2	Detect a recently active (1 to 2 year-old) Malleefowl mound within the acquired offset area(s). Performance and completion criteria include: • In 0 to 5 years, a recently active Malleefowl mound is detected; and • In 5 to 10 and 10 to 15 years, a recently active Malleefowl mound is detected onsite during at least two (2) monitoring events during each five (5) year period.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 11	Table 3.2	Detect Chuditch and Malleefowl within 5 km of the acquired offset area(s). Performance and completion criteria include: • Chuditch and Malleefowl are detected within 5 km, in each five-year period.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 12	Table 3.2	Vegetation condition within the acquired offset area(s) are classified as 'Very Good' or higher as per the Keighery Scale. Performance and completion criteria include: • In 0 to 5 years, vegetation condition is averaged as 'Good' across all baseline assessment locations; and • In 5 to 10 and 10 to 15 years, vegetation condition is averaged as 'Very Good' or higher across all baseline assessment locations. **Note:** In the event that baselines assessments determine vegetation condition is currently 'Very Good' or higher, completion criteria will be amended to reflect an increase to 'Excellent' or higher as per the Keighery Scale.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 13	Table 3.2	Record hollow fallen trees within the acquired offset area(s). Performance and completion criteria include: • In 0 to 5 years, suitable hollow fallen trees are recorded at four (4) or more baseline habitat assessment locations; and • In 5 to 10 and 10 to 15 years, suitable hollow fallen trees are recorded at eight (8) or more baseline habitat assessment locations.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 14	Table 3.2	Record the presence of prey species of the Chuditch within the acquired offset area(s). Performance and completion criteria include: • In 0 to 5 years, Chuditch prey species are recorded at greater than six (6) baseline habitat assessment locations; and • In 5 to 10 and 10 to 15 years, Chuditch prey species are recorded at eight (8) or more baseline habitat assessment locations.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 15	Table 3.2	Record sufficient leaf litter to be utilised by the Malleefowl to build a mound within the acquired offset area(s). Performance and completion criteria include: • In 0 to 5 years, sufficient leaf litter to build a mound is recorded at four (4) or more habitat assessment locations; and • In 5 to 10 and 10 to 15 years, sufficient leaf litter to build a mound is recorded at eight (8) or more habitat assessment locations.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 16	Table 3.2	Record the presence of foraging resources of the Malleefowl within the acquired offset area(s). Performance and completion criteria include: • In 0 to 5 years, Malleefowl foraging resources are recorded at six (6) or more baseline habitat assessment locations; and • In 5 to 10 and 10 to 15 years, Malleefowl foraging resources are recorded at eight (8) or more baseline habitat assessment locations.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 17	Section 3.2.4	Achieve all completion criteria within twenty (20) years from the approval of the Fauna Offset Management Plan.	Ongoing	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 18		Covalent will fund land acquisition, transfer and implementation of this OMP, to attain and maintain completion criteria, for the period of effect of EPBC Act approval for this project.	Overall	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 19	Table 3.5	Install firebreaks within and around the acquired offset area(s) to minimise likelihood of uncontrolled fires impacting on conservation values.	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 20	Table 3.5	Install perimeter fencing around the acquired offset area(s) to prevent the unauthorised access of pedestrians and/or vehicles and exclude livestock grazing.	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 21	Table 3.5	Undertake prescribed burning in consultation with the Department of Biodiversity, Conservation and Attractions and other relevant stakeholders to minimise likelihood of uncontrolled fires impacting on conservation values.	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 22	Table 3.5	Remove waste and unwanted infrastructure.	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 23	Table 3.5	Undertake predator control in consultation with the Department of Biodiversity, Conservation and Attractions and other relevant stakeholders to reduce predation on	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 24	Section 3.3.4	Undertake introduced flora control in consultation with the Department of Biodiversity, Conservation and Attractions and other relevant stakeholders for the purpose of improving habitat condition to 'Very Good' as per the Keighery Scale.	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 25	Table 4.3	Event: Presence of species is not confirmed during monitoring activities Trigger: 0 - 5 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review monitoring (habitat quality) and management measures (for example feral predator control) to determine any potential contributions to absence of species and amend plan as required, which may include: o Feral cat trapping as determined by monitoring results o Fox baiting as determined by monitoring results o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Undertake research programmes to improve likelihood of species presence	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 26	Table 4.3	Event: Presence of species is not confirmed during monitoring activities Trigger: 5 - 10 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 27	Table 4.3	Event: Presence of species is not confirmed during monitoring activities Trigger: 10 - 15 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 10 Year Performance Criteria • Investigate feasibility of translocation or reintroduction programmes in consultation with DBCA and specialist groups (National Malleefowl Recovery Team, Perth Zoo)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 28	Table 4.3	Event: Presence of foxes and cats increasing risk of predation Trigger: Monitoring identifies an increase in feral animal records from previous monitoring period Contingency Action / Response: • Review of impacts on species presence as determined through monitoring • Feral predator management controls (involvement in site or regional feral predator programmes) are implemented, in consultation with DBCA and relevant stakeholders (Eastern Wheatbelt Biosecurity Group and adjacent landowners)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 29	Table 4.3	Event: Offsite development activities displace species Trigger: Offsite development approval within 1 km of Offset Site Contingency Action / Response: • Review adjacent development activities and consult with proponent to minimise species displacement • Review monitoring programme to detect any potential population changes • Investigate and implement requirement for additional management measures, such as noise barriers, improved fencing or feral predator management controls	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 30	Table 4.3	Event: Presence of Chuditch during breeding season is not confirmed during monitoring activities Trigger: 0 - 5 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review monitoring (habitat quality) and management measures (for example feral predator control) to determine any potential contributions to absence of species and amend as required, which may include: o Feral cat trapping as determined by monitoring results o Fox baiting as determined by monitoring results o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Undertake research programmes to improve likelihood of species presence and breeding habitat (for example artificial den creation)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 31	Table 4.3	Event: Presence of Chuditch during breeding season is not confirmed during monitoring activities Trigger: 5 - 10 and 10 - 15 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate feasibility of translocation or reintroduction programmes in consultation with DBCA and specialist groups (Perth Zoo) • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 32	Table 4.3	Event: Presence of recently active Malleefowl mounds is not confirmed during monitoring activities Trigger: 0 - 5 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review of monitoring (habitat quality) and management measures (for example feral predator control) to determine any potential contributions to absence of species and amend as required, which may include: o Feral cat trapping as determined by monitoring results o Fox baiting as determined by monitoring results o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Undertake research programmes to improve likelihood of species presence and breeding habitat (for example artificial mound creation)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 33	Table 4.3	Event: Presence of recently active Malleefowl mounds is not confirmed during monitoring activities Trigger: 5 - 10 and 10 - 15 Year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate feasibility of translocation or reintroduction programmes in consultation with DBCA and specialist groups (National Malleefowl Recovery Team) • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 34	Table 4.3	Event: Presence of species surrounding Site 10 is not confirmed during monitoring activities Trigger: Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review of monitoring and management measures (for example feral predator control) to determine any potential contributions to absence of species and amend as required, which may include: o Feral cat trapping as determined by monitoring results o Fox baiting as determined by monitoring results o Additional habitat quality improvement through fire management • Continue monitoring at current frequency • Assess if increase in monitoring effort is required • Undertake research programmes to improve likelihood of species presence and breeding habitat (for example artificial mound creation)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 35	Table 4.3	Event: Evidence of Chuditch prey species or Malleefowl foraging resources is not confirmed during monitoring activities Trigger: 5 year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review of monitoring (habitat quality) and management measures (for example feral predator control) to determine any potential contributions and amend as required, which may include: o Feral cat trapping as determined by monitoring results o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Investigate rehabilitation practices which may improve habitat quality, such as seeding programmes and implement if required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 36	Table 4.3	Event: Evidence of Chuditch prey species or Malleefowl foraging resources is not confirmed during monitoring activities Trigger: 10 and 15 year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 37	Table 4.3	Event: Evidence of numerous hollow fallen trees and sufficient leaf litter is not confirmed during monitoring activities Trigger: 5 year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • Review of monitoring (habitat quality) and management measures to determine any potential contributions and amend as required, which may include: o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Undertake research programmes to improve quality of breeding habitat (for example artificial den or mound creation)	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 38	Table 4.3	Event: Evidence of numerous hollow fallen trees and sufficient leaf litter is not confirmed during monitoring activities Trigger: 10 and 15 year Performance Criteria not met as per Table 3.2 Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 39	Table 4.3	Event: Vegetation condition is not classified as Very Good during monitoring activities Trigger: 5 year Performance Criteria not met – Vegetation condition is averaged as Good (Keighery scale) across all assessment locations Contingency Action / Response: • Review of monitoring and management measures to determine any potential contributions and amend as required, which may include: o Additional habitat quality improvement through weed control, fire management or improved fencing • Continue annual monitoring • Assess if increase in monitoring effort is required • Investigate rehabilitation practices which may improve habitat quality, such as seeding programmes and implement if required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 40	Table 4.3	Event: Vegetation condition is not classified as Very Good during monitoring activities Trigger: 10 and 15 year Performance Criteria not met – Vegetation condition is averaged as Very Good (Keighery scale) across all assessment locations Contingency Action / Response: • As per 5 Year Performance Criteria • Investigate requirements for additional or alternative offset site through consultation with DAWE and DWER • Provide additional or alternative offset, as required by DAWE and DWER, and revise and submit OMP for approval	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 41	Table 4.3	Event: Unplanned fires result in vegetation condition and breeding habitat decline Trigger: Unplanned fire identified Contingency Action / Response: • Review of monitoring and management measures to determine any improvement and amend as required, which may include: o Maintenance or improvement to fire management tracks o Prescribed burns o Weed control o Involvement in regional fire management measures with local shire, DFES and DBCA to prevent recurrence • Review vegetation condition monitoring programme to determine if amendments are required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 42	Table 4.3	Event: Prescribed burns detrimentally impact vegetation condition and breeding habitat decline Trigger: Prescribed burn considered necessary Contingency Action / Response: • Undertake consultation with DBCA and other relevant stakeholders (for example Shire of Yilgarn and DFES) to ensure appropriate controls in place for prescribed burn activities • Ensure mosaic burns or only high-risk portions of site are burnt, to ensure hollow logs and leaf litter is retained to maintain species breeding habitat • Review Fauna habitat assessment monitoring programme to determine if amendments are required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 43	Table 4.3	Event: Unauthorised site access or grazing result in vegetation condition and breeding habitat decline Trigger: Evidence of unauthorised access or stock grazing is identified Contingency Action / Response: • Review of monitoring and management measures to determine any improvement and amend as required, which may include: o Repair, maintenance or improvement to perimeter fencing and gates o Consultation with adjacent landowners to exclude stock • Review vegetation condition monitoring programme to determine if amendments are required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 44	Table 4.3	Event: Increase in weed invasion result in vegetation condition and breeding habitat decline Trigger: Vegetation condition monitoring identifies an increase in weed species and cover Contingency Action / Response: • Review of monitoring and management measures to determine any improvement and amend as required, which may include: o Weed spraying programmes o Targeted weed controls programmes o Review and improvement of vehicle entry and hygiene procedures • Review vegetation condition monitoring programme to determine if amendments are required	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 45	Table 4.3	Event: Land unavailable for purchase Trigger: Land unavailable for purchase Contingency Action / Response: • If acquisition is delayed, revised timeframes will be confirmed with DAWE and DWER. • If acquisition is unsuccessful, alternative offset sites will be proposed and revised OMP submitted	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 46	Table 4.3	Event: • Conversion to conservation estate is unsuccessful • Exclusion of exploration, mining and grazing is unsuccessful Trigger: Conversion to conservation reserve does not occur within five years following site acquisition Contingency Action / Response: • If conservation reserve creation is delayed, revised timeframes will be confirmed with DAWE and DWERs. • If conservation reserve creation is unsuccessful, alternative offset sites will be proposed and revised OMP submitted, or consultation will be undertaken to determine if a conservation covenant provides sufficient protective mechanisms	If trigger criteria met	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 47	Table 6.1	All personnel (employees, contractors, and/or subcontractors) must be inducted/reinducted on the key requirements of the Fauna Offset Management Plan prior to commencement of work onsite.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
Monitoring Actions						
TFOMP 48	Section 5.1	Inspect and, if required, maintain perimeter fencing of the acquired offset area(s)	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 49	Section 5.1	Inspect and, if required, control introduced flora (weed) cover and density within the acquired offset area(s)	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 50	Section 5.1	Inspect and, if required, control feral animal occurrences and frequency within the acquired offset area(s)	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 51	Section 5.1	Inspect and, if required, maintain firebreaks of the acquired offset area(s)	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 52	Section 5.1	Inspect and, if required, control any unauthorised access incidents and/or livestock grazing within the acquired offset area(s)	As required	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 53	Section 5.2	Undertake vegetation monitoring within the acquired offset area(s) to determine the following: • Dominant three (3) vascular flora species in each strata; • Percent cover of native vegetation in each strata; • Percent cover of bare ground in each strata; • Percent cover of leaf litter; • Percent cover of introduced flora species • Flora species composition in each strata; • Condition/health of each strata; and • Disturbances (if any), disturbance type and their estimated frequency;	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 54	Section 5.3	Undertake fauna habitat assessments within the acquired offset area(s) to determine the following: • Number of hollow fallen trees; • Presence of prey species of the Chuditch; • Sufficient leaf litter to be utilised by Malleefowl to build a mound; and • Presence of foraging resources of the Malleefowl.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 55	Section 5.4	Undertake Chuditch presence monitoring within the acquired offset area(s) as follows: • Monitor in Chuditch breeding season (May to July); • Use cameras at static locations with a minimum of two arrays of 20 cameras with 200 m between cameras as per Rayner *et al*. (2011); and • Record opportunistic evidence of Chuditch, including tracks, scats, scratching and/or sightings.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable

Condition	Reference	Requirement	Timing	Evidence	Assessment	Status
TFOMP 56	Section 5.4	Undertake Malleefowl presence monitoring within the acquired offset area(s) as follows: • Monitor in Malleefowl mound-building season (September to December); • Use LiDAR imagery to identify potential mounds with field verification or field verification of previously identified mounds; • Record opportunistic evidence of Malleefowl, including additional mounds, feathers, tracks, scats, scratching and/or sightings; • Align fauna monitoring with the with the '*National Malleefowl Monitoring Manual*' (2019) including mound activity status; and • Submit data via a cyber-tracker software program to the National Malleefowl Monitoring Database for population trend analysis, as well as the National Malleefowl Recovery Plan.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
TFOMP 57	Section 5.4	Provide an estimate of local population numbers for Chuditch, Malleefowl and feral animals based on evidence collated and temporal analysis.	Annual	Refer to TFOMP 02	The implementation of the TFOMP will not commence until it is approved by both DCCEEW and DWER.	Not applicable
Reporting						
TFOMP 58	Section 7.1	Report the progress of the acquisition of the offset area(s).	Annual	R12_Threatened Fauna Offset Management Plan	Covalent Lithium has identified and acquired of an offset property containing foraging and breeding habitat for the Malleefowl (*Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*). The offset property is located in Skeleton Rock, within the Shire of Yilgarn in WA. The property itself is 1,788 ha, consisting of 1,510 ha of woodland and shrubland fauna habitat and 135 ha of granite habitat. The remaining 143 ha of area is cleared land which Covalent Lithium will utilise for fencing and firebreaks.	Compliant
TFOMP 59	Section 7.1	Report the progress of the transfer of the offset area(s) to a conservation reserve system for management by the Department of Biodiversity, Conservation and Attractions.	Annual	M02_Covalent ACR Evidence Request Response Rev 0	There is no progress in transferring the offset area to the conservation reserve system. This is not anticipated until the TFOMP is approved by both DCCEEW and DWER.	Compliant
TFOMP 60	Section 7.1	Report the implementation status of management actions.	Annual	R01_EGLP Annual Compliance Report (2024)(Rev 0)	This ACR (R01) reports that the TFOMP will be implement once it is approved by both DCCEEW and DWER.	Compliant
TFOMP 61	Section 7.1	Report the results of the environmental monitoring.	Annual	M02_Covalent ACR Evidence Request Response Rev 0	No environmental monitoring has been undertaken.	Compliant
TFOMP 62	Section 7.1	Report the implementation of the outcomes of any contingency actions (if required).	As required	M02_Covalent ACR Evidence Request Response Rev 0	No contingency actions have been taken.	Compliant
TFOMP 63	Section 7.1	Report any potential/non-compliances or incidents to the DCCEEW within two (2) business days, with further details provided within ten (10) business days as required under Condition 14 of the EPBC Decision 2017/7950 approval.	Annual	M02_Covalent ACR Evidence Request Response Rev 0	No potential/non-compliances or incidents related to the Threatened Fauna Offset Management Plan occurred within the reporting period.	Not applicable

Appendix G Malleefowl Monitoring 2022-23

2022 MALLEEFOWL MONITORING

Covalent Lithium

ecoscape

Revision	Author	QA Reviewer	Approved	Date
Draft	Louisa Carlsson	LS	LS	06/07/2023
Final	Louisa Carlsson			25/07/2023

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ACKNOWLEDGEMENTS

Ecoscape would like to acknowledge the Covalent staff for their assistance with the project.

SUMMARY

Ecoscape was engaged by Covalent Lithium to provide the following services as part of the annual fauna monitoring:

- undertake National Malleefowl Recovery Team (NMRT) Malleefowl mound monitoring for the 2022-23 monitoring period
- collate images of fauna species and activity from Malleefowl mounds.

The results of the Malleefowl mound monitoring and review of the recorded images provides ongoing data that can be used for temporal comparisons of Malleefowl activity for the Covalent Earl Grey Lithium Project site.

The 2022-23 program recorded information on mounds which are monitored on an annual basis. Mounds which are monitored every five years (5 YR mounds), will be monitored again in 2025. The 2022-23 monitoring period recorded one active breeding mound within the development envelope (DE) and five active breeding mounds outside the DE. One mound has been newly detected (MM76) and two (MM77 and MM08) are 5 YR mounds. In total there are 12 mounds that recorded signs of Malleefowl activity during the 2022-23 monitoring period.

An activity analysis indicates that there are potentially five distinct breeding pairs within the monitoring area. One breeding pair within the DE and another four close by (approximately 3 km from the DE boundary), excluding the pair at the active mound MM08 due to distance (approximately 10 km form the DE boundary). Activity patterns compared over the monitoring events indicate an ongoing increase in breeding activity during the 2022-23 season compared to previous monitoring events.

Trail cameras deployed at mounds identified 10 different Malleefowl mounds that were visited by Feral Cats. This included both active and inactive Malleefowl mounds. A Wild Dog was recorded from two mounds (one active, one inactive) in close proximity to one another.

To provide Malleefowl population health and abundance data the following aspects are recommended to be monitored annually:

- trail camera monitoring during the egg incubation season (September to January) of all Malleefowl mounds that have been identified as annual, within and adjacent to the development envelope
- maintain database of Malleefowl and other fauna species sightings within a fauna register and report annually on number and location of active mounds
- collate image data and report on status of all monitored mounds
- collate and report on records of sightings of feral predators captured on cameras at the monitored mounds
- continue ground truthing of LiDAR data within the development envelope opportunistically.

1 INTRODUCTION

Covalent Lithium is developing the Earl Grey Lithium Project (EGLP) located at Mt Holland which will include the construction and operation of a fully integrated mine, concentrator, and refinery in Western Australia. The project is centred on the Earl Grey hard-rock lithium deposit 105 km south of Southern Cross in Western Australia and approximately 500 km east of Perth. It is owned by a 50-50 joint venture (JV) between subsidiaries of Wesfarmers Pty Ltd (WES:ASX) and Sociedad Química y Minera de Chile S.A. (SQM: NYSE). Covalent is the manager for the JV and is responsible for the development and operation of the project.

The survey area includes the habitats of two conservation significant fauna species, the Malleefowl (*Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*). Both species are listed as vulnerable (VU) under both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Western Australian *Biodiversity Conservation Act 2016* and are considered as Matters of National Environmental Significance (MNES).

Monitoring of Malleefowl mounds was undertaken during the mound building and egg laying summer season in 2022-2023. Mounds identified for annual monitoring were revisited and remeasured. Trail cameras were deployed on mounds to capture activity of Malleefowl and other fauna species including feral predators.

1.1 PROJECT SCOPE

Ecoscape was engaged to conduct the annual monitoring survey of known Malleefowl mounds. The requirements of the field survey were to:

- be conducted in accordance with current statutory and technical requirements and guidance
- be undertaken by suitably qualified, experienced personnel in compliance with regulatory expectations
- identify, map and measure Malleefowl mounds to National Malleefowl Recovery Team (NMRT) standards, and
- install and deploy trail cameras on mounds.

1.2 SURVEY AREA

1.2.1 REGIONAL LOCATION

The survey area is in the Shire of Yilgarn in the Goldfields region of Western Australia, about 100km south of Southern Cross. The development envelope (DE) is within the Great Western Woodlands (GWW) and is approximately 1,984 ha in extent (**Map 1**). The GWW is a 16 million hectare area extending from the wheatbelt to the edge of the deserts and is the largest intact area of Mediterranean Woodland on earth (DEC 2010). The GWW includes open Eucalypt woodlands (63%), Mallee Eucalypt woodlands, shrublands and grasslands (Fox, Mcnee & Douglas 2016). Less common habitats in the GWW include granite outcrops, banded ironstone formations, salt lakes and freshwater wetlands (Fox, Mcnee & Douglas 2016).

The DE is in the Southern Cross Subregion of the Coolgardie Bioregion of the Interim Biogeographic Regionalism for Australia (IBRA) classification system (Government & Energy 2017). The dominant land-uses in this bioregion are Crown Reserves and Unallocated Crown Land (66.7%), grazing on native pastures (17%), conservation (11.5%) and dryland agriculture (2.3%) (Cowan, Graham & McKenzie 2001). The greenstone hills, alluvial valleys and broad plains of calcareous earths support diverse Eucalypt woodlands. The uplands support Mallee woodlands and scrub-heaths on sandplains, gravelly sandplains and lateritic breakaways, chains of salt lakes with dwarf shrublands of Samphire occur in the valleys (Cowan, Graham & McKenzie 2001).

1.3 STATUTORY AND TECHNICAL FRAMEWORK

This environmental assessment was conducted in accordance with Commonwealth and State legislation and guidelines:

- Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Western Australian Environmental Protection Act 1986 (EP Act)
- Western Australian Biodiversity Conservation Act 2016 (BC Act)
- Department of Environment Water Heritage and the Arts *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999* (DEWHA 2009).

In addition, the Minister for the Environment has published lists of fauna species in need of special protection because they are considered rare, likely to become extinct, or are presumed extinct. The current listings were published in the Government Gazette on 11 September 2018 (Government of Western Australia 2018) and was taken into account.

As well as those listed above, the assessment complied with EPA requirements for environmental survey and reporting in Western Australia, as outlined in Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020).

1.3.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

At a Commonwealth level, threatened taxa (flora and fauna) are protected under the EPBC Act, which lists species that are considered Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild.

1.3.2 WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian EP Act was created to provide for an Environmental Protection Authority (EPA) that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement, and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information included in environmental assessments and provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

1.3.3 WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian BC Act provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia. It commenced on 1 January 2019.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are highly protected and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable have been aligned with those detailed in the EPBC Act.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreements are also listed under the Act. These are known as specially protected species in the BC Act.

The most recent flora and fauna listings were published in the Government Gazette on 11 September 2018 (Government of Western Australia 2018).

1.3.4 WESTERN AUSTRALIAN PRIORITY FAUNA

Conservation significant fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, these have a greater level of significance than other native species.

1.3.5 DBCA WILDLIFE LICENCES

The field survey for the 2022 Malleefowl monitoring program was undertaken by Ecoscape Ecologist Louisa Carlsson and Senior Zoologist Robert Hemsworth under DBCA Wildlife Licensing Fauna License No. BA27000085-4 and Threatened Fauna Authority TFA 2020-0070-2.

2 METHOD

The 2022-23 Malleefowl monitoring was undertaken by Louisa Carlsson and Robert Hemsworth between 5-9 September 2022. This is the fourth season of monitoring which commenced in the mound building season of 2019-20.

2.1.1 MALLEEFOWL MONITORING

Malleefowl mounds previously identified as ANNUAL (Ecoscape (Australia) Pty Ltd 2022) were revisited, re-measured and assessed to determine current activity status. Each mound was recorded as either active or inactive and given a mound profile. An active mound is described as one where mound building, egg laying and sometimes chick emergence is recorded. Mounds were marked with a numbered star picket, photographed and cross sticks were left in place over the mound for future monitoring events. A 20 m radius was searched around active mounds only for any signs of predation.

At each Malleefowl mound, a series of criteria were recorded in accordance with section three of the NMRT Monitoring Manual (2022). These criteria were:

- individual site and mound reference
- mound photo
- date and time monitored
- new/known mound
- revisited ok (mound is found), sought not found (mound is sought, but not found), not sought (mound is found opportunistically)
- mound profile
- status, active or not (active mounds are currently used by Malleefowl for the incubation of their eggs)
- position of X sticks on arrival
- is the mound freshly scraped or not?
- are egg shells present and if yes how many?
- are lerps present and if yes how many?
- are prints of animals present and if yes of which animal?
- are scats presents and if yes of which animal?
- are inner crust / moss lichen / herbs present and if yes how many?
- dimensions of the mound measured in cm; height, depth, outer diameter, rim diameter
- evidence of predation
- reposition of X on conclusion of monitoring.

2.1.2 TRAIL CAMERA MONITORING

Trail cameras were mounted at annual mounds within and adjacent to the DE. Cameras were mounted on brackets attached to star pickets installed close to the mound and high enough off the ground to view the interior of the mound.

Image 1: Monitored mound showing location of post and camera

The cameras were deployed from early September 2022. All cameras were frequently revisited by the Covalent Environmental Team to have batteries replaced and image data downloaded and were then subsequently collected in March 2023. Cameras mounted at active mounds were serviced by Covalent staff every two weeks to replace batteries and download image data. The downloaded data was collated into folders for each monitored mound and then reviewed. The review process involved removing images with no fauna present (e.g., wind moving shrubs) and then sorting images with fauna present. Malleefowl visit events were collated and tabulated for GIS analysis.

Recorded images of Malleefowl were reviewed to determine areas of Malleefowl activity. This was achieved by logging the number of activity events recorded at each mound. An activity event is defined as an image, or group of images, separated by at least two hours. The results were then analysed using a GIS heat map based on the number of events recorded for each mound.

3 RESULTS

3.1 MALLEEFOWL MOUND MONITORING

A total of 24 Malleefowl mounds classified as annual mounds were measured to NMRT standards and monitored by trail camera (**Table 3 Appendix Two**). Four additional mounds identified as active were monitored by trail camera only (**Table 3 Appendix Two**). Of these 28 mounds, 12 are within the DE and 16 are outside the DE (**Map 1**). In total six mounds were recorded as active. In comparison to the previous 2021-22 monitoring event there has been an increase in active mounds recorded (from four to six mounds), mound MM62 inside the DE, and mounds MM08, MM70, M77, MM63 and MM76 outside the DE (**Map 2**).

Six mounds, three inside the DE and three outside the DE, recorded Malleefowl visitation only, with no mound building or egg laying activity (**Map 2, Table 1**). This general Malleefowl activity decreased slightly from 2021-22, where 15 mounds recorded visitation.

3.2 TRAIL CAMERA IMAGE REVIEW

Table 4 (**Appendix Two**) lists all species recorded by the trail cameras at the monitored mounds. Varanid species, Feral Cats and a Wild Dog were recorded on mounds indicating predators of Malleefowl eggs were active at the time of survey.

3.2.1 MALLEEFOWL

Images of Malleefowl were reviewed for behaviour, e.g., scratching or egg laying, with the number of activity events tabulated. Results are discussed with respect to possible abundance based on timing of image capture.

Twelve (four inside DE; eight outside DE) camera monitored Malleefowl mounds recorded Malleefowl and were mapped to indicate their spatial relationship to each other. One active mound (MM62) was inside the DE, and five active mounds (MM77, MM70, MM08, MM63 and MM76) were recorded outside the DE (**Map 2**).

Table 1: Malleefowl mounds that recorded activity

Mound ID	Number of recorded activity events	Monitoring Frequency	Inside DE (yes/no)	Feral Predators
MM02	1	ANNUAL	Yes	Yes
MM08	>100	5 YEAR	No	No
MM11	1	ANNUAL	Yes	No
MM24	14	ANNUAL	No	Yes
MM60	11	ANNUAL	Yes	Yes
MM62	>100	5 YEAR	Yes	No
MM63	>100	ANNUAL	No	Yes
MM64	3	ANNUAL	No	Yes
MM65	32	ANNUAL	No	No
MM70	>100	ANNUAL	No	No
MM76	>100	-	No	No
MM77	>100	-	No	No

The six mounds identified as active **Table 1** (> 100 number of recorded activity events) recorded constant images of pairs of Malleefowl scratching and laying **(Image 2, Image 3 and Image 4**). Mound 70 is identified as being active for the second consecutive year.

Image 2: Nest building activity at MM70

Image 3: Activity at MM62

Image 4: Activity at MM63

The review of trail camera footage identified that at five out of the six active mounds Malleefowl chicks have emerged (**Table 2**). During the 2022-23 monitoring season at least ten live chicks have left active Malleefowl mounds (**Image 5**). In addition one potential chick was observed at MM76 mid December 2022 and one dead chick was observed at the end of January 2023 (**Image 6** and **Image 7**).

Table 2: Summary of Malleefowl chick observations

Mound ID	Date	Event
MM08	07.01.2023	One chick observed
	19.01.2023	One chick observed
	27.01.2023	One chick observed
	28.01.2023	One chick observed, assumed to be dead, but not as a result of predation
MM62	23.01.2023	One chick observed
MM63	23.12.2022	One chick observed
	29.12.2022	One chick observed
	05.01.2023	One chick observed
	24.01.2023	One chick observed
MM70	22.03.2023	One chick observed (outside of monitoring season)
MM76	13.12.2022	One potential chick observed
	29.12.2022	One chick observed
	02.01.2023	One chick observed

Image 5: Malleefowl chick at mound MM62

Image 6: Potential chick at MM76

Image 7: Potential dead Malleefowl Chick at mound MM08

3.2.2 OTHER SPECIES

Western Brush Wallaby (**Image 8**), Sand Goanna, other small reptiles and a suite of small woodland bird species were recorded visiting active and inactive Malleefowl mounds. **Table 4** (**Appendix Two**) lists all species recorded visiting the trail camera monitored mounds during the 2022-2023 monitoring event.

Image 8: Western Brush Wallaby at mound MM02

3.2.3 INTRODUCED SPECIES

Feral Cats were recorded by trail cameras (**Image 9**) at ten Malleefowl mounds (MM02, MM24, MM34, MM42, MM 53, MM56, MM60, MM63, MM64 and MM66). Five of these mounds (MM24, MM34, MM63, MM64 and M66) are outside the DE and five inside (MM02, MM42, MM53, MM56 and MM60) (**Map 1**). Feral cats were recorded at active and inactive Malleefowl Mounds (**Table 1** and **Map 2**). Five of these mounds (MM24, MM34, MM63, MM64 and MM66) were visited by feral cats during the previous monitoring event, the newly visited mounds by Cats are less than 3 km away from previous cat records.

A Wild Dog (**Image 10**) was recorded at MM63 and MM24 (outside DE), which are approximately 850 m of each other. MM63 was recorded as active and MM24 as inactive but visited by Malleefowl during this monitoring event.

European Rabbits were recorded from MM02 and MM11, both classified as INACTIVE during this monitoring event **(Image 11)**.

Image 9: Feral Cat recorded at mound MM63

Image 10: Wild dog at mound MM24

Image 11: Rabbit at MM02

3.3 ACTIVTY ANALYSIS

An analysis was performed using the recorded events of activity at each mound to determine areas of Malleefowl activity. Tabulated event numbers for each mound was analysed in GIS to produce a heat map of activity based on the number of events recorded by trail camera images.

Data for the three monitoring events (**Figure 1**, **Figure 2**, **Figure 3 and Figure 4**) was subjected to the same GIS analysis to provide comparison between years.

3.3.1 2019-20 ANALYSIS

Malleefowl mound MM17 was the only mound active for the length of the 2019-20 monitoring period (**Figure 1**). Mound MM23 was recorded as active and then subsequently abandoned approximately halfway through the monitoring period, most likely due to feral cat visitation (Ecoscape (Australia) Pty Ltd 2019).

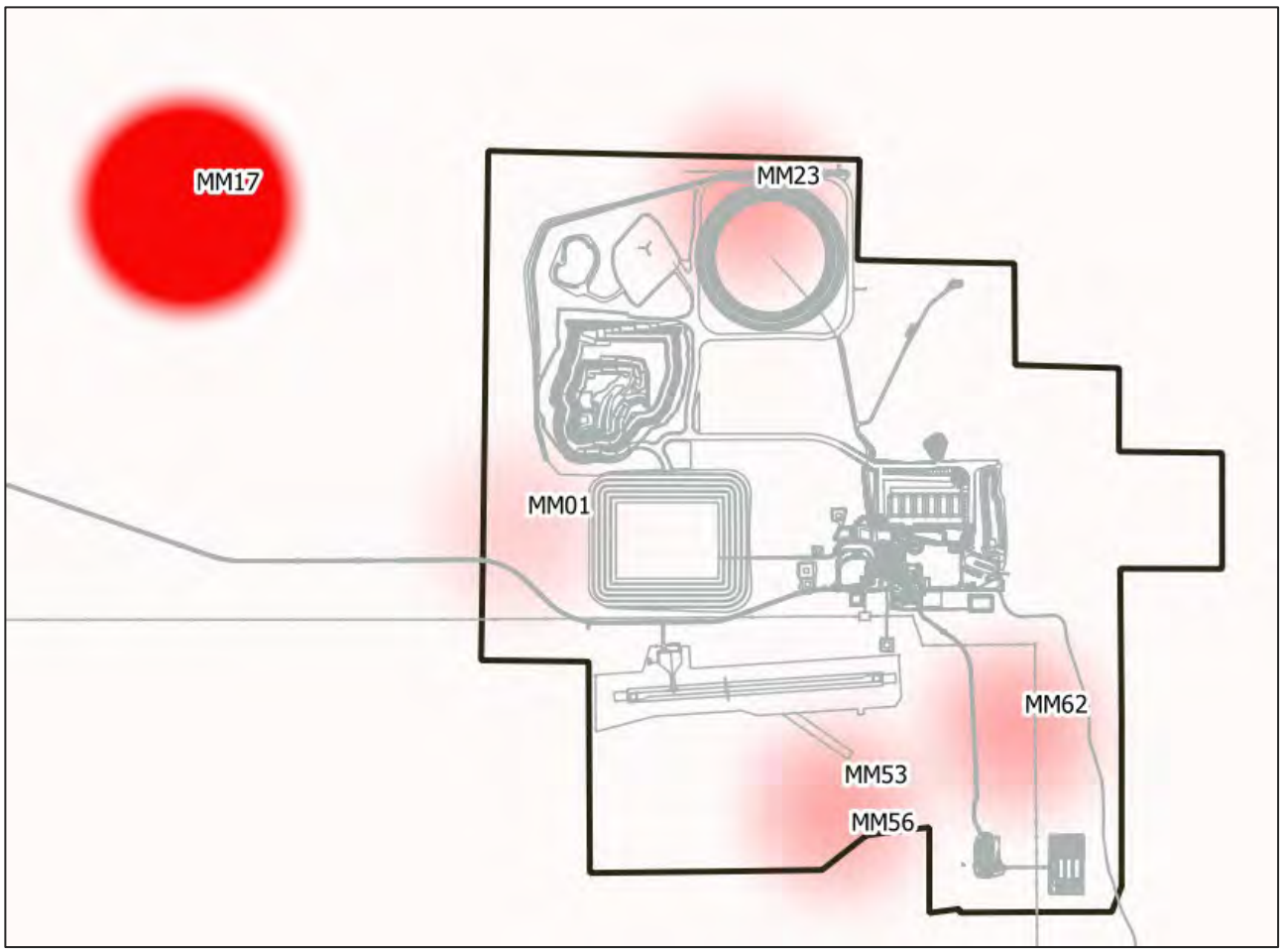


Figure 1: Malleefowl activity heat map based on number of events recorded 2019-20 at camera monitored mounds

3.3.2 2020-21 ANALYSIS

The activity pattern for 2020-21 is similar to 2019-20 in that Malleefowl activity was recorded around mounds located in the same areas with the exception of MM28 and MM64 (**Figure 2**). The obvious difference is the increase in activity during 2020-21 and this was supported by the increase in the number of sightings of Malleefowl being recorded on site since February 2021.

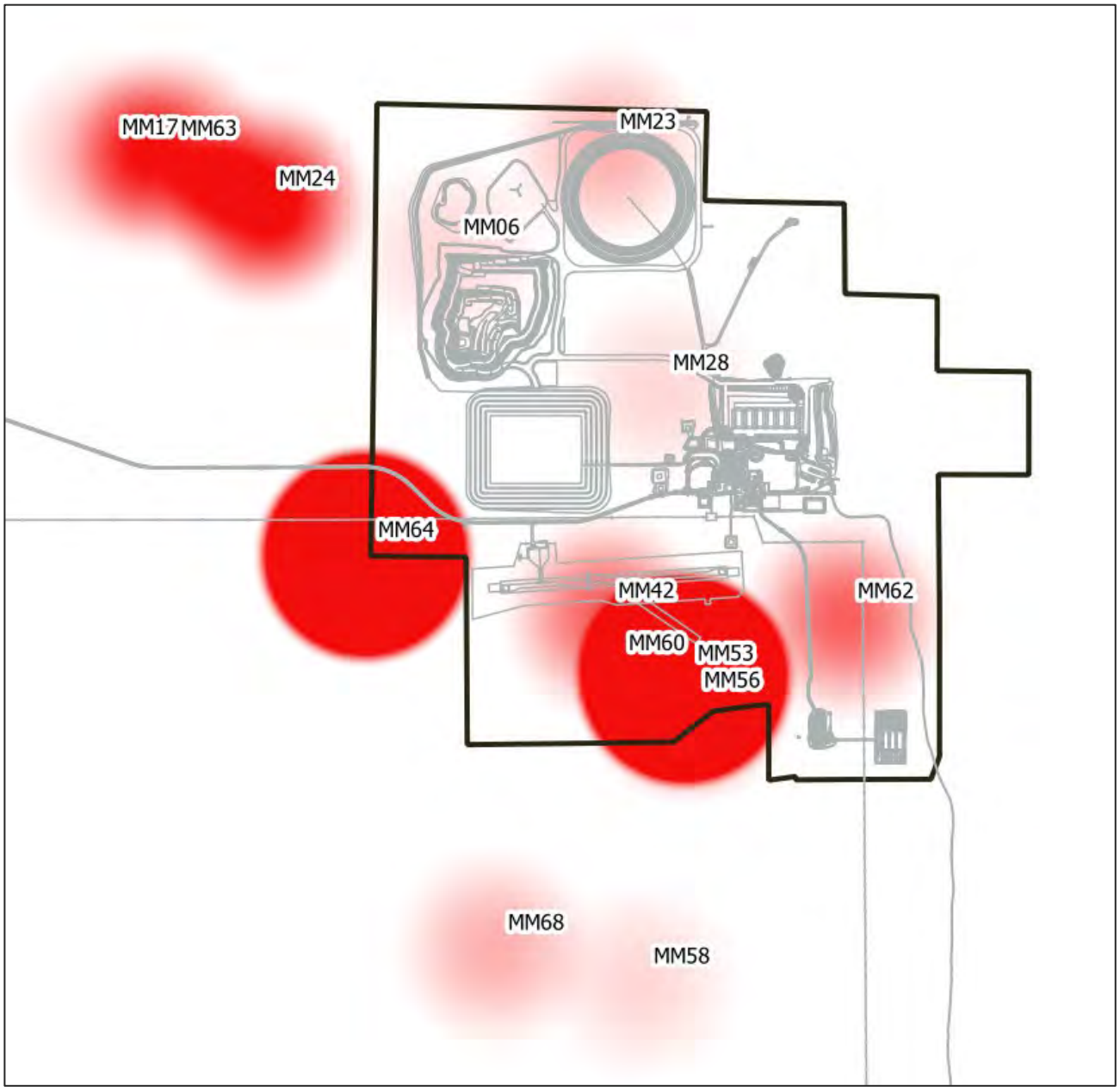


Figure 2: Malleefowl activity heat map based on number of events recorded in 2020-21 at camera monitored mounds

3.3.3 2021-22 ANALYSIS

The analysis determined that there are potentially four breeding pairs of Malleefowl within the area of the monitored mounds. **Figure 3** shows that Malleefowl activity is highest around the four active mounds MM53, MM24, MM70, and MM64. The activity around mounds MM63, MM66, MM65, MM42 and MM68 is not attributed to mound building or egg laying however these mounds were visited many times and most likely by the same birds that are nesting at the active mounds. Malleefowl activity was similar in the location of active mounds with the 2020-21 monitoring with the addition of one new active mound at MM66.

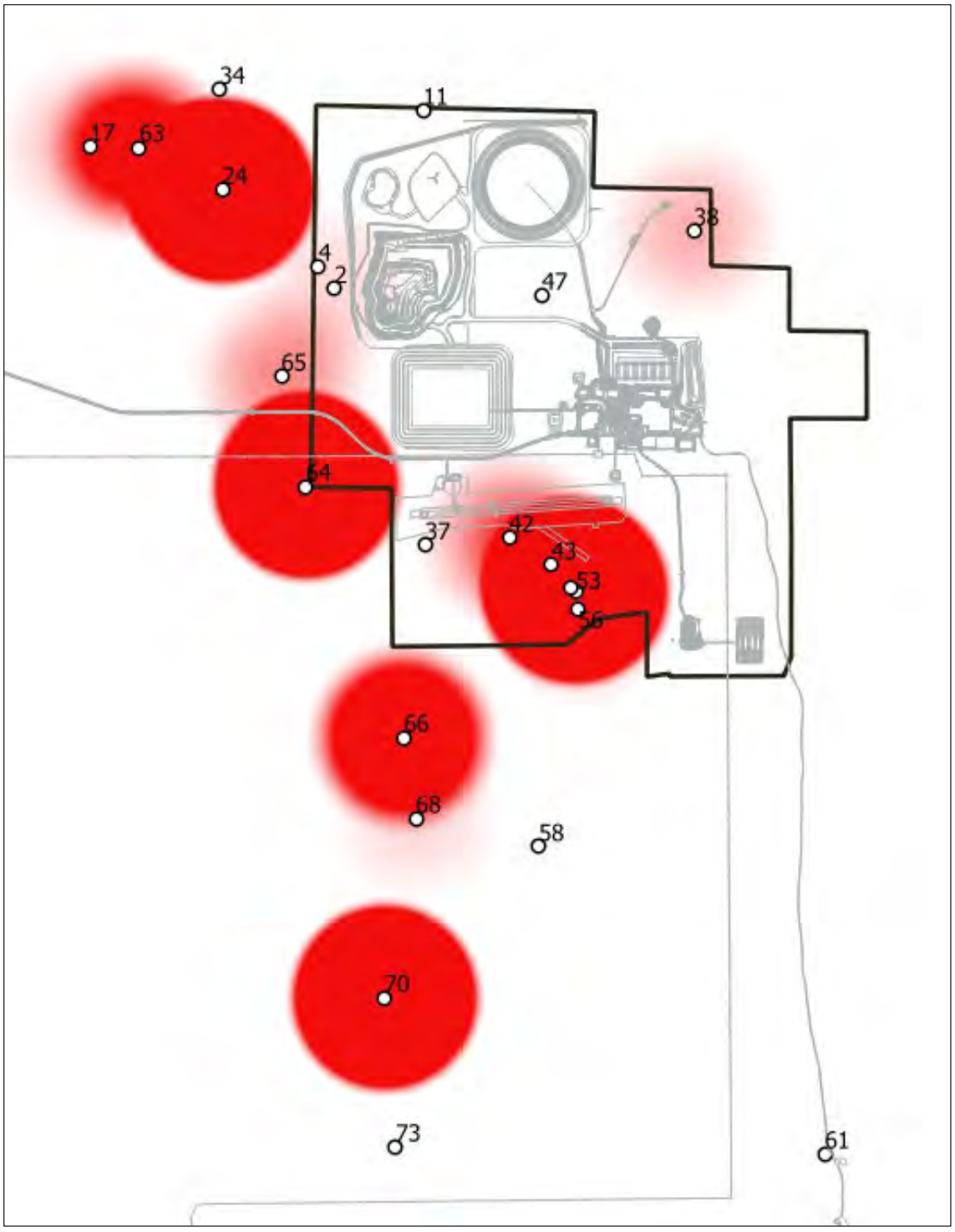


Figure 3: Malleefowl activity heat map based on number of events recorded in 2021-22 at camera monitored mounds

3.3.4 2022-23 ANALYSIS

The analysis determined that there are at least six distinct breeding pairs of Malleefowl within the area of monitored mounds. **Figure 4** shows that Malleefowl activity is highest around the six active mounds (MM08, MM62, MM63, MM70, MM76 and MM77). The activity around the other mounds is not attributed to mound building, egg laying or incubating activity however these mounds were visited by Malleefowl and most likely by birds that are nesting on active mounds close by. Overall activity has shifted little compared to previous monitoring events. MM08 being the exception, however this mound was monitored opportunistically and is not part of the annual monitoring event.

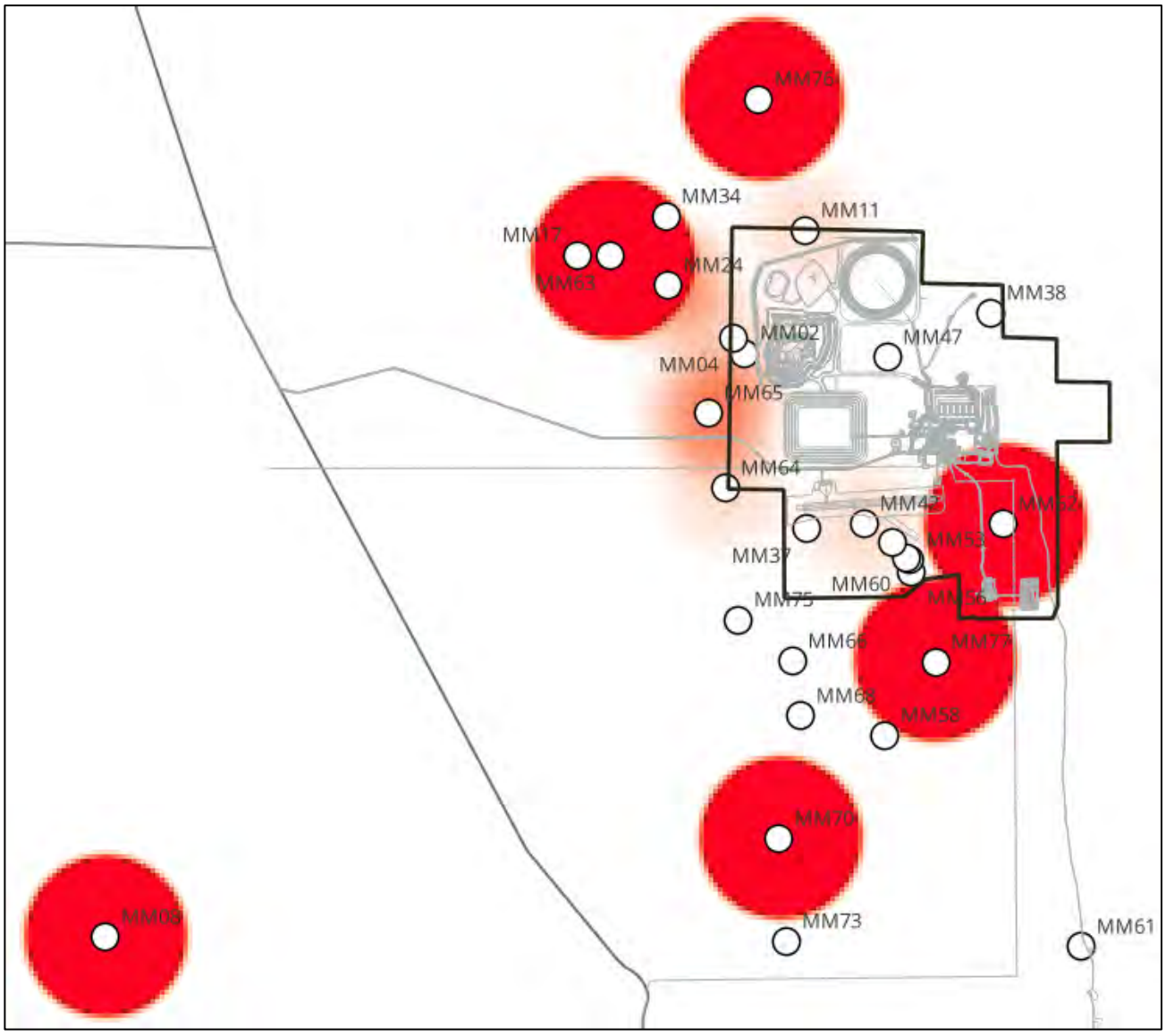


Figure 4: Malleefowl activity heat map based on number of events recorded in 2022-23 at camera monitored mounds

3.4 LIDAR GROUND TRUTHING

Ground truthing of LiDAR results was not undertaken during this monitoring event or any other fauna survey during 2022. One active Malleefowl mound (MM76) was identified during a Flora and Vegetation survey and was included in the monitoring. On review of the LiDAR data (Anditi 2021) this mound was classified as Class 3 (isn't very similar to a typical Malleefowl mound).

4 DISCUSSION AND RECOMMENDATIONS

4.1 MALLEEFOWL MONITORING

4.1.1 MALLEEFOWL MOUND MONITORING

Six active mounds were recorded during the 2022-23 monitoring event. Out of these one (MM63) is part of the annual monitoring event and four (MM08, MM62, MM70, MM76 and MM77) were identified as active opportunistically and included in the monitoring event. Only one of these mounds (MM62) is located within the DE. In addition, six mounds recorded Malleefowl visits. Compared to overall activity this is a slight decrease compared to the previous monitoring event (2021-22) with a total of 12 mounds being active or recording activity, however the number of active mounds increased by two compared to the previous monitoring event.

Figure 3 and **Figure 4** show the slight increase and shift between active mounds and mounds of general Malleefowl activity in 2022-23 compared to the previous monitoring event (2021-22). The six active mounds (MM08, MM62, MM63, MM 70, MM76 and MM77) recording mound building, egg laying and incubating behaviour constantly through the monitoring period.

The results indicate that there were potentially six discrete breeding pairs of Malleefowl maintaining mounds during the 2022-23 monitoring period.

The 2023-24 monitoring event will compromise all mounds listed as annual **Table 5** (**Appendix Two**).

4.1.2 ACTIVITY ANALYSIS

The analysis of images to produce activity patterns at the monitored mounds and the resultant heat maps indicate six areas of high activity for 2022-23 (**Figure 4),** with the potential of one of the mounds to the north-west (approximately surrounding MM65) to become an active mound in future breeding seasons and adding another area of high activity. The activity patterns have slightly shifted compared to previous monitoring events (**Figure 1**, **Figure 2** and **Figure 3**) as overall less mounds record Malleefowl activity, but the number of active mounds increases.

The results indicate that potentially at least five Malleefowl pairs are known to be active within the monitoring area, excluding the pair at MM08 due to distance.

4.1.3 INTRODUCED PREDATORS

Over the 2022-23 period of trail camera monitoring ten different mounds recorded visits by Feral Cats. Five of these mounds (MM24, MM34, MM63, MM64 and MM66) are all outside the DE to the northwest of the Earl Grey and Jasmine Pits and are within close proximity of each other. The images recorded show distinguishing stripe patterns suitable to confirm that the animal seen on trail camera images in this area are likely to be the same individual, also recorded within the DE at MM02. A feral cat was also recorded at mounds MM42, MM53, MM56, and MM60 (within the DE) to the south of the old airstrip, image review suggests that this is a different individual to the one recorded to the northwest of the Ear Grey / Jasmine Pits.

During 2022-23 a Wild Dog was recorded from MM63 (active) and MM24 (inactive), the mounds are approximately within 850 m distance from each other, the image review reveals a distinct pattern and indicate that it is the same individual.

Compared to the previous monitoring event (2021-22) no European Red Fox was recorded.

4.1.4 GENERAL OBSERVATIONS

Of note is the death of a Malleefowl on 1 March 2022 on the Village Access Rd after a vehicle strike. The Malleefowl survived the initial incident but died in transit to a Wildlife Hospital.

4.2 RECOMMENDATIONS

These recommendations are made without knowledge of the possible conditions of approval and pertain to monitoring of the likely Malleefowl population within the overall project area and are aligned with the guidelines of the NMRT Monitoring Manual.

Monitoring of mounds both within and outside of the DE may provide insight on the number of birds breeding and foraging that may be impacted by potential clearing activity.

To provide Malleefowl population health and abundance data the following aspects are recommended to be monitored annually:

- Trail camera monitoring during the egg incubation season for 2023-24 (September to January) of all Malleefowl mounds that have been identified as ANNUAL, within and adjacent to the DE. Including the newly identified mound MM76.
- Maintain database of Malleefowl sightings and Malleefowl mortality within a fauna register and report annually on number and location of active mounds.
- Collate image data and report on status of all monitored mounds.
- Collate and report on records of sightings of feral predators and images captured on cameras at the monitored mounds.
- Continue ground truthing of LiDAR data within the DE.

REFERENCES

Anditi Pty Ltd (2021), Covalent Lithium Malleefowl Mound Detection via LiDAR Metadata and Methodology Report. Report prepared by Evans G of Anditi Pty Ltd for Covalent Lithium Pty Ltd. November 2021.

Cowan, M, Graham, G & McKenzie, N 2001, ‘‘Coolgardie 2 (COO 2 – Southern Cross Subregion).’’ in *A Biodiversity Audit of Western Australia’s 53 Biogeographical Subregions in 2002* , eds.JE May & NL McKenzie, Department of Conservation and Land Management, Department of Conservation and Land Management.

Department of Environment and Conservation 2010, *A Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands*. Available from: http://www.dpaw.wa.gov.au/images/documents/conservation-management/off-road-conservation/gww/gww-strategy.pdf.

Department of the Environment Water Heritage and the Arts; Commonwealth of Australia 2009, *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*.

Ecoscape (Australia) Pty Ltd 2019, *2019 Mt Holland Malleefowl Monitoring unpublished report for Covalent Lithium*.

Ecoscape (Australia) Pty Ltd 2022, *2021 Malleefowl Monitoring unpublished Report for Covalent Lithium*.

Environmental Protection Authority 2020, *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, EPA, Perth, Western Australia. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA-Technical-Guidance-Vertebrate-Fauna-Surveys.pdf.

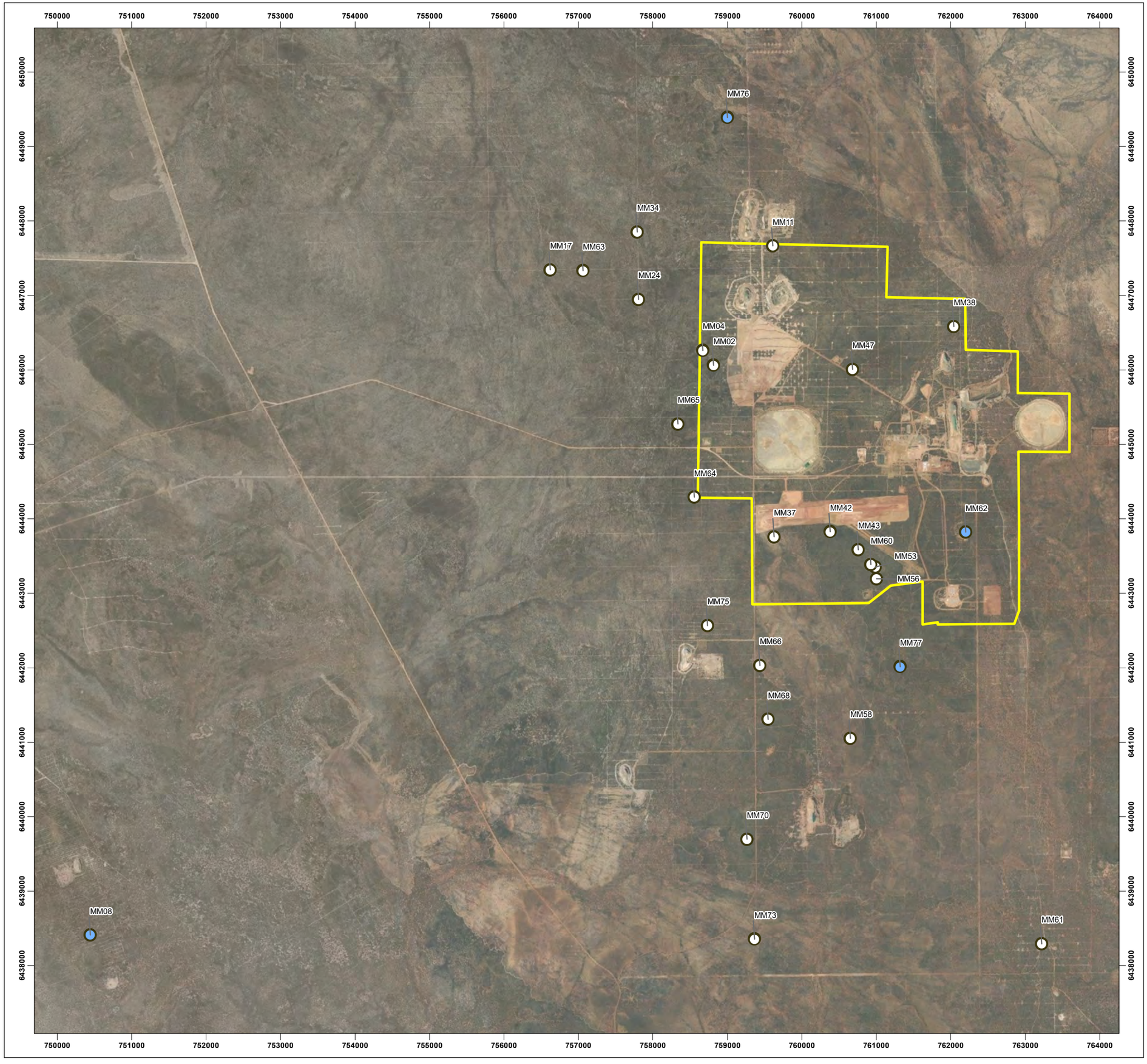
Fox, E, Mcnee, S & Douglas, T 2016, *Birds of the Great Western Woodlands. Report for The Nature Conservancy*.

Government, A & Energy, D of the E and 2017, *Australia’s bioregions (IBRA)*. .

Government of Western Australia 2018, *Government Gazette No. 135, 11 September 2018*. Available from: https://www.slp.wa.gov.au/gazette/gazette.nsf/searchgazette/EF556EEFA23C70FA482583040013E0FC/$file/Gg135.pdf.

National Malleefowl Recovery Team 2022, *National Malleefowl Monitoring Manual*. Available from: https://static1.squarespace.com/static/5ee48b83a257c239d965b32b/t/6315b9170e35b708af52e0db/1662368067328/2022+Monitoring+Manual.pdf.

APPENDIX ONE MAPS



LEGEND

Development Envelope

Malleefowl Mounds monitored 2022-23

- measured and monitored by trail camera
- monitored by trail camera only

DATASOURCES:
SOURCE DATA: MALLEEFOWL DATA (ECOSCAPE, 2023)
AERIAL: ESRI WORLD IMAGERY (2021)
SERVICE LAYERS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA

ecoscape

MONITORED MALLEEFOWL MOUNDS
COVALENT FAUNA MONITORING 2022

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

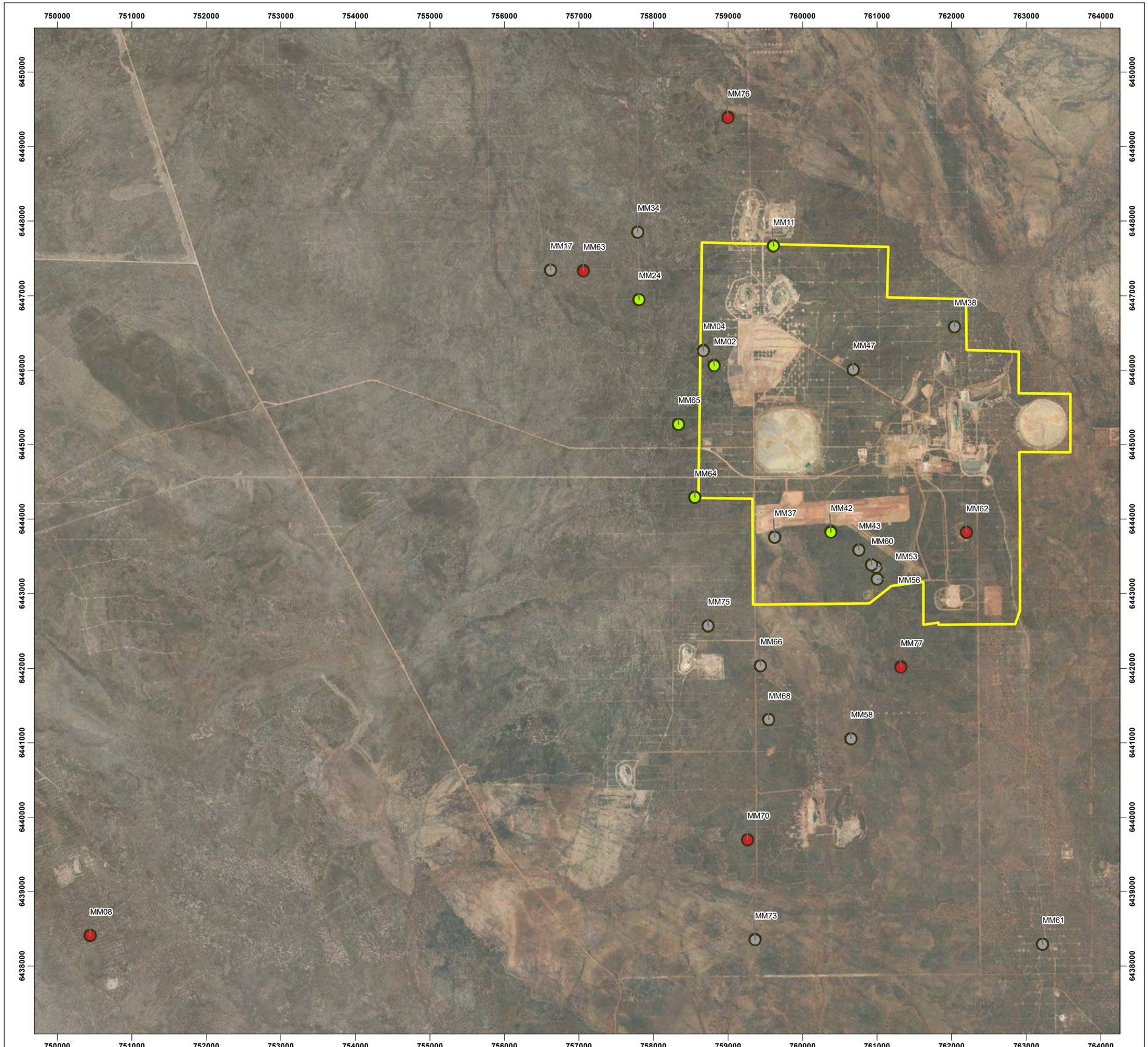
SCALE: 1:50,000 @ A3

0 0.4 0.8 1.2 1.6 2 km

PROJECT NO: 4743-22

REV	AUTHOR	APPROVED	DATE
00	LC	BT	30/06/2023

MAP 01



LEGEND

Development Envelope

Malleefowl Mounds monitored 2022-23

- Active
- visited by Malleefowl
- Not Active

DATASOURCES:
SOURCE DATA: MALLEEFOWL DATA (ECOSCAPE, 2023)
AERIAL: ESRI WORLD IMAGERY (2021)
SERVICE LAYERS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA

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MALLEEFOWL ACTIVITY

COVALENT FAUNA MONITORING 2022

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

SCALE: 1:50,000 @ A3

0 0.4 0.8 1.2 1.6 2 km

PROJECT NO: 4743-22

REV	AUTHOR	APPROVED	DATE
00	LC	BT	30/06/2023

MAP 02

APPENDIX TWO MONITORING RESULTS

Table 3: Malleefowl mounds visited and monitored during the 2022/2023 season (highlight indicates ACTIVE mound)

Mound No.	Comments	Easting	Northing	Action
2	Measured and monitored by trail camera	758814.450	6446062.100	ANNUAL
4	Measured and monitored by trail camera	758671.410	6446261.450	ANNUAL
8	Monitored by trail camera only	750445.000	6438410.000	5 - YEAR
11	Measured and monitored by trail camera	759608.780	6447663.710	ANNUAL
17	Measured and monitored by trail camera	756616.660	6447339.360	ANNUAL
24	Measured and monitored by trail camera	757807.780	6446949.680	ANNUAL
34	Measured and monitored by trail camera	757784.400	6447850.350	ANNUAL
37	Measured and monitored by trail camera	759627.840	6443759.560	ANNUAL
38	Measured and monitored by trail camera	762041.070	6446580.550	ANNUAL
42	Measured and monitored by trail camera	760380.820	6443823.550	ANNUAL
43	Measured and monitored by trail camera	760762.250	6443581.310	ANNUAL
47	Measured and monitored by trail camera	760678.550	6446002.240	ANNUAL
53	Measured and monitored by trail camera	760983.090	6443348.360	ANNUAL
56	Measured and monitored by trail camera	761001.850	6443190.010	ANNUAL
58	Measured and monitored by trail camera	760649.570	6441052.370	ANNUAL
60	Measured and monitored by trail camera	760934.210	6443386.150	ANNUAL
61	Measured and monitored by trail camera	763216.780	6438292.680	ANNUAL
62	Monitored by trail camera only	762200.000	6443820.000	5 - YEAR
63	Measured and monitored by trail camera	757062.490	6447330.290	ANNUAL
64	Measured and monitored by trail camera	758558.640	6444285.370	ANNUAL
65	Measured and monitored by trail camera	758336.650	6445274.990	ANNUAL
66	Measured and monitored by trail camera	759437.293	6442033.674	ANNUAL
68	Measured and monitored by trail camera	759545.240	6441306.261	ANNUAL
70	Measured and monitored by trail camera	759262.392	6439696.610	ANNUAL
73	Measured and monitored by trail camera	759363.117	6438355.697	ANNUAL
75	Measured and monitored by trail camera	758733.83	6442566.13	ANNUAL
76 new	Monitored by trail camera only	758978.000	6449393.000	ANNUAL
77	Monitored by trail camera only	761322.000	6442010.000	5 - YEAR

Table 4: Species recorded by trail camera (* denotes introduced species)

Species	Common Name
Acanthagenys rufogularis	Spiny-cheeked Honeyeater
Accipiter fasciatus	Brown Goshawk
Anas superciliosa	Pacific Black Duck
Artamus conereus	Black-faced Woodswallow
Barnardius zonarius	Australian Ringneck
Calamanthus cautus	Shy Heathwren
**Canis familiaris familiaris*	Dog
Cincloramphus cruralis	Brown Songlark
Cinclosoma clarum	Western Chestnut Quail-thrush (Copperback Quail-thrush)
Colluricincla harmonica	Grey Shrike-thrush
Corvus coronoides	Australian Raven
Ctenophorus cristatus	Bicycle Dragon, Crested Dragon
?Ctenotus severus	? Stern Rock Ctenotus
Drymodes brunneopygia	Southern Scrub Robin
**Felis catus*	Cat
Gavicalis virescens	Singing Honeyeater
Gliciphila melanops	Tawny-crowned Honeyeater
Leipoa ocellata	Malleefowl
Lichenostomus cratitius	Purple-gaped Honeyeater
Lichenostomus leucotis	White-eared Honeyeater
Lichmera indistincta	Brown Honeyeater
Malurus pulcherrimus	Blue-breasted Fairy-wren
Notamacropus irma	Western Brush Wallaby
Notomys mitchellii	Mitchell's Hopping Mouse
Oreoica gutturalis	Crested Bellbird
**Oryctolagus cuniculus*	Rabbit
Phaps chalcoptera	Common Bronzewing
Phaps elegans	Brush Bronzewing
Platycercus icterotis	Western Rosella
Pogona minor minor	Western Bearded Dragon
Pomatostomus superciliosus	White-browed Babbler
Pseudechis australis	King Brown Snake
Pseudonaja affinis	Dugite
Purnella albifrons	White-fronted Honeyeater
Sminthopsis sp.	Dunnart
Strepera versicolor	Grey Currawong
Synoicus ypsilophorus	Brown Quail
Tiliqua occipitalis	Western Bluetongue

Species	Common Name
Tiliqua rugosa rugosa	Bobtail
Varanus gouldii	Sand Goanna
Varanus rosenbergi	Heath Goanna

Table 5: Malleefowl mounds for 2023-24 monitoring program / recommendations

Mound No.	Easting	Northing	Proposed Action
2	758814.450	6446062.100	5 YEAR
4	758671.410	6446261.450	5 YEAR
11	759608.780	6447663.710	5 YEAR
17	756616.660	6447339.360	ANNUAL
24	757807.780	6446949.680	ANNUAL
34	757784.400	6447850.350	ANNUAL
37	759627.840	6443759.560	5 YEAR
38	762041.070	6446580.550	5 YEAR
42	760380.820	6443823.550	5 YEAR
43	760762.250	6443581.310	5 YEAR
47	760678.550	6446002.240	5 YEAR
53	760983.090	6443348.360	ANNUAL
56	761001.850	6443190.010	ANNUAL
58	760649.570	6441052.370	5 YEAR
60	760934.210	6443386.150	5 YEAR
61	763216.780	6438292.680	5 YEAR
62	762200.000	6443820.000	ANNUAL
63	757062.490	6447330.290	ANNUAL
64	758558.640	6444285.370	ANNUAL
65	758336.650	6445274.990	5 YEAR
66	759437.293	6442033.674	5 YEAR
68	759545.240	6441306.261	5 YEAR
70	759262.392	6439696.610	ANNUAL
73	759363.117	6438355.697	ANNUAL
75	758733.83	6442566.13	5 YEAR
76 new	758978.000	6449393.000	ANNUAL
77	761322.000	6442010.000	ANNUAL

Appendix H Chuditch Monitoring 2023

2023 MT HOLLAND CHUDITCH MONITORING

Covalent Lithium

ecoscape

Revision	Author	QA Reviewer	Approved	Date
Final	TDV	RH	RH	16/02/2024

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This document should be cited as 'Ecoscape (Australia) Pty Ltd (2024) 2023 Mt Holland Chuditch Monitoring, prepared for Covalent Lithium

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ACKNOWLEDGEMENTS

Ecoscape would like to acknowledge the assistance and support we received from Covalent staff who made us welcome and provided logistical support where needed. We look forward to continuing to work together in in the future.

SUMMARY

Ecoscape was engaged to provide the following services for the project:

- undertake and complete Chuditch (*Dasyurus geoffroii*) monitoring, specifically:
  - establish and monitor three control sites more than five kilometres outside of the development envelope
  - establish and monitor three impact sites within the development envelope
- record all Chuditch captures in a monitoring database including morphometrics; location of capture; health status and breeding status (e.g. number of pouch young; lactation)
- undertake monitoring within the Chuditch breeding season (May to July).

The results of the 2023 Mt Holland Chuditch monitoring has provided data that can be used to compare future monitoring results for the Covalent Lithium EGLP Project site.

- one male Chuditch was captured in the control site during the 2023 monitoring period
- four camera traps recorded Chuditch, two in the control and two in the impact site. Spot pattern comparison suggests two individuals, in addition to the trap capture
- three male Chuditch were captured during routine introduced predator control activities in April of 2023, one of which was later captured on camera during July's monitoring
- Copper-backed Quail-thrush (*Cinclosoma clarum*), Gilbert's Dunnart (*Pseudomys gilberti*), Grey Currawong (*Strepera versicolor*), Mitchell's Hopping mouse (*Notomys mitchelli*), Shy Heathwren (*Hylacola cauta*), Southern Scrub-robin (*Drymodes brunneopygia*), Stripe-faced Dunnart (*Sminthopsis macroura*) and White-browed Babbler (*Pomatostomus superciliosus*) were also recorded at both the control and impact sites.

The 2023 Chuditch monitoring was the fifth annual monitoring survey undertaken during the Chuditch breeding season.

Ecoscape recommends that ongoing monitoring of the Chuditch population, within and outside of the development envelope, should continue in June 2024.

ACRONYMS AND ABBREVIATIONS

Table 1: Acronyms and abbreviations

Acronyms	
BACI	Before After Control Impact
BC Act	Western Australian *Biodiversity Conservation Act 2016*
BoM	Bureau of Meteorology
DBCA	Western Australian Department of Biodiversity, Conservation and Attractions
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DEC	Western Australian Department of Environment and Conservation (2006-2013, now DBCA)
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts (2007-2010, now DCCEEW)
DSEWPaC	Commonwealth Department of Sustainability, Environment, Water, Population and Communities (2010-2013, now DCCEEW)
EN	Endangered (listed under Commonwealth EPBC Act and/or Western Australian BC Act)
Ecoscape	Ecoscape (Australia) Pty Ltd
EGLP	Earl Grey Lithium Project
EP Act	Western Australian *Environmental Protection Act 1986*
EPA	Western Australian Environmental Protection Authority
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
GDA 94	Geographic Datum of Australia 1994
GPS	Global Positioning System
GWW	Great Western Woodlands
ha	hectare/hectares
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for Conservation of Nature
km	kilometre/kilometres
m	metre/metres
MNES	Matters of National Environmental Significance
VU	Vulnerable

1 INTRODUCTION

1.1 PROJECT PURPOSE

Covalent Lithium is developing the Earl Grey Lithium Project (EGLP) which will include the construction and operation of a fully integrated mine, concentrator, and refinery in Western Australia. The project is centred on the Earl Grey hard-rock lithium deposit 105 km south of Southern Cross in Western Australia and approximately 500 km east of Perth (**Figure 1**).

The survey area intersects with habitat of two conservation significant fauna species, the Malleefowl *(Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*). Both species are listed as vulnerable (VU) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Western Australian *Biodiversity Conservation Act 2016* and are considered Matters of National Environmental Significance (MNES).

The purpose of the project is to continue Chuditch monitoring prior to, during, and post construction of the mine and associated infrastructure, to determine Chuditch population density or abundance and determine their distribution in the local region.

1.1.1 PROJECT SCOPE

The project scope was to undertake a monitoring program for the Chuditch using a before-after-control-impact (BACI) design adapted to Chuditch ecology through consultation with the Department of Biodiversity Conservation and Attractions (DBCA).

Ecoscape was engaged to provide the following services for the project:

- undertake and complete Chuditch monitoring for 2023, specifically:
  - establish and monitor three control sites more than five kilometres outside of the development envelope
  - establish and monitor three impact sites within the development envelope
- record all Chuditch captures in a monitoring database including morphometrics; location of capture; health status and breeding status (e.g. number of pouch young; lactation)
- undertake monitoring within the Chuditch breeding season (May to July).

1.2 SURVEY AREA

The survey area is in the Shire of Yilgarn in the Goldfields region of Western Australia, about 100 km south of Southern Cross. The survey area consists of the impact sites within the development envelope and the control site five kilometres outside the development envelope. The development envelope is within the Great Western Woodlands (GWW) and is approximately 1,984 ha in extent (**Figure 1**). The GWW is a 16 million ha area extending from the wheatbelt to the edge of the deserts and is the largest intact area of Mediterranean Woodland on earth (DEC 2010). The GWW includes open Eucalypt woodlands (63%), Mallee Eucalypt woodlands, shrublands and grasslands. Less common habitats in the GWW include granite outcrops, banded ironstone formations, salt lakes and freshwater wetlands (Fox et al. 2016).

The survey area is in the Southern Cross Subregion of the Coolgardie Bioregion of the Interim Biogeographic Regionalism for Australia (IBRA) classification system (Department of Agriculture Water and the Environment (DAWE) 2020). The dominant land-uses in this bioregion are Crown Reserves and Unallocated Crown Land (66.7%), grazing on native pastures (17%), conservation (11.5%) and dryland agriculture (2.3%) (Cowan 2001; Cowan et al. 2001). The greenstone hills, alluvial valleys and broad plains of calcareous earths support diverse Eucalypt woodlands. The uplands support Mallee woodlands and scrub-heaths on sandplains, gravelly sandplains, and lateritic breakaways. Chains of salt lakes with dwarf shrublands of samphire occur in the valleys (Cowan et al. 2001).

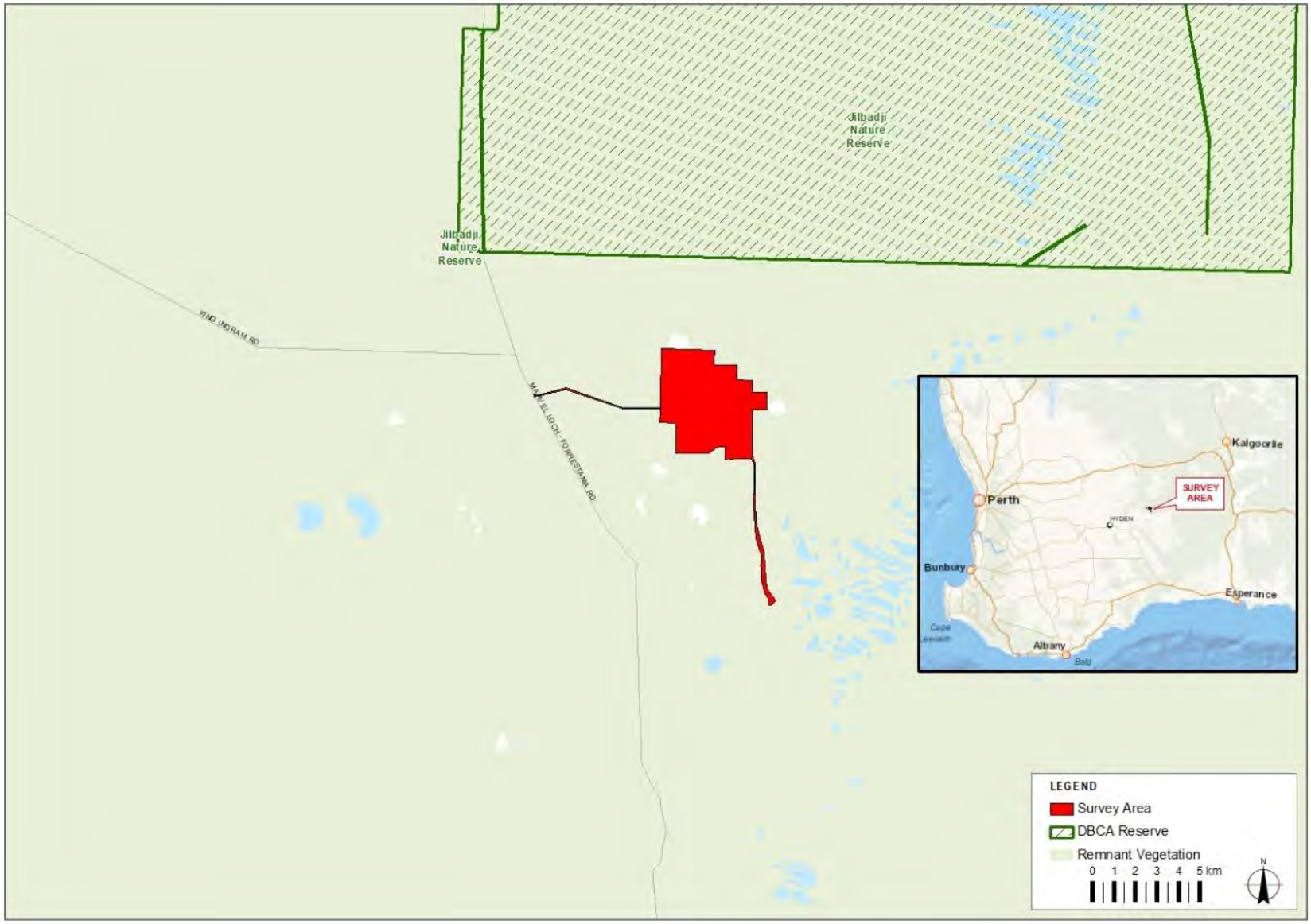


Figure 1: Project location

1.3 STATUTORY AND TECHNICAL FRAMEWORK

The requirements of the monitoring program were as follows:

- To be conducted in accordance with current statutory and technical guidance;
  - Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (1999)
  - Department of Sustainability Environment Water Population and Communities (DSEWPaC) *Survey guidelines for Australia's threatened mammals* (2011)
  - Western Australian *Environmental Protection Act 1986* (EP Act)
  - Western Australian *Biodiversity Conservation Act 2016* (BC Act) (2016)
  - Environmental Protection Authority (EPA) - *Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment* (2020)
- Department of Environment Water Heritage and the Arts *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*. (DEWHA 2009b)
- Follow DBCA Standard Operating Procedures;
  - Cage traps for live capture of terrestrial vertebrates (DBCA 2023)
  - Permanent marking of vertebrates using passive integrated transponder (DBCA 2023).

To be conducted by personnel complying with regulatory expectations in relation to holding the necessary DBCA Fauna License and years of experience.

1.3.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

At Commonwealth level, threatened taxa (flora and fauna) are protected under the EPBC Act (1999), which lists species that are considered Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild (**Table 5**).

1.3.2 WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian *EP Act* (1986) was created to provide for an EPA that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement, and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information included in environmental assessments and provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

1.3.3 WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian *BC Act* (2016) provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia. It came into effect on 1 January 2019.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are highly protected and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable have been aligned with those detailed in the EPBC Act and are detailed in **Table 6** in **Appendix 1**.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreements are also listed under the Act. These are known as specially protected species in the BC Act.

The most recent list of species of conservation interest were published in the Government Gazette on 06 October 2023 (Western Australian Government 2023a)

1.3.4 WESTERN AUSTRALIAN PRIORITY FAUNA

Conservation significant fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, these have a greater level of significance than other native species. The categories covering Priority Fauna species are outlined in **Table 6** in **Appendix 1**.

2 METHODS

2.1 FIELD SURVEY

The field survey for the 2023 Chuditch monitoring program was undertaken by Ecoscape Zoologists Robert Hemsworth and Tracy de Vetter under DBCA Wildlife Licensing Fauna License No. BA27000085-4 and Threatened Species Authority TFA_2020-0070-2_Turner_Monitoring_Authorisation. The survey was conducted from 3 to 10 July 2023.

2.2 SURVEY DESIGN

The design of the survey was developed in conjunction with DBCA expert Dr Keith Morris and included the following elements:

- monitoring to have a BACI design element to enable potential impacts to be measured
  - two sites to be established: control site and impact site
  - control site to be more than 5 km from development envelope boundary and close to 2017 capture sites if possible
  - impact site to be within the development envelope and outside of the infrastructure footprint
- each site is to consist of three grids or transects of 10 traps each with traps to be spaced 200 m apart within a grid
- traps to be in operation for a minimum of four nights
- trap effort for each of the control and impact sites will be 10 traps x 3 grids x 4 nights = 120 trap nights.

This design has since been adapted to increase the success of capture, with the following changes:

- trapping grids extended to form transects to cover a greater area
- trapping effort increased to 6 nights, giving 180 trap nights per site
- the use of 30 trail cameras per site, at 200 m intervals between the cage traps, to help determine the presence/absence of Chuditch.

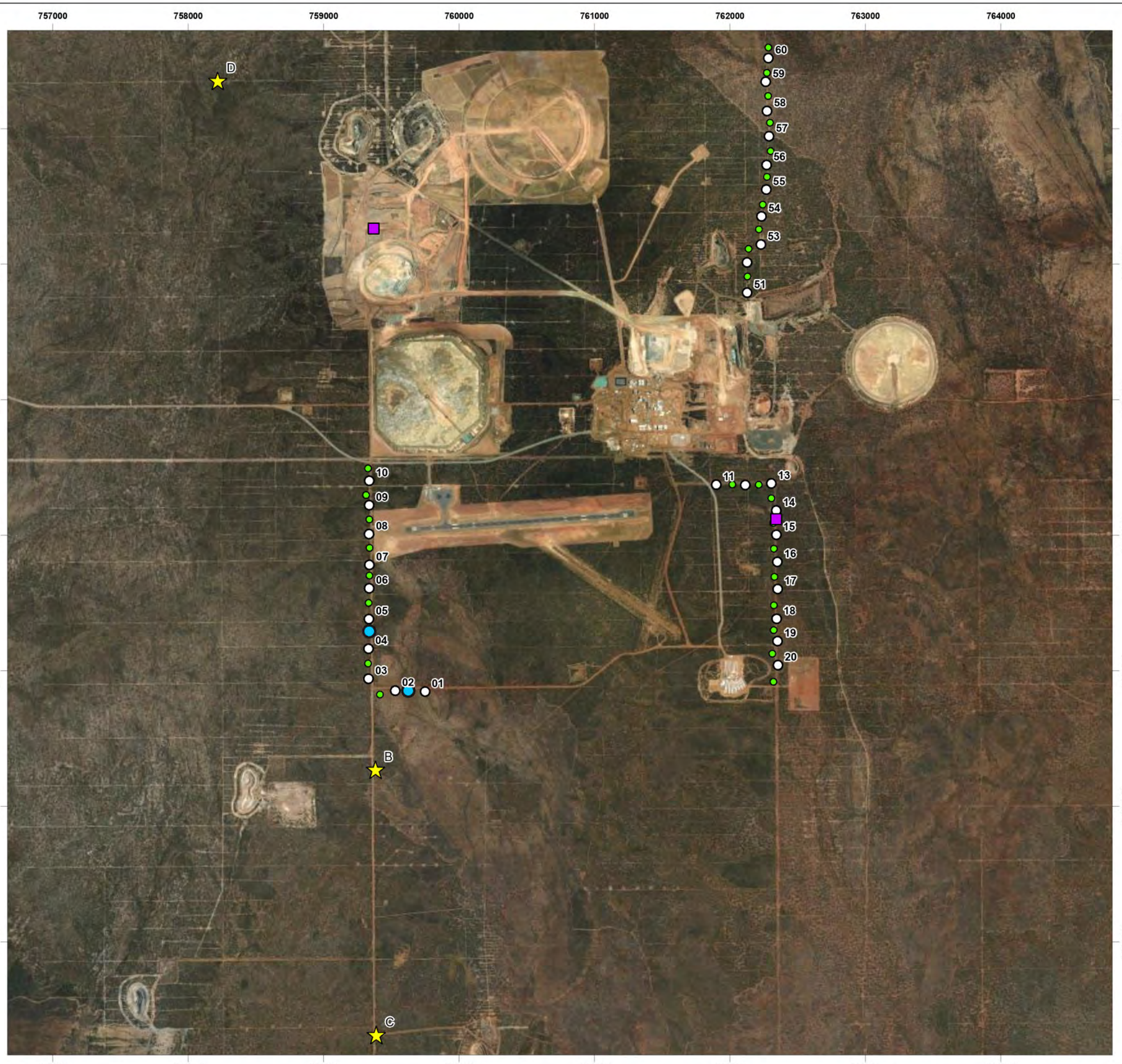
2.3 SITE SELECTION

The impact site was restricted to areas within the development envelope that were not planned to be cleared for the proposed mine and associated infrastructure and in areas where Chuditch were captured in 2017. Three areas were selected in 2019 by desktop investigation and have been replicated in 2020, 2021, 2022, and 2023 (**Map 1**).

The control site was also preselected by desktop investigation using the 2017 trapped Chuditch locations and placing a 5 km buffer around the development envelope. The location of the control site was relocated after the 2019 survey to be closer to the original 2017 transect approximately five km north of the Jasmine mine pit. This control site has since been used for the 2020, 2021, 2022, and 2023 monitoring surveys (**Map 2**).

2.4 DATA ANALYSIS

The intention is to analyse capture date to provide a population density estimate using a standard mark and recapture method as that performed by Rayner *et al*. (2011). Data collected in the field is entered into the MARK software (White 2014) that completes an iteration process to provide an estimate of population density based on information entered by the user.



LEGEND

- Impact site trap location
- Trail camera location
- Chuditch camera capture 2023
- Opportunistic Chuditch capture (Introduced predator control, April 2023)
- Previous Chuditch capture

DATA SOURCES:
SOURCE DATA: TRAP AND CAPTURE DATA (ECOSCAPE 2023) CLEARING REGULATIONS - ENVIRONMENTALLY SENSITIVE AREAS (DWER-046) (DWER 2021). DBCA - LEGISLATED LANDS AND WATERS (DBCA-011) (DBCA 2022). ROAD NETWORK (MRWA 2023). SURFACE HYDROLOGY LINES (NATIONAL) (GEOSCIENCE AUSTRALIA 2015).
SERVICE LAYERS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, FAO, NOAA, USGS
WORLD IMAGERY: MAXAR

ecoscape

IMPACT SITE

COVALENT FAUNA MONITORING 2023

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

SCALE: 1:28,000 @ A3

0 1,000 m

PROJECT NO: 4806-23

REV	AUTHOR	APPROVED	DATE
0	TD	RH	12/02/2024

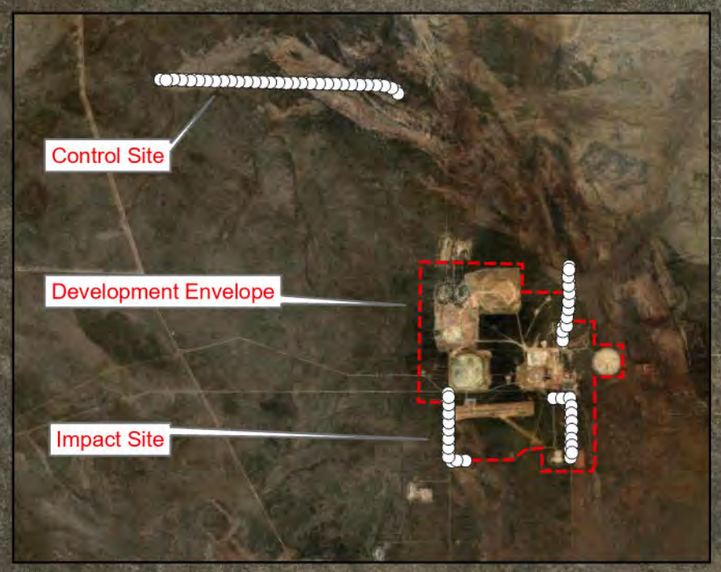
MAP 01

753000 754000 755000 756000 757000 758000

6454000 6453000 6452000 6451000 6450000 6449000

Jilbadji Nature Reserve

50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 A 34 33 32 31 30 29 28 27 26 25 24 23 22 21



LEGEND

- Control site trap location
- Trail camera location
- Chuditch capture 2023
- Chuditch camera capture 2023
- Previous Chuditch capture
- DBCA Reserve

DATA SOURCES:
SOURCE DATA: TRAPS AND CAPTURE DATA (ECOSCAPE 2023) CLEARING REGULATIONS - ENVIRONMENTALLY SENSITIVE AREAS (DWER-046) (DWER 2021). DBCA - LEGISLATED LANDS AND WATERS (DBCA-011) (DBCA 2022). ROAD NETWORK (MRWA 2023). SURFACE HYDROLOGY LINES (NATIONAL) (GEOSCIENCE AUSTRALIA 2015).
SERVICE LAYERS: WORLD TOPOGRAPHIC MAP: ESRI, HERE, GARMIN, FAO, NOAA, USGS
WORLD IMAGERY: EARTHSTAR GEOGRAPHICS
WORLD IMAGERY: MAXAR

ecoscape

CONTROL SITE

COVALENT FAUNA MONITORING 2023

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

N

SCALE: 1:21,000 @ A3

0 500 1,000 m

PROJECT NO: 0000-YY

REV	AUTHOR	APPROVED	DATE
0	TD	RH	13/02/2024

MAP 02

3 RESULTS

3.1 MONITORING SITES

The field team revisited two monitoring sites to capture and record data on the target species Chuditch (*Dasyurus geoffroii*). Traps and cameras were set at the impact site (**Map 1**), within the development envelope, and at the control site (**Map 2**), approximately five km to the northwest of the impact site.

Monitoring sites were comprised of three lines of ten wire cage traps totalling 30 traps spaced at 200 m intervals at the impact site and one line of 30 traps spaced at 200 m intervals at the control site. In 2020 trap layout was modified from a grid pattern to extending the traps out into longer lines to cover more area, this layout has been used since. Traps were set for a total of six nights giving a total of 180 trap nights/site. Traps were baited with a universal bait mix with added sardines to attract Chuditch. In 2023 bacon and chicken was included as an attractant, in addition to the universal bait. Traps were checked each morning within three hours of sunrise. Traps were covered with hessian bags to provide shelter. Trap locations are listed in **Table 7** and **Table 8** in **Appendix 2**.

As an additional effort to record Chuditch, trail cameras were placed at 200 m intervals, with a camera located between each trap. 60 cameras were deployed in total, 30 at the impact site and 30 at the control site.

Habitat quality within the development envelope was considered to be in very good condition with the impact sites trapping area being located across all habitat types present. Habitat quality at the control sites varied from very good to moderate, the moderate sites were regenerating from fire disturbance approximately five years previous. Weather conditions were cold mornings and cool, cloudy days with two mornings and one afternoon of light rain.

3.2 CHUDITCH RECORDS

Table 2 shows a summary of all captures in 2023 across cage and camera traps, during monitoring and opportunistic events. In total, four unique individuals were identified from cage or camera traps in 2023 based on visual spot pattern analysis. The July monitoring event had one live capture, which was also caught on camera. In addition, there were three opportunistic captures in April during routine introduced predator (cat) control, all in the vicinity of the impact site. One of these opportunistic captures was also identified on two camera traps at the impact site during the July monitoring. One individual, captured on a trail camera, was determined to be non-identifiable and therefore the image was not attributed to any one individual.

Table 2: Combined Chuditch capture details

		Individual				
		A	**B**	**C**	**D**	Unidentifiable
Cage	April		Impact*	Impact*	Impact	
	July	Control				
Camera	July	Control			Impact	Control
Sex		Male	Male	Male	Male	-
Weight (g)		1000	1165	980	1180	-
PIT #		941000022848312	-	-	-	-
PES (mm)		56.30	60.00	60.00	65.00	-
Head (mm)		90.20	-	-	-	-
Easting		755365.93	759389.51	758218.99	759384.09	754498.08
Northing		6452090.57	6440311.48	6447351.62	6442269.02	6452114.68

*within vicinity of impact monitoring site

3.2.1 JULY MONITORING TRAP CAPTURES

One male Chuditch was captured in a cage trap during the 2023 monitoring event (**Image 1**). The capture occurred in the control site, in unburnt Mallee woodland, adjacent to dense shrubland (**Image 2**). The Mallee woodland had several dead Salmon Gums (*Eucalyptus salmonophloia*) nearby, providing hollow logs for denning, although no dens were located. The capture was weighed, measured, and tagged with a Passive Implant Transponder (PIT) tag (**Table 2**). The animal was in good condition with no recorded bite marks or parasites and did not exhibit any previous capture marks or tags.

Image 1: Male Chuditch captured at trap 25, control site "Chuditch A" (Map 1)

Image 2: Habitat at capture site

3.2.2 CAMERA RECORDS

Two confirmed individuals were captured by camera traps in 2023. Chuditch were recorded at four camera trap locations, two each in impact and control sites. Based on visual spot pattern analysis one capture in the control site was the same individual that was caught during the July monitoring (Chuditch A) (**Image 3)** and another individual was identified on two cameras at the impact site (Chuditch D) (**Image 4)**, which was also caught opportunistically in April. One capture record could not be identified to individual level (**Image 5**). Representative habitat type of captures is shown in **Image 6**. Records from 2020, 2021, 2022 and 2023 are indicated on **Map 1** and **Map 2**, showing distribution of records across the survey area.

Image 3: Trail camera image at control site. Chuditch 'A' also captured live.

Image 4: Trail camera images at impact site. Chuditch 'D'.

Image 5: Trail camera image at control Site. Unidentifiable individual

Image 6: Typical habitat at site of camera records

3.2.3 OPPORTUNISTIC RECORDS

Three captures of male Chuditch occurred during routine introduced predator (cat) trapping in April 2023 (**Image 7-9**, **Table 2**, **Appendix 2**). The trapping used wire cage traps similar to those used during the July Chuditch monitoring. The bait used was an open tin of sardines.

Image 7: First Chuditch captured during introduced predator control (Chuditch 'B')

Image 8: Second Chuditch captured during introduced predator control (Chuditch 'C')

Image 9: Third Chuditch captured during introduced predator control (Chuditch 'D')

3.2.4 OTHER SPECIES

The non-target species list is shown in **Table 3** and **Table 4**. The records of Mitchell's Hopping-mouse, Ash-grey Mouse and the dunnart species suggests a low abundance of predators such as Fox and feral cat. However, one cat was recorded on three trail cameras. These were located in proximity to the accommodation camp in the impact site.

Image 10: Trail camera images of Felis catus

Table 3: Non-targeted fauna species captured in traps

Species	Common name	Site ID	Trap ID	Date
Drymodes brunneopygia	Southern Scrub Robin	Impact	04	5.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Impact	14	8.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Control	49	8.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Impact	02	9.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Control	48	9.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Control	26	9.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Control	25	9.07.2023
Notomys mitchellii	Mitchell's Hopping-mouse	Impact	11	9.07.2023

Table 4: Non-targeted fauna species recorded on trail cameras

Species	Common name
Pseudomys albocinereus	Ash-grey Mouse
Phaps elegans	Brush Bronzewing
Cinclosoma castanotus	Chestnut Quail-thrush
Cinclosoma clarum	Copper-backed Quail-thrush
Oreoica gutturalis	Crested Bellbird
Dromaius novaehollandiae	Emu
Felis catus	Feral Cat
Sminthopsis gilberti	Gilbert's Dunnart
Strepera versicolor	Grey Currawong
Notomys mitchellii	Mitchell's Hopping-mouse
Hylacola cauta	Shy Heathwren
Drymodes brunneopygia	Southern Scrub Robin
Pardalotus striatus	Striated Pardalote
Sminthopsis macroura	Stripe-faced Dunnart
Coturnix pectoralia	Stubble Quail
Macropus irma	Western Brush Wallaby
Macropus fuliginosus	Western Grey Kangaroo
Pomatostomus superciliosus	White-browed Babbler
Acanthiza chrysorrhoa	Yellow-rumped Thornbill

3.3 DATA ANALYSIS

No capture-mark-recapture analysis was able to be performed as there was only a single Chuditch captured during the July monitoring. Opportunistic trappings during routine introduced predator control could not be used for capture-mark-recapture analysis as they were not PIT tagged and their capture fell outside the discrete timeframe of the 2023 monitoring. Images from the 2022 trail cameras were not sufficient for comparison with the 2023 captures.

4 DISCUSSION AND RECOMMENDATIONS

4.1 CHUDITCH POPULATION

The 2023 Chuditch monitoring results identified two distinct individuals (Chudtich A & D) and one undetermined individual through a total of five capture events across both cameras and cage traps. Physical captures in cages are consistent with previous years, however, the increase in camera capture events in 2023 suggest a higher population density than can be sampled by cage trapping alone.

The monitoring fell within the optimum period for monitoring Chuditch, aligning with the known mate-seeking and denning period (Rayner et al. 2011). The weather conditions were similar to those in previous years and were unlikely to have influenced capture rates. There were no other known variables likely to have affected the increase in camera capture events. Due to the low overall number of events, this increase is unlikely to be significant and possibly stems from natural fluctuations in population density (Wayne et al. 2008).

Of note are the opportunistic captures of three male Chuditch in April during routine introduced predator (cat) control activities, prior to the 2023 annual monitoring event. The lower weights (980g – 1180g) of these individuals indicate that they are likely subadult males dispersing from their natal areas, which occurs around 25 weeks of age (Soderquist & Serena 2000) and may not be indicative of the local resident population. Using a visual spot pattern comparison, one of these males was also captured on a trail camera approximately 4.7km away.

Overall, the use of trail cameras was successful, not only in identifying the presence of Chuditch but also confirming the presence of introduced predators, i.e., cat, in the survey area, which may influence the presence/absence of Chuditch.

The 2023 EGLP Chuditch monitoring results offer valuable data for comparing future monitoring outcomes at the Covalent Lithium EGLP site. However, estimating population abundance through capture-mark-recapture analysis is not possible with only one physical capture recorded during the 2023 monitoring. Consideration should be given to adapting future monitoring protocols, to increase capture rates to a level that allows statistical analysis of the population.

4.2 RECOMMENDATIONS ADOPTED FROM 2022 CHUDITCH MONITORING

With the conclusion of the 2022 monitoring, the following recommendations were adopted for the 2023 Chuditch monitoring:

- Continued monitoring was undertaken in July 2023
- continued use of trail cameras
- investigation of the use of alternate baits and/or attractants. Adding bacon and chicken was explored.

4.3 RECOMMENDATIONS FOR 2024 MONITORING

After discussions and advice from DBCA Chuditch experts, Ecoscape recommends the following changes to the 2024 Chuditch monitoring. These changes are based on trapping conducted during DBCAs' Western Shield monitoring in multiple reserves in the southwest (DBCA 2022). The recommended changes increased overall capture rates, giving a more robust population estimate than was previously surveyed.

For the 2024 monitoring, the following adaptive management recommendations are made:

- Increasing the spacing of cage traps to 500m to avoid oversampling
- changing the trap bait to raw chicken wings
- the use of a camera and lure array at 1km spacing
- use of I3S spot pattern recognition software for identification of individuals from captured images.

REFERENCES

Commonwealth of Australia (1999), *Environment Protection and Biodiversity Conservation Act 1999*.

Cowan, M 2001, *Coolgardie 3 (COO3 – Eastern Goldfields subregion)*., vol. 3, no. August, pp.156–169.

Cowan, M, Graham, G & McKenzie, N 2001, ‘‘Coolgardie 2 (COO 2 – Southern Cross Subregion).’’ in *A Biodiversity Audit of Western Australia’s 53 Biogeographical Subregions in 2002* , eds.JE May & NL McKenzie, Department of Conservation and Land Management, Department of Conservation and Land Management.

Department Biodiversity Conservation and Attractions 2023, *Standard Operating Procedure SC22-07: Cage Traps for Live Capture of Terrestrial Vertebrate*.

Department of Agriculture Water and the Environment 2020, *Australia’s bioregions (IBRA)*. Available from: http://www.environment.gov.au/land/nrs/science/ibra.

Department of Biodiversity Conservation and Attractions 2020, *Conservation Codes for Western Australian Fauna and Flora (10 December 2020)*. Available from: https://www.dpaw.wa.gov.au/images/Conservation codes for Western Australian Flora and Fauna 179KB.pdf.

Department of Biodiversity Conservation and Attractions 2023, *Standard Operating Procedure SC22-18 Permanent Marking of Vertebrates Using Passive Integrated Transponder (PIT) Tags*, Western Australia.

Department of Climate Change Energy the Environment and Water 2023, *SPRAT EPBC Migratory List in Species Profile and Threats Database*. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicshowmigratory.pl.

Department of Environment and Conservation 2010, *A Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands*. Available from: http://www.dpaw.wa.gov.au/images/documents/conservation-management/off-road-conservation/gww/gww-strategy.pdf.

Department of Sustainability Environment Water Population and Communities 2011, *Survey guidelines for Australia’s threatened mammals: Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*. Available from: http://www.environment.gov.au/system/files/resources/b1c6b237-12d9-4071-a26e-ee816caa2b39/files/survey-guidelines-mammals.pdf.

Department of the Environment Water Heritage and the Arts; Commonwealth of Australia 2009, *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*.

Environmental Protection Authority 2020, *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, EPA, Perth, Western Australia. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA-Technical-Guidance-Vertebrate-Fauna-Surveys.pdf.

Fox, E, Mcnee, S & Douglas, T 2016, *Birds of the Great Western Woodlands. Report for The Nature Conservancy* , Birdlife Australia, Melbourne.

Government of Western Australia (1986), *Environmental Protection Act 1986*.

Government of Western Australia (2016a), *Biodiversity Conservation Act 2016*.

Government of Western Australia (2016b), *Biodiversity Conservation Act 2016*. Available from: https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13811_homepage.html.

Government of Western Australia (2018), *Biodiversity Conservation Regulations 2018*.

Rayner, K, Chambers, B, Johnson, B, Morris, K & Mills, HR 2011, ‘Spatial and dietary requirements of the chuditch (Dasyurus geoffroii) in a semiarid climatic zone’., *Australian Mammalogy*.

Soderquist, TR & Serena, M 2000, ‘Juvenile behaviour and dispersal of Chuditch’., *Australian Journal of Zoology*, vol. 48, pp.551–560.

Wayne, AF, Rooney, J, Morris, KD & Johnson, B 2008, ‘Improved bait and trapping techniques for chuditch (Dasyurus geoffroii): overcoming reduced trap availability due to increased densities of other native fauna’.

Western Australian Government 2023a, *Government Gazette 6 October 2023. No. 135*. Available from: https://www.legislation.wa.gov.au/legislation/prod/gazettestore.nsf/FileURL/gg2023_135.pdf/$FILE/Gg2023_135.pdf?OpenElement. [27 October 2023].

Western Australian Government 2023b, 'Biodiversity Conservation (Threatened Ecological Communities) Order 2023'., *Government Gazette*, vol. No. 62.

White, G 2014, *MARK*.

APPENDIX 1 LEGISLATIVE CONTEXT, DEFINITIONS AND CRITERIA

COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act is a legal framework to protect and manage matters of national environmental significance (MNES) including important flora, fauna, ecological communities and heritage areas listed under the Act.

Threatened taxa (flora and fauna) are protected under the EPBC Act, which lists species and ecological communities that have been assessed as meeting the criteria to be listed as Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild, as detailed in **Table 5**.

Threatened Ecological Communities protected under the EPBC Act are categorised as Critically Endangered, Endangered or Vulnerable, also detailed in this table.

Migratory species subject to international agreements are also protected under the EPBC Act. The definition of a migratory species under the Act follows that prescribed by the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (DCCEEW 2023). The list of migratory species established under section 209 of the EPBC Act comprises:

- migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II);
- migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China-Australia Migratory Bird Agreement (CAMBA); and
- native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Table 5: EPBC Act categories for flora, fauna and ecological communities

Category	Threatened species	Threatened Ecological Communities
Extinct	A native species is eligible to be included in the extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.	n/a
Extinct in the wild	A native species is eligible to be included in the extinct in the wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.	n/a
Critically Endangered (CR)	A native species is eligible to be included in the *critically endangered* category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *critically endangered* category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria
Endangered (EN)	A native species is eligible to be included in the *endangered* category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *endangered* category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

Category	Threatened species	Threatened Ecological Communities
Vulnerable (VU)	A native species is eligible to be included in the *vulnerable* category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.	An ecological community is eligible to be included in the *vulnerable* category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.
Conservation Dependent	A native species is eligible to be included in the conservation dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming vulnerable, endangered or critically endangered; or (b) the following subparagraphs are satisfied: (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long-term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; (iv) cessation of the plan of management would adversely affect the conservation status of the species.	n/a

WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian EP Act was created to provide for an Environmental Protection Authority (the EPA) that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian BC Act provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are protected under this legislation and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable are detailed in **Table 6**; these categories align with those of the EPBC Act. Some State-listed threatened species and ecological communities are provided with additional protection as they are also listed under the Commonwealth EPBC Act (see **Table 5** for conservation status category descriptions).

The most recent Western Australian flora and fauna listings were published in the Government Gazette on 6 October 2023 (Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a)(Western Australian Government 2023a) and ecological communities listings on 26 May 2023 (Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b)(Western Australian Government 2023b).

PRIORITY-LISTED FLORA AND FAUNA

Flora are listed as PF where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to TF categories. Whilst PF are not specifically listed in the BC Act, some may qualify as being of special conservation interest and thereby have a greater level of protection than unlisted species.

There are three categories covering Western Australian-listed TF and four categories covering PF species which are outlined in **Table 6**. PF for Western Australia are regularly reviewed by the DBCA whenever new information becomes available, with species status altered or removed from the list when data indicates that they no longer meet these requirements.

Conservation significant fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, these have a greater level of significance than other native species. The categories covering Priority Fauna species are outlined in **Table 6**.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, have a restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreement are also listed under the Act. These are known as 'specially protected species' in the BC Act.

Table 6: Conservation codes for Western Australian flora and fauna (DBCA 2020)

Conservation Codes for Western Australian Flora and Fauna
Threatened, Extinct and Specially Protected fauna or flora[1] are species[2] which have been adequately searched for and are deemed to be, in the wild, threatened, extinct or in need of special protection, and have been gazetted as such.
The *Wildlife Conservation (Specially Protected Fauna) Notice 2018* and the *Wildlife Conservation (Rare Flora) Notice 2018* have been transitioned under regulations 170, 171 and 172 of the *Biodiversity Conservation Regulations 2018* to be the lists of Threatened, Extinct and Specially Protected species under Part 2 of the *Biodiversity Conservation Act 2016*.
Categories of Threatened, Extinct and Specially Protected fauna and flora are:

Conservation Codes for Western Australian Flora and Fauna	
T	**Threatened species** Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act). **Threatened fauna** is the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species. **Threatened flora** is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species. The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of Ministerial Guideline (Number 1) and Ministerial Guideline (Number 2) that adopts the use of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species Categories and Criteria4, and is based on the national distribution of the species
CR	**Critically endangered species** Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as critically endangered undersection 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
EN	**Endangered species** Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
VU	**Vulnerable species** Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*". Listed as vulnerable undersection 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.
Extinct species **Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.**	
EX	**Extinct species** Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
EW	**Extinct in the wild species** Species that "*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25of the BC Act).
Specially protected species Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.	
MI	**Migratory species** Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.
CD	**Species of special conservation interest (conservation dependent)** Species of special conservation need that are dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act)
OS	**Other specially protected species** Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18of the BC Act).

Conservation Codes for Western Australian Flora and Fauna	
P	**Priority species** Priority is not a listing category under the BC Act. All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land). Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened. Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Assessment of priority status is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
1	**Priority 1: Poorly-known species – known from few locations, none on conservation lands** Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.
2	**Priority 2: Poorly-known species – known from few locations, some on conservation lands** Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.
3	**Priority 3: Poorly-known species – known from several locations** Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.
4	**Priority 4: Rare, Near Threatened and other species in need of monitoring** (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

[1] The definition of flora includes algae, fungi and lichens.
[2] Species includes all taxa (plural of taxon - a classificatory group of any taxonomic rank, e.g. a family, genus, species or any infraspecific category i.e. subspecies or variety, or a distinct population).

APPENDIX 2 TRAPPING SITE DETAILS

Table 7: Locations of impact trap sites (GDA 94, Zone 50)

Site Type	Trap Number	Easting	Northing
Impact Sites	1	759360.363	6444352.637
	2	759363.040	6444154.600
	3	759368.392	6443951.210
	4	759363.040	6443761.202
	5	759368.392	6443552.460
	6	759368.392	6443359.776
	7	759363.040	6443151.034
	8	759368.392	6442950.321
	9	759541.005	6442885.424
	10	759741.718	6442882.748
	11	761901.391	6444368.025
	12	762104.780	6444378.729
	13	762302.817	6444381.405
	14	762345.636	6444180.692
	15	762345.636	6443985.332
	16	762345.636	6443784.618
	17	762348.312	6443583.905
	18	762350.988	6443380.516
	19	762348.312	6443209.241
	20	762554.378	6443206.565
	21	761331.366	6446371.141
	22	761532.079	6446372.479
	23	761731.454	6446376.494
	24	761930.829	6446376.494
	25	762123.514	6446376.494
	26	762114.147	6446574.530
	27	762115.485	6446776.582
	28	761920.124	6446783.272
	29	761716.735	6446780.596
	30	761516.022	6446775.244

Table 8: Locations of control trap sites (GDA 94, Zone 50)

Site Type	Trap Number	Easting	Northing
Control Sites	31	757750.215	6452023.916
	32	758103.354	6451823.234
	33	758038.015	6451933.687
	34	757912.005	6451983.468
	35	752554.257	6452154.593
	36	752753.384	6452148.370
	37	752958.733	6452135.924
	38	753157.859	6452135.924
	39	753556.113	6452123.479
	40	753356.986	6452123.479
	41	753755.239	6452123.479
	42	753954.366	6452123.479
	43	754153.492	6452117.256
	44	754358.841	6452117.256
	45	754551.745	6452098.588
	46	754757.094	6452098.588
	47	754956.221	6452092.366
	48	755155.348	6452086.143
	49	755354.474	6452086.143
	50	755553.601	6452079.920
	51	755758.950	6452067.475
	52	755958.076	6452061.252
	53	756157.203	6452061.252
	54	756356.329	6452067.475
	55	756555.456	6452055.029
	56	756754.583	6452048.807
	57	756953.709	6452036.361
	58	757159.058	6452030.138
	59	757351.962	6452030.138
	60	757557.311	6452023.916

Appendix I Vegetation Condition Monitoring Spring 2023

EARL GREY LITHIUM PROJECT

VEGETATION CONDITION MONITORING

Spring 2023

Prepared By

Mattiske Consulting Pty Ltd

Prepared For

Covalent Lithium Pty Ltd

December 2023

DOCUMENT STATUS				
DOCUMENT REFERENCE: CLL2302/036/23				
VERSION	**TYPE**	**AUTHOR/S**	**REVIEWER/S**	**DATE DISTRIBUTED**
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FINAL	Final report			

(ACN 063 507 175, ABN 39 063 507 175)

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LIST OF ABBREVIATIONS

BC Act:	*Biodiversity Conservation Act 2016* (WA)
BOM:	Bureau of Meteorology
Covalent:	Covalent Lithium Pty Ltd
DBCA:	Department of Biodiversity, Conservation and Attractions
DE:	Development Envelope
EGLP:	Earl Grey Lithium Project
EPA:	Environmental Protection Authority
EPBC Act:	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
FVMP:	Flora and Vegetation Environmental Management Plan
IBRA	Interim Biogeographic Regionalisation for Australia
Mattiske Consulting:	Mattiske Consulting Pty Ltd
MS1118	Ministerial Statement 1118
PEA:	Plant pigment efficiency analyser
TSF:	Tailings Storage Facility
WAH:	Western Australian Herbarium (PERTH)
WRD	Waste Rock Dump
VEZ	Vegetation exclusion zone (as defined in MS1118)

EXECUTIVE SUMMARY

The Earl Grey Lithium Project is owned by Covalent Lithium Pty Ltd. Ministerial approval for the implementation of the development of the Earl Grey Lithium Project was provided under Ministerial Statement 1118 in November of 2019. In order to meet Condition 6 of Ministerial Statement 1118, Covalent Lithium Pty Ltd has developed a Flora and Vegetation Management Plan (FVMP), which is intended to meet the key environmental outcome of condition 6-1(1) of Ministerial Statement 1118, which states:

- The proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones as shown on Figure 3 and delineated by coordinates in Schedule 2.

The FVMP involves the monitoring of plant condition, dust deposition and weed monitoring in order to:

- determine if there are any changes occurring to flora and vegetation condition and health in the vegetation exclusion zones;
- assess whether any changes in flora and vegetation are due to the project or external/natural factors; and,
- provide a methodology for ongoing monitoring to enable time-based comparisons.

The plant condition monitoring program, designed to provide an assessment of the vegetation condition, will be undertaken at permanent representative sites within vegetation exclusion zones and at control sites away from any proposal related indirect effects. The FVMP provides for two mechanisms to assess plant condition:

- A visual (qualitative) assessment of a range of parameters (vegetation condition, leaf die-off, new tip growth, epicormic growth, reproductive state and insect damage); and
- A quantitative assessment, using a plant pigment efficiency analyser, to measure chlorophyll fluorescence.

A total of 18 plant condition monitoring transects were established, comprising nine control and nine impact transects. Of these 18, four were established in October of 2019. The remaining 14 transects were established in October 2020 over the course of two separate field visits. Transect 6 was cleared for mine expansion and hence has not been monitored since the Autumn survey in 2022.

Construction of the Earl Grey Lithium Project commenced in July 2021, representing the commencement of the vegetation disturbance monitoring. Given that construction of the EGLP commenced approximately two and a half years prior to this survey in November 2023, disturbances surrounding all impact transects are still minimal.

The vegetation condition in impact transects, best represented by the mean canopy health score, were all less than 20% different to the corresponding control transects and thereby complying with the threshold as defined in the FVMP (Covalent 2020). The changes in vegetation condition observed between this survey and the last spring survey in September 2022 can most likely be attributed to the variation in different observers' qualitative canopy health scores, and variation in rainfall. Future surveys aim to minimise this variation with the use of quantitative plant pigment efficiency analyser (PEA) measurements of plant health.

1. INTRODUCTION

The Earl Grey Lithium Project (EGLP) is owned by Covalent Lithium Pty Ltd (Covalent). Covalent is a joint venture between Wesfarmers Chemicals, Energy and Fertilisers Limited and Sociedad Quimica y Minera de Chile.

Ministerial approval for the implementation of the development of the EGLP was provided under Ministerial Statement 1118 (MS1118) in November of 2019. In order to meet Condition 6 of MS1118, Covalent have developed a Flora and Vegetation Environmental Management Plan (FVMP). The Covalent FVMP (2020) aims to meet the key environmental outcome of condition 6-1(1) of MS1118, which states:

- The proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones as shown on Figure 3 and delineated by coordinates in Schedule 2.

Construction of the EGLP commenced in July 2021 following the receival of all approvals (Government of Western Australia 2019). Mattiske Consulting Pty Ltd (Mattiske Consulting) was engaged in September 2023 to undertake the assessment of the vegetation health monitoring transects. The survey took place between 30th of October and the 3rd of November 2023.

1.1 Scope of plant condition monitoring

The EGLP lies in the Roe Botanical Province (Beard 1990) within the Southern Cross (COO02) Interim Biogeographic Regionalisation for Australia (IBRA) subregion (Cowan *et al.*, 2001). The EGLP, which is located approximately 100 km southeast of the town of Southern Cross, is situated on the abandoned Bounty Gold Mine (Figure 1).

The FVMP (Covalent 2020) prescribes the monitoring of plant condition, dust deposition and weed monitoring in order to:

- determine if there are any changes occurring to flora and vegetation condition and health in the vegetation exclusion zones (VEZs);
- assess whether any changes in flora and vegetation are potentially attributable to mining and associated activities or are the result of fluctuations associated with prevailing environmental factors; and,
- provide a methodology for ongoing monitoring to enable time-based comparisons.

The plant condition monitoring program, designed to provide an assessment of the vegetation condition, will be undertaken at permanent representative sites within the development envelope and control sites away from any proposal related indirect effects (Covalent 2020, Mattiske Consulting 2021a). Each monitoring transect consists of a quadrat 10 m by 40 m arranged linearly with four sub-quadrats of 10m x 10m (Mattiske Consulting 2021a). The FVMP (Covalent 2020) provides for two mechanisms to assess plant condition:

- A visual (qualitative) assessment of a range of parameters (vegetation condition, leaf die-off, new tip growth, epicormic growth, reproductive state and insect damage); and,
- A quantitative assessment, using a plant pigment efficiency analyser (PEA), to measure chlorophyll fluorescence.

To date, only qualitative assessments have been made of the plant condition at each transect, at the request of Covalent. Dust deposition monitoring, at this time, will be addressed directly by Covalent. Weed monitoring was initially undertaken in the winter/spring of 2019 / 2020. This consisted of broad scale weed surveys across the EGLP to ascertain the range and locations of weed species present within the project area (principally existing cleared areas, exploration drill tracks and drill pads). A report summarising the findings of these surveys has been prepared (Mattiske Consulting 2020). No specific weed surveys have been undertaken since the initial survey (Mattiske Consulting 2020).

N

0 5 10 km

Scale: 1:750,000
MGA94 (Zone 50)

CAD Ref: a2445_f41_01

Date: December 2023 | Rev: A | A4

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Covalent Lithium Pty Ltd

Earl Grey Lithium Project

Location

Figure: 1

1.2 Potential impacts to flora and vegetation

Baseline plant condition monitoring consists of three baseline monitoring events undertaken in the spring (Mattiske Consulting 2021a and Mattiske Consulting 2021c), and one post-summer survey (Mattiske Consulting 2021b), prior to commencement of construction (Table 1). This is to provide data in the post-winter and dry summer periods to establish typical plant responses to the annual weather cycle. Mine construction commenced in July 2021, and three (including this survey) monitoring surveys have been carried out post-construction. Mine construction and subsequent operation could potentially impact the flora and vegetation adversely through a range of potential impacts, including:

- the clearing of native vegetation;
- altered local hydrology as a result of changes to surface water flow patterns, water table draw down, including the associated potential to cause erosion;
- the potential use or release of local, hypersaline water within the project area;
- dust deposition from vehicles, mining operations, stockpiles and cleared areas on adjacent native vegetation;
- the potential for vehicles to bring introduced plant species on-site, particularly given that vehicles transiting on/off site pass through the adjacent Wheatbelt agricultural areas;
- introduction of pathogens, such as die-back (e.g., *Phytophthora* sp.);
- failure to adhere to clearing boundaries within the project area;
- unauthorised vehicle access to areas of native vegetation; and
- release of contaminated water or solvents from operational facilities, including but not limited to waste landforms, tailings storage facility (TSF) and processing plants areas.

Table 1: Plant condition monitoring surveys at the EGLP

SURVEY TIMING	SURVEY TYPE	SURVEY DESCRIPTION	REFERENCE
Spring 2019	Baseline	Establishment and survey of five of 19 transects	Mattiske Consulting 2021a
Spring 2020	Baseline	Establishment and survey of 14 transects and reassess the five transects established in 2019	Mattiske Consulting 2021a
Autumn 2021	Baseline	Reassess all 19 transects	Mattiske Consulting 2021b
Spring 2021	Baseline	Reassess all 19 transects	Mattiske Consulting 2021c
Autumn 2022	Post construction	Reassess all 18 transects (Transect 6 removed due to site being cleared).	Mattiske Consulting 2021d
Spring 2022	Post construction	Reassess all 18 transects (Transect 6 removed due to site being cleared).	Mattiske Consulting 2022
Spring 2023	Post construction	Reassess all 18 transects (Transect 6 removed due to site being cleared).	This Report

1.3 Climate

Beard (1990) described the climate of the wider region containing the EGLP as dry warm mediterranean, with winter precipitation between 300 – 500 mm, with 7 – 8 dry months, consistent with descriptions of a characteristically arid to semi-arid climate with 200-300 mm of precipitation (Beard 1990, Cowan *et al.*, 2001). Southern Cross, which is located approximately 100 km northwest of the EGLP has an average annual rainfall of 302.5 mm (Bureau of Meteorology, BoM 2023). Rainfall and temperature data for Southern Cross Airfield is illustrated in Figure 2. The rainfall and temperature data displayed spans the period October 2022 to October 2023. This includes rainfall data from Covalent weather station at Mt Holland, available for the same period with some data unavailable from August 2023 – October 2023

when the weather station was down. The rainfall in the July – October 2023 period, four months prior to the survey, was below average with the winter/spring being approximately 56% of the long-term average.

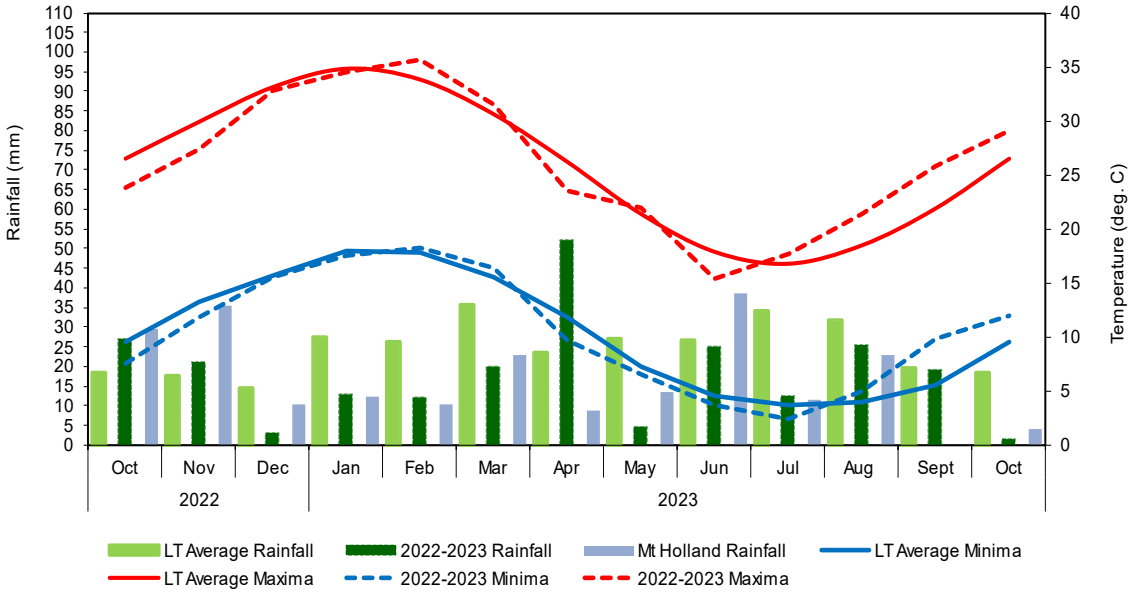


Figure 2: Rainfall and temperature data for Southern Cross Airfield (Station No. 012320) and Mt Holland

Long term average rainfall and temperature data, together with monthly rainfall data for the period October 2022 to October 2023 (BoM 2023).

2. METHODS

2.1. Plant condition monitoring transect site selection

The locations of plant condition monitoring transects took into account the following considerations:

- condition 6-1 (1) states that 'The Proponent shall ensure there is no proposal-related direct or adverse indirect impacts to flora and vegetation within the exclusion zones'.
- impact monitoring transects should be placed in close proximity (10 m) to an area of disturbance. The disturbance area may be part of an existing disturbance area or may form part of the project infrastructure footprint subject to clearing subsequent to transect establishment;
- control monitoring transects should be placed sufficiently distant from an area of disturbance such that they will be unaffected by mine site operations. A nominal distance of 1 km was used as a basis for control transect location, within the constraints imposed by the project area and adjacent tenement stakeholders. Additionally, the control monitoring transects should be sited in the same vegetation type as the corresponding impact monitoring transects, and should consist of a similar species composition;
- impact and control monitoring transect locations should represent a range of the vegetation communities present within the EGLP;
- impact and control monitoring transect should contain a range of the conservation significant flora which have been recorded within the EGLP (Mattiske 2021a); and
- it is acknowledged that for construction considerations, impact monitoring transects were not established about the proposed waste rock dump (WRD) and TSF areas due to the high likelihood that construction may result in transects being destroyed.

2.2. Plant condition monitoring transect design

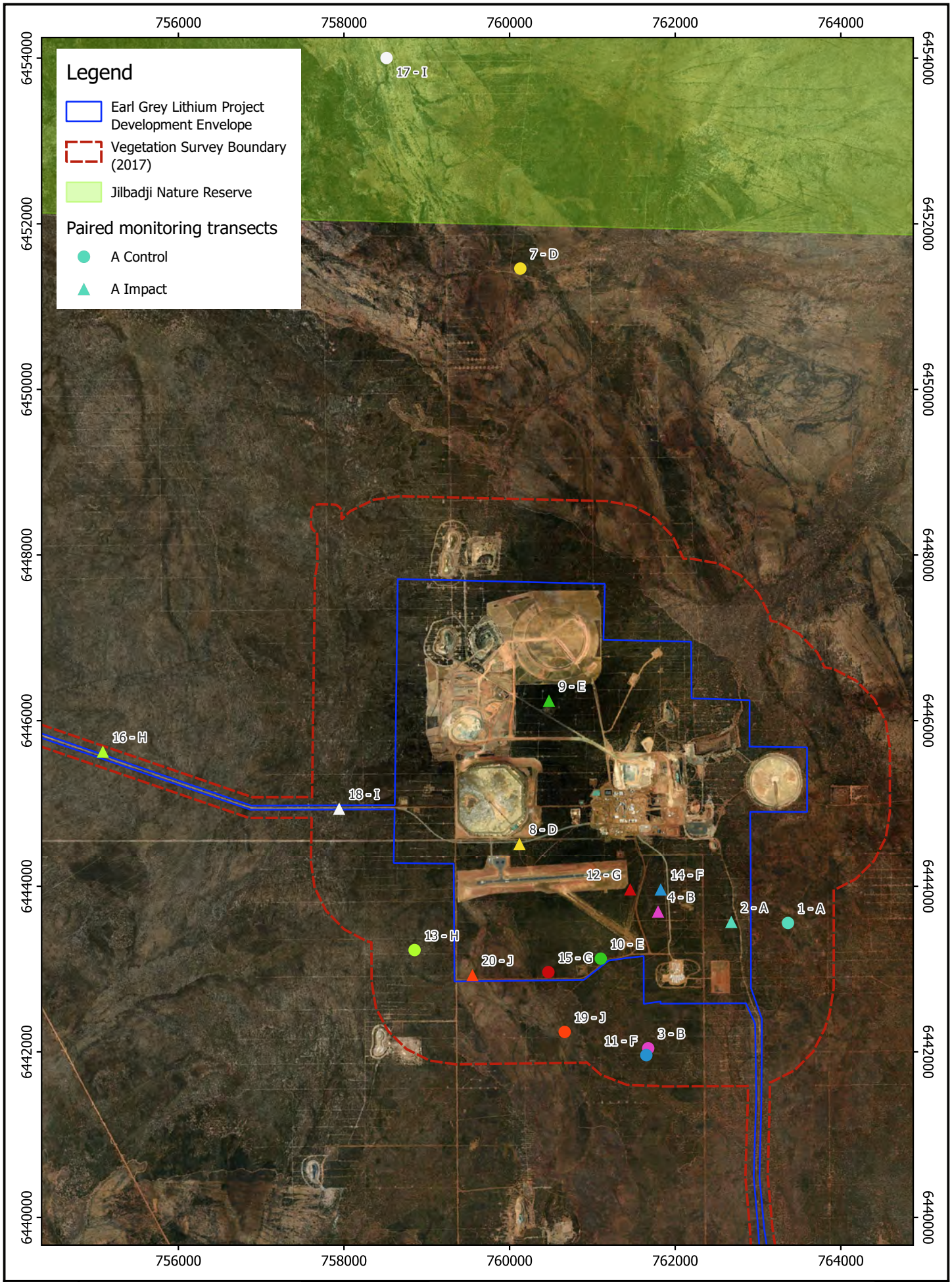
Permanent plant condition monitoring transects cover an area equivalent to a 20 m x 20 m quadrat in size, to conform to the recommended survey quadrat size for the bioregion (Environmental Protection Authority (EPA) Technical Guidance, 2016). Each transect comprises four 10 m x 10 m sub-quadrats arranged as a belt transect. In the case of impact transects, one end of the transect is located within 10 m of an impact area, with the remaining three transects being aligned adjacent to and perpendicular to the impact area. This arrangement will provide scope to assess plant condition with respect to distance from the impact area (Mattiske Consulting 2021a). The location of plant condition monitoring transects are set out in Table 2.

2.3. Survey data collection

2.3.1. Transect location and photographic record

At each transect the geographic coordinates of the north-west and south-west corners of the transect were recorded. A photograph was taken from the north-west corner of each of the four sub-quadrats facing in the direction of the south-east corner of the sub-quadrat, to provide long term temporal imagery of the transect.

Plant condition monitoring transect locations are illustrated in Figure 3.



N
MGA 94
Zone 50

0 1 2 km

Scale: 1:60,000

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Covalent Lithium Pty Ltd

Location of Vegetation Condition Monitoring Transects

Figure: 3

Table 2: Location of plant condition monitoring transects at the EGLP

TRANSECT NUMBER[1]	PAIRED CONTROL / IMPACT[2]	LOCATION (GDA 94, ZONE 50	LOCALITY	WITHIN VEZ[3]	VEGETATION COMMUNTIY AND SUMMARY[4]	CONSERVATION SIGNIFICANT FLORA PRESENT	FIRE HISTORY
1	A (control)	763363 mE, 6443557 mN	70 m west of bore field access track.	yes	W7: *Eucalyptus* spp. low open woodland over *Santalum acuminatum, Dodonaea stenozyga, Melaleuca eleuterostachya* mid sparse shrubland over *Acacia erinaceae, Daviesia argillaceae* low sparse heathland.	*Hakea pendens* (P3)	< 10 years (fire Feb 2016)
2	A (impact)	762678 mE 6443570 mN	600 m east of borefield access track.	no	W17: *Eucalyptus capillosa* low open mallee woodland over *Hakea pendens* (P3), *Beyeria sulcata*, *Santalum acuminatum* mid sparse shrubland over *Rinzia sessilis*, *Westringia cephalantha* subsp. *cephalantha*, *Hibbertia ancistrophylla* low sparse shrubland.	*Hakea pendens* (P3)	> 20 years
3	B (control)	761675 mE 6442044 mN	770 m south of accommodation village.	no	H1: *Melaleuca cliffortioides*, *Allocasuarina campestris*, *Dodonaea adenophora* mid open heathland over *Grevillea lissopleura* (P1), *Trymalium myrtillus* subsp. *myrtillus* low sparse shrubland.	*Grevillea lissopleura* (P1) *Hibbertia tuberculata* (P1) *Rinzia medifila* (P1)	> 20 years
4	B (impact)	761794 mE 6443696 mN	95 m west of accommodation village access road.	yes		*Grevillea lissopleura* (P1)	> 20 years
7	D (control)	760130 mE 6451461 mN	3.8 km north of EGLP development envelope.	no	W13: *Callitris preissii*, *Eucalyptus rigidula* low open mallee woodland over *Micromyrtus erichsenii*, *Persoonia coriacea*, *Allocasuarina spinosissima* mid tall sparse shrubland over *Beyeria sulcata* var. *gracilis*, *Drummondita hassellii* low sparse shrubland	*Acacia undosa* (P3)	> 20 years
8	D (impact)	760120 mE 6444511 mN	60 m south of Western Power easement and 290 m east of planned airstrip access road.	no		*Acacia undosa* (P3)	> 20 years

Table 2: Location of plant condition monitoring transects at the EGLP (continued)

TRANSECT NUMBER[1]	PAIRED CONTROL / IMPACT[2]	LOCATION (GDA 94, ZONE 50)	LOCALITY	WITHIN VEZ[3]	VEGETATION COMMUNTIY AND SUMMARY[4]	CONSERVATION SIGNIFICANT FLORA PRESENT	FIRE HISTORY
10	E (control)	761102 mE 6443126 mN	54 m north of access road south of original Mt Holland airstrip.	yes	S3: *Allocasuarina acutivalvis*, *Eucalyptus burracoppinensis* tall sparse shrubland over *Banksia purdieana*, *Hakea subsulcata*, *Melaleuca cordata* mid sparse shrubland over *Micromyrtus erichsenii*, *Persoonia coriacea* low isolated shrubs	*Banksia dolichostyla* (T) *Boronia ternata* var. *promiscua* (P3) *Daviesia sarissa* subsp. *redacta* (P2) *Microcorys elatoides* (P1)	> 20 years
9	E (impact)	760476 mE 6446242 mN	adjacent to old borrow pit , on northern side of original Earl Grey haul road.	yes		*Banksia dolichostyla* (T) *Microcorys elatoides* (P1)	> 20 years
11	F (control)	761652 mE 6441960 mN	860 m south of accommodation village.	no	W9: *Eucalyptus urna*, *Eucalyptus ravida*, *Eucalyptus prolixa* low mallee woodland over *Melaleuca pauperiflora*, *Dodonaea stenozyga*, *Daviesia argillacea* mid sparse shrubland over *Acacia merrallii*, *Grevillea acuaria*, *Phebalium multiflorum* low sparse shrubland	*Eutaxia lasiocalyx* (P2)	> 20 years
14	F (impact)	761826 mE 6443962 mN	53 m west of access road to accommodation village.	yes			> 20 years
15	G (control)	760469 mE 6442964 mN	1.1 km east of Blue Vein Rd and 82 m north of access road south of original Mt Holland airstrip.	no	W5: *Eucalyptus rigidula*, *Eucalyptus burracoppinensis* low open mallee woodland over *Micromyrtus erichsenii*, *Persoonia coriacea, Hakea erecta* mid sparse heathland over *Hibbertia rostellata*, *Hibbertia stowardii* low isolated shrubs	*Boronia ternata* var. *promiscua* (P3) *Microcorys elatoides* (P1)	> 20 years
12	G (impact)	761457 mE 6443963 mN	20 m east of new airstrip boundary.	yes	W13: *Callitris preissii*, *Eucalyptus rigidula* low open mallee woodland over *Micromyrtus erichsenii*, *Persoonia coriacea*, *Allocasuarina spinosissima* mid tall sparse shrubland over *Beyeria sulcata* var. *gracilis*, *Drummondita hassellii* low sparse shrubland	*Balaustion grandibracteatum* subsp. *junctura* Rye (P2) *Banksia dolichostyla* (T) *Boronia ternata* var. *promiscua* (P3) *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) *Microcorys elatoides* (P1)	> 20 years

Table 2: Location of plant condition monitoring transects at the EGLP (continued)

TRANSECT NUMBER[1]	PAIRED CONTROL / IMPACT[2]	LOCATION (GDA 94, ZONE 50	LOCALITY	WITHIN VEZ[3]	VEGETATION COMMUNTIY AND SUMMARY[4]	CONSERVATION SIGNIFICANT FLORA PRESENT	FIRE HISTORY
13	H (control)	758853 mE 6443230 mN	495 m west of Blue Vein Rd.	no	S3: *Allocasuarina acutivalvis*, *Eucalyptus burracoppinensis* tall sparse shrubland over *Banksia purdieana*, *Hakea subsulcata*, *Melaleuca cordata* mid sparse shrubland over *Micromyrtus erichsenii*, *Persoonia coriacea* low isolated shrubs	*Balaustion grandibracteatum* subsp. *junctura* Rye (P2) *Banksia dolichostyla* (T) *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) *Daviesia sarissa* subsp. *redacta* (P2) *Microcorys elatoides* (P1) *Verticordia stenopetala* (P3)	> 20 years
16	H (impact)	755088 mE 6445627 mN	10 m north of EGLP main access road, 2.4 km east of Forrestania Rd.	yes		*Balaustion grandibracteatum* subsp. *junctura* Rye (P2) *Banksia dolichostyla* (T) *Verticordia stenopetala* (P3)	> 20 years
17	I (control)	758514 mE 6454004 mN	6.3 km north of EGLP development envelope, within Jilbadji Nature Reserve.	no	W4: *Eucalyptus flocktoniae* subsp. *flocktoniae*, *Eucalyptus eremophila* low open mallee woodland over *Melaleuca depauperata*, *Callitris preissii*, *Melaleuca phoidophylla* mid-tall sparse shrubland over *Acacia tetraptera*, *Grevillea acuaria* low isolated heath shrubs	*Acacia lachnocarpa* (P1)	< 10 years (fire Feb 2016)
18	I (impact)	757942 mE 6444937 mN	10m south of EGLP main access road, 5.4 km east of Forrestania Rd.	yes		*Acacia lachnocarpa* (P1)	> 20 years

Table 2: Location of plant condition monitoring transects at the EGLP (continued)

TRANSECT NUMBER[1]	PAIRED CONTROL / IMPACT[2]	LOCATION (GDA 94, ZONE 50	LOCALITY	WITHIN VEZ[3]	VEGETATION COMMUNTIY AND SUMMARY[4]	CONSERVATION SIGNIFICANT FLORA PRESENT	FIRE HISTORY
19	J (control)	760666 mE 6442241 mN	633 m south of EGLP development envelope, 1.3 km east of Blue Vein Rd.	no	W11: *Eucalyptus eremophila*, *Eucalyptus rigidula*, *Eucalyptus flocktoniae* subsp. *flocktoniae* low mallee woodland over *Melaleuca lateriflora*, *Melaleuca eleuterostachya*, *Melaleuca acuminata* subsp. *acuminata* mid sparse shrubland over *Grevillea acuaria*, *Acacia hystrix* subsp. *hystrix*, *Phebalium ambiguum* low sparse shrubland	*Banksia dolichostyla* (T) *Boronia ternata* var. *promiscua* (P3) *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) *Daviesia sarissa* subsp. *redacta* (P2) *Microcorys elatoides* (P1) *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)	< 10 years (fire Feb 2016)
20	J (impact)	759552 mE 6442928 mN	46 m north of access road south of original Mt Holland airstrip, 190 m east of Blue Vein Rd.	no		*Balaustion grandibracteatum* subsp. *junctura* Rye (P2) *Boronia ternata* var. *promiscua* (P3) *Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1) *Daviesia sarissa* subsp. *redacta* (P2) *Grevillea marriottii* (P3) *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)	< 10 years (fire Feb 2016)

Notes

1 Transects 3 and 4 were originally established on 9/10/2019. Transects 9 and 10 were originally established on 10/10/2019.

2. Control-Impact paired transects are represented by the same letter designation.

3. VEZ as defined in MS1118

4. Vegetation communities are defined in Mattiske (2019)

2.3.2. Plant species data

Within each sub-quadrat, the following data was recorded:

- all plant species, both native and introduced;
- the average height of each species present; and,
- the estimated percentage projected foliage cover (dead/alive) for each species;

Population counts for each plant species were not recorded during this this survey as they were during the transect establishment.

2.3.3. Tagged plant species

When each of the plant condition monitoring transects were established in 2019 and 2020, five (dominant/keystone) species were tagged in each sub-quadrat of each transect. Wherever possible the same five species were tagged in each sub-quadrat of each transect to provide for replication (Mattiske Consulting 2021a). The visual assessment of a range of parameters to assist in determining plant health score, was based on a stem classification system which has been used by Mattiske Consulting on numerous projects, together with a modification of the method of Souter *et al*. (2009), to provide for visual assessments of a range of other characters. The range of visual characters used to assess plants has been designed to reduce inter-operator error when making assessments in the field.

Plant condition was primarily measured by determining the extent and density of the foliage on the plant, or the crown cover of a tree (Table 3). In addition, a range of attributes were scored to standardise the visual assessment process. Some of the attributes are positive, in terms of plant health – signs of reproduction or new foliage growth. Some of the attributes are negative, in terms of plant health – increasing levels of leaf discolouration and death, insect damage. The attributes scored were:

- leaf die-off
- new tip growth
- reproductive state
- epicormic growth
- insect damage

These attributes were assessed using the scale set out in Table 4.

Table 3: Plant condition scoring

CONDITION	FACTORS
Healthy (score = 4)	• > 90% of foliage present • canopy is intact • if a tree or mallee, then no epicormic growth present • none or little indication of leaf discolouration or loss • none to minor evidence of insect damage, no fungal or other pathogen attack
Slightly stressed (score = 3)	• 75% - 90% of foliage present • some minor canopy loss • if a tree or mallee, then no epicormic growth present • minor evidence of leaf discolouration; potentially some dead leaves on branch tips • minor evidence of insect damage, fungal or other pathogen attack
Stressed (score = 2)	• 50% - 75% of foliage present • moderate canopy loss • if a tree or mallee, then none to some epicormic growth present • evidence of leaf discolouration; evident damage to leaves significant • evidence of insect, fungal or other pathogen attack obvious
Very stressed (score = 1)	• < 50% of foliage present • major canopy loss • if a tree or mallee, then epicormic growth likely • leaf discolouration significant; evident damage to leaves significant • evidence of insect, fungal or other pathogen attack obvious
Dead (score = 0)	• plant dead • foliage may present, but IS brown and desiccated. If a tree then the bark is still attached (DR – dead recent) • foliage is absent, fine twigs still present. If a tree, bark may be present (DM – dead moderate) • foliage and fine twigs absent. If a tree, the barks is also absent (DO- dead old)

Table 4: Attribute scale

SCORE	DESCRIPTION
0	Absent - effect is not present
1	Scarce - effect is not obvious in a cursory examination, but is present.
2	Common - effect is clearly visible
3	Abundant - effect dominates the appearance of the shrub / tree

2.3.4. Vegetation disturbance scale

The overall condition of the vegetation at each transect was assessed, based on the vegetation condition scale of Trudgen (1988), for assessment of disturbance within the Eremaean and Northern Botanical Provinces. The disturbance scale is set out in Table 5.

Table 5: Vegetation condition scale (adapted from Trudgen, 1988)

VEGETATION CONDITION	DESCRIPTION
Excellent (Ex)	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good (VG)	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good (G)	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor (P)	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded (D)	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded (CD)	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

2.4. Vegetation condition triggers

Section 2 of the FVMP (Covalent 2020) specifies threshold criteria in terms of changes (declines) in plant health condition scores which will trigger investigations to determine if the changes are attributable to the impacts associated with mining activities, and if so, what management measures are required to be put in place to meet the defined environmental outcomes. The defined environmental outcome is that no proposal related indirect impacts will occur within a VEZ. The FVMP (Covalent 2020) specifies a threshold level for a statistically significant reduction in mean vegetation condition rating is a 20% decline in vegetation health within a VEZ in comparison to the relevant control transect.

Section 2 of the FVMP (Covalent 2020) also specifies that, where a plant pigment efficiency analyser (PEA) is used to derive quantitative plant health data based on the index of chlorophyll fluorescence (Fv/Fm), a Fv/Fm value of <0.6 will be used as an indicator of stress. The PEA records a score of between 0.0 to 1 for Fv/Fm with most plant taxa being considered healthy within a range of 0.7 to 0.8 (Kalaji *et al.* 2014). When plants are experiencing stress, the ratio may decline and potentially represent a reduction in physiological function or healthy function of the plant. To date, it has generally been accepted that a Fv/Fm score of <0.6 in most regions is an indicator a plant is stressed (Kalaji *et al.* 2014).

3. RESULTS

3.1. Plant condition monitoring transect locations and justification

The 18 transects were comprised of nine pairs of control and impact transects. Of these, five were originally established in October of 2019. The remaining transects were established between the 7th and 25th October 2020 over the course of two separate field visits, at which time the transects established in 2019 were re-surveyed. The geographic coordinates of each transect established together with their associated vegetation community and justification for location selection are set out in Table 2. Figure 3 shows the locations of all impact and control transects established at the EGLP.

3.2. Survey limitations

A general assessment was made of the current survey against a range of factors that may have limited the outcomes and conclusions of this report (Table 6). The survey was not constrained by factors which would adversely affect the outcomes of the survey nor the conclusions formed from the results of the survey.

3.3. Flora

A total of 182 species, representative of 73 genera and 31 families were recorded across the 18 transects surveyed. The most commonly represented families were Myrtaceae (56 taxa), Proteaceae (25 taxa), Fabaceae (24 taxa) and Rutaceae (11 taxa). The taxa recorded during the survey are set out in Appendix A. A list of plant taxa recorded at each transect is set out in Appendix B. Several species collected could not be identified to species level (Appendix A). This was primarily due to the specimens being from juvenile or sterile plants. No introduced (exotic) species were recorded at any of the transects surveyed.

One threatened plant taxon pursuant to subsection (1), section 19 of the *Biodiversity Conservation Act 2016* (BC Act) and as listed by the WAH (1998-) was recorded during the survey. This taxon was *Banksia dolichostyla* (T). This taxon is also listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act; Department of Agriculture, Water and the Environment 2021). Seventeen priority plant taxa, as listed by the WAH (1998-), were recorded during the survey (Appendix A).

Table 6: Potential survey limitations for plant condition monitoring transects

POTENTIAL SURVEY LIMITATION	IMPACT ON CURRENT SURVEY
Availability of contextual information at a regional and local scale	**Not a constraint.** Detailed local information on the flora and vegetation of the Mt Holland area in and surrounding the EGLP has been established (Mattiske 2021a, 2021b, 2021c, 2022). This formed the basis for selection of locations for siting of vegetation health monitoring transects, and informed the identification of plant species present during this survey.
Competency/experience of team carrying out survey; experience in the bioregion surveyed	**Not a constraint.** The survey team comprised personnel with extensive experience of the project area and its flora and vegetation. Mattiske Consulting has undertaken regular flora and vegetation surveys associated with the EGLP since 2016.
Proportion of flora collected and identification issues	**Not a constraint.** All flora within the vegetation health monitoring transects were identified and/or collected.
Effort and extent of survey	**Not a constraint.** Transects were established as proscribed within MS1118. The 18 monitoring transects have now been assessed six times (transects 3, 4, 9 & 10 assessed seven times) across two seasons prior to the construction phase of the project. This is deemed sufficient as baseline data for future comparison, as proscribed by the FVMP. All 18 monitoring transects were reassessed during this survey.
Access restrictions within survey area	**Not a constraint.** Access to all transects, particularly control transect locations, is via existing tracks.
Survey timing, rainfall, season of survey	**Minor constraint.** Vegetation condition monitoring surveys have and will be timed to occur during the spring and post-summer period to gain an understanding of annual variation in vegetation health with respect to seasonal influences. The rainfall in the July – October 2023 period, four months prior to the survey, was below average with the winter/spring being approximately 56% of the long-term average. This could attribute to the overall condition of the vegetation.
Disturbances (fire/flood/clearing)	**Not a constraint.** None of the transects have been the subject of disturbances since establishment.

3.4. Species Richness

Plant species richness per transect is set out in Table 7. The most species rich transects were 19 and 20 (control/impact pairs J) and 13 and 16 (control/impact pairs H). Transects 19 and 20 were situated in woodland which had been burnt approximately seven years previously. Transects 13 and 16 were also similarly species rich. These transects were sited in a narrow band of S3 vegetation (Table 2) which abuts W5 vegetation. The least species rich transect were 11 and 14 (control/impact pair F) and 3 and 4 (control/impact pair B). Transects 11 and 14 are situated in vegetation community W9 which is a low mallee Eucalyptus woodland over a mid and low sparce shrubland, with an average species richness of 12.11 (Mattiske 2021c). Transects 3 and 4 are situated in the H1 vegetation community, which is the most restricted type of vegetation recorded within the EGLP occupying 0.04% (2.46 ha). The H1 vegetation is the least species rich community occurring within the EGLP exhibiting a mean species richness of nine (Mattiske 2017).

3.5. Species Projected Foliage Cover

The sum of projected dead and alive foliage cover for each transect is shown in Figure 4. There are large differences in the sum of projected alive foliage cover between the paired E transects (10 and 9), with control transect 10 having a higher projected foliage cover than impact transect 9. There is also a large difference between transects 17 and 18 (control/impact pairs I), where impact transect 18 has a higher foliage cover than control transect 17.

The sum of projected foliage cover is lowest in the transects 19 and 20 (control/impact pair J) which were burnt approximately seven years previously, but exhibited the highest species richness and highest number of conservation significant taxa (Table 7).

Table 7: Plant species richness per transect, November 2023

TRANSECT	TYPE[1]		NUMBER OF TAXA	NUMBER OF CONSERVATION SIGNIFICANT TAXA
1	Impact	A	11	1
2	Control	A	23	1
3	Control	B	14	2
4	Impact	B	10	2
7	Control	D	22	1
8	Impact	D	19	1
9	Impact	E	15	2
10	Control	E	23	3
11	Control	F	13	1
12	Impact	G	29	3
13	Control	H	36	5
14	Impact	F	9	0
15	Control	G	26	2
16	impact	H	40	4
17	control	I	15	1
18	impact	I	21	1
19	control	J	32	6
20	impact	J	49	6

1. Letter codes (A, B, etc.) indicate control/impact transect pairs

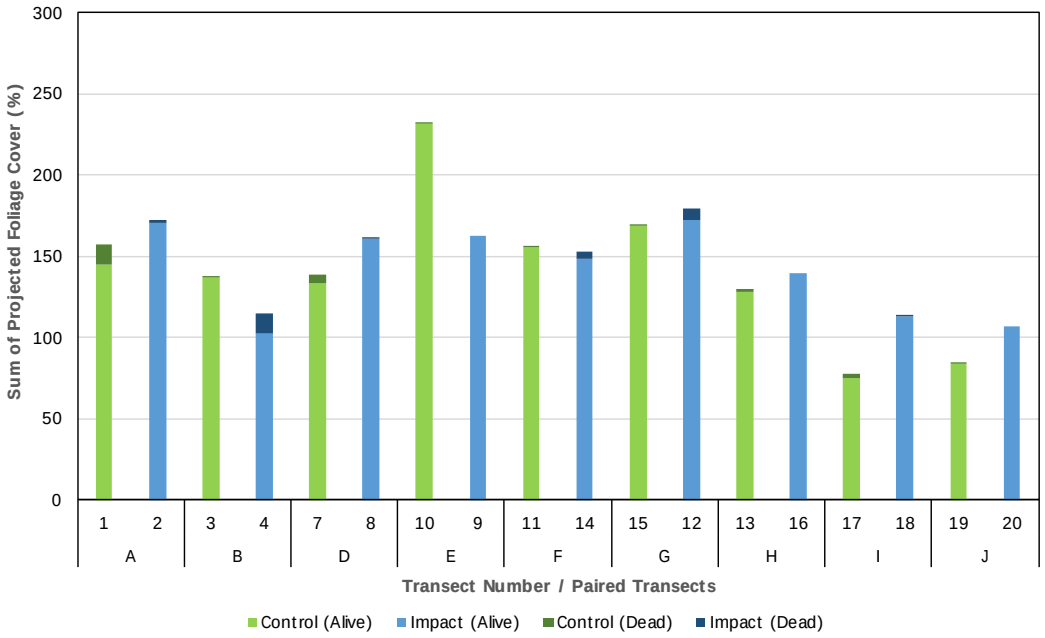


Figure 4: Sum of alive and dead projected foliage cover at plant condition monitoring transects, November 2023
Paired control/impact transects are indicated by the letters A through J.

3.6. Tagged Species

A total of twenty individual plants were tagged at each transect for a more detailed plant condition assessment (refer Section 2.3.3). The assessment of individual plants comprised positive and negative plant condition trajectory attributes. These attributes were:

Positive trajectory attributes

- canopy percentage
- epicormic growth
- new tip growth
- reproductive state

Negative trajectory attributes

- leaf die-off
- insect leaf damage

The raw individual plant condition assessment data is set out in Appendix C. The average canopy health scores are shown in Figure 5. Figure 6 shows the differences in canopy health scores for each transect pair. All of the paired transects have less than a 20% difference between their control and impact transects, which falls below the trigger value specified within the FVMP (Covalent 2020). Transect pair E exhibits the largest difference between the average condition ratings, with the impact transect 9 showing a 18.33% increased condition rating compared to the control transect 10. This is reflected in the trajectory attributes measured (Appendix C) where the impact transect exhibits an overall average increase in all positive attributes measured.

Figure 5 shows four of the impact transects increased canopy health compared with the control (pairs B, D, E and G), whilst three control transects (pairs F, I and J) show a decline in canopy health compared with their corresponding impact transects. Two of the transects show no difference (pairs A and H).

Figure 5: Average canopy health scores for 20 tagged plants at each plant condition monitoring transect, November 2023
Paired control/impact transects are indicated by the letters A through J. Canopy health scores: 0 dead; 1 very stressed; 2 stressed; 3 slightly stressed; 4 healthy. Refer to Table 3 for a detailed description of each health score.

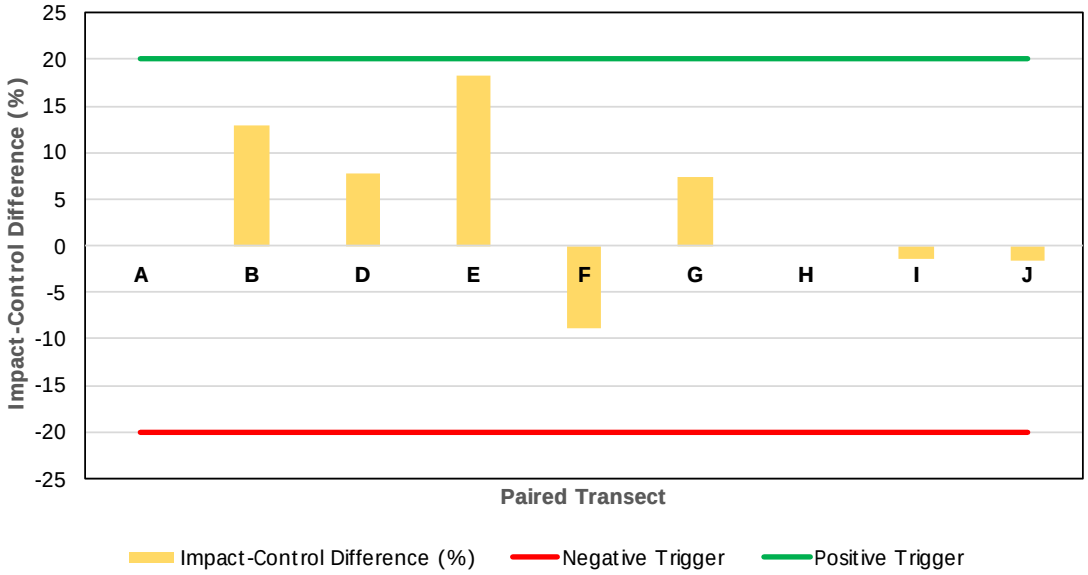


Figure 6: Control-Impact paired transect differential health scores, November 2023
The percentage difference between the control, and impact transects are shown, together with positive and negative trigger values.

3.7. Comparison of September 2022 and November 2023 data

Figure 7 shows the percentage difference in mean canopy health score between September 2022 (the last spring survey) and November 2023 (this survey). The largest decrease in average canopy health scores between this year and last year were observed at control transect 3 (-14.28%), and transect 13 (-14.06%). The largest increase in average canopy health scores were observed at impact transect 18 (9.83%). The overall trend shows an average decline in canopy health by -3.89%.

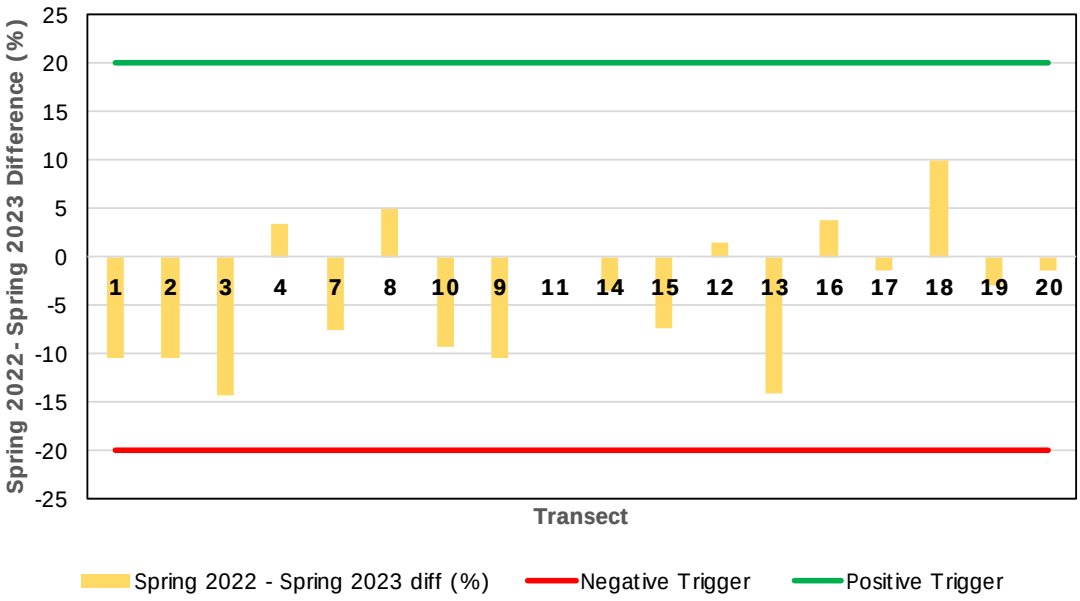


Figure 7: Percentage difference in average canopy health scores for 20 tagged plants, between September 2022 (last spring survey) and November 2023 (this survey) at each vegetation health monitoring transect

3.8. Photographic records

Appendix D comprises the photograph of each transects north-west corner recorded in September 2022 and November 2023. Appendix E contains a photograph of each tagged plant species at each transect in September 2022 and November 2023.

4. DISCUSSION

4.1. Transect Location

A total of 18 plant condition monitoring transects have been established at the EGLP, comprised of nine impact and nine control transects. All transects consist of four 10m x 10m quadrats arranged in a continuous belt, covering an area of 400 m^2. This is the same area which would apply to survey quadrats within the bioregion (EPA 2016).

The impact transects are arranged such that the base of the transect is located within 10 m of an impact area. Six of the impact transects are situated within the VEZs specified in MS1118 (Figure 3). The initial Development Envelope (DE) footprint has been moved since the establishment of the monitoring sites in 2019/20, compromising the effectiveness of the location of impact transect 14F.

Control transects have been placed in the same vegetation type with similar species composition as the corresponding impact transect, with the exception of Transect 1 and 2 (control/impact pair A). These have been placed in different vegetation communities, W7 and W17 respectively, due to the restricted nature of the W17 (*Hakea pendens* (P3) community). In the case of transect 17, which is a control transect within W4 vegetation (Mattiske 2017), this has been sited within an area of the Jilbadji Nature Reserve. This is because an appropriate control location to the south-west of the EGLP is not within a tenement under Covalent control, and which is sufficiently distant from any areas of disturbance to represent a genuine control vegetation location. It was not always possible to achieve a minimum 1 km spatial distance to separate control transects from areas of disturbance. In some cases, the distance is 700 m. This proved to be more problematic with the more restricted vegetation types, such as the H1 and W17 vegetation (Mattiske 201). In the case of transect 10, which is located to the north of an existing access route to the south of the Mt Holland airstrip, its use as a control location was justified on the basis that the access road will be closed off to traffic unless during an emergency, and thus it provides adequate spatial separation from operational areas. The other constraint on locating suitable control locations was long-term access, and avoiding area which may potentially represent future areas for mine development. This effectively meant that areas to the north and west of the current development envelope were avoided in 2020.

4.2. Flora and Vegetation

The location of the transects was, in part, selected on the basis of vegetation types and to ensure that a range of conservation significant flora present within the EGLP were being monitored. Sixteen conservation significant taxa are located in the plant condition monitoring transects (Table 2), and represent a selection of conservation significant flora based on their conservation status, plant family, and the representation of taxa which were newly uncovered during surveys of the EGLP. In the case of the latter, four of the six species newly uncovered during surveys associated with the EGLP are represented in the plant health condition monitoring transects. These are *Acacia lachnocarpa* (P1), *Hibbertia tuberculata* (P1), *Microcorys elatoides* (P1), and *Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1).

In the November 2023 survey, 182 species, representative of 73 genera and 31 families were recorded across the 18-plant health monitoring transects. During the vegetation mapping of the EGLP (Mattiske 2017), 369 vascular plant taxa which were representative of 140 genera and 49 families were recorded across the 214 survey quadrats. Consequently, the plant health monitoring transects represent approximately 49% of all plant species recorded within the EGLP, and thus provide a good representation of the flora present, and can be considered to be representative of the vegetation within the EGLP.

In terms of species richness and foliage cover, when paired control/impact transects are compared (Table 7, Figure 4), there is a notable difference between the species richness and foliage cover for transects 9 and 10 (group E). The differences could be attributed to the climatic differences experienced at the site in the 12 months prior to the survey and to the variation in different observers' qualitative canopy health scores.

The location of transect 17 was based on the presence of *Acacia lachnocarpa* (P1). This taxon is currently only known from two areas in the Mt Holland area. A location for the control transect, in unburnt W4 type vegetation, was not possible due to it being within a tenement outside Covalent control. The low levels of foliage cover in transects 19 and 20 (group J) is a result of both transects being situated in areas burnt by fire approximately seven years ago.

4.3. Plant Health

Twenty plants within each transect (five per 10 m x 10 m sub-quadrat) were tagged for long term individual assessment. Six attributes were scored for each plant. These were: canopy percentage, epicormic growth, new tip growth, reproductive state, leaf die-off, and insect leaf damage. The first four of these attributes are classed as positive indicators of plant health, whereas the latter two are classed as negative indicators of plant health (Souter *et al*. 2009).

The most immediately useful measure of plant condition was the qualitative assessment of plant canopy health (Figures 5, 6, and 7). The differences in mean plant canopy health scores between control and impact transects pairs (Figure 6) was less than 20%. The largest positive difference between control and impact transect pairs was recorded at pair E (transects 10 and 9). The 18.33% Impact-Control difference (Figure 6, Appendix C) was contributed by increased canopy health in transect 9 (Impact) and a decrease in transect 10 (Control).

Section 2 of the FVMP (Covalent 2020) sets out a range of outcome-based and management based provisions with respect to environmental management within the EGLP. Specifically, the FVMP, as it relates to plant condition monitoring, states that there should be no proposal related indirect impact to flora and vegetation within a VEZ resulting in an adverse impact. The threshold and trigger criteria associated with this which would mandate a response action are:

- **Trigger criteria** – a statistically significant reduction in mean condition ratings (more than 20% difference for both qualitative and quantitative) of vegetation health within a VEZ in comparison to control sites and a mean Fv/Fm (index of Chlorophyll florescence) of <0.6.
- **Threshold criteria** - Flora and vegetation within a VEZ experiences a statistically significant higher mortality rate than that of control sites (where that mortality is not attributed to direct impacts).

The intent of the present survey is ensuring that data is gathered to enable any changes to plant conditions to meaningfully be assessed. To date, health monitoring transects have been monitored at least six times, with four transects established in 2019 being monitored seven times. Given that construction of the EGLP commenced only two years and three months prior to this survey in July 2021, disturbances surrounding all impact transects are still minimal. As a mitigation measure for dust deposition on vegetation, Covalent have sealed the access road on site. A minor decrease in mean canopy health score is likely the result of the variations in the qualitative assessment of the plants changes in vegetation health observed between surveys (Figure 7) are therefore likely to be either climate or observer related. Quantitative measurements of vegetation health using the PEA (see section 2.2), which are planned for future surveys, aim to minimise qualitative variation between observers.

The other measures of plant health did not show a correlation trend, particularly with the canopy health score. In the case of the negative health attributes described, it will be necessary to obtain data from multiple survey periods to determine the level of correlation between leaf die-off or insect leaf damage and its relationship to the canopy health score, and thus the usefulness of recording such attributes. Positive health attributes, such as leaf tip growth and reproductive state may also tend to reflect seasonal variation, and hence a number of surveys may be required to establish any trend in relation to overall plant condition. In the short term, plant canopy health, as described in Table 1, is likely to be the most useful measure.

Changes in canopy health score for all control and impact health monitoring transects are below the 20% trigger set out in the FVMP (Covalent 2020).

5. RECOMMENDATION

It would be recommended to initiate the use of plant pigment efficiency analyser (PEA) as it is an increasingly accepted method of determining plant health and function within the mining, forestry and agricultural industries. When plants are experiencing stress, the ratio may decline and potentially represent a reduction in physiological function or healthy function of the plant. The (PEA) will support minimise qualitative variation between observers and assist in statistical analysis used to determine if a significant difference is apparent.

The location of the transect 14F is no longer suitable as an impact transect as the location of the access road into the camp has been altered. It is recommended this transect be moved east, to the opposite side of the access road into the mine camp, placing it within 10 m proximity of the disturbance area. It would also be recommended to establish monitoring transects abutting the mine pit, waste rock dump and tailings storage facilities once construction is finalised.

6. CONCLUSION

The survey results presented in this report represent the third to monitor the impacts of disturbance associated with the construction of the EGLP. The vegetation condition in impact transects, best represented by the mean canopy health score, were all less than 20% different to the corresponding control transects, as stipulated by the FVMP (Covalent 2020). The changes observed between this survey and the last Spring survey in September 2022 are likely be attributed to the variation in different observers' qualitative canopy health scores. Future surveys aim to minimise this variation with the use of quantitative PEA measurements of plant health to minimise the variation in qualitative and estimated measures of plant health. The general decline in canopy health can be attributed to the below average rainfall in the 12 months prior to the survey.

7. PERSONNEL

The following Mattiske Consulting Pty Ltd personnel were involved in this project:

NAME	POSITION	PROJECT INVOLVEMENT	FLORA COLLECTION PERMITS
Dr E. M. Mattiske	Managing Director & Principal Ecologist	Planning, review of reporting	N/A
Mr D. Angus	Senior Botanist	Planning, fieldwork, reporting	FB62000022-5 TFL 2223-0034
Ms J. Marshall	Botanist	Fieldwork, reporting	FB62000572

8. REFERENCES

Beard, JS (1990)

Plant life of Western Australia, Kangaroo Press, Kenthurst, NSW.

Biodiversity Conservation Act 2016 (WA)

Bureau of Meteorology (2023)

Climate averages for specific sites. Accessed 7th November 2023. <http://www.bom.gov.au/climate/data/ >

Covalent Lithium Pty Ltd (2020)

Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan (Rev2).

Cowan, M., Graham, G. and McKenzie, N. (2001)

Coolgardie 2 (COO2 – Southern Cross Bioregion). In: A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Western Australian Government Department of Environment and Conservation, Perth, Western Australia.

Department of Biodiversity, Conservation and Attractions (2023)

Threatened species and communities. Accessed 22 November 2023.

< Threatened species and communities | Department of Biodiversity, Conservation and Attractions (dbca.wa.gov.au) >

Department of Agriculture, Water and the Environment (2023)

Environment Protection and Biodiversity Conservation Act 1999 List of Threatened Flora. Accessed 4th December 2023.

<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl?wanted=flora>

Environmental Protection Authority (2016)

Technical Guidance – Flora and vegetation surveys for environmental impact assessment, Environmental Protection Authority, Western Australia.

Environmental Protection Authority (2023)

Conservation Codes for Western Australian Flora and Fauna. Accessed 22nd November 2023.

< DWERDT480152 App 6 - 2020 Western Australian and Commonwealth of Australia Conservation Codes(2).pdf (epa.wa.gov.au) >

Environment Protection and Biodiversity Conservation Act 1999

Government of Western Australia (2019)

Ministerial Statement 1118. Statement that a proposal may be implanted – Earl Grey Lithium Project. 21st November 2019.

Kalaji, H.M., *et al.* (2014)

Frequently asked questions about in vivo chlorophyll fluorescence: practical issues. Photosynth Res 2014 122: 121-158

Mattiske Consulting Pty Ltd (2017)

Flora and Vegetation Assessment of Earl Grey Lithium Project. Unpublished report prepared for Kidman Resources Limited, December 2017.

Mattiske Consulting Pty Ltd (2020)

Earl Grey Lithium Project introduced flora (weed) survey. Unpublished report prepared for Covalent Lithium Pty Ltd, October 2020.

Mattiske Consulting Pty Ltd (2021a)

Earl Grey Lithium Project Vegetation Condition Monitoring Transect Establishment. Unpublished report prepared for Covalent Lithium Pty Ltd, January 2021.

Mattiske Consulting Pty Ltd (2021b)

Earl Grey Lithium Project Vegetation Condition Monitoring. Unpublished report prepared for Covalent Lithium Pty Ltd, March 2021.

Mattiske Consulting Pty Ltd (2021c)

Earl Grey Lithium Project Flora and Vegetation Assessment. Unpublished report prepared for Covalent Lithium Pty Ltd, November 2021.

Mattiske Consulting Pty Ltd (2022)

Earl Grey Lithium Project Flora and Vegetation Assessment. Unpublished report prepared for Covalent Lithium Pty Ltd, January 2022.

Mattiske Consulting Pty Ltd (2023)

Earl Grey Lithium Project Flora and Vegetation Assessment. Unpublished report prepared for Covalent Lithium Pty Ltd, January 2023.

Souter, N.J., Watts, R.A., White, M.G., George, A.K. and McNicol, K.J. (2009)

Method manual for the visual assessment of lower River Murray floodplain trees. Technical Note 2009/25. Government of South Australia, Department of Water, Land and Biodiversity Conservation.

Trudgen, M.E. (1988)

A report on the flora and vegetation of the Port Kennedy area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth

Western Australian Herbarium (1998-)

FloraBase - the Western Australian Flora. Department of Parks and Wildlife. Accessed 19th January 2023. <https://florabase.dpaw.wa.gov.au/>

APPENIDIX A: VASCULAR PLANT SPECIES RECORDED WITHIN THE PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Note: P1 to P4 denotes priority taxon (EPA 2023, WAH 1998-);
T denotes threatened taxon (DBCA 2023)

FAMILY	SPECIES
Apiaceae	*Platysace maxwellii*
Asparagaceae	*Chamaexeros fimbriata*
	Thysanotus sp.
	Thysanotus sp. Twining Wheatbelt (N.H. Brittan 81/29)
Asteraceae	*Asteraceae* sp.
	Olearia ramosissima
Boraginaceae	*Halgania integerrima*
Casuarinaceae	*Allocasuarina acutivalvis* subsp*. acutivalvis*
	Allocasuarina campestris
	Allocasuarina sp. (juvenile)
	Allocasuarina spinosissima
Celastraceae	*Psammomoya choretroides*
Convolvulaceae	*Wilsonia humilis*
Cupressaceae	*Callitris columellaris*
	Callitris preissii
Cyperaceae	*Lepidosperma sanguinolentum*
	Lepidosperma sp. 1
	Lepidosperma sp. 2
Dilleniaceae	*Hibbertia ancistrophylla*
	Hibbertia exasperata
	Hibbertia psilocarpa
	Hibbertia rostellata
	Hibbertia stowardii
	Hibbertia tuberculata (P1)
Droseraceae	*Drosera* ?*moorei*
Ericaceae	*Acrotriche lancifolia*
	Leucopogon sp. outer wheatbelt
	Lysinema ciliatum
	Styphelia browniae
	Styphelia exserta
	Styphelia serratifolia

APPENIDIX A: VASCULAR PLANT SPECIES RECORDED WITHIN THE PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Note: P1 to P4 denotes priority taxon (EPA 2023, WAH 1998-);
T denotes threatened taxon (DBCA 2023)

FAMILY	SPECIES
Euphorbiaceae	*Beyeria minor*
	Beyeria sulcata var. *gracilis*
	Beyeria sulcata var. *sulcata*
	Monotaxis grandiflora var. *obtusifolia*
Fabaceae	*Acacia* ?*assimilis*
	Acacia assimilis subsp. *assimilis*
	Acacia camptoclada
	Acacia lachnocarpa (P1)
	Acacia merrallii
	Acacia resinimarginea
	Acacia sphacelata subsp. *sphacelata*
	Acacia steedmanii subsp. *steedmanii*
	Acacia sulcata var. *platyphylla*
	Acacia undosa (P3)
	Acacia yorkrakinensis
	Acacia yorkrakinensis subsp. *acrita*
	Chorizema circinale (P3)
	Daviesia aphylla
	Daviesia argillacea
	Daviesia cardiophylla
	Daviesia sarissa subsp. *redacta* (P2)
	Daviesia scoparia
	Eutaxia lasiocalyx (P2)
	Gastrolobium floribundum
	Gastrolobium melanocarpum
	Gastrolobium spinosum
	Gompholobium hendersonii
	Jacksonia nematoclada
Goodeniaceae	*Dampiera obliqua*
	Dampiera sp.
Haloragaceae	*Glischrocaryon aureum*
Lamiaceae	*Microcorys elatoides* (P1)
	Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)
	Pityrodia loricata
	Westringia cephalantha
	Westringia rigida
Lauraceae	*Cassytha aurea* var. *hirta*
	Cassytha sp.

APPENIDIX A: VASCULAR PLANT SPECIES RECORDED WITHIN THE PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Note: P1 to P4 denotes priority taxon (EPA 2023, WAH 1998-);
T denotes threatened taxon (DBCA 2023)

FAMILY	SPECIES
Loganiaceae	*Orianthera judithiana*
Malvaceae	*Lasiopetalum ferraricollinum*
Myrtaceae	*Apectospermum spinescens*
	Balaustion grandibracteatum subsp. *junctura* Rye (P2)
	Beaufortia orbifolia
	Beaufortia puberula
	Beaufortia schaueri
	Calothamnus gilesii
	Calytrix breviseta subsp. *stipulosa*
	Calytrix tetragona
	Chamelaucium ciliatum
	Chamelaucium sp. Parker Range (B.H. Smith 1255) (P1)
	Chamelaucium virgatum
	Cyathostemon sp.
	Ericomyrtus serpyllifolia
	Eucalyptus burracoppinensis
	Eucalyptus calycogona subsp. *calycogona*
	Eucalyptus ?capillosa
	Eucalyptus capillosa
	Eucalyptus cylindriflora
	Eucalyptus eremophila
	Eucalyptus flocktoniae subsp. *flocktoniae*
	Eucalyptus horistes
	Eucalyptus protensa
	Eucalyptus rigidula
	Eucalyptus salubris
	Eucalyptus sp.
	Eucalyptus sp. 1
	Eucalyptus sp. 2
	Eucalyptus urna
	Euryomyrtus maidenii
	Melaleuca acuminata subsp. *acuminata*
	Melaleuca ?calyptroides
	Melaleuca calyptroides
	Melaleuca cliffortioides
	Melaleuca condylosa
	Melaleuca cordata
	Melaleuca cucullata
	Melaleuca depauperata
	Melaleuca eleuterostachya

APPENIDIX A: VASCULAR PLANT SPECIES RECORDED WITHIN THE PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Note: P1 to P4 denotes priority taxon (EPA 2023, WAH 1998-);
T denotes threatened taxon (DBCA 2023)

FAMILY	SPECIES
Myrtaceae (continued)	*Melaleuca halmaturorum*
	Melaleuca johnsonii
	Melaleuca lateriflora
	Melaleuca laxiflora
	Melaleuca pauperiflora subsp. *pauperiflora*
	Melaleuca phoidophylla
	Melaleuca pungens
	Melaleuca scalena
	Melaleuca societatis
	Melaleuca sp.
	Melaleuca sparsiflora
	Micromyrtus erichsenii
	Rinzia carnosa
	Rinzia medifila (P1)
	Rinzia sessilis
	Thryptomene kochii
	Verticordia chrysantha
	Verticordia stenopetala (P3)
Orchidaceae	*Caladenia paradoxa*
	Thelymitra sp.
Poaceae	*Austrostipa* sp.
	Poaceae sp.
Proteaceae	*Adenanthos argyreus*
	Banksia dolichostyla (T)
	Banksia laevigata subsp. *fuscolutea*
	Banksia purdieana
	Grevillea acuaria
	Grevillea hookeriana subsp. *apiciloba*
	Grevillea huegelii
	Grevillea lissopleura (P1)
	Grevillea marriottii (P1)
	Grevillea ?oncogyne
	Grevillea oncogyne
	Grevillea pterosperma
	Hakea ?subsulcata
	Hakea erecta
	Hakea meisneriana
	Hakea multilineata
	Hakea pendens (P3)

APPENIDIX A: VASCULAR PLANT SPECIES RECORDED WITHIN THE PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Note: P1 to P4 denotes priority taxon (EPA 2023, WAH 1998-);
T denotes threatened taxon (DBCA 2023)

FAMILY	SPECIES
Proteaceae (continued)	*Hakea scoparia* subsp. *scoparia*
	Hakea subsulcata
	Isopogon gardneri
	Isopogon scabriusculus subsp. *pubifloris*
	Persoonia coriacea
	Persoonia ?saundersiana
	Persoonia ?quinquenervis
	Petrophile stricta
Rhamnaceae	*Cryptandra ?distigma*
	Stenanthemum stipulosum
	Trymalium myrtillus
	Trymalium myrtillus subsp. *myrtillus*
Rutaceae	*Boronia ternata* var. *promiscua* (P3)
	Drummondita hassellii
	Phebalium ambiguum
	Phebalium filifolium
	Phebalium ?megaphyllum
	Phebalium megaphyllum
	Phebalium multiflorum
	Phebalium multiflorum subsp. *multiflorum*
	Phebalium obovatum
	Phebalium tuberculosum
	Philotheca rhomboidea
Santalaceae	*Exocarpos aphyllus*
	Exocarpos sparteus
	Santalum acuminatum
	Santalum sp.
Sapindaceae	*Dodonaea bursariifolia*
	Dodonaea microzyga var. *acrolobata*
	Dodonaea stenozyga
Scrophulariaceae	*Eremophila ?interstans*
	Eremophila dempsteri
Thymelaeaceae	*Pimelea sulphurea*
Violaceae	*Pigea floribunda*

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Acacia ?*assimilis*		X																	
Acacia assimilis subsp. *assimilis*												X	X	X	X			X	X
Acacia camptoclada							X												
Acacia lachnocarpa (P1)																X	X		
Acacia merrallii						X													
Acacia resinimarginea															X				
Acacia sphacelata subsp. *sphacelata*															X				X
Acacia steedmanii subsp. *steedmanii*																X			
Acacia sulcata var. *platyphylla*				X															
Acacia undosa (P3)						X	X												
Acacia yorkrakinensis																			X
Acacia yorkrakinensis subsp. *acrita*								X				X	X	X					
Acrotriche lancifolia																X			
Adenanthos argyreus								X					X	X				X	X
Allocasuarina acutivalvis subsp. *acutivalvis*		X	X					X	X			X	X	X	X	X	X	X	
Allocasuarina campestris				X	X														
Allocasuarina sp. (juvenile)																			X
Allocasuarina spinosissima			X										X		X				
Apectospermum spinescens									X										
Asteraceae sp.										X									
Austrostipa sp.				X															
Balaustion grandibracteatum subsp. *junctura* Rye (P2)														X	X				X

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Banksia dolichostyla (T)								X	X					X	X			X	
Banksia laevigata subsp. *fuscolutea*								X							X				
Banksia purdieana								X	X			X	X	X	X			X	
Beaufortia orbifolia								X	X			X	X	X				X	
Beaufortia puberula															X				
Beaufortia schaueri								X				X	X	X	X				
Beyeria minor																		X	X
Beyeria sulcata var. *gracilis*			X																
Beyeria sulcata var. *sulcata*																			X
Boronia ternata var. *promiscua* (P3)												X	X					X	X
Caladenia paradoxa				X															
Callitris columellaris		X														X	X		
Callitris preissii			X				X												X
Calothamnus gilesii		X																	
Calytrix breviseta subsp. *stipulosa*															X			X	
Calytrix tetragona					X														
Cassytha aurea var. *hirta*								X	X										
Cassytha sp.												X	X	X	X			X	X
Chamaexeros fimbriata																			X
Chamelaucium ciliatum														X					
Chamelaucium sp. Parker Range (B.H. Smith 1255) (P1)													X	X				X	X
Chamelaucium virgatum														X	X				

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Chorizema circinale (P3)															X				
Cryptandra ?distigma						X													
Cyathostemon sp.						X										X			
Dampiera obliqua																		X	X
Dampiera sp.																X			
Daviesia aphylla																	X		
Daviesia argillacea			X			X				X									
Daviesia cardiophylla															X				
Daviesia sarissa subsp. *redacta* (P2)								X						X				X	X
Daviesia scoparia																	X		
Dodonaea bursariifolia			X			X													
Dodonaea microzyga var. *acrolobata*				X	X														
Dodonaea stenozyga										X	X								
Drosera ?moorei				X															
Drummondita hassellii								X				X	X	X	X			X	X
Eremophila ?interstans						X													
Eremophila dempsteri											X								
Ericomyrtus serpyllifolia			X																
Eucalyptus burracoppinensis								X	X			X	X	X	X				
Eucalyptus calycogona subsp. *calycogona*						X													
Eucalyptus ?capillosa		X																	
Eucalyptus capillosa																X	X		

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Eucalyptus cylindriflora						X	X												
Eucalyptus eremophila			X			X	X										X		
Eucalyptus flocktoniae subsp. *flocktoniae*																	X		
Eucalyptus horistes													X						
Eucalyptus protensa										X	X								
Eucalyptus rigidula																			X
Eucalyptus salubris										X	X						X		
Eucalyptus sp.			X									X						X	
Eucalyptus sp. 1			X																
Eucalyptus sp. 2			X																
Eucalyptus urna										X	X								
Euryomyrtus maidenii														X	X				X
Eutaxia lasiocalyx (P2)										X									X
Exocarpos aphyllus		X								X	X						X		
Exocarpos sparteus																			X
Gastrolobium floribundum								X										X	
Gastrolobium melanocarpum																X			
Gastrolobium spinosum												X	X	X				X	X
Glischrocaryon aureum																			X
Gompholobium hendersonii									X									X	
Grevillea acuaria						X	X										X		
Grevillea hookeriana subsp. *apiciloba*												X	X	X				X	X

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Grevillea huegelii						X													
Grevillea lissopleura (P1)				X	X														
Grevillea marriottii (P1)																			X
Grevillea ?oncogyne																			X
Grevillea oncogyne																	X		
Grevillea pterosperma												X							
Hakea erecta							X	X					X	X	X				X
Hakea meisneriana								X	X										
Hakea multilineata									X			X		X				X	X
Hakea pendens (P3)		X	X																
Hakea scoparia subsp. *scoparia*															X	X			
Hakea ?subsulcata																		X	
Hakea subsulcata			X									X	X	X					X
Halgania integerrima																			X
Hibbertia ancistrophylla															X				
Hibbertia exasperata																X			
Hibbertia psilocarpa						X													
Hibbertia rostellata			X											X				X	X
Hibbertia stowardii								X				X	X	X				X	X
Hibbertia tuberculata (P1)				X	X														
Isopogon gardneri								X	X				X	X				X	
Isopogon scabriusculus subsp. *pubifloris*													X		X				X

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Jacksonia nematoclada														X					X
Lasiopetalum ferraricollinum													X	X	X			X	
Lepidosperma sanguinolentum				X															
Lepidosperma sp. 1															X				
Lepidosperma sp. 2															X				
Leucopogon sp. outer wheatbelt												X							X
Lysinema ciliatum															X				
Melaleuca acuminata subsp. *acuminata*						X	X												
Melaleuca ?calyptroides																			X
Melaleuca calyptroides								X				X	X	X	X				X
Melaleuca cliffortioides				X	X														
Melaleuca condylosa																X	X		
Melaleuca cordata								X	X			X	X	X	X			X	
Melaleuca cucullata										X	X								
Melaleuca depauperata						X	X												
Melaleuca eleuterostachya						X	X										X		
Melaleuca halmaturorum																	X		
Melaleuca johnsonii							X												
Melaleuca lateriflora						X	X												
Melaleuca laxiflora							X												
Melaleuca pauperiflora subsp. *pauperiflora*										X									
Melaleuca phoidophylla											X								

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Melaleuca pungens								X					X		X				
Melaleuca scalena			X			X	X					X					X		
Melaleuca societatis																	X		
Melaleuca sp.																		X	
Melaleuca sparsiflora																	X		
Microcorys elatoides (P1)								X	X			X	X	X				X	
Microcorys sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)																		X	
Micromyrtus erichsenii			X										X	X	X			X	X
Monotaxis grandiflora var. *obtusifolia*																			X
Olearia ramosissima							X												
Orianthera judithiana															X				
Persoonia ?*quinquenervis*			X									X							
Persoonia ?*saundersiana*									X										
Persoonia coriacea												X		X				X	X
Petrophile stricta														X					
Phebalium ambiguum														X	X				
Phebalium filifolium															X				X
Phebalium ?*megaphyllum*																X			
Phebalium megaphyllum		X	X														X		
Phebalium multiflorum																			X
Phebalium multiflorum subsp. *multiflorum*										X	X								
Phebalium obovatum			X													X			

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Phebalium tuberculosum		X																	
Philotheca rhomboidea																			X
Pigea floribunda																			X
Pimelea sulphurea																			X
Pityrodia loricata																			X
Platysace maxwellii					X		X		X					X				X	X
Poaceae sp.						X													
Psammomoya choretroides															X				
Rinzia carnosa																	X		
Rinzia medifila (P1)				X															
Rinzia sessilis			X			X													
Santalum acuminatum			X					X				X	X		X		X		X
Santalum sp.										X									
Stenanthemum stipulosum																			X
Styphelia browniae															X				
Styphelia exserta				X	X														
Styphelia serratifolia		X													X				
Thelymitra sp.							X												
Thryptomene kochii								X				X	X						X
Thysanotus sp.																X			
Thysanotus sp. Twining Wheatbelt (N.H. Brittan 81/29)		X	X		X	X	X												
Trymalium myrtillus					X														

APPENDIX B: VASCULAR PLANT SPECIES RECORDED AT EACH PLANT CONDITION MONITORING TRANSECT, NOVEMBER 2023

Note: P1 to P4 denotes prioirty taxa (EPA 2023, WAH 1998-); T denotes threatened taxon (DBCA 2023)

SPECIES	Transect Pair	A		B		D		E		F		G		H		I		F	
	Transect Type	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact	control	impact
	Transect Number	1	2	3	4	7	8	10	9	11	14	15	12	13	16	17	18	19	20
Trymalium myrtillus subsp. *myrtillus*				X															
Verticordia chrysantha															X				
Verticordia stenopetala (P3)															X				
Westringia cephalantha			X				X												
Westringia rigida						X													
Wilsonia humilis										X									

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 1							
1	*Hakea pendens* (P3)	2	1	2	0	0	0
2	*Phebalium megaphyllum*	3	1	2	3	0	0
3	*Callitris columellaris*	3	2	3	0	0	0
4	*Allocasuarina acutivalvis* subsp. *acutivalvis*	2	1	2	0	0	0
5	*Styphelia serratifolia*	3	1	2	1	0	0
6	*Hakea pendens* (P3)	2	1	2	0	0	0
7	*Allocasuarina acutivalvis* subsp. *acutivalvis*	2	2	2	2	0	0
8	*Callitris columellaris*	3	1	3	1	0	0
9	*Phebalium megaphyllum*	3	1	2	0	0	0
10	*Callitris columellaris*	4	1	3	0	0	0
11	*Phebalium tuberculosum*	4	1	2	3	0	0
12	*Phebalium megaphyllum*	4	0	2	3	0	0
13	*Hakea pendens* (P3)	3	1	2	0	0	0
14	*Callitris columellaris*	3	2	3	0	0	0
15	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	0	0	0
16	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	1	2	3	0	0
17	*Hakea pendens* (P3)	2	1	2	0	1	0
18	*Phebalium megaphyllum*	3	1	2	3	0	0
19	*Phebalium tuberculosum*	4	1	2	3	0	0
20	*Callitris columellaris*	4	1	2	0	0	0
Transect 2							
1	*Rinzia sessilis*	3	2	2	1	0	0
2	*Beyeria sulcata*	3	1	2	1	0	0
3	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	2	0	0
4	*Phebalium megaphyllum*	3	1	2	0	0	0
5	*Hakea pendens* (P3)	3	1	2	3	0	0
6	*Beyeria sulcata*	2	1	1	0	1	0
7	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	1	2	2	0	0
8	*Hakea pendens* (P3)	2	1	3	0	0	0
9	*Phebalium megaphyllum*	3	0	2	3	0	0
10	*Rinzia sessilis*	3	1	1	0	0	0
11	*Allocasuarina acutivalvis* subsp. *acutivalvis*	2	1	2	2	0	0
12	*Rinzia sessilis*	4	0	1	3	0	0
13	*Beyeria sulcata*	3	1	1	3	0	0
14	*Phebalium megaphyllum*	3	0	2	3	0	0
15	*Hakea pendens* (P3)	4	0	2	1	0	0
16	*Beyeria sulcata*	3	0	3	1	0	0
17	*Phebalium megaphyllum*	3	0	2	3	0	0
18	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	2	0	0
19	*Hakea pendens* (P3)	4	0	2	2	1	0
20	*Rinzia sessilis*	3	1	2	3	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 3							
1	*Melaleuca cliffortioides*	3	1	2	3	0	0
2	*Melaleuca cliffortioides*	3	1	2	3	0	0
3	*Grevillea lissopleura* (P1)	2	0	2	0	0	0
4	*Hibbertia tuberculata* (P1)	3	2	2	0	0	0
5	*Trymalium myrtillus* subsp. *myrtillus*	2	1	2	0	0	0
6	*Melaleuca cliffortioides*	3	1	3	3	0	0
7	*Hibbertia tuberculata* (P1)	3	2	2	0	0	0
8	*Grevillea lissopleura* (P1)	3	1	2	3	0	0
9	*Trymalium myrtillus* subsp. *myrtillus*	2	1	1	2	0	0
10	*Dodonaea microzyga* var. *acrolobata*	2	1	2	0	0	0
11	*Melaleuca cliffortioides*	4	1	2	2	0	0
12	*Grevillea lissopleura* (P1)	2	1	2	3	0	0
13	*Hibbertia tuberculata* (P1)	3	1	2	0	0	0
14	*Trymalium myrtillus* subsp. *myrtillus*	3	2	2	0	0	0
15	*Dodonaea microzyga* var. *acrolobata*	2	1	2	0	0	0
16	*Melaleuca cliffortioides*	3	0	2	0	1	0
17	*Styphelia exserta*	4	1	1	2	0	0
18	*Dodonaea microzyga* var. *acrolobata*	3	1	2	3	0	0
19	*Hibbertia tuberculata* (P1)	2	2	1	1	0	0
20	*Grevillea lissopleura* (P1)	2	0	2	0	0	0
Transect 4							
1	*Grevillea lissopleura* (P1)	3	1	2	0	0	0
2	*Dodonaea microzyga* var. *acrolobata*	2	0	1	3	0	0
3	*Calytrix tetragona*	3	1	2	2	0	0
4	*Styphelia exserta*	3	1	1	2	0	0
5	*Melaleuca cliffortioides*	3	1	2	2	0	0
6	*Melaleuca cliffortioides*	4	1	2	2	0	0
7	*Grevillea lissopleura* (P1)	3	0	0	0	0	0
8	*Calytrix tetragona*	3	3	0	0	0	0
9	*Styphelia exserta*	3	2	0	0	0	0
10	*Dodonaea microzyga* var. *acrolobata*	3	1	2	3	0	0
11	*Styphelia exserta*	4	1	2	0	0	0
12	*Calytrix tetragona*	3	1	1	2	0	0
13	*Melaleuca cliffortioides*	3	1	2	0	0	0
14	*Grevillea lissopleura* (P1)	2	0	1	0	0	0
15	*Dodonaea microzyga* var. *acrolobata*	3	3	1	3	0	0
16	*Melaleuca cliffortioides*	4	1	2	0	0	0
17	*Dodonaea microzyga* var. *acrolobata1*	3	0	1	3	0	0
18	*Grevillea lissopleura* (P1)	3	0	1	0	0	0
19	*Calytrix tetragona*	3	0	2	2	0	0
20	*Styphelia exserta*	4	1	2	0	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 7							
1	*Melaleuca lateriflora*	3	1	2	0	1	0
2	*Daviesia argillacea*	4	1	2	0	1	0
3	*Acacia undosa* (P3)	1	1	1	0	1	0
4	*Eucalyptus calycogona* subsp. *calycogona*	3	1	2	0	2	0
5	*Melaleuca eleuterostachya*	3	1	2	3	0	0
6	*Acacia undosa* (P3)	2	1	2	0	1	0
7	*Grevillea acuaria*	3	1	3	0	0	0
8	*Melaleuca lateriflora*	4	1	2	3	0	0
9	*Eucalyptus calycogona* subsp. *calycogona*	4	1	1	0	1	0
10	*Melaleuca eleuterostachya*	4	1	2	3	1	0
11	*Melaleuca eleuterostachya*	3	1	2	0	0	0
12	*Acacia undosa* (P3)	2	1	2	2	0	0
13	*Daviesia argillacea*	3	1	2	0	1	0
14	*Eucalyptus calycogona* subsp. *calycogona*	3	1	2	0	1	2
15	*Acacia undosa* (P3)	3	1	2	0	0	0
16	*Acacia undosa* (P3)	2	2	2	0	0	1
17	*Hibbertia psilocarpa*	3	1	1	2	1	0
18	*Melaleuca depauperata*	3	0	2	1	0	0
19	*Eucalyptus calycogona* subsp. *calycogona*	3	1	1	0	1	0
20	*Melaleuca lateriflora*	4	1	1	0	1	0
Transect 8							
1	*Acacia undosa* (P3)	3	2	1	3	0	0
2	*Grevillea acuaria*	4	0	2	0	1	0
3	*Melaleuca lateriflora*	3	2	3	0	0	0
4	*Eucalyptus cylindriflora*	3	2	2	0	1	1
5	*Melaleuca eleuterostachya*	4	1	2	0	0	0
6	*Melaleuca lateriflora*	4	1	2	0	1	0
7	*Eucalyptus cylindriflora*	4	1	2	0	1	0
8	*Acacia undosa* (P3)	3	1	2	0	0	0
9	*Melaleuca eleuterostachya*	4	1	2	0	0	0
10	*Grevillea acuaria*	1	2	2	3	0	0
11	*Melaleuca eleuterostachya*	3	1	2	0	0	0
12	*Eucalyptus cylindriflora*	4	0	2	3	1	0
13	*Melaleuca lateriflora*	4	0	3	0	1	0
14	*Grevillea acuaria*	4	1	3	3	0	0
15	*Acacia undosa* (P3)	2	2	1	3	0	0
16	*Acacia undosa* (P3)	2	2	1	3	0	0
17	*Melaleuca lateriflora*	4	1	2	1	1	0
18	*Eucalyptus cylindriflora*	2	1	2	3	0	2
19	*Grevillea acuaria*	4	1	3	3	0	0
20	*Melaleuca eleuterostachya*	3	1	2	0	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 9							
1	*Banksia dolichostyla* (T)	3	1	2	0	0	0
2	*Microcorys elatoides* (P1)	3	0	2	3	0	0
3	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	1	2	2	0	0
4	*Beaufortia orbifolia*	4	1	2	3	0	0
5	*Banksia purdieana*	3	2	2	2	0	0
6	*Banksia dolichostyla* (T)	3	1	2	0	0	0
7	*Microcorys elatoides* (P1)	3	1	2	0	1	0
8	*Microcorys elatoides* (P1)	3	0	2	2	0	0
9	*Beaufortia orbifolia*	3	1	2	0	0	0
10	*Banksia purdieana*	3	2	2	0	0	0
11	*Banksia dolichostyla* (T)	3	1	2	0	0	0
12	*Microcorys elatoides* (P1)	3	0	2	0	0	0
13	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	0	2	2	0	0
14	*Beaufortia orbifolia*	3	1	2	2	0	0
15	*Banksia purdieana*	2	2	2	0	0	0
16	*Banksia dolichostyla* (T)	4	0	2	0	0	0
17	*Microcorys elatoides* (P1)	3	0	2	0	1	0
18	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	1	3	2	0	0
19	*Banksia purdieana*	2	2	2	2	0	0
20	*Beaufortia orbifolia*	3	1	2	0	0	0
Transect 10							
1	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	1	1	3	0	0
2	*Banksia purdieana*	3	2	2	2	0	0
3	*Beaufortia orbifolia*	3	2	2	3	0	0
4	*Microcorys elatoides* (P1)	2	1	1	0	0	0
5	*Banksia dolichostyla* (T)	3	2	1	0	0	0
6	*Banksia dolichostyla* (T)	1	1	3	0	0	0
7	*Beaufortia orbifolia*	3	1	2	3	0	0
8	*Banksia purdieana*	2	2	2	2	1	0
9	*Allocasuarina acutivalvis* subsp*. acutivalvis*	2	0	2	2	1	0
10	*Microcorys elatoides* (P1)	2	0	1	0	1	0
11	*Banksia purdieana*	3	2	2	0	0	0
12	*Microcorys elatoides* (P1)	1	0	1	0	0	0
13	*Beaufortia orbifolia*	4	1	2	0	1	0
14	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	0	2	2	1	0
15	*Banksia dolichostyla* (T)	1	1	2	2	0	0
16	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	0	2	2	0	0
17	*Beaufortia orbifolia*	3	1	2	0	0	0
18	*Eucalyptus burracoppinensis*	2	1	1	3	2	1
19	*Banksia purdieana*	3	2	2	2	0	0
20	*Banksia dolichostyla* (T)	2	2	2	0	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 11							
1	*Melaleuca cucullata*	3	1	3	0	0	0
2	*Melaleuca pauperiflora* subsp. *pauperiflora*	4	1	2	1	0	0
3	*Microcybe multiflora* subsp. *multiflora*	4	0	1	1	0	0
4	*Dodonaea stenozyga*	2	2	0	0	0	0
5	*Exocarpos aphyllus*	2	2	1	2	0	0
6	*Melaleuca pauperiflora* subsp. *pauperiflora*	4	1	2	1	0	0
7	*Dodonaea stenozyga*	3	1	2	3	0	0
8	*Melaleuca pauperiflora* subsp. *pauperiflora*	4	1	1	1	0	0
9	*Microcybe multiflora* subsp. *multiflora*	3	1	3	0	0	0
10	*Exocarpos aphyllus*	2	2	2	2	0	0
11	*Eucalyptus urna*	4	0	2	1	0	0
12	*Dodonaea stenozyga*	2	0	2	3	0	0
13	*Melaleuca pauperiflora* subsp. *pauperiflora*	4	1	2	1	0	0
14	*Melaleuca cucullata*	3	1	3	0	0	0
15	*Daviesia argillacea*	3	1	1	0	0	0
16	*Melaleuca pauperiflora* subsp. *pauperiflora*	3	1	2	1	0	0
17	*Melaleuca cucullata*	4	0	2	0	0	0
18	*Microcybe multiflora* subsp. *multiflora*	3	1	1	1	0	0
19	*Dodonaea stenozyga*	3	1	2	3	0	0
20	*Daviesia argillacea*	3	1	1	2	0	0
Transect 12							
1	*Acacia yorkrakinensis* subsp. *acrita*	4	0	1	0	0	0
2	*Melaleuca calyptroides*	3	0	1	0	0	0
3	*Hakea erecta*	4	0	0	1	0	0
4	*Microcorys elatoides* (P1)	2	1	0	0	0	0
5	*Drummondita hassellii*	4	0	2	2	0	0
6	*Hakea erecta*	4	0	0	0	0	0
7	*Acacia yorkrakinensis* subsp. *acrita*	3	0	0	0	0	0
8	*Melaleuca calyptroides*	4	0	1	0	0	0
9	*Melaleuca pungens*	4	0	0	0	0	0
10	*Drummondita hassellii*	3	1	0	2	0	0
11	*Thryptomene kochii*	3	3	0	0	0	0
12	*Melaleuca pungens*	4	0	0	0	0	0
13	*Acacia yorkrakinensis* subsp. *acrita*	2	1	0	0	2	0
14	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	2	1	0	0	0	0
15	*Isopogon gardneri*	4	0	2	0	0	0
16	*Isopogon gardneri*	4	0	2	2	0	0
17	*Acacia yorkrakinensis* subsp. *acrita*	3	0	0	0	0	0
18	*Melaleuca pungens*	4		0	0	0	0
19	*Microcorys elatoides* (P1)	3	1	0	0	0	0
20	*Isopogon gardneri*	4	0	2	3	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 13							
1	*Microcorys elatoides* (P1)	3	0	1	0	1	0
2	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	3	1	2	0	0	0
3	*Balaustion grandibracteatum* subsp. *junctura* (P2)	3	1	1	0	0	0
4	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	2	0	0
5	*Banksia dolichostyla* (T)	3	0	2	0	0	0
6	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	2	0	0
7	*Balaustion grandibracteatum* subsp. *junctura* (P2)	3	1	1	0	0	0
8	*Hakea erecta*	4	0	2	0	1	0
9	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	3	1	2	0	0	0
10	*Banksia dolichostyla* (T)	3	1	3	0	0	0
11	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	0	2	2	2	0
12	*Banksia dolichostyla* (T)	3	1	3	0	0	0
13	*Microcorys elatoides* (P1)	2	1	1	0	0	0
14	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	2	1	1	0	0	0
15	*Balaustion grandibracteatum* subsp. *junctura* (P2)	2	2	1	0	0	0
16	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	1	2	0	0	0	0
17	*Microcorys elatoides* (P1)	2	1	1	0	1	0
18	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	1	2	2	0	0
19	*Balaustion grandibracteatum* subsp. *junctura* (P2)	3	2	1	0	0	0
20	*Banksia dolichostyla* (T)	3	2	2	0	0	0
Transect 14							
1	*Dodonaea stenozyga*	2	1	2	3	0	0
2	*Melaleuca cucullata*	3	1	2	0	0	0
3	*Eremophila dempsteri*	3	1	3	0	0	0
4	*Melaleuca phoidophylla*	3	0	2	0	0	0
5	*Eucalyptus urna*	3	1	1	0	0	0
6	*Dodonaea stenozyga*	3	1	3	3	0	0
7	*Eucalyptus urna*	3	0	2	0	1	0
8	*Exocarpos aphyllus*	2	1	0	1	1	0
9	*Eucalyptus salubris*	4	1	2	0	1	0
10	*Melaleuca cucullata*	2	1	2	0	0	0
11	*Dodonaea stenozyga*	3	1	1	0	0	0
12	*Melaleuca cucullata*	3	1	2	0	0	0
13	*Eucalyptus urna*	2	1	0	0	1	0
14	*Eucalyptus protensa*						
15	*Dodonaea stenozyga*	3	1	1	3	0	0
16	*Melaleuca phoidophylla*	3	1	2	2	0	0
17	*Microcybe multiflora* subsp. *multiflora*	4	0	2	2	0	0
18	*Dodonaea stenozyga*	3	1	2	0	0	0
19	*Eucalyptus urna*	2	1	0	0	0	0
20	*Melaleuca cucullata*	4	1	3	2	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 15							
1	*Drummondita hassellii*	4	1	2	0	0	0
2	*Melaleuca cordata*	3	1	2	0	1	0
3	*Beaufortia schaueri*	3	1	2	3	0	0
4	*Acacia yorkrakinensis* subsp*. acrita*	3	1	2	0	2	0
5	*Microcorys elatoides* (P1)	3	1	2	0	0	0
6	*Microcorys elatoides* (P1)	3	1	2	3	0	0
7	*Drummondita hassellii*	4	1	2	2	0	0
8	*Hakea subsulcata*	3	1	2	0	0	0
9	*Acacia yorkrakinensis* subsp*. acrita*	3	1	2	0	1	0
10	*Melaleuca cordata*	3	1	1	0	1	0
11	*Hakea subsulcata*	4	1	2	0	0	0
12	*Melaleuca cordata*	3	1	2	3	1	0
13	*Microcorys elatoides* (P1)	3	0	2	3	1	0
14	*Acacia yorkrakinensis* subsp*. acrita*	2	1	2	0	2	0
15	*Drummondita hassellii*	4	1	2	3	0	0
16	*Microcorys elatoides* (P1)	3	1	2	0	0	0
17	*Drummondita hassellii*	3	1	2	3	0	0
18	*Acacia yorkrakinensis* subsp*. acrita*	2	1	2	0	0	0
19	*Hakea subsulcata*	4	0	2	0	0	0
20	*Melaleuca cordata*	3	1	2	3	0	0
Transect 16							
1	*Banksia dolichostyla* (T)	4	1	3	2	0	0
2	*Balaustion grandibracteatum* subsp. *junctura* (P2)	3	1	1	0	0	0
3	*Hakea erecta*	2	2	2	0	1	0
4	*Styphelia browniae*	3	1	1	0	1	0
5	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	1	2	2	0	0
6	*Leucopogon* sp. Forrestania (G.F. Craig 2386)	3	1	2	0	0	0
7	*Hakea erecta*	2	2	2	0	1	0
8	*Allocasuarina acutivalvis* subsp*. acutivalvis*	2	0	2	2	0	0
9	*Balaustion grandibracteatum* subsp. *junctura* (P2)	2	1	1	0	0	0
10	*Banksia dolichostyla* (T)	3	1	3	0	0	0
11	*Leucopogon* sp. Forrestania (G.F. Craig 2386)	3	2	2	0	2	0
12	*Hakea erecta*	3	1	3	0	0	0
13	*Banksia dolichostyla (T)*	2	2	3	0	0	0
14	*Balaustion grandibracteatum* subsp. *junctura* (P2)	2	1	1	0	0	0
15	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	1	2	0	0	0
16	*Hakea erecta*	3	2	1	0	1	0
17	*Banksia dolichostyla* (T)	4	1	2	2	0	0
18	*Leucopogon* sp. Forrestania (G.F. Craig 2386)	3	1	2	0	0	0
19	*Balaustion grandibracteatum* subsp. *junctura* (P2)	2	1	3	0	0	0
20	*Allocasuarina acutivalvis* subsp*. acutivalvis*	3	2	2	2	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 17							
1	*Melaleuca condylosa*	4	0	3	0	0	0
2	*Eucalyptus capillosa*	2	2	2	3	1	3
3	*Acacia lachnocarpa* (P1)	4	1	2	3	0	0
4	*Gastrolobium melanocarpum*	3	1	1	0	2	0
5	*Acrotriche lancifolia*	4	0	2	0	0	0
6	*Acrotriche lancifolia*	4	0	3	0	0	0
7	*Melaleuca condylosa*	4	1	2	0	0	0
8	*Gastrolobium melanocarpum*	2	1	1	0	1	0
9	*Acacia lachnocarpa* (P1)	3	1	2	0	0	0
10	*Eucalyptus capillosa*	4	1	3	3	1	0
11	*Melaleuca condylosa*	4	0	3	3	0	0
12	*Gastrolobium melanocarpum*	3	1	1	0	1	0
13	*Acacia lachnocarpa* (P1)	3	2	2	0	0	0
14	*Eucalyptus capillosa*	3	2	2		1	0
15	*Acrotriche lancifolia*	4	1	2	0	1	0
16	*Melaleuca condylosa*	4	0	3		0	0
17	*Eucalyptus capillosa*	3	2	1	0	1	0
18	*Acrotriche lancifolia*	3	1	2	0	1	0
19	*Gastrolobium melanocarpum*	3	1	1	0	1	0
20	*Acacia lachnocarpa* (P1)	4	2	2		0	0
Transect 18							
1	*Melaleuca sparsiflora*	4	1	3	3	0	0
2	*Grevillea acuaria* sens. lat. (shiny leaf form)	3	1	1	0	0	0
3	*Acacia lachnocarpa* (P1)	2	2	2	0	0	0
4	*Callitris columellaris*	3	1	3	0	0	0
5	*Melaleuca halmaturorum*	3	2	2	0	0	0
6	*Acacia lachnocarpa* (P1)	3	2	2	0	0	0
7	*Grevillea oncogyne*	4	1	2	3	0	0
8	*Callitris columellaris*	4	2	2	1	0	0
9	*Daviesia scoparia*	3	2	2	3	0	0
10	*Melaleuca sparsiflora*	4	1	2	1	0	0
11	*Melaleuca condylosa*	3	1	2	0	0	0
12	*Phebalium megaphyllum*	3	1	2	0	0	0
13	*Acacia lachnocarpa* (P1)	3	3	3	3	0	0
14	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	1	2	0	0	0
15	*Callitris columellaris*	4	1	2	0	0	0
16	*Allocasuarina acutivalvis* subsp. *acutivalvis*	3	1	1	2	0	0
17	*Acacia lachnocarpa* (P1)	3	2	2	0	2	0
18	*Melaleuca sparsiflora*	4	1	2	2	0	0
19	*Callitris columellaris*	4	1	2	3	0	0
20	*Melaleuca scalena*	4	1	3	0	0	0

APPENDIX C: HEALTH SCORES FOR INDIVIDUALLY TAGGED PLANTS AT PLANT HEALTH MONITORING TRANSECTS, NOVEMBER 2023

Refer to Methods for score definitions.

TAG	SPECIES	CANOPY	LEAF DIE OFF	NEW TIP GROWTH	REPRODUCTIVE STATE	INSECT LEAF DAMAGE	EPICORMIC GROWTH
Transect 19							
1	*Banksia dolichostyla* (T)	4	0	3	0	0	0
2	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
3	*Microcorys* sp. Mt Holland broad-leaf (G. Barrett s.n. PERTH 04104927) (P1)	3	0	2	3	0	0
4	*Acacia assimilis* subsp. *assimilis*	4	0	1	0	1	0
5	*Microcorys elatoides* (P1)	3	1	2	0	1	0
6	*Acacia assimilis* subsp. *assimilis*	4	1	1	0	0	0
7	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	3	1	1	0	0	0
8	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
9	*Microcorys elatoides* (P1)	3	0	1	0	0	0
10	*Banksia purdieana*	3	3	3	2	0	0
11	*Acacia assimilis* subsp. *assimilis*	4	1	1	0	0	0
12	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	4	1	1	0	0	0
13	*Microcorys elatoides* (P1)	3	1	2	0	0	0
14	*Banksia dolichostyla* (T)	3	1	2	0	0	0
15	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
16	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
17	*Banksia dolichostyla* (T)	4	1	3	0	0	0
18	*Acacia assimilis* subsp. *assimilis*	4	1	2	0	0	0
19	*Chamelaucium* sp. Parker Range (B.H. Smith 1255) (P1)	1	3	0	0	0	0
20	*Microcorys elatoides* (P1)	4	1	2	0	0	0
Transect 20							
1	*Acacia assimilis* subsp. *assimilis*	4	1	2	0	0	0
2	*Balaustion grandibracteatum* subsp. *junctura* (P2)	3	2	2	0	1	0
3	*Grevillea marriottii* (P1)	3	1	1	1	0	0
4	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
5	*Persoonia coriacea*	3	1	2	0	2	0
6	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	3	0	0	0
7	*Grevillea marriottii* (P1)	3	1	2	1	0	0
8	*Persoonia coriacea*	3	1	2	0	1	0
9	*Balaustion grandibracteatum* subsp. *junctura* (P2)	1	2	1	0	0	0
10	*Acacia assimilis* subsp. *assimilis*	4	0	2	0	0	0
11	*Grevillea marriottii* (P1)	3	1	2	1	0	0
12	*Melaleuca ?calyptroides*	4	1	2	0	0	0
13	*Acacia assimilis* subsp. *assimilis*	4	0	2	0	0	0
14	*Persoonia coriacea*	4	1	2	0	1	0
15	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	2	0	0	0
16	*Melaleuca ?calyptroides*	4	0	2	0	1	0
17	*Grevillea marriottii* (P1)	4	0	2	2	1	0
18	*Persoonia coriacea*	3	2	2	0	2	0
19	*Acacia assimilis* subsp. *assimilis*	3	0	2	0	0	0
20	*Daviesia sarissa* subsp. *redacta* (P2)	3	2	3	0	0	0

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 1a, September 2022

Quadrat 1a, November 2023

Quadrat 1b, September 2022

Quadrat 1b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 1c, September 2022

Quadrat 1c, November 2023

Quadrat 1d, September 2022

Quadrat 1d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 2a, September 2022

Quadrat 2a, November 2023

Quadrat 2b, September 2022

Quadrat 2b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 2c, September 2022

Quadrat 2c, November 2023

Quadrat 2d, September 2022

Quadrat 2d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 3a, September 2022

Quadrat 3a, November 2023

Quadrat 3b, September 2022

Quadrat 3b, November 2023

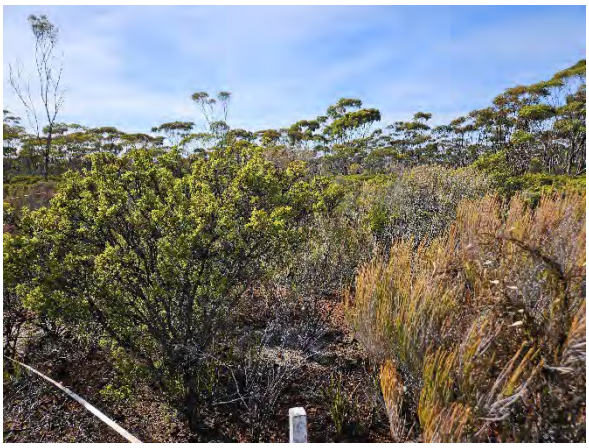
APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 3c, September 2022

Quadrat 3c, November 2023

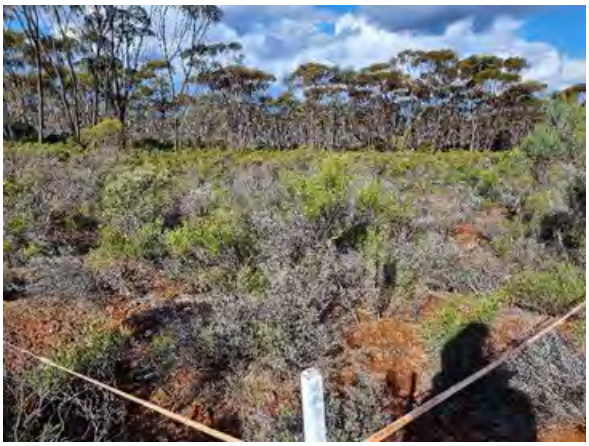
Quadrat 3d, September 2022



Quadrat 3d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)



Quadrat 4a, September 2022

Quadrat 4a, November 2023

Quadrat 4b, September 2022

Quadrat 4b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 4c, September 2022

Quadrat 4c, November 2023

Quadrat 4d, September 2022

Quadrat 4d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 7a, September 2022

Quadrat 7a, November 2023

Quadrat 7b, September 2022

Quadrat 7b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 7c, September 2022

Quadrat 7c, November 2023

Quadrat 7d, September 2022

Quadrat 7d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 8a, September 2022

Quadrat 8a, November 2023

Quadrat 8b, September 2022

Quadrat 8b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Photo not available

Quadrat 8c, November 2023

Photo not available

Quadrat 8d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 9a, September 2022

Quadrat 9a, November 2023

Quadrat 9b, September 2022

Quadrat 9b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 9c, September 2022

Quadrat 9c, November 2023

Photo not available

Quadrat 9d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 10a, September 2022

Quadrat 10a, November 2023

Quadrat 10b, September 2022

Quadrat 10b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 10c, September 2022

Quadrat 10c, November 2023

Quadrat 10d, September 2022

Quadrat 10d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 11a, September 2022

Quadrat 11a, November 2023

Quadrat 11b, September 2022

Quadrat 11b, November 2023

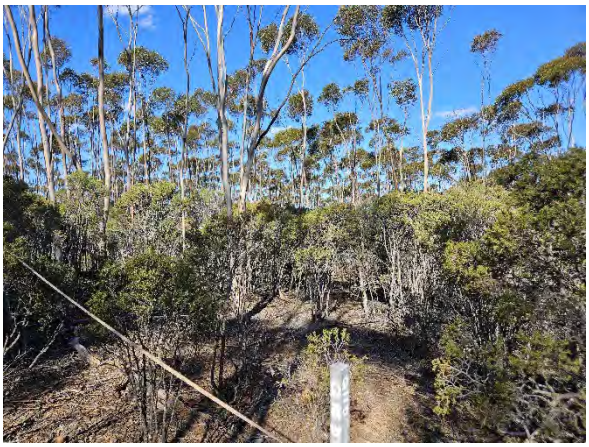
APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 11c, September 2022

Quadrat 11c, November 2023

Quadrat 11d, September 2022



Quadrat 11d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 12a, September 2022

Quadrat 12a, November 2023

Quadrat 12b, September 2022

Quadrat 12b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 12c, September 2022

Quadrat 12c, November 2023

Quadrat 12d, September 2022

Quadrat 12d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 13a, September 2022

Quadrat 13a, November 2023

Quadrat 13b, September 2022

Quadrat 13b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 13c, September 2022

Quadrat 13c, November 2023

Quadrat 13d, September 2022

Quadrat 13d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 14a, September 2022

Quadrat 14a, November 2023

Quadrat 14b, September 2022

Quadrat 14b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 14c, September 2022

Quadrat 14c, November 2023

Quadrat 14d, September 2022

Quadrat 14d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 15a, September 2022

Quadrat 15a, November 2023

Quadrat 15b, September 2022

Quadrat 15b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 15c, September 2022

Quadrat 15c, November 2023

Quadrat 15d, September 2022

Quadrat 15d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 16a, September 2022

Quadrat 16a, November 2023

Quadrat 16b, September 2022

Quadrat 16b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 16c, September 2022

Quadrat 16c, November 2023

Quadrat 16d, September 2022

Quadrat 16d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 17a, September 2022

Quadrat 17a, November 2023

Quadrat 17b, September 2022

Quadrat 17b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 17c, September 2022

Quadrat 17c, November 2023

Quadrat 17d, September 2022

Quadrat 17d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 18a, September 2022

Quadrat 18a, November 2023

Quadrat 18b, September 2022

Quadrat 18b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Photo not available

Quadrat 18c, November 2023

Photo not available

Quadrat 18d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 19a, September 2022

Quadrat 19a, November 2023

Quadrat 19b, September 2022

Quadrat 19b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 19c, September 2022

Quadrat 19c, November 2023

Quadrat 19d, September 2022

Quadrat 19d, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 20a, September 2022

Quadrat 20a, November 2023

Quadrat 20b, September 2022

Quadrat 20b, November 2023

APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

Each transect consisted of four 10 m x 10 m quadrats arranged as a contiguous belt. Four photographs were taken at each transect, one at the north-west corner of each 10 m x 10 m sub-quadrat (quadrats a, b, c and d)

Quadrat 20c, September 2022

Quadrat 20c, November 2023

Quadrat 20d, September 2022

Quadrat 20d, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-1, September 2022

Transect 1-1, November 2023

Transect 1-2 September 2022

Transect 1-2 November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-3, September 2022

Transect 1-3, November 2023

Transect 1-4, September 2022

Transect 1-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-5, September 2022

Transect 1-5, November 2023

Transect 1-6, September 2022

Transect 1-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-7, September 2022

Transect 1-7, November 2023

Transect 1-8, September 2022

Transect 1-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-9, September 2022

Transect 1-9, November 2023

Transect 1-10, September 2022

Transect 1-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-11, September 2022

Transect 1-11, November 2023

Transect 1-12, September 2022

Transect 1-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-13, September 2022

Transect 1-13, November 2023

Transect 1-14, September 2022

Transect 1-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-15, September 2022

Transect 1-15, November 2023

Transect 1-16, September 2022

Transect 1-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-17, September 2022

Transect 1-17, November 2023

Transect 1-18, September 2022

Transect 1-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 1-19, September 2022

Transect 1-19, November 2023

Transect 1-20, September 2022

Transect 1-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-1, September 2022

Transect 2-1, November 2023

Transect 2-2, September 2022

Transect 2-2, November 2023

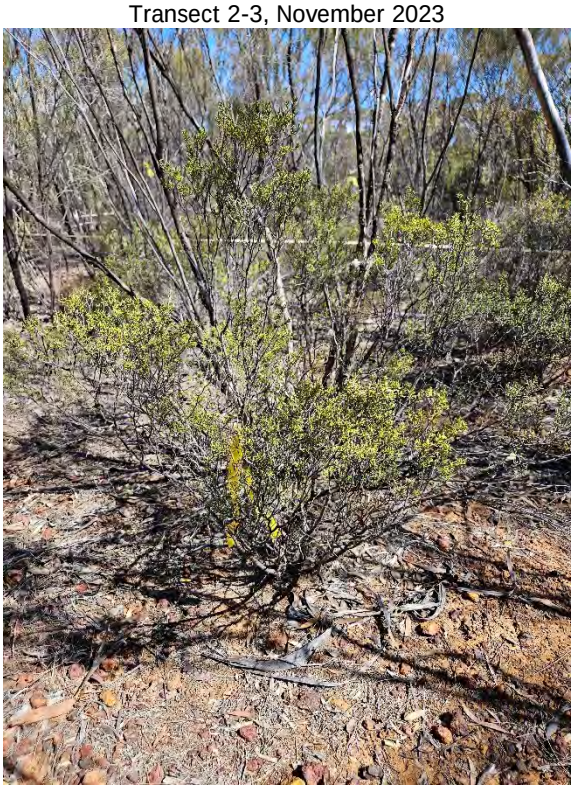
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-3, September 2022

Transect 2-3, November 2023

Transect 2-4, September 2022



Transect 2-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-5, September 2022

Transect 2-5, November 2023

Transect 2-6, September 2022

Transect 2-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-7, September 2022

Transect 2-7, November 2023

Transect 2-8, September 2022

Transect 2-8, November 2023

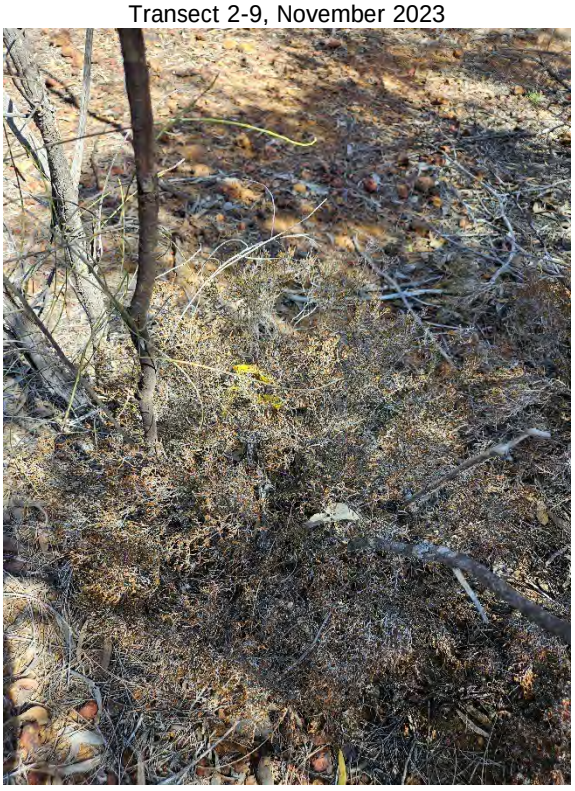
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-9, September 2022

Transect 2-9, November 2023

Transect 2-10, September 2022



Transect 2-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-11, September 2022

Transect 2-11, November 2023

Transect 2-12, September 2022

Transect 2-12, November 2023

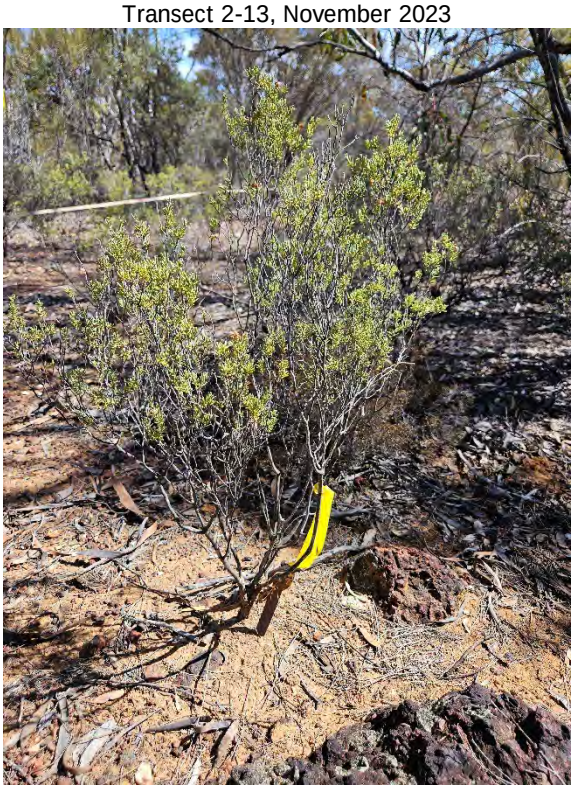
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-13, September 2022

Transect 2-13, November 2023

Transect 2-14, September 2022



Transect 2-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-15, September 2022

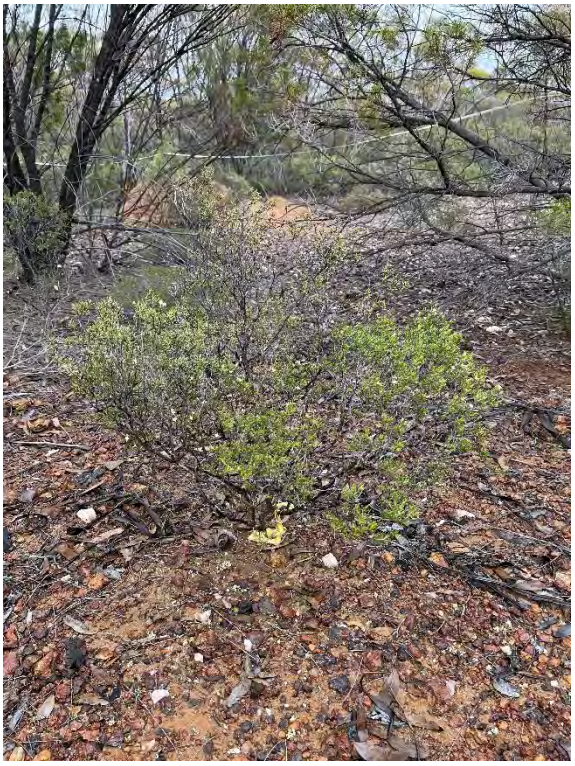
Transect 2-15, November 2023

Transect 2-16, September 2022

Transect 2-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.



Transect 2-17, September 2022

Transect 2-17, November 2023

Transect 2-18, September 2022

Transect 2-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 2-19, September 2022

Transect 2-19, November 2023

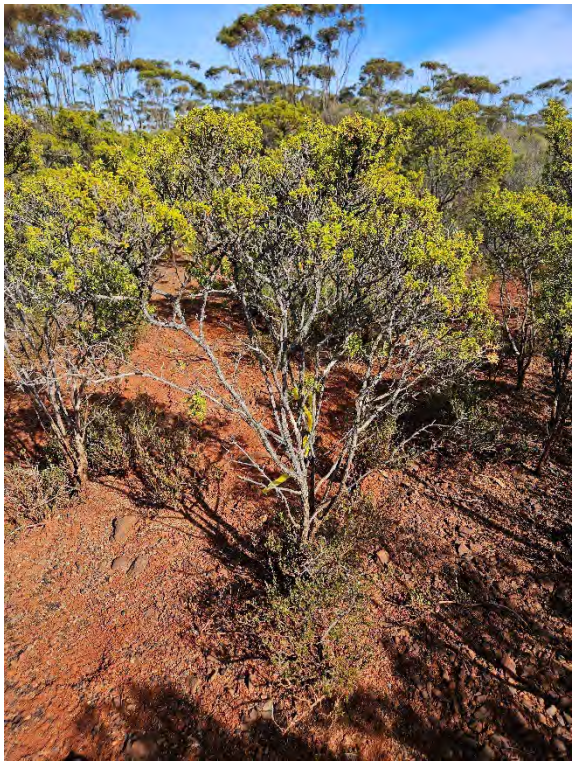
Transect 2-20, September 2022

Transect 2-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-1, September 2022



Transect 3-1, November 2023

Transect 3-2, September 2022

Transect 3-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-3, September 2022

Transect 3-3, November 2023

Transect 3-4, September 2022

Transect 3-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-5, September 2022

Transect 3-5, September 2022

Transect 3-6, September 2022

Transect 3-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-7, September 2022

Transect 3-7, November 2023

Transect 3-8, September 2022

Transect 3-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-9, September 2022

Transect 3-9, November 2023

Transect 3-10, September 2022

Transect 3-10, November 2023

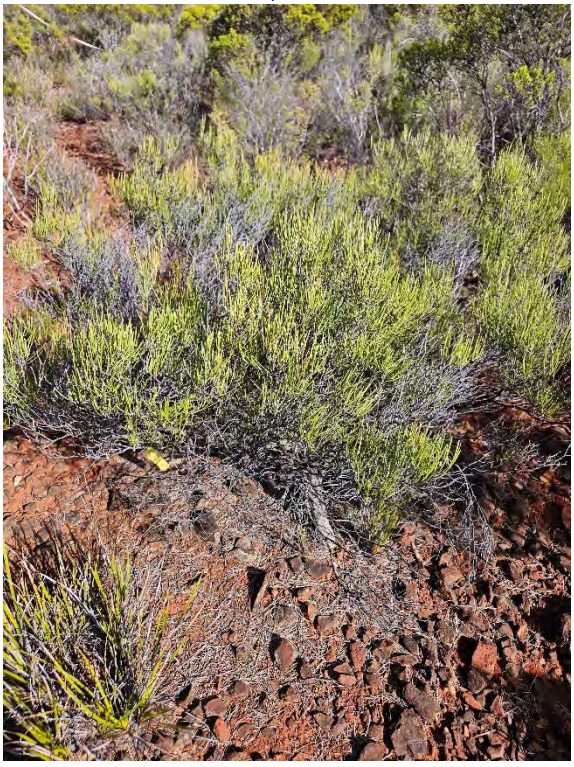
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-11, September 2022

Transect 3-11, November 2023

Transect 3-12, September 2022



Transect 3-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-13, September 2022

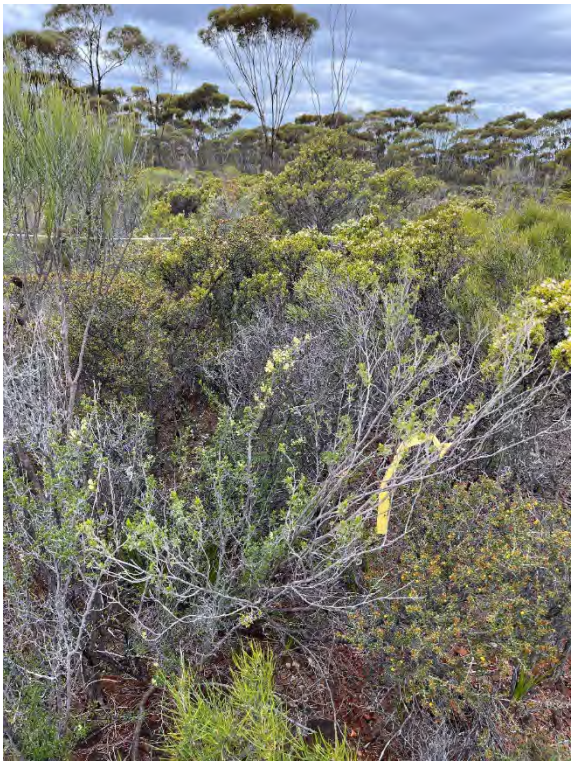
Transect 3-13, November 2023

Transect 3-14, September 2022

Transect 3-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

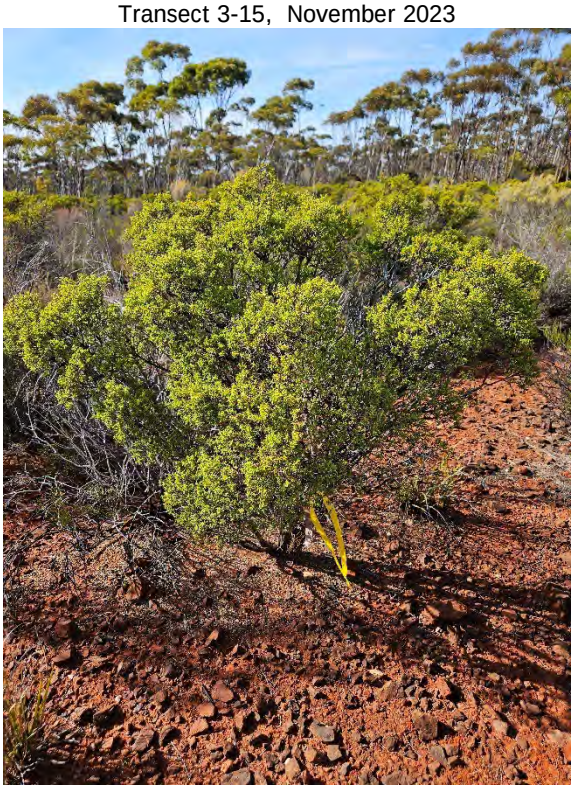
Photographs are labelled in sequence by transect and tagged plant number.



Transect 3-15, September 2022

Transect 3-15, November 2023

Transect 3-16, September 2022



Transect 3-16, November 2023

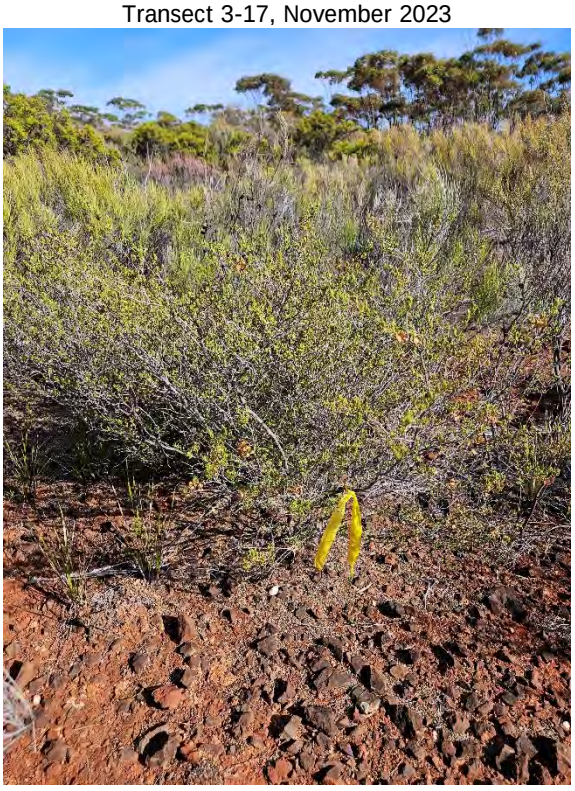
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-17, September 2022

Transect 3-17, November 2023

Transect 3-18, September 2022



Transect 3-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 3-19, September 2022

Transect 3-19, November 2023

Transect 3-20, September 2022

Transect 3-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-1, September 2022

Transect 4-1, November 2023

Transect 4-2, September 2022

Transect 4-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-3, September 2022

Transect 4-3, November 2023

Transect 4-4, September 2022

Transect 4-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-5, September 2022

Transect 4-5, November 2023

Transect 4-6, September 2022

Transect 4-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-7, September 2022

Transect 4-7, November 2023

Transect 4-8, September 2022

Transect 4-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-9, September 2022

Transect 4-9, November 2023

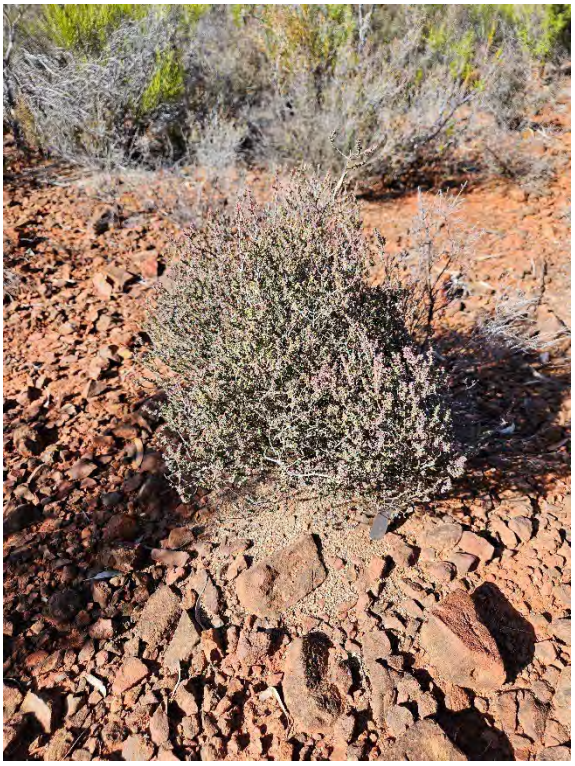
Transect 4-10, September 2022

Transect 4-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-11, September 2022



Transect 4-11, November 2023

Transect 4-12, September 2022

Transect 4-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-13, September 2022

Transect 4-13, November 2023

Transect 4-14, September 2022

Transect 4-14, November 2023

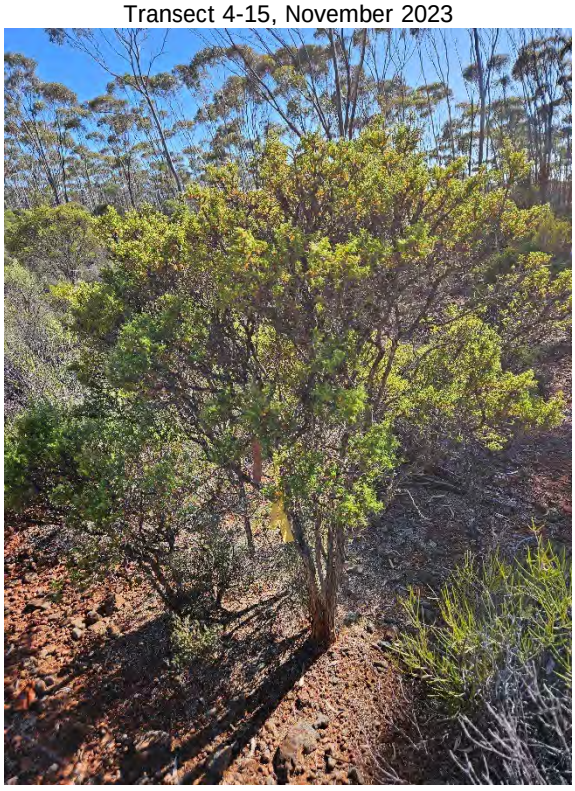
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-15, September 2022

Transect 4-15, November 2023

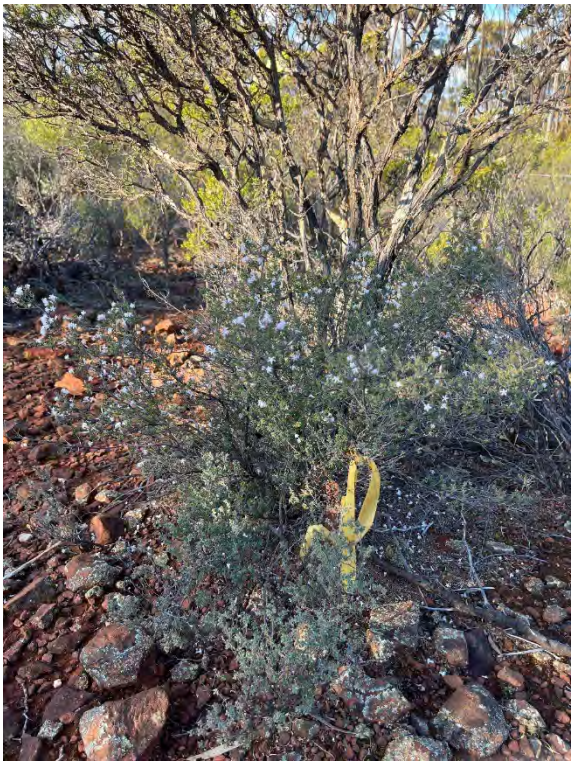
Transect 4-16, September 2022



Transect 4-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.



Transect 4-17, September 2022

Transect 4-17, November 2023

Transect 4-18, September 2022

Transect 4-18, November 2023

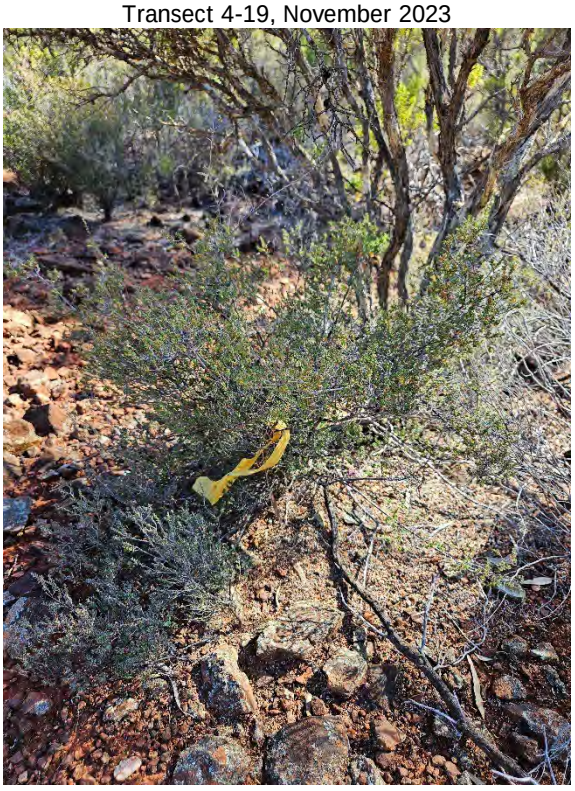
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 4-19, September 2022

Transect 4-19, November 2023

Transect 4-20, September 2022



Transect 4-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-1, September 2022

Transect 7-1, November 2023

Transect 7-2, September 2022

Transect 7-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-3, September 2022

Transect 7-3, November 2023

Transect 7-4, September 2022

Transect 7-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-5, September 2022

Transect 7-5, November 2023

Transect 7-6, September 2022

Transect 7-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-7, September 2022

Transect 7-7, November 2023

Transect 7-8, September 2022

Transect 7-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-9, September 2022

Transect 7-9, November 2023

Transect 7-10, September 2022

Transect 7-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-11, September 2022

Transect 7-11, November 2023

Transect 7-12, September 2022

Transect 7-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-13, September 2022

Transect 7-13, November 2023

Transect 7-14, September 2022

Transect 7-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-15, September 2022

Transect 7-15, November 2023

Transect 7-16, September 2022

Transect 7-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-17, September 2022

Transect 7-17, November 2023

Transect 7-18, September 2022

Transect 7-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 7-19, September 2022

Transect 7-19, November 2023

Transect 7-20, September 2022

Transect 7-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-1, September 2022

Transect 8-1, November 2023

Transect 8-2, September 2022

Transect 8-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-3, September 2022

Transect 8-3, November 2023

Transect 8-4, September 2022

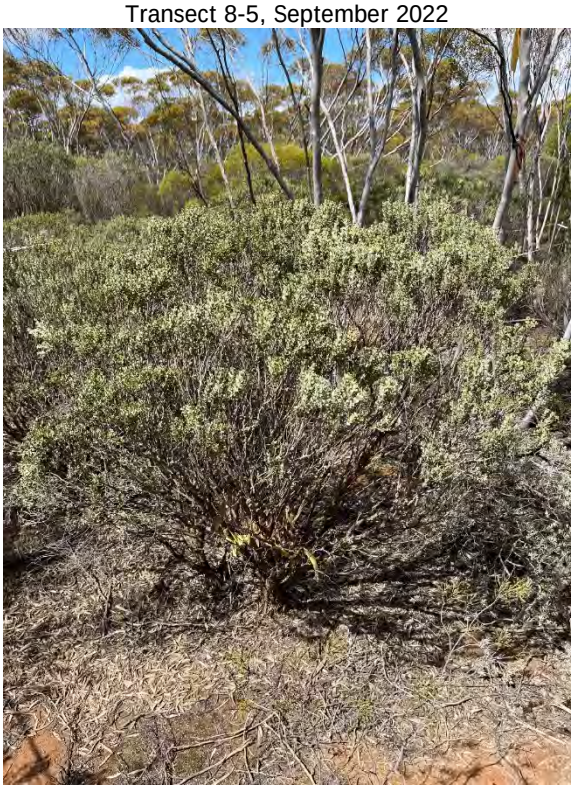
Transect 8-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-5, September 2022

Transect 8-5, November 2023



Transect 8-6, September 2022

Transect 8-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-7, September 2022

Transect 8-7, November 2023

Transect 8-8, September 2022

Transect 8-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-9, September 2022

Transect 8-9, November 2023

Transect 8-10, September 2022

Transect 8-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-11, September 2022

Transect 8-11, November 2023

Transect 8-12, September 2022

Transect 8-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-13, September 2022

Transect 8-13, November 2023

Transect 8-14, September 2022

Transect 8-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-15, September 2022

Transect 8-15, November 2023

Transect 8-16, September 2022

Transect 8-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-17, September 2022

Transect 8-17, November 2023

Transect 8-18, September 2022

Transect 8-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 8-19, September 2022

Transect 8-19, November 2023

Transect 8-20, September 2022

Transect 8-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-1, September 2022

Transect 9-1, November 2023

Transect 9-2, September 2022

Transect 9-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-3, September 2022

Transect 9-3, November 2023

Transect 9-4, September 2022

Transect 9-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-5, September 2022

Transect 9-5, November 2023

Transect 9-6, September 2022

Transect 9-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-7, September 2022

Transect 9-7, November 2023

Transect 9-8, September 2022

Transect 9-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-9, September 2022

Transect 9-9, November 2023

Transect 9-10, September 2022

Transect 9-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-11, September 2022

Transect 9-11, November 2023

Transect 9-12, September 2022

Transect 9-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-13, September 2022

Transect 9-13, November 2023

Transect 9-14, September 2022

Transect 9-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-15, September 2022

Transect 9-15, November 2023

Transect 9-16, September 2022

Transect 9-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-17, September 2022

Transect 9-17, November 2023

Transect 9-18, September 2022

Transect 9-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 9-19, September 2022

Transect 9-19, November 2023

Transect 9-20, September 2022

Transect 9-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-1, September 2022

Transect 10-1, November 2023

Transect 10-2, September 2022

Transect 10-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-3, September 2022

Transect 10-3, November 2023

Transect 10-4, September 2022

Transect 10-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-5, September 2022

Transect 10-5, November 2023

Transect 10-6, September 2022

Transect 10-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-7, September 2022

Transect 10-7, November 2023

Transect 10-8, September 2022

Transect 10-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-9, September 2022

Transect 10-9, November 2023

Transect 10-10, September 2022

Transect 10-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-11, September 2022

Transect 10-11, November 2023

Transect 10-12, September 2022

Transect 10-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-13, September 2022

Transect 10-13, November 2023

Transect 10-14, September 2022

Transect 10-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-15, September 2022

Transect 10-15, November 2023

Transect 10-16, September 2022

Transect 10-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-17, September 2022

Transect 10-17, November 2023

Transect 10-18, September 2022

Transect 10-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 10-19, September 2022

Transect 10-19, November 2023

Transect 10-20, September 2022

Transect 10-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-1, September 2022

Transect 11-1, September 2022

Transect 11-2, September 2022

Transect 11-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-3, September 2022

Transect 11-3, September 2022

Transect 11-4, September 2022

Transect 11-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-5, September 2022

Transect 11-5, September 2022

Transect 11-6, September 2022

Transect 11-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-7, September 2022

Transect 11-7, September 2022

Transect 11-8, September 2022

Transect 11-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-9, September 2022

Transect 11-9, September 2022

Transect 11-10, September 2022

Transect 11-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-11, September 2022

Transect 11-11, September 2022

Transect 11-12, September 2022

Transect 11-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-13, September 2022

Transect 11-13, September 2022

Transect 11-14, September 2022

Transect 11-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-15, September 2022

Transect 11-15, September 2022

Transect 11-16, September 2022

Transect 11-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-17, September 2022

Transect 11-17, September 2022

Transect 11-18, September 2022

Transect 11-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 11-19, September 2022

Transect 11-19, September 2022

Transect 11-20, September 2022

Transect 11-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-1, September 2022

Transect 12-1, September 2022

Transect 12-2, September 2022

Transect 12-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-3, September 2022

Transect 12-3, September 2022

Transect 12-4, September 2022

Transect 12-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-5, September 2022

Transect 12-5, September 2022

Transect 12-6, September 2022

Transect 12-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-7, September 2022

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Transect 12-7, September 2022

Transect 12-8, September 2022

Transect 12-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-9, September 2022

Transect 12-9, September 2022

Transect 12-10, September 2022

Transect 12-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-11, September 2022

Transect 12-11, September 2022

Transect 12-12, September 2022

Transect 12-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-13, September 2022

Transect 12-13, September 2022

Transect 12-14, September 2022

Transect 12-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-15, September 2022

Transect 12-15, September 2022

Transect 12-16, September 2022

Transect 12-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-17, September 2022

Transect 12-17, September 2022

Transect 12-18, September 2022

Transect 12-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 12-19, September 2022

Transect 12-19, September 2022

Transect 12-20, September 2022

Transect 12-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-1, September 2022

Transect 13-1, September 2022

Transect 13-2, September 2022

Transect 13-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-3, September 2022

Transect 13-3, September 2022

Transect 13-4, September 2022

Transect 13-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-5, September 2022

Transect 13-5, November 2023

Transect 13-6, September 2022

Transect 13-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-7, September 2022

Transect 13-7, November 2023

Transect 13-8, September 2022

Transect 13-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-9, September 2022

Transect 13-9, November 2023

Transect 13-10, September 2022

Transect 13-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-11, September 2022

Transect 13-11, November 2023

Transect 13-12, September 2022

Transect 13-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-13, September 2022

Transect 13-13 November 2023

Transect 13-14, September 2022

Transect 13-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-15, September 2022

Transect 13-15, November 2023

Transect 13-16, September 2022

Transect 13-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-17, September 2022

Transect 13-17, November 2023

Transect 13-18, September 2022

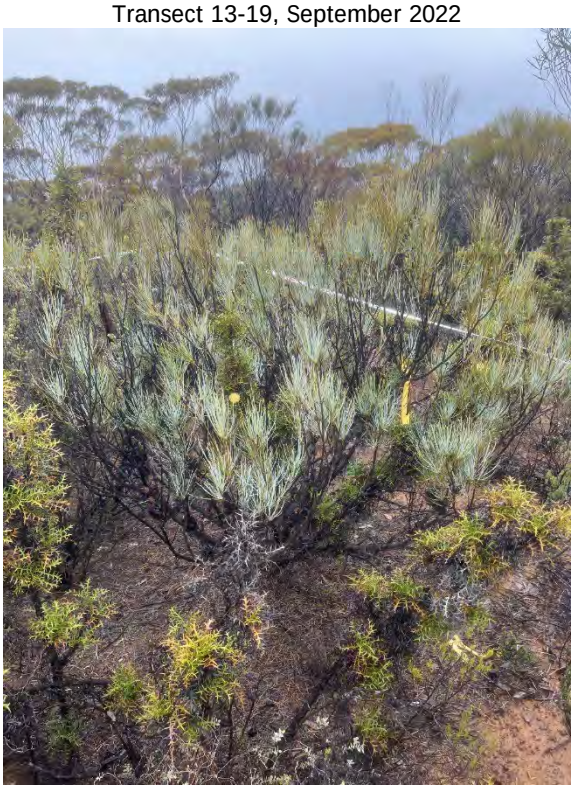
Transect 13-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 13-19, September 2022

Transect 13-19, November 2023



Transect 13-20, September 2022

Transect 13-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-1, September 2022

Transect 14-1, November 2023

Transect 14-2, September 2022

Transect 14-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-3, September 2022

Transect 14-3, November 2023

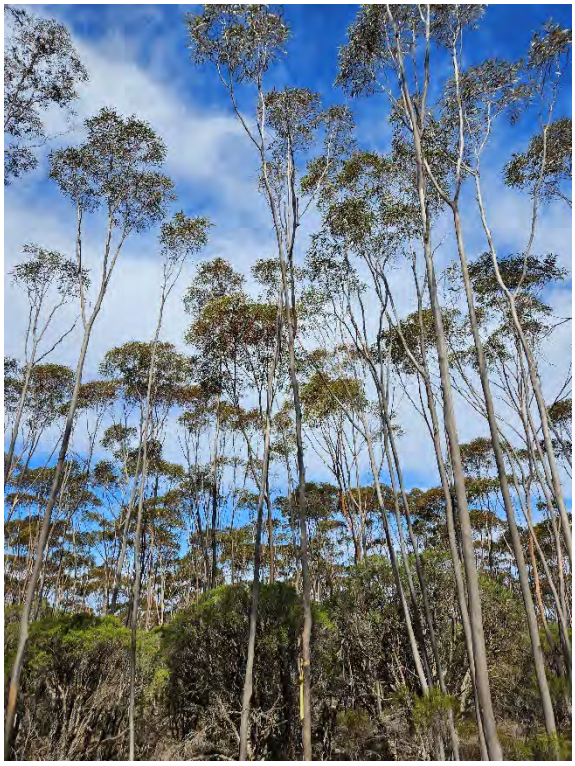
Transect 14-4, September 2022

Transect 14-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-5, September 2022



Transect 14-5, November 2023

Transect 14-6, September 2022

Transect 14-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-7, September 2022

Transect 14-7, November 2023

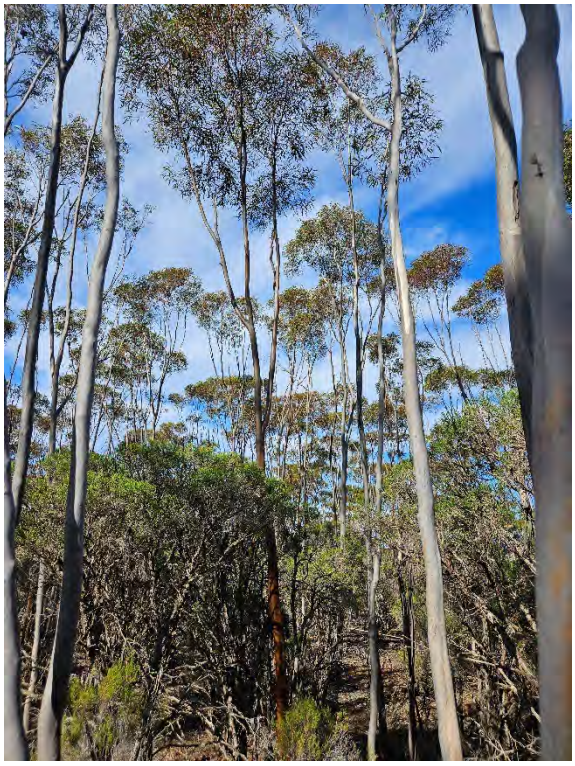
Transect 14-8, September 2022

Transect 14-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-9, September 2022



Transect 14-9, November 2023

Transect 14-10, September 2022

Transect 14-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-11, September 2022

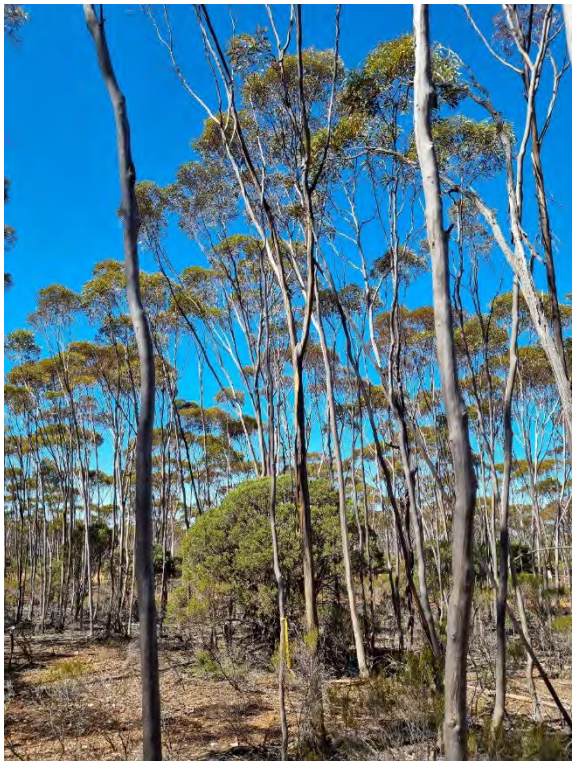
Transect 14-11, November 2023

Transect 14-12, September 2022

Transect 14-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

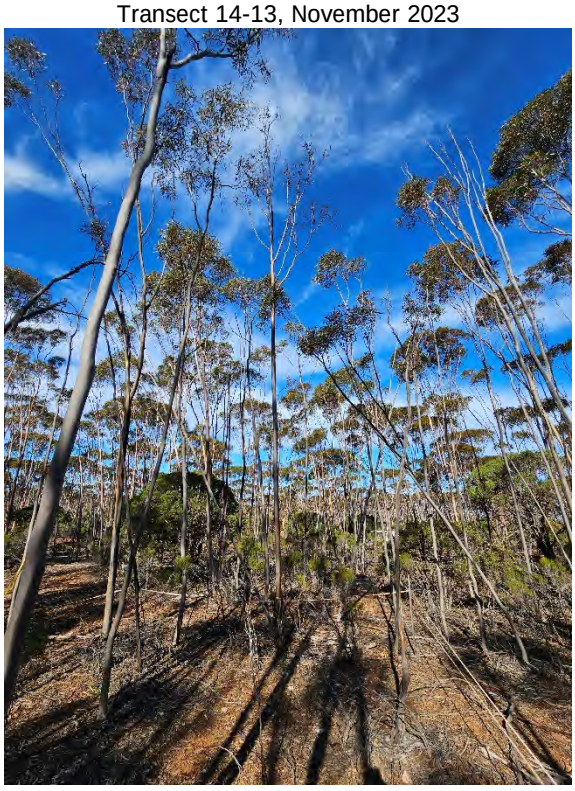
Photographs are labelled in sequence by transect and tagged plant number.



Transect 14-13, September 2022

Transect 14-13, November 2023

Transect 14-14, September 2022



Transect 14-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-15, September 2022

Transect 14-15, November 2023

Transect 14-16, September 2022

Transect 14-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-17, September 2022

Transect 14-17, November 2023

Transect 14-18, September 2022

Transect 14-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 14-19, September 2022

Transect 14-19, November 2023

Transect 14-20, September 2022

Transect 14-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-1, March 2022

Transect 15-1, November 2023

Transect 15-2, September 2022

Transect 15-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-3, September 2022

Transect 15-3, November 2023

Transect 15-4, September 2022

Transect 15-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-5, September 2022

Transect 15-5, November 2023

Transect 15-6, September 2022

Transect 15-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-7, September 2022

Transect 15-7, November 2023

Transect 15-8, September 2022

Transect 15-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-9, September 2022

Transect 15-9, November 2023

Transect 15-10, September 2022

Transect 15-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-11, September 2022

Transect 15-11, November 2023

Transect 15-12, September 2022

Transect 15-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 15-13, September 2022

Transect 15-13, November 2023

Transect 15-14, September 2022

Transect 15-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 15-15, September 2022

Transect 15-15, November 2023

Transect 15-16, September 2022

Transect 15-16, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

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Transect 15-17, November 2023

Transect 15-18, September 2022

Transect 15-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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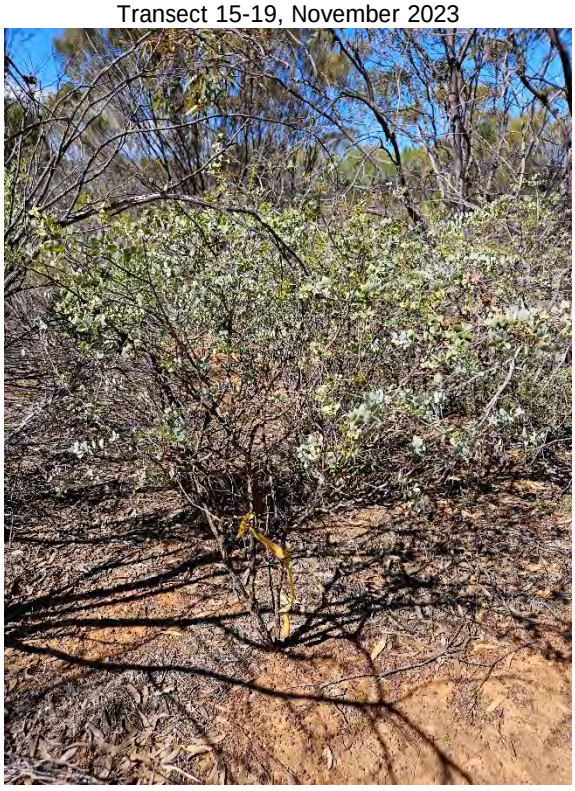
Transect 15-19, September 2022

Transect 15-19, November 2023

Transect 15-20, September 2022



Transect 15-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 16-1, September 2022

Transect 16-1, November 2023

Transect 16-2, September 2022

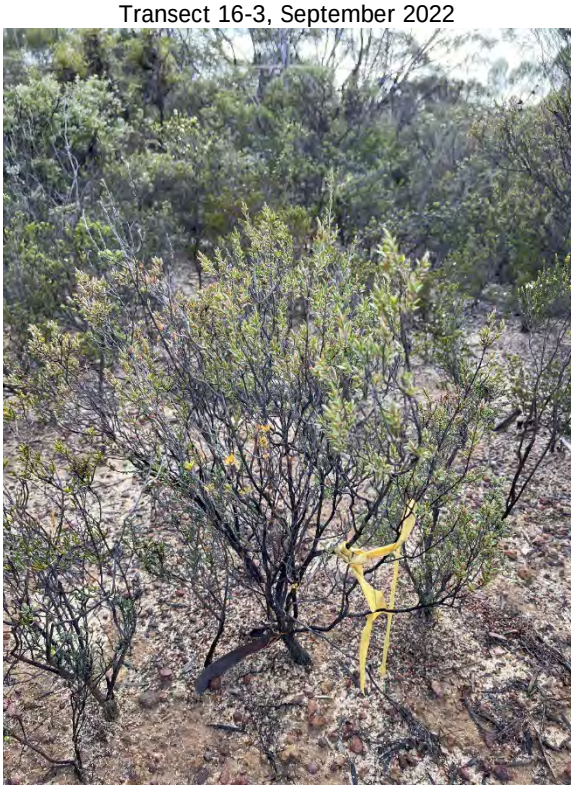
Transect 16-2 (new), November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 16-3, September 2022

Transect 16-3, November 2023



Transect 16-4, September 2022

Transect 16-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

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Transect 16-6, September 2022

Transect 16-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 16-7, September 2022

Transect 16-7, November 2023

Transect 16-8, September 2022

Transect 16-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 16-9, September 2022

Transect 16-9, November 2023

Transect 16-10, September 2022

Transect 16-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 16-11, November 2023

Transect 16-12, September 2022

Transect 16-12, November 2023

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Transect 16-13, November 2023

Transect 16-14, September 2022

Transect 16-14, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 16-16, November 2023

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Transect 16-17, November 2023

Transect 16-18, September 2022

Transect 16-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 16-19, September 2022

Transect 16-19, November 2023

Transect 16-20, September 2022

Transect 16-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 17-1, November 2023

Transect 17-2, September 2022

Transect 17-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 17-3, September 2022

Transect 17-3, November 2023

Transect 17-4, September 2022

Transect 17-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 17-5, September 2022

Transect 17-5, November 2023

Transect 17-6, September 2022

Transect 17-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 17-7, September 2022

Transect 17-7, November 2023

Transect 17-8, Ma rch 2022

Transect 17-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 17-9, September 2022

Transect 17-9, November 2023

Transect 17-10, September 2022

Transect 17-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 17-11, November 2023

Transect 17-12, September 2022

Transect 17-12, Nov ember 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 17-13, November 2023

Transect 17-14, September 2022

Transect 17-14, November 2023

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Transect 17-20, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

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Transect 18-1, November 2023

Transect 18-2, September 2022

Transect 18-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

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Transect 18-3, November 2023

Transect 18-4, September 2022

Transect 18-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 18-5, September 2022

Transect 18-5, November 2023

Transect 18-6, September 2022

Transect 18-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 18-7, September 2022

Transect 18-7, November 2023

Transect 18-8, September 2022

Transect 18-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 18-9, November 2023

Transect 18-10, September 2022

Transect 18-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 18-11, September 2022

Transect 18-11, November 2023

Transect 18-12, September 2022

Transect 18-12, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 18-13, September 2022

Transect 18-13, November 2023

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Transect 18-15, November 2023

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Transect 18-16, November 2023

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Transect 18-17, September 2022

Transect 18-17, November 2023

Transect 18-18, September 2022

Transect 18-18, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 18-20, November 2023

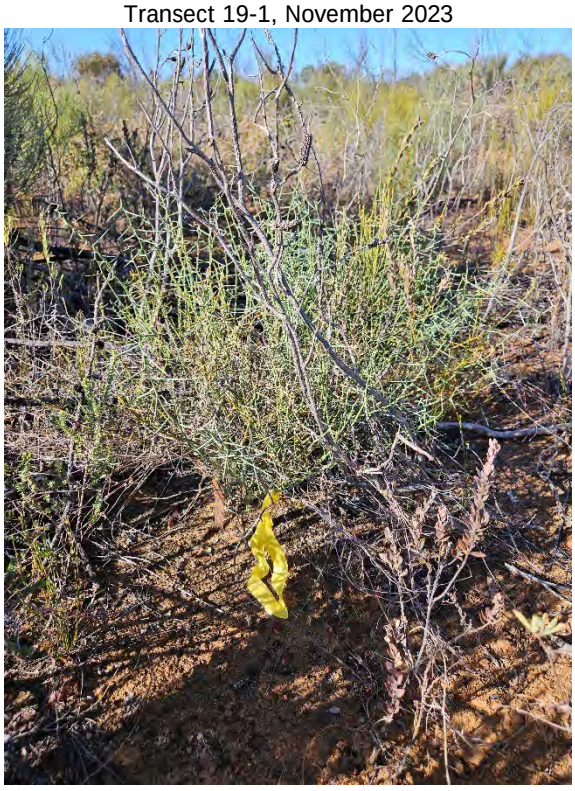
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-1, September 2022

Transect 19-1, November 2023

Transect 19-2, September 2022



Transect 19-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-3, September 2022

Transect 19-3, November 2023

Transect 19-4, September 2022

Transect 19-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-5, September 2022

Transect 19-5, November 2023

Transect 19-6, September 2022

Transect 19-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-7, September 2022

Transect 19-7, November 2023

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Transect 19-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-9, September 2022

Transect 19-9, November 2023

Transect 19-10, September 2022

Transect 19-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-11, September 2022

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Transect 19-13, September 2022

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APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-15, September 2022

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APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-17, September 2022

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APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 19-19, September 2022

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APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 20-1, September 2022

Transect 20-1, November 2023

Transect 20-2, September 2022

Transect 20-2, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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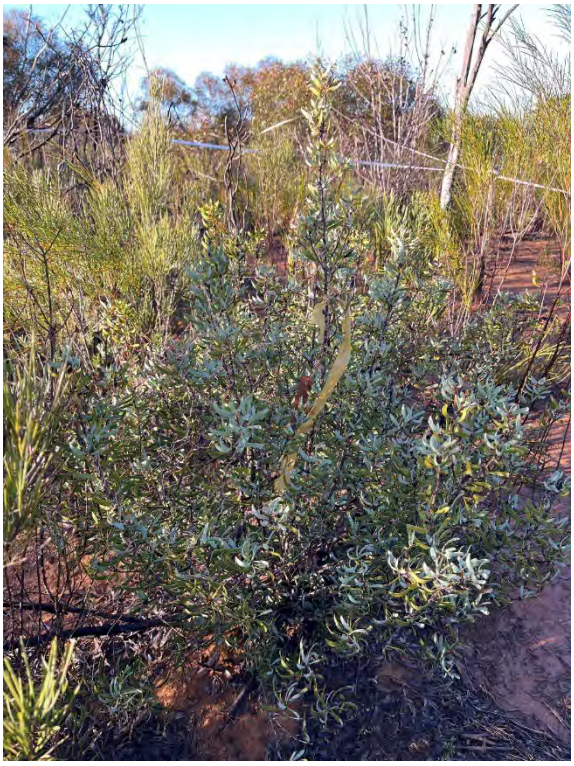
Transect 20-4, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.



Transect 20-5, September 2022

Transect 20-5, November 2023

Transect 20-6, September 2022

Transect 20-6, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

Photographs are labelled in sequence by transect and tagged plant number.

Transect 20-7, September 2022

Transect 20-7, November 2023

Transect 20-8, September 2022

Transect 20-8, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 20-9, September

Transect 20-9, November 2023

Transect 20-10, September 2022

Transect 20-10, November 2023

APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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Transect 20-20, November 2023

Appendix J Fauna Pre-clearance Survey March 2023

Fauna Pre-Clearance Survey Form

This form must be completed and signed off at the completion of the pre-clearance fauna survey before vegetation clearing can proceed, a requirement of the Terrestrial Fauna Environmental Management Plan. Ensure Survey area or GDP maps are attached.

GDP Details	GDP0060_V7						
Area(s) Surveyed	AREA 1 (13.3.23-14.3.23), AREA 2 (14.3.23-15.3.23), AREA 3 (15.3.23-16.3.23), AREA 1 RE-SURVEY (15.3.23-16.3.23)						
Survey Details	**DATE**	14/3/23	15/3/23	16/3/23			
	Survey completed	YES	YES	YES			
	Approx. No. Hectares	7 ha	7 ha	10 ha			
	No. Traps deployed	9	7	10			
	Can clearing commence?	YES	YES	YES			

Malleefowl		**Yes**	**No**	**N/A**
1.	Is vegetation clearing required within the Malleefowl breeding season (September – February)? *If yes, Pre-clearance survey for Malleefowl is required a minimum of two weeks prior to clearing.*	☐	☑	☐
2.	Has LiDAR data showing potential mounds been inspected to confirm classification as a Malleefowl mound?	☑	☐	☐
3.	Have any new mounds been identified during pre-clearance survey?	☐	☑	☐
4.	Are any new mounds classified as *active* and given a 100m exclusion zone?	☐	☑	☐
5.	Notes:			

Chuditch		**Yes**	**No**	**N/A**
6.	Is vegetation clearing required within the Chuditch breeding/denning season (September – November)? *If yes, additional requirements as per item 10 and 11.*	☐	☑	☐
7.	Has trapping been undertaken for one night immediately prior to vegetation clearing with at least four traps per hectare?	☑	☐	☐
8.	Were all captured Chuditch held in captivity for no more than one night and released at dusk into nearby habitat?	☐	☐	☑
9.	Were the following details recorded for any captured Chuditch? *Sex, weight, hind foot length (between base of toe to end of heel), head length, pouch status, wounds or injuries, PIT tagged (microchip), tissue samples and/or scats, and GPS coordinates of capture/release locations.*	☐	☐	☑
10.	Were any lactating females captured and released with a radio collar?	☐	☐	☑
11.	Were any Chuditch dens identified and given a 100m exclusion zone?	☐	☐	☑
12.	Notes: HABITAT UNSUITABLE FOR CHUDITCH			

Other Fauna	
13.	

Licenced Fauna Handler			
Name	ROBERT HEMSWORTH	**Company**	ECOSCAPE
Signature		**Date**	16/03/23

Appendix K Introduced Predator Monitoring 2022

2022 PREDATOR MONITORING

Covalent Lithium

ecoscape

Revision	Author	QA Reviewer	Approved	Date
Draft	Bruce Turner	LS	LS	22/06/2023
Final	Bruce Turner	LS	LS	20/07/2023

Direct all inquiries to:
Ecoscape (Australia) Pty Ltd
Lvl 1 38 Adelaide Street, FREMANTLE (Walyalup) WA 6160
Whadjuk Boodja
Ph: (08) 9430 8955
Prepared for Covalent Lithium

This document should be cited as 'Ecoscape (Australia) Pty Ltd (2022) *2022 Predator* Monitoring, prepared for Covalent Lithium

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ACKNOWLEDGEMENTS

Ecoscape would like to acknowledge the assistance and support we received from the Covalent staff on-site who made us welcome and provided logistical support where needed. We look forward to returning for the next years monitoring.

SUMMARY

Ecoscape was engaged by Covalent Lithium in early 2022 to provide the following services for the project:

- undertake National Malleefowl Recovery Team (NMRT) Malleefowl mound monitoring for the 2022-23 monitoring period
- collate images of introduced predator species and activity from camera monitored Malleefowl mounds.

This monitoring program was developed to be in accordance with condition 7-1 of Ministerial Statement 1118 (MS 1118).

The results of the monitoring and review of the recorded images of introduced predators at mounds between 2019 to 2022-23, has provided an indication of the level of introduced predator abundance within the project development envelope (DE) and adjacent undisturbed areas.

Twelve Cats were recorded in 2019; seven in 2020; 10 in 2021, and 16 in 2022, indicating a consistent level of Cat presence within and close to the DE. Fox numbers are low with no records for 2019, 2020 and 2022, with two recorded in 2021. Similarly Dog numbers are also low with one record in each of 2019 and 2021, no records for 2020 and three records for 2022.

To provide introduced predator abundance data, we recommend the following aspects are monitored annually:

- continue trail camera monitoring during the egg incubation season (September to January) of all Malleefowl mounds that have been identified as Annual monitored mounds, within and adjacent to the development envelope
- maintain a register of introduced predator sightings within a fauna database and report annually on number and location
- collate image data and report on status of all monitored mounds annually.

1 INTRODUCTION

Covalent Lithium is developing the Earl Grey Lithium Project (EGLP) located at Mt Holland which will include the construction and operation of a fully integrated mine, concentrator, and refinery in Western Australia. The project is centred on the Earl Grey hard-rock lithium deposit 105 km south of Southern Cross in Western Australia and approximately 500 km east of Perth. It is owned by a 50-50 joint venture (JV) between subsidiaries of Wesfarmers Pty Ltd (WES:ASX) and Sociedad Química y Minera de Chile S.A. (SQM: NYSE). Covalent is the manager for the JV and is responsible for the development and operation of the project.

The survey area includes the habitats of two conservation significant fauna species, the Malleefowl (*Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*). Both species are listed as vulnerable (VU) under both the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Western Australian *Biodiversity Conservation Act 2016* and are considered as Matters of National Environmental Significance (MNES).

Monitoring of Malleefowl mounds was undertaken during the mound building and egg laying summer season of October 2022 to January 2023. Trail cameras were deployed on mounds to capture activity of Malleefowl and other fauna species including introduced predators.

1.1 PROJECT SCOPE

Ecoscape was engaged to provide the following:

- provide the number and spatial location of introduced predators from the monitoring of known Malleefowl mounds, and other sources
- provide a temporal spatial distribution of recorded introduced predators.

The field survey was to be conducted:

- in accordance with current statutory and technical requirements and guidance
- by personnel complying with regulatory expectations, in relation to years of experience, to ground truth the desktop findings through a comprehensive and targeted survey.

1.2 SURVEY AREA

1.2.1 REGIONAL LOCATION

The survey area is in the Shire of Yilgarn in the Goldfields region of Western Australia, about 100km south of Southern Cross. The development envelope (DE) is within the Great Western Woodlands (GWW) and is approximately 1,984 ha in extent (**Map 1**). The GWW is a 16 million hectare area extending from the wheatbelt to the edge of the deserts and is the largest intact area of Mediterranean Woodland on earth (DEC 2010). The GWW includes open eucalypt woodlands (63%), Mallee eucalypt woodlands, shrublands and grasslands (Fox, Mcnee & Douglas 2016). Less common habitats in the GWW include granite outcrops, banded ironstone formations, salt lakes and freshwater wetlands (Fox, Mcnee & Douglas 2016).

The DE is in the Southern Cross Subregion of the Coolgardie Bioregion of the Interim Biogeographic Regionalism for Australia (IBRA) classification system (Government & Energy 2017). The dominant land-uses in this bioregion are Crown Reserves and Unallocated Crown Land (66.7%), grazing on native pastures (17%), conservation (11.5%) and dryland agriculture (2.3%) (Cowan, Graham & McKenzie 2001). The greenstone hills, alluvial valleys and broad plains of calcareous earths support diverse eucalypt woodlands. The uplands support Mallee woodlands and scrub-heaths on sandplains, gravelly sandplains and lateritic breakaways, chains of salt lakes with dwarf shrublands of samphire occur in the valleys (Cowan, Graham & McKenzie 2001).

1.3 STATUTORY AND TECHNICAL FRAMEWORK

This environmental assessment was conducted in accordance with Commonwealth and State legislation and guidelines:

- Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) 1999)
- Western Australian Environmental Protection Act 1986 (EP Act) (Environmental Protection Act 1986)
- Western Australian Biodiversity Conservation Act 2016 (BC Act) (Biodiversity Conservation Act 2016)
- Department of Environment Water Heritage and the Arts Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999 (DEWHA 2009).

In addition, the monitoring program was developed to meet the requirements as stated in the Terrestrial Fauna Environmental Management Plan (TFEMP) with the intention to meet environmental outcomes and objectives of condition 7-1 of Ministerial Statement 1118 (MS 1118) which requires Covalent to meet the following:

- 7-1(1) The proponent shall ensure there is no proposal-related direct or indirect or adverse indirect impacts to malleefowl mounds within the exclusion areas as shown on Figure 4 and delineated by coordinates in Schedule 2.
- 7-1(2) The proponent shall ensure there is no direct proposal-related significant adverse impacts to malleefowl and chuditch within the development envelope.
- 7-1(3) The proponent shall ensure there is no removal of active malleefowl mounds within the development envelope.

This TFEMP seeks to provide a framework to ensure potential impacts on chuditch (Dasyurus geoffroii), and malleefowl (Leipoa ocellata) found to be attributable to the Earl Grey Lithium Project (EGLP) are avoided to the maximum extent practicable.

In addition, the Minister for the Environment has published lists of fauna species in need of special protection because they are considered rare, likely to become extinct, or are presumed extinct. The current listings were published in the Government Gazette on 11 September 2018 (Government of Western Australia 2018) and was taken into account.

As well as those listed above, the assessment complied with EPA requirements for environmental survey and reporting in Western Australia, as outlined in:

- EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (2020)
- NMRT - National Malleefowl Monitoring Manual: Edition 2019_1 (2019).

1.3.1 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

At a Commonwealth level, threatened taxa (flora and fauna) are protected under the EPBC Act, which lists species that are considered Critically Endangered, Endangered, Vulnerable, Conservation Dependant, Extinct, or Extinct in the Wild.

1.3.2 WESTERN AUSTRALIAN ENVIRONMENTAL PROTECTION ACT 1986

The Western Australian EP Act was created to provide for an Environmental Protection Authority (EPA) that has the responsibility for:

- prevention, control and abatement of pollution and environmental harm
- conservation, preservation, protection, enhancement, and management of the environment
- matters incidental to or connected with the above.

The EPA is responsible for providing the guidance and policy under which environmental assessments are conducted. It conducts environmental impact assessments (based on the information included in environmental assessments and provided by the proponent), initiates measures to protect the environment and provides advice to the Minister responsible for environmental matters.

1.3.3 WESTERN AUSTRALIAN BIODIVERSITY CONSERVATION ACT 2016

The Western Australian BC Act provides for the conservation, protection and ecologically sustainable use of biodiversity and biodiversity components in Western Australia. It commenced on 1 January 2019.

Threatened species (both flora and fauna) and ecological communities that meet the categories listed within the BC Act are highly protected and require authorisation by the Minister to take or disturb. These are known as Threatened Flora, Threatened Fauna and Threatened Ecological Communities. The conservation categories of Critically Endangered, Endangered and Vulnerable have been aligned with those detailed in the EPBC Act.

Flora and fauna species may be listed as being of special conservation interest if they have a naturally low population, restricted natural range, are subject to or recovering from a significant population decline or reduction of range or are of special interest, and the Minister considers that taking may result in depletion of the species. Migratory species and those subject to international agreements are also listed under the Act. These are known as specially protected species in the BC Act.

The most recent flora and fauna listings were published in the Government Gazette on 11 September 2018 (Government of Western Australia 2018).

1.3.4 WESTERN AUSTRALIAN PRIORITY FAUNA

Conservation significant fauna species are listed by the DBCA as Priority Fauna where populations are geographically restricted or threatened by local processes, or where there is insufficient information to formally assign them to threatened fauna categories. Whilst Priority Fauna are not specifically listed in the BC Act, these have a greater level of significance than other native species.

2 METHOD

The purpose of the 2022-23 introduced predator monitoring was to collect presence data of introduced predators on all monitored Malleefowl mounds within and outside the DE, that were identified by the previous surveys (Western Wildlife 2017).

2.1.1 INTRODUCED PREDATOR MONITORING

Malleefowl mounds identified for annual monitoring (Ecoscape 2019) were revisited commencing in 2019, as per NMRT methodology. Each mound was monitored by deploying post mounted trail cameras to record images of fauna species visiting the mounds.

For the 2022 predator monitoring an additional 30 cameras were deployed for 6 nights (180 camera nights) to supplement the annual Chuditch monitoring in June 2022, this was the first time cameras had been used during the monitoring program. An additional 60 cameras were deployed for 7 nights (420 camera nights) in the LOM survey area adjacent to the DE during a detailed fauna survey. Data from these deployments of additional cameras was used in this 2022 predator monitoring period.

The Covalent Lithium Fauna Sightings and Deaths Register also provided records of introduced predators collected in 2022.

2.1.2 TRAIL CAMERA MONITORING

Trail cameras were mounted at mounds within and adjacent to the DE. Cameras were mounted on brackets attached to star pickets installed close to the mound and high enough off the ground to view the interior of the mound (**Image 1**).

Image 1: Monitored mound showing location of post and camera

The cameras were deployed annually from September to February. Images from the trail cameras were downloaded for review and collation of species recorded.

Recorded images of introduced predators were reviewed to determine areas of activity. This was achieved by logging the number of activity events recorded at each mound. An activity event is defined as an image, or group of images, separated by at least two hours.

3 RESULTS

3.1 INTRODUCED PREDATOR MONITORING

The results of the introduced predator monitoring for each of the four years (2019-2022) is summarised in **Table 1** with monitoring effort expressed as total camera nights in **Table 2**. The location of introduced predator events were recorded and mapped (**Maps 1-4**). The difference in camera nights is directly related to the number of mounds being monitored, e.g. the 40-50 mounds in 2019-20 included "5 Year" and "Annual" mounds whereas the 20-30 mounds in 2021-22 were the Annual mounds only, plus the cameras used for Chuditch monitoring and the LOM fauna survey.

Twenty-six (26) Malleefowl mounds were monitored in 2022 (**Table 3**, **Map 4**). Additional cameras, used for the first time in 2022 during the annual Chuditch monitoring, recorded one Feral Cat. Cameras deployed for the October 2022 detailed fauna survey of the LOM survey area recorded three Feral Cats outside the DE (**Map 4**). Records of introduced predators from the Covalent Lithium Fauna Sightings and Deaths Register returned five sightings; 3 Feral Cat; 2 Dog/Dingo all located within the DE (**Map 4**).

Table 1: Number of introduced predator events recorded

Year	Cat	Fox	Dog	Total
2019	12	0	1	13
2020	7	0	1	8
2021	10	2	0	12
2022*	16	0	3	19

*includes records from Chuditch monitoring, LOM survey, and Covalent Lithium Fauna Sightings and Deaths Register

Table 2: Monitoring Effort

Year	No. of cameras	No. of nights	Total Camera nights
2019	50	92	4600
2020	41	99	4059
2021	23	113	2599
2022	30	145	4350

3.1.1 DATA ANALYSIS

The raw data shows that 17 individual Malleefowl mounds recorded introduced predators between 2019-2022 years (**Table 3 Appendix One**). As the same mounds are monitored each year this is an expected result. This data is spatially displayed on (**Maps 1-4**).

Cat numbers recorded over the four year monitoring period were statistically analysed to provide a mean and standard deviation to investigate if there are differences between years. The statistical mean was calculated as 10.76 with a standard deviation of ± 3.26 across all years monitored. A Chi-square test was performed to determine if any significant difference was evident between years and returned a value of 0.99 indicating a non-significant difference between years for the recorded Cat numbers.

The locations of all monitoring mounds are also displayed which indicates where the trail cameras were deployed and therefore able to record introduced predators.

Figure 1 shows the relationship in records between species and year.

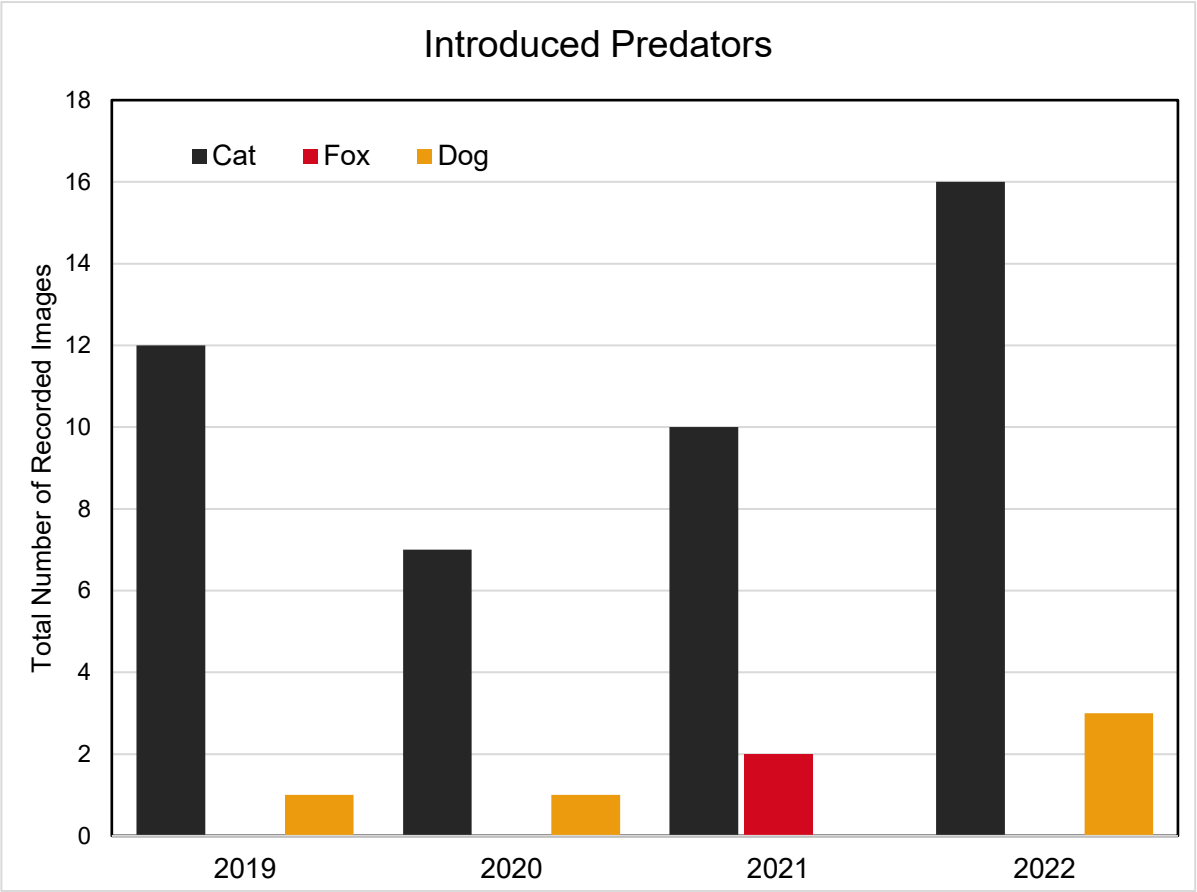


Figure 1: Introduced predator recorded events by Year

Feral Cats were recorded by trail cameras at 9 Malleefowl mounds in 2022 (**Images 2, 4, 5)**. Dogs were recorded at mound MM24 and twice as observations between the Village and the mine administration office in 2022 (**Image 3**).

Image 2: Feral Cat recorded at mound MM63

Image 3: Dog/Dingo at mound MM24

Image 4: Feral Cat recorded at mound MM24

Image 5: Feral Cat recorded at mound MM64

4 DISCUSSION AND RECOMMENDATIONS

4.1.1 INTRODUCED PREDATORS

Over the 2022-23 period of trail camera monitoring nine different Malleefowl mounds recorded visits by Feral Cats. Five of these mounds (MM24, MM34, MM63, MM64, MM66) are outside the DE. Feral cats were also recorded at mounds MM02, MM53, MM56 and MM60 inside the DE.

The increase in Cat records is most likely due to an increase in camera effort, as the statistical analysis has shown no significant difference between years of monitoring. The additional cameras deployed for the annual Chuditch monitoring will be repeated in future monitoring events, however the cameras deployed for the survey of the LOM survey area were a one off single event and will not be repeated.

Predator abundance is not able to be determined from the results. The spatial distribution suggests at least 2-3 individual Cats, and one Dog, are present within the surveyed area. This is a conservative estimate and predator numbers may be higher.

Statistical analysis indicated that there is no significant difference between years for the number of Cats recorded by the monitoring program.

A feral predator control program was commenced in 2023 and future predator monitoring may provide results of the control effort.

4.2 RECOMMENDATIONS

Monitoring of mounds both within and outside of the DE may provide insight on the number of introduced predators that are a potential impact/threat to the suite of native fauna species.

To provide introduced predator abundance data the following recommendations are made for annual monitoring:

- Trail camera monitoring during the egg incubation season for 2023-24 (September to January) of all Malleefowl mounds that have been identified as ANNUAL, within and adjacent to the DE.
- Maintain database of introduced predator sightings within a Fauna Sightings and Deaths register and report annually on number and location.
- Collate and report on records of sightings of feral predators and images captured on cameras at the monitored mounds, and elsewhere.

REFERENCES

Commonwealth of Australia (1999), *Environment Protection and Biodiversity Conservation Act 1999*. Available from: http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/.

Cowan, M, Graham, G & McKenzie, N 2001, ‘‘Coolgardie 2 (COO 2 – Southern Cross Subregion).’’ in *A Biodiversity Audit of Western Australia’s 53 Biogeographical Subregions in 2002* , eds.JE May & NL McKenzie, Department of Conservation and Land Management, Department of Conservation and Land Management.

Department of Environment and Conservation 2010, *A Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands*. Available from: http://www.dpaw.wa.gov.au/images/documents/conservation-management/off-road-conservation/gww/gww-strategy.pdf.

Department of the Environment Water Heritage and the Arts; Commonwealth of Australia 2009, *Matters of National Environmental Significance. Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999*.

Ecoscape (Australia) Pty Ltd 2019, *2019 Mt Holland Malleefowl Monitoring unpublished report for Covalent Lithium*.

Environmental Protection Authority 2020, *Technical Guidance - Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment*, EPA, Perth, Western Australia. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA-Technical-Guidance-Vertebrate-Fauna-Surveys.pdf.

Fox, E, Mcnee, S & Douglas, T 2016, *Birds of the Great Western Woodlands. Report for The Nature Conservancy*.

Government, A & Energy, D of the E and 2017, *Australia’s bioregions (IBRA)*. Available from: http://www.environment.gov.au/land/nrs/science/ibra.

Government of Western Australia (1986), *Environmental Protection Act 1986*. Available from: http://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_1384_homepage.html.

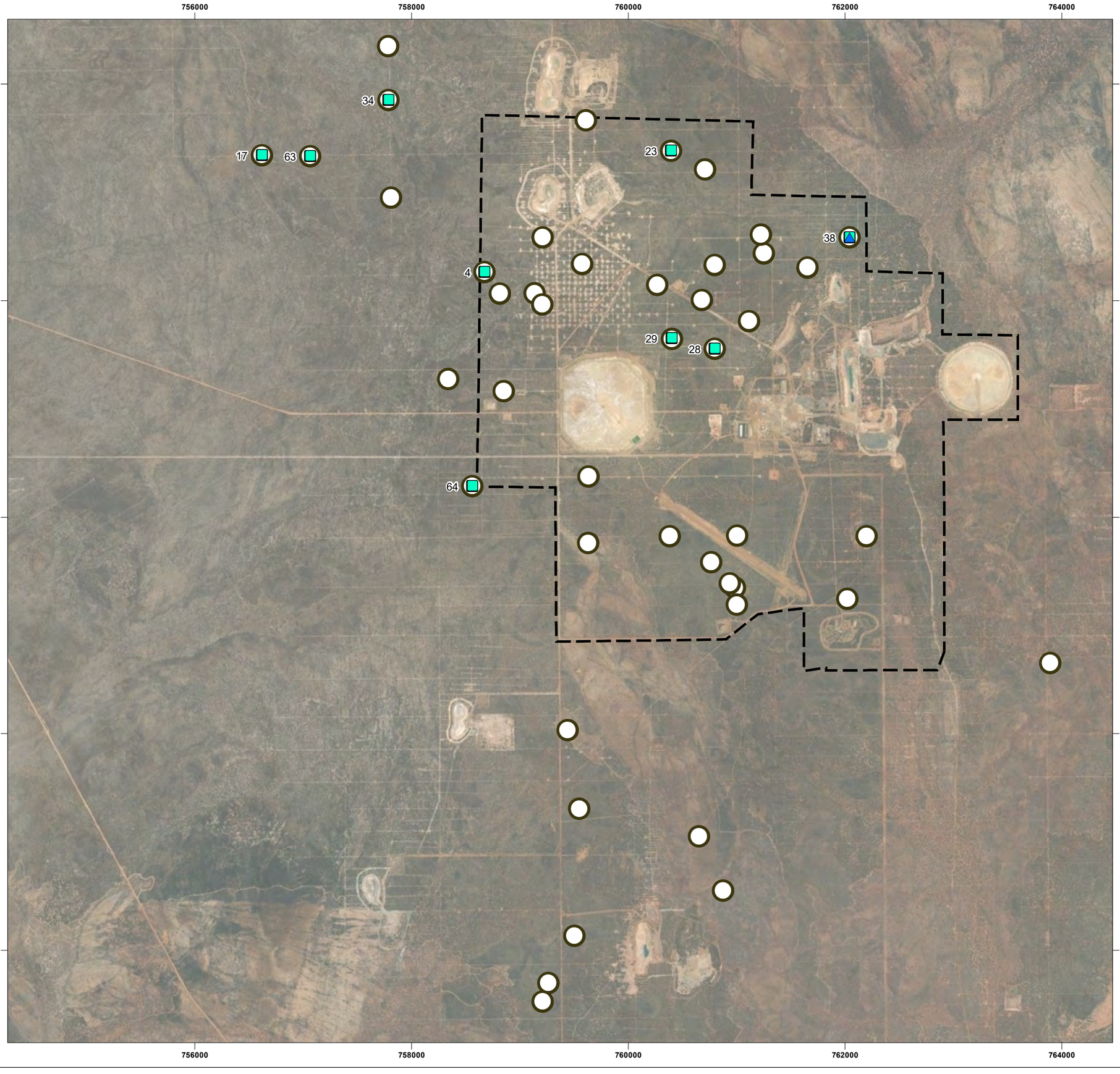
Government of Western Australia (2016), *Biodiversity Conservation Act 2016*. Available from: https://www.legislation.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13811_homepage.html.

Government of Western Australia 2018, *Government Gazette No. 135, 11 September 2018*. Available from: https://www.slp.wa.gov.au/gazette/gazette.nsf/searchgazette/EF556EEFA23C70FA482583040013E0FC/$file/Gg135.pdf.

National Malleefowl Recovery Team 2019, *National Mallefowl Monitoring Manual. Edition 2019_1*.

Western Wildlife 2017, *Earl Grey Lithium Project: Level 2 vertebrate fauna survey with targeted Chuditch and Malleefowl surveys, 2016 - 2017*.

MAPS

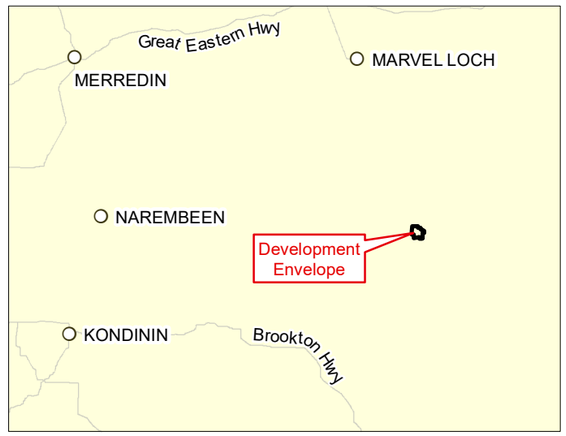


LEGEND

- Covalent Development Envelope
- Monitored Malleefowl Mounds

Predators 2019

- Cat
- Dog



DATA SOURCES :
SOURCE DATA: FAUNA DATA (ECOSCAPE 2019)
BASEMAP: GEOSCIENCE AUSTRALIA
SERVICE LAYERS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

ecoscape

INTRODUCED PREDATOR LOCATIONS 2019

COVALENT FAUNA MONITORING

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

SCALE: 1:35,000 @ A3

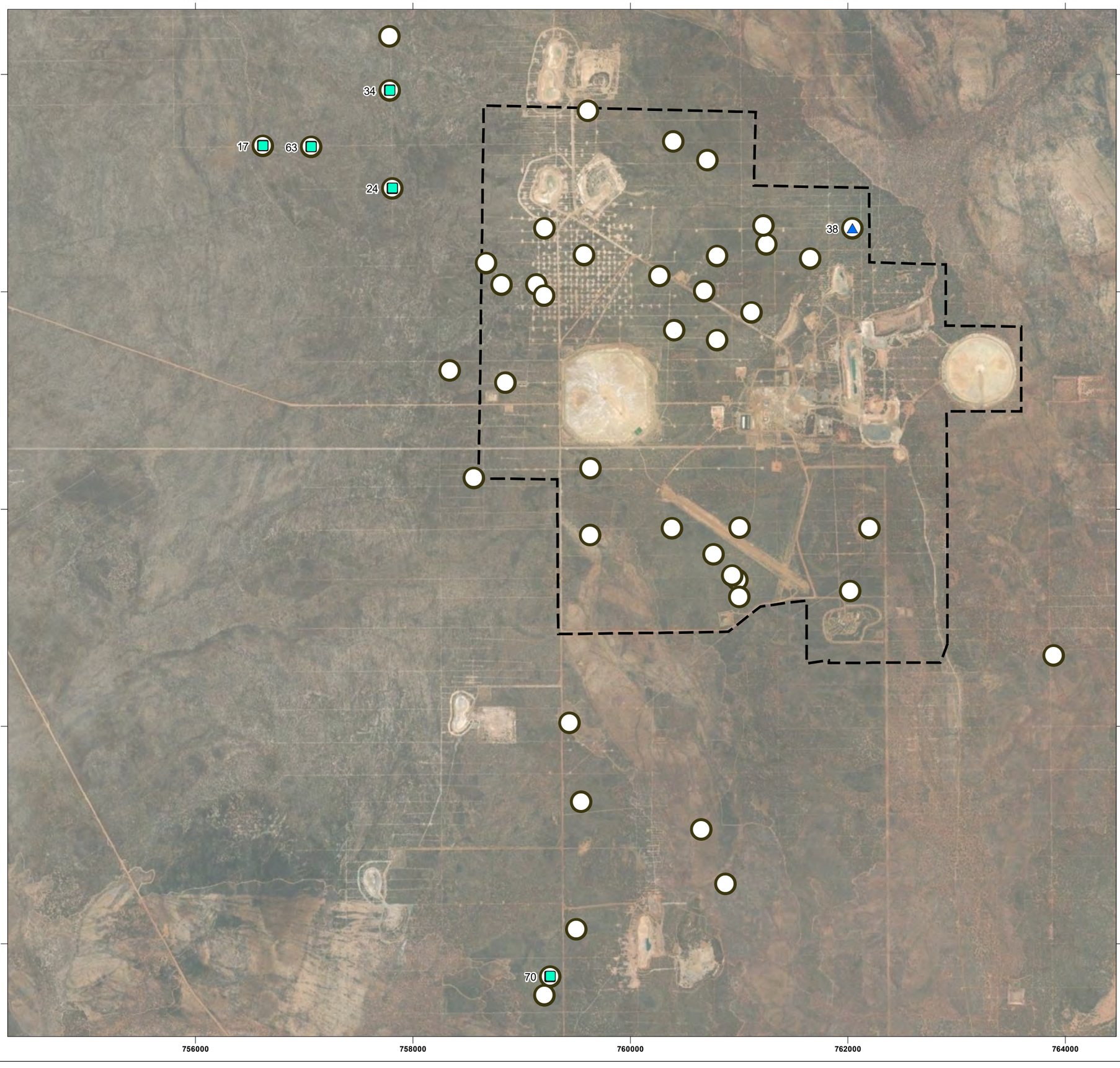
N

0 500 1,000 metres

PROJECT NO: 4644-21

REV	AUTHOR	APPROVED	DATE
00	SS	NW	25/05/2022

MAP 01

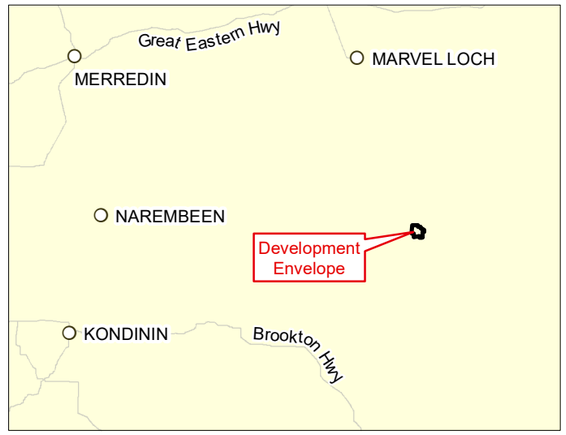


LEGEND

- Covalent Development Envelope
- Monitored Malleefowl Mounds

Predators 2020

- cat
- dog



DATA SOURCES :
SOURCE DATA: FAUNA DATA (ECOSCAPE 2020)
BASEMAP: GEOSCIENCE AUSTRALIA
SERVICE LAYERS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

ecoscape

INTRODUCED PREDATOR LOCATIONS 2020

COVALENT FAUNA MONITORING

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

SCALE: 1:35,000 @ A3

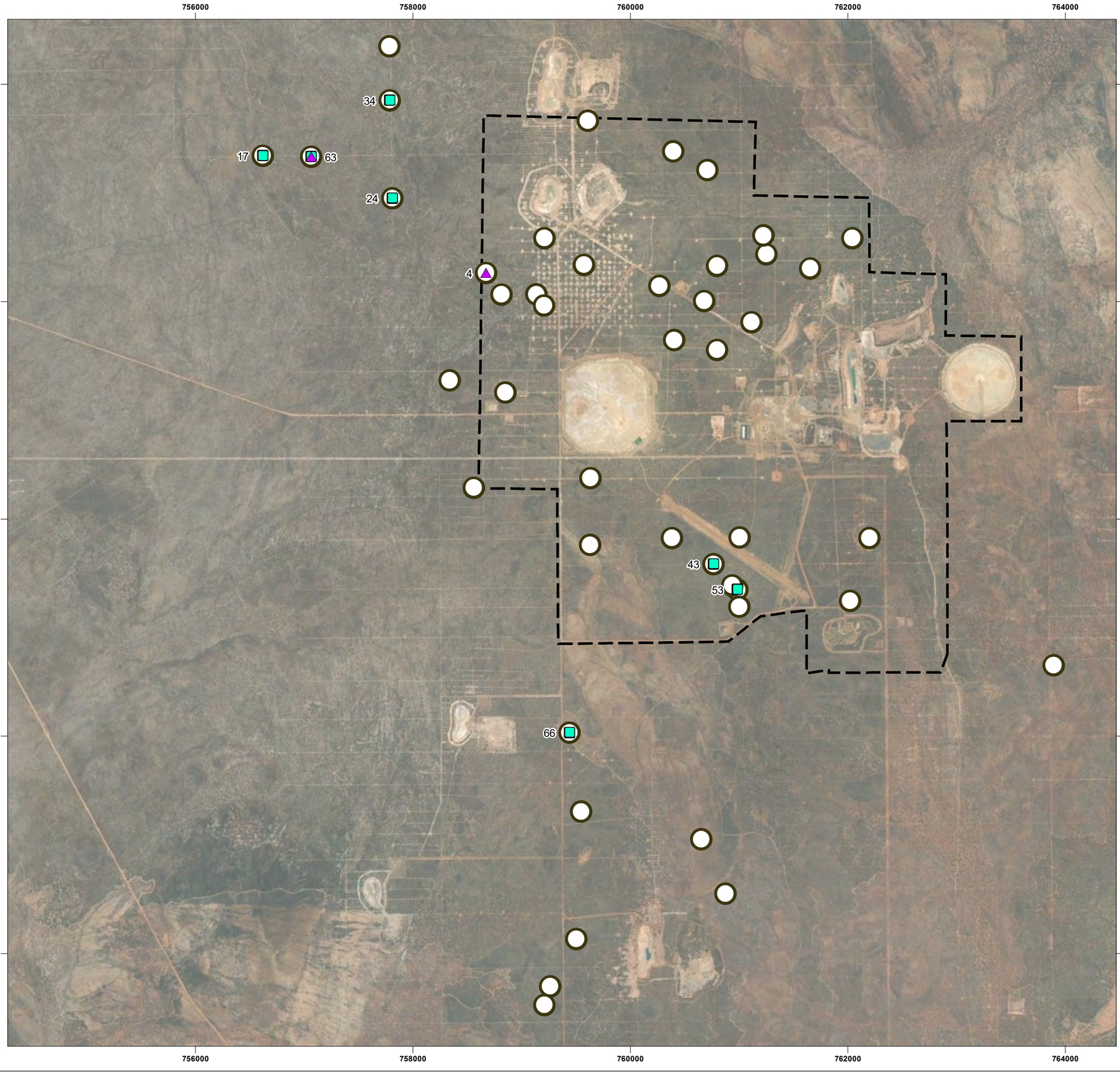
N

0 500 1,000 metres

PROJECT NO: 4644-21

REV	AUTHOR	APPROVED	DATE
00	SS	NW	25/05/2022

MAP 02



LEGEND

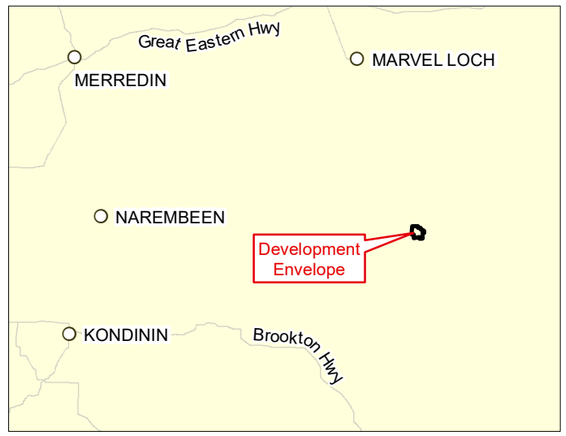
Covalent Development Envelope

Monitored Malleefowl Mounds

Predators 2021

cat

fox



DATA SOURCES :
SOURCE DATA: FAUNA DATA (ECOSCAPE 2021)
BASEMAP: GEOSCIENCE AUSTRALIA
SERVICE LAYERS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

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INTRODUCED PREDATOR LOCATIONS 2021

COVALENT FAUNA MONITORING

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

SCALE: 1:35,000 @ A3

N

0 500 1,000 metres

PROJECT NO: 4644-21

REV	AUTHOR	APPROVED	DATE
00	SS	NW	25/05/2022

MAP 03

752000 754000 756000 758000 760000 762000 764000 766000

6450000 6448000 6446000 6444000 6442000 6440000 6438000

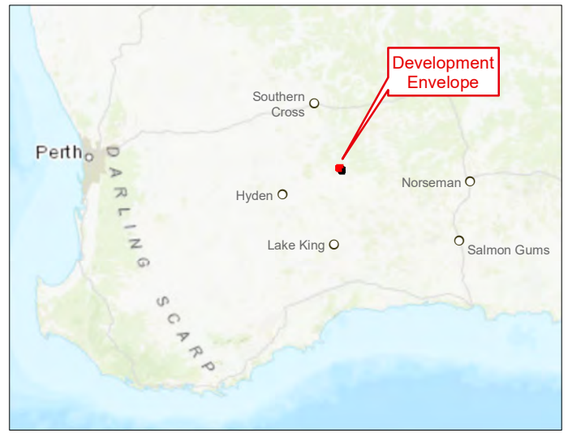
34 63 24 02 64 60 53 56 66

LEGEND

- Covalent Development Envelope
- LOM Survey Area
- Malleefowl Mounds

Predators 2022

- Cat
- Dog



DATA SOURCES :
SOURCE DATA: FAUNA DATA (ECOSCAPE 2022)
BASEMAP: ESRI WORLD IMAGERY (2021)
SERVICE LAYERS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

ecoscape

INTRODUCED PREDATOR LOCATIONS 2022

COVALENT FAUNA MONITORING

covalent LITHIUM

COORDINATE SYSTEM: GDA 1994 MGA ZONE 50
PROJECTION: TRANSVERSE MERCATOR
DATUM: GDA 1994
UNITS: METER

SCALE: 1:50,000 @ A3

N 0 1 2 km

PROJECT NO: 4743-22

REV	AUTHOR	APPROVED	DATE
00	LC	BT	02/06/2023

MAP 04

APPENDIX ONE MONITORING RESULTS

Table 3: Introduced Predator Records at Monitored Malleefowl Mounds

Mound ID	2019			2020			2021			2022			Easting	Northing
	Cat	Fox	Dog	Cat	Fox	Dog	Cat	Fox	Dog	Cat	Fox	Dog		
2										x			758814.4	6446062
4	x							x					758671.4	6446261
17	x			x			x						756616.7	6447339
23	x												760393.7	6447381
24				x			x			x		x	757807.8	6446950
28	x												760796.1	6445552
29	x												760398.4	6445650
34	x			x			x			x			757784.4	6447850
38	x		x			x							762041.1	6446581
43							x						760762.3	6443581
53							xx			x			760983.1	6443348
56										x			761001.8	6443827
60										x			760934.2	6443386
63	xxx			xxx			xx	x		x			757062.5	6447330
64	xx									x			758558.6	6444285
66							xx			x			759437.3	6442034
70				x									759262.4	6439697
Chuditch Monitoring June 2022														
MC71										x				
Fauna Survey October 2022														
MC25										x				
MC87										x				
MC84										x				
Covalent Fauna Register														
Observations										xxx		xx		
Total	**12**	**0**	**1**	**7**	**0**	**1**	**10**	**2**	**0**	**16**		3		

Appendix L Dust Report 2023

MAXY Engineering
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Covalent Lithium dust report – 2022-2023

Prepared for: Covalent Lithium

September 2023

Version 2

Prepared by:

MAXY Engineering – Razvan Vlad

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Scope of work

MAXY Engineering was contracted to monitor the dust concentrations at the Covalent Lithium mine site located in Western Australia. Dust monitoring is a requirement of the Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan (Rev 7) and Earl Grey Lithium Project Mining Proposal – Stage 2.

The measurements were performed using two methods:

- Realtime PM10 concentration at two locations
- Realtime wind speed and wind direction measurements at one location
- Monthly average dust concentrations and composition at 9 locations using dust deposition gauges (data supplied by Covalent staff)
- Monthly dust composition at the two realtime monitoring locations (data supplied by Covalent staff)

Monitoring equipment

Realtime monitors

- Light scattering devices
- Heated inlets
- PM10 inlet separators
- 2 second measurements, 5 minutes averages
- 1.8 m above ground inlet height
- Mechanical wind speed / wind direction sensor

Dust deposition gauges

- AS dust deposition gauge fitted with high capacity bottles
- ARL method 103 metals analysis
- Modified AS/NZS 3580.10.1 total solids analysis

There were two realtime dust monitors and nine dust deposition gauges deployed during the reporting period. The dust monitoring locations and purpose are described in Table 1 below.

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ABN: 95 154 819 100

Table 1:Dust Monitoring Sites

Type	Location	Description	Easting (UTM Zone 50)	Northing (UTM Zone 50)
Realtime	RT1	02/2022 – 12/05/2023	762324	6445360
Realtime	RT1	12/05/2023 – 30/06/2023	761403	6445017
Realtime	RT2	02/2022 – 18/04/2023	759607	6444354
Realtime	RT2	18/04/2023 – 30/06/2023	761808	6445104
Dust Gauge	Transect 2	Impact	762678	6443570
Dust Gauge	Transect 7	Control	760130	6451461
Dust Gauge	Transect 8	Impact	760120	6444511
Dust Gauge	Transect 9	Impact	760456	6446138
Dust Gauge	Transect 10	Control	761099	6443067
Dust Gauge	Transect 11	Control	761652	6441960
Dust Gauge	Transect 14	Impact	761826	6443962
Dust Gauge	Transect 16	Impact	755088	6445627
Dust Gauge	Transect 18	Impact	757942	6444937

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General observations

The monitoring stations were installed in July 2021 and operated continuously until the end of June 2023. A separate report was prepared for the first part of the project (June 2021 – September 2022) and this document deals with the data from October 2022 until the end of the monitoring program (June 2023). The realtime monitoring stations were relocated during this period as shown in the following image.

Image 1 – Realtime dust monitoring locations

Station 1 complied to the Australian Standard for siting during the first period, but due to the local conditions it was not possible to find a location for Station 2 that fully complies. The chosen locations are the best fit possible as far as the clear sky view and vegetation proximity are concerned.

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Wind conditions

An Australian Standard weather station is not available on site and for this project a local wind vane was used to collect wind information. The sensor was located at the Station 2 site, 1.8m above ground and sampled at the same frequency as the PM10 monitor. The wind roses below show the data collected during the first period (01/10/2022 – 18/4/2023) and the second period (18/4/2023 – 30/6/2023).

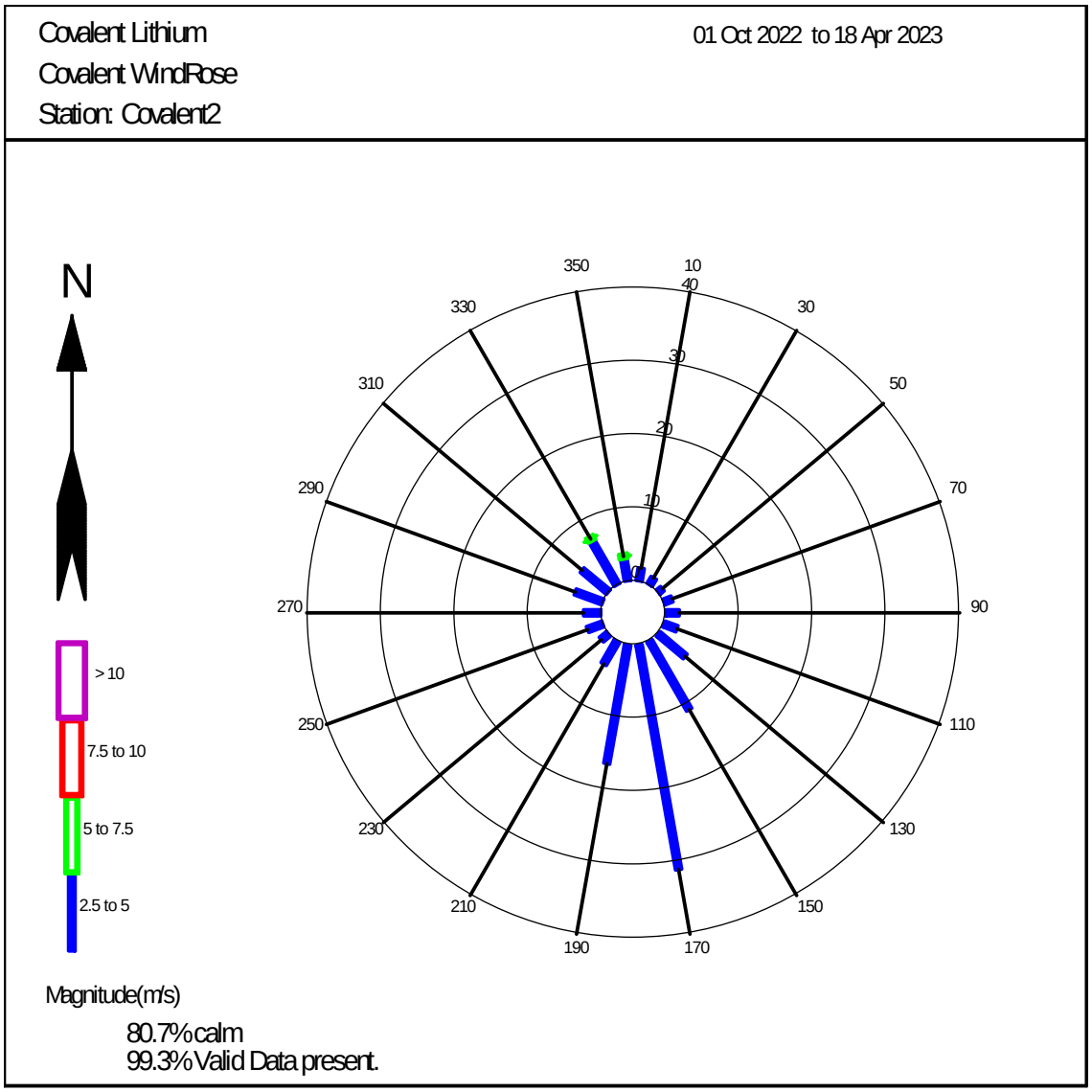

Image 2 – Wind Rose, Station 2, 01/10/2022 – 18/4/2023

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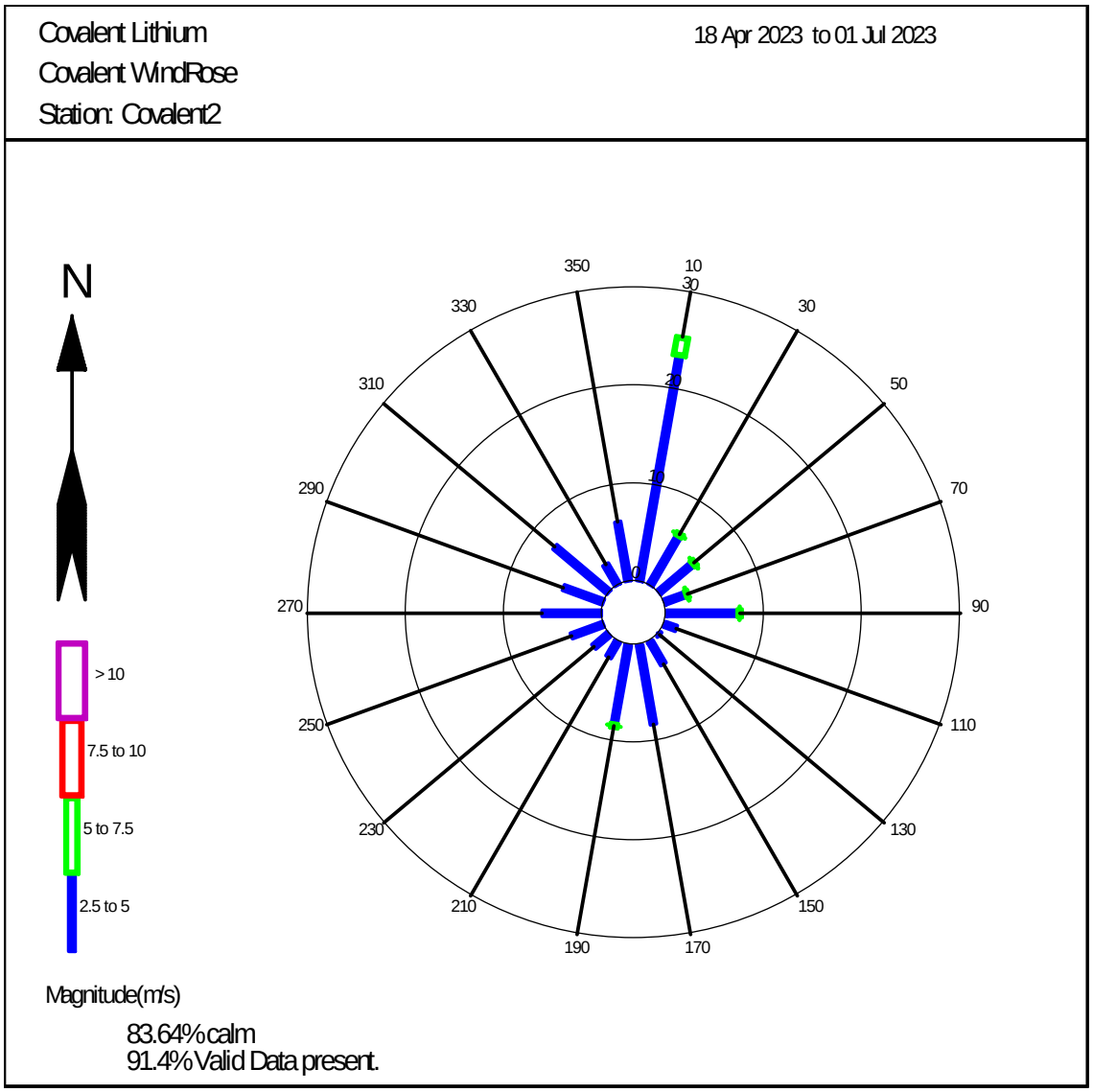

Image 3 – Wind Rose, Station 2, 18/4/2023 – 30/6/2023

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PM10 realtime measurements

The following graphs show the 24 hours average PM10 concentrations for the 3 different periods (taking into account the location of each station during this time). The NEPM limit was not exceeded during the first two intervals and it was only exceeded at Station 2 once it was moved to the final location.

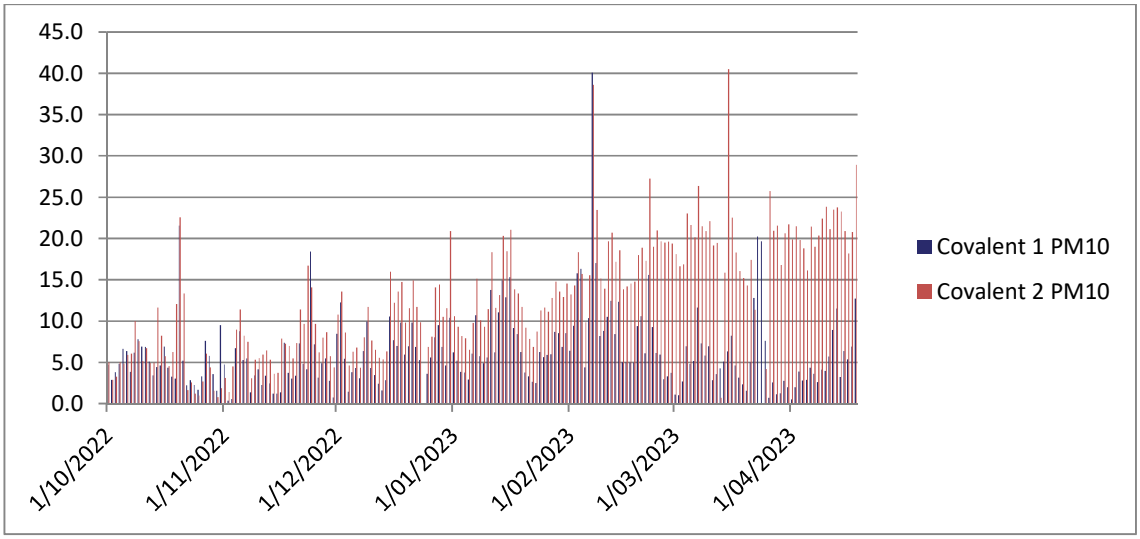

Image 4 – PM10 24 hours concentrations 01/10/2022 – 17/4/2023

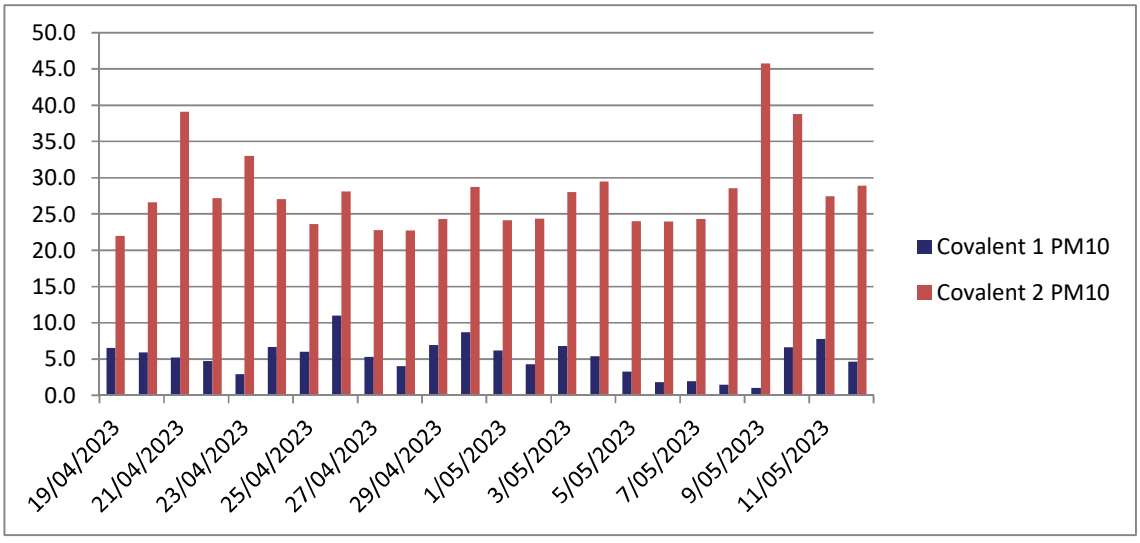

Image 5 – PM10 24 hours concentrations 18/4/2023 – 12/5/2022

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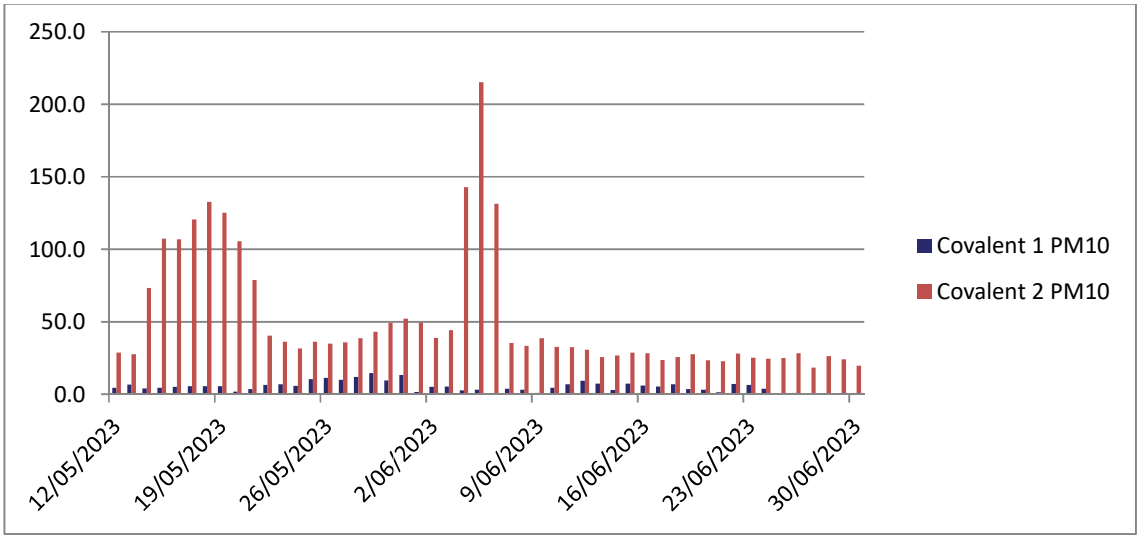

Image 6 – PM10 24 hours concentrations 12/5/2023 – 30/6/2023

A dust source identification was compiled for Station 2 at the second location.

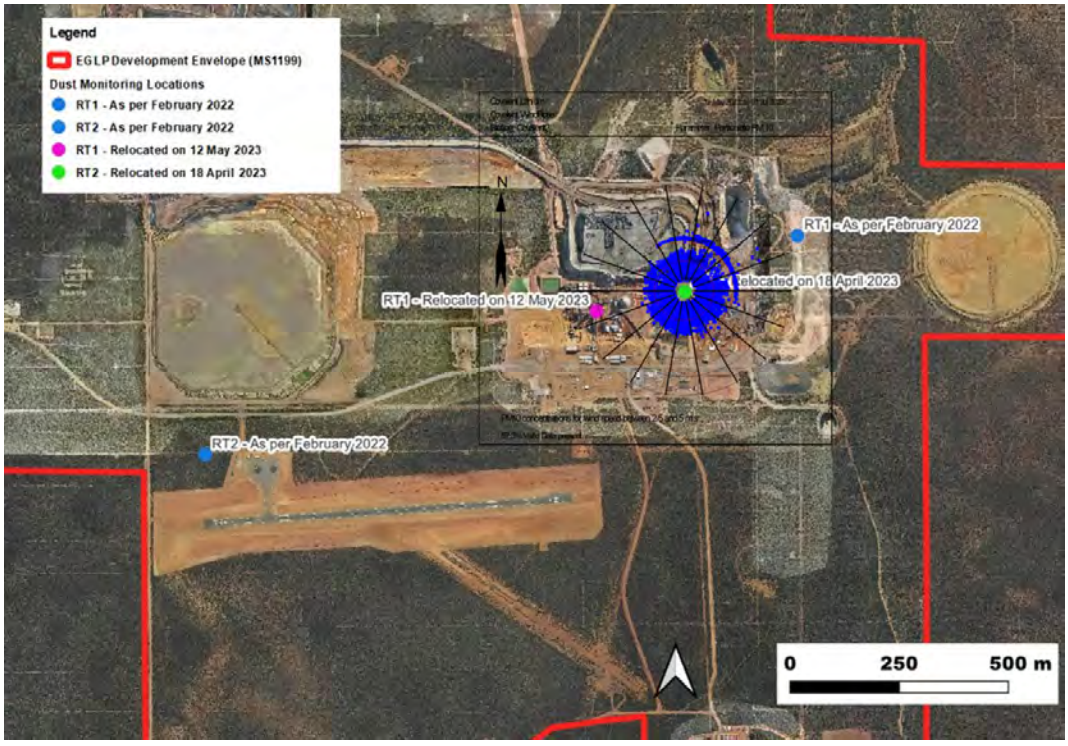

Image 7 – PM10 10 min dust sources, Station 2, 18/4/2023 – 30/6/2023

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Realtime dust results analysis

The NEPM limit for PM10 dust concentrations is 50µg/m^3 for 24 hours averages. There were 12 exceedences of the limit during the monitoring period, all of them recorded at Station 2 in the second location. The wind speed and direction analysis for these days shows that the dust sources were located directly South of Station 2, probably within a few hundred meters of it. During the same period Station 1 did not record any elevated readings showing that the general dust background was unchanged.

Date	Station 2 PM10 concentration (µg/m^3)	Station 1 PM10 concentration (µg/m^3)
14/5/2023	73.3	3.9
15/5/2023	107.3	4.7
16/5/2023	106.9	5.2
17/5/2023	120.6	5.6
18/5/2023	132.8	5.6
19/5/2023	125.1	5.7
20/5/2023	105.7	2
21/5/2023	79	3.6
31/5/2023	52.2	13.3
04/6/2023	143	2.8
05/6/2023	215.4	3.1
06/6/2023	131.3	0.5

Dust composition results analysis

A full suite of chemical analysis was performed on the dust deposition gauge samples (9 locations) and the filters collected at the realtime monitors. Ten sets of samples were analysed for each location and the following metals were targeted:

Aluminium, Silver, Arsenic, Boron, Barium, Beryllium, Cadmium, Cobalt, Copper, Mercury, Manganese, Molybdenum, Nickel, Lead, Selenium, Vanadium, Zinc, Chromium (Hexavalent)

Insoluble solids (g/m2/month) at Transect site 10 exceeded the FVEMP early response trigger (5 g/m2/month) five times throughout the reporting period. No exceedances of the management target (10 g/m2/month) were recorded during the reporting period.

A summary of the results and interpretation are presented in Table 2 below.

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Table 2:Dust Deposition Gauge results

MT HOLLAND DUST DEPOSITION MONITORING				Early Response Trigger - 5g/m2				Management Trigger - 10g/m2					
Monitoring Period	Collection Date	Analysis	Unit	Transect 2 Impact Borefield Rd	Transect 7 Control Jilbadji	Transect 8 Impact South of MAR	Transect 9 Impact FVEZ Haul Rd	Transect 10 Control FVEZ Airstrip	Transect 11 Control South of DE	Transect 14 Impact FVEZ VAR	Transect 16 Impact MAR	Transect 18 Impact MAR	Comments - Interpretation
Sep-22	30/09/2022	Insoluble Solids	g/m².month	0.3	0.1	2.3	1.9	3.6	0.7	0.8	0.3	0.4	Compliant
Oct-22	1/11/2022	Insoluble Solids	g/m².month	0.3	0.3	0.5	2.3	5.9	0.4	0.7	0.4	0.8	Transect 10 exceeded the early response warning trigger. This was reported internally. No action is required unless T10 is triggered again next month. Actions include the speed limit in the area being changed to 40 kmph and increased dust supression in the area.
Nov-22	30/11/2022	Insoluble Solids	g/m².month	0.8	0.6	1.8	1.9	3.7	0.6	0.7	0.5	0.9	Compliant
Dec-22	20/12/2022	Insoluble Solids	g/m².month	0.5	0.4	2.7	4.2	9.1	0.7	0.6	0.8	1.2	Increased dust suppression in the area. Reported internally as an exceedance of early response trigger.
Jan-23	30/01/2023	Insoluble Solids	g/m².month	1	0.6	2.1	3.9	9.6	0.9	1.4	1.4	2.1	Reported externally to DWER in accordance with Vegetation Health Environmental Management Plan, 2 consecutive exceedances of early response triggers. New village access road is being sealed to eliminate traffic near T10.
Feb-23	27/02/2023	Insoluble Solids	g/m².month	0.6	0.3	4.3	3.9	6.6	0.4	3.5	0.3	0.1	Reported internally as an exceedance of early response trigger. Increased dust suppression near T10 whilst new access road is being sealed.
Mar-23	27/03/2023	Insoluble Solids	g/m².month	0.2	0.4	1.6	3.4	9.8	0.4	0.8	1.2	0.7	Reported internally as an exceedance of early response trigger. Opening of new village access road and closure of blue vein road will decrease traffic at T10.
Apr-23	26/04/2023	Insoluble Solids	g/m².month	0.1	0.2	0.8	1	1.9	0.1	0.1	0.1	2.5	Compliant
May-23	27/05/2023	Insoluble Solids	g/m².month	0.8	0.1	2.4	4	0.5	0.3	1.7	0.3	0.7	Compliant
Jun-23	2/07/2023	Insoluble Solids	g/m².month	0.4	0.2	1	1.8	0.1	2	2.6	1	2.8	Compliant
Jul-23	31/07/2023	Insoluble Solids	g/m².month	0.6	0.2	3.2	2.1	0.9	0.4	1.2	0.3	0.8	Compliant

Appendix M Evidence Register

Table M.4: Evidence Register

Code	Reference	Author	Electronic	Hard-copy	Topic
C01	C01_Notice of EPBC Act Approval 2017_7950 2022 Annual Compliance Report for Covalent Earl Grey Lithium Project _SEC_OFFICIAL_	DCCEEW	X		Email acknowledgement 23/10/2023 from DCCEEW on receipt of 2023 ACR.
C02	C02_DWER TFOS Review 20231026	DWER	X		DWER review of the TFOMP 26/10/2023
C03	C03_MS1199 - TFEMP Rev 5 approval	DWER	X		DWER approval letter for the TFEMP under MS1199
C04	C04_MS1199 - FVEMP Rev 7 approval	DWER	X		DWER approval letter for the FVEMP under MS1199
C05	C05_Covalent Reconciliation of clearing	Covalent	X		Correspondence from Covalent to JBS&G auditor clarifying that the clearing figures in G01 are correct in December 2022 plus the March 2023 new clearing.
C06	C06_ DWER correspondence - Dust compliance query	DWER	X		Letter from Covalent to DWER (incorrect address) notifying DWER of dust deposition trigger criteria exceedance.
C07	C07_20230713 Covalent Lithium EGLP EPBC Decision 20177950 Approval - Notice to DCCEEW	Covalent	X		Condition 13 notification dated 13/07/2023 to DCCEEW of potential non-compliance with conditions 6 and 12.
C08	C08_2017_7950 - 240313 - Show cause	DCCEEW	X		DCCEEW show cause notice dated 21/03/2024 regarding potential non-compliances with conditions 6, 12 and 14.
C09	C10_2017_7950 CR 23 003265 240502 Earl Grey Lithium Project Close out letter_non-compliant_NFA C09_Covalent Response to DCCEEW Show Cause	DCCEEW	X		DCCEEW warning letter dated 06/06/2024 in regard to non-compliances with conditions 6, 12 and 14.
E01	E01_Website Screenshot 2024-06-10	JBS&G	X		Screenshot of Covalent website:

Code	Reference	Author	Electronic	Hard-copy	Topic
					https://www.covalentlithium.com/sustainability
E02	E02_Lightning Protection Infrastructure	Covalent	X		Photo of Lightning Protection Infrastructure
E03	E03_GDP60_V7_SWRL Fauna Preclearance	Covalent	X		Fauna Pre-clearance Survey Form for GDP0060_V7 (16/03/2023)
E04	E04_Exclusion Signage 1	Covalent	X		Photo of EEZ Signage “Please Keep Out”
E05	E05_Exclusion Signage 2	Covalent	X		Photo of EEZ Signage “Please Keep Out”
E06	E06_Exclusion Signage 3	Covalent	X		Photo of Protected Vegetation Zone “Start”
E07	E07_Mt Holland Environmental Induction	Covalent	X		Environmental Section of the Mt Holland Induction
E08	E08_Weed Control Register	Covalent	X		Register of weed control undertaken in 2023
E09	E09_Ministerial Statement MS1199	EPA	X		Ministerial Statement 1199 Earl Grey Lithium Project (Significant Amendment) dated 23/11/2022
E10	E10_Weed Hygiene Register	Covalent	X		Weed hygiene register for vehicles and mobile equipment
E11	E11_Example Vehicle Hygiene Record	Covalent	X		Vehicle hygiene inspection record for Cat Model 980 on 31/10/2023
E12	E12_Dust Suppression FY23	Covalent	X		Register of water use for dust suppression in 2023 FY
E13	E13_Truck Example Fire Suppression System Photo 1	Covalent	X		Photo of Fire Suppression System on Truck
E14	E14_Dozer Example Fire Suppression System Photo 1	Covalent	X		Photo of Fire Suppression System on Dozer
E15	E15_Dozer Example Fire Suppression System Photo 2	Covalent	X		Photo of Fire Suppression System on Dozer
E16	E16_Fire Equipment Service register	Covalent	X		Service Register for Mine Site Fire Equipment
E17	E17_Fire Extinguisher Workshop Vehicle Example	Covalent	X		Photo of Fire Extinguisher in Workshop Vehicle

Code	Reference	Author	Electronic	Hard-copy	Topic
E18	E18_Fire Extinguisher Workshop Vehicles Tag	Covalent	X		In service tag on Fire Extinguisher in Workshop Vehicles
E19	E19_Fire Extinguisher Workshop	Covalent	X		Photo of Fire Extinguisher in Workshop Building
E20	E20_Fire Hydrants Hose Reels	Covalent	X		Schematic of locations of fire hydrants and hose reels on mine site
E21	E21_Fauna Register as at 240531	Covalent	X		Register of fauna conservation significant fauna interactions and all fauna injuries and fauna fatalities.
E22	E22_2023-2024 MTH Environmental Incident Register from INX	Covalent	X		Covalent Environmental Incident Register for 2023
E23	E23_Landfill inspection Nov 2023	Covalent	X		Landfill inspection record from Nov 2023
E24	E24_Putrescible skip	Covalent	X		Photo of Putrescible waste skip
E25	E25_2023_MtHollandGDPAwarenessScript	Covalent	X		Ground Disturbance Permit Training Online Induction Script
E26	E26_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E27	E27_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E28	E28_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E29	E29_GDP0060_V9_SWRL_ExistingTSF2	Covalent	X		South Waste Rock Landform footprint (SWRL) Ground Disturbance Permit No. 60 V9
E30	E30_GDP0071_TSFConstruction_V1	Covalent	X		TSF Construction Ground Disturbance Permit No. 71 V1
E31	E31_DMIRS 2023_Fauna Egress	Covalent	X		Covalent Fauna Egress Matting Plan for Lined Ponds [RA-484-5594] (In line with DMIRS ENV-MEB-212 Fauna Egress Matting and Ramps)
E32	E32_20230321_Environmental Inspection	Covalent	X		Environmental Inspection Record of LV Wash Bay on 21/03/2023
E33	E33_20230903_Environmental Inspection	Covalent	X		Environmental Inspection Record of Village on 03/09/2023
E34	E34_20230116 TBT Reporting Fauna Sightings	Covalent	X		Toolbox talk on Reporting Fauna Sightings

Code	Reference	Author	Electronic	Hard-copy	Topic
E35	E35_20230823 Reporting Fauna Sightings	Covalent	X		Toolbox talk on Reporting Fauna Sightings
E36	E36_20230912 TBT Site Speed Limits	Covalent	X		Toolbox talk on TBT Site Speed Limits
E37	E37_20231203 TBT Protect Our Malleefowl	Covalent	X		Toolbox talk on TBT Protect Our Malleefowl
E38	E38_20230418 Introduced Predator Control	Covalent	X		Toolbox talk on Introduced Predator Control
E39	E39_20230809 TBT Malleefowl Breeding Season	Covalent	X		Toolbox talk on TBT Malleefowl Breeding Season
E40	E40_20230903 TBT Snake Awareness	Covalent	X		Toolbox talk on TBT Snake Awareness
E41	E41_20230907 TBT Threatened Species Day	Covalent	X		Toolbox talk on TBT Threatened Species Day
E42	E42_Dust Event16-01-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 16/01/2023
E43	E43_Dust Event23-02-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 23/02/2023
E44	E44_Dust Event20-03-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 20/03/2023
E45	E45_PEA Order Confirmation OA00047164	John Morris Group	X		Order confirmation for PEA analyser
E46	E46_Kings Park Science Restoration Research	King's Park	X		Kings Park Research Proposal including investigation of the viability of the use of the PEA
G01	G01_a2765 CAR23 f01 03 - Fig3 Clearing	CAD Resources	X		Figure 3 for EGLP CAR 2023 showing Clearing within the Development Envelope
G02	G02_CAR23 Calcs 20240429	CAD Resources	X		Calculations of Priority listed flora impacted by the proposal
M01	M01_Covalent CAR Evidence Request Response Rev 0	M01	X		Covalent response to JBS&G's request for evidence to undertake the compliance assessment for 2023 associated with 2023 MS1199 Compliance Assessment Report.
M02	M02_Covalent ACR Evidence Request Response Rev 0	JBS&G / Covalent	X		Covalent response to JBS&G's request for evidence to undertake the compliance assessment for 2023/24 EPBC Annual Compliance Report.

Code	Reference	Author	Electronic	Hard-copy	Topic
P01	P01_COV-000-EN-PRO-0012.2.IFU GDP Procedure	Covalent	X		Ground Disturbance Permit (GDP) Procedure Rev 2 (11/03/2022)
P02	P02_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing Procedure	Covalent	X		Covalent Fauna Management and Trench Clearing Procedure Rev 1 (22/08/2022)
P03	P03_COV-M000-EN-PRO-0003.1.IFU Landfill Facility Management Procedure	Covalent	X		Mt Holland Landfill Facility Management Procedure Rev 1 (27/03/2024)
R01	R01_EGLP Annual Compliance Report (2024)(Rev 0)	JBS&G	X		This Report
R02	R02_EGLP Annual Compliance Report (2023)(Rev 0)	JBS&G	X		Previous EPBC 2017/7950 Annual Compliance Report for the period 1 January 2022 to 31 December 2022.
R03	R03_Covalent Lithium CAR 2023 (Rev 0)	Covalent	X		Covalent Lithium Pty Ltd Earl Grey Lithium Project Compliance Assessment Report 2023 (Ministerial Statement 1199) Rev 0
R04	R04_20230725 ECO 2022_23 Malleefowl Monitoring	ecoscape	X		ecoscape Covalent Lithium 2022-23 Malleefowl Monitoring (25/07/2023)
R05	R05_20240216 ECO 2023 Mt Holland Chuditch Monitoring	ecoscape	X		ecoscape Covalent Lithium 2023 Mt Holland Chuditch Monitoring (16/02/2024)
R06	R06_Mattiske Veg Condition Monitoring Spring 2023	Mattiske	X		Earl Grey Lithium Project Vegetation Condition Monitoring Spring 2023 V2 (08/12/2023)
R07	R07_20230720_ECO_2022 Predator Monitoring	ecoscape	X		2022 Predator Monitoring
R08	R08_20230915_Maxy Engineering Dust Report		X		Maxy Engineering Covalent Lithium dust report – 2022-2023 Version 2
R09	R09_Terrestrial Fauna Management Plan Rev 5	Covalent	X		Covalent Lithium Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan Rev 5 (29/11/2022)
R10	R10_Ironcaps Banksia Conservation Plan (Rev2)	Covalent	X		Covalent Lithium Earl Grey Lithium Project Conservation Plan for Ironcaps Banksia (*Banksia sphaerocarpa var. dolichostyla*) EPBC Approval 2017/7950 (Revision 2) 01/02/2021.

Code	Reference	Author	Electronic	Hard-copy	Topic
R11	R11_Flora and Vegetation Management Plan	Covalent	X		Covalent Lithium Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan Rev 7 (20/07/2022)
R12	R12_Threatened Fauna Offset Management Plan	Covalent	X		Covalent Lithium Earl Grey Lithium Project Threatened Fauna Offset Management Plan EPBC Approval 2017/7950 and EPA Ministerial Statement 1118 (Revision 0) 26/03/2021.
R13	R13_Covalent Lithium CAR 2022 (Rev 0)	JBS&G	X		Covalent Lithium Pty Ltd Earl Grey Lithium Project Compliance Assessment Report (Ministerial Statement 1199) Rev 0 (30 April 2024)
R14	R14_COV-0000-EN-PLN-0001_1 Construction EMP	Covalent	X		Covalent Lithium Earl Grey Lithium Project Construction Environmental Management Plan Rev 1 (24/09/2021)
R15	R15_COV-M000-HS-PLN-0005.1.IFU MTH Emergency Management Plan	Covalent	X		Mt Holland Emergency Management Plan Rev 1 (30/09/2023)
R16	R16_20230425_APAS_Feral Cat Control Program Report	Alpha Pest Animal Solutions	X		ALPHA Pest Animal Solutions report on feral cat control at Covalent Lithium Mt Holland April 2023
R17	R17_IntroducedPredatorMonitoring 2021	ecoscape	X		2021 Predator Monitoring

Document Distribution

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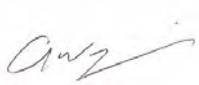
0	Andrea Wills	Andrew Winzer	Andrew Winzer		18/06/2024

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