Earl Grey Lithium Project

Covalent Lithium Pty Ltd

2023 Compliance Assessment Report – Ministerial Statement 1199

JBS&G 666747

30 April 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.

Table of Contents

List of Tables

List of Figures

No table of figures entries found.

Appendices

Introduction

1.1 Project Background

This Compliance Assessment Report (CAR) addresses the status and compliance of operations at the Covalent Lithium Pty Ltd Earl Grey Lithium Project (the Project) with respect to the conditions provided within Ministerial Statement (MS) 1199. This CAR has been prepared for the purpose of meeting the requirement of Condition 8-3 of MS 1199 (1199: M8.3), which is to:

> *"assess compliance with conditions in accordance with the Compliance Assessment Plan (CAP) required by condition 8-1."*

1.2 Project Background

Covalent Lithium Pty Ltd (hereafter referred to as Covalent Lithium), the appointed manager for the Mount Holland Lithium Joint Venture between subsidiaries of Wesfarmers Limited (Wesfarmers) and Sociedad Química y Minera de Chile (SQM), proposed the development of the Earl Grey Lithium Project (the Project) which is located approximately 105 kilometres (km) south of the Southern Cross township in Western Australia (WA).

The Project has been designed to maximize the use of pre-existing disturbance areas. It encompasses a total area of 667 hectares (ha), of which 386 ha is native vegetation and 281 ha is existing infrastructure or disturbed areas (the Project Area). The key components of the project are summarised in Table 1.1.

Table 1.1: Key Components of the Project

Element	Proposed Extent
Physical Elements	
Open-cut Mine Pit	Clearing a maximum of 386 ha of native vegetation, within a Disturbance Footprint of 667 ha and Development Envelope of 1,984 ha
Waste Rock Landform	
Tailings Storage Facility	
Operational Elements	
Mining operations	Earl Grey Lithium Project open-cut mine pit
Waste Rock	Maximum of 184 million cubic metres (m^3) of waste rock tailings
Tailings Disposal	Maximum of 16.5 million m^3 of coarse tailings (i.e., gravel rejects); Maximum of 32 million m^3 of fine tailings (dry stacked); and Maximum of 1.5 gigalitres (GL) per annum.

1.3 Environmental Approval to Implement the Project

The Project was referred under Part IV Section 38 of the Environmental Protection Act 1986 (WA) (EP Act) and was assessed by the Environmental Protection Authority (EPA) as requiring a Public Environmental Review (PER) Level of Assessment (LOA). The Project was granted conditional environmental approval by the Minister of Environment on 21 November 2019, subject to conditions contained in MS 1118, including requirements for Covalent Lithium to monitor and report compliance. A section 46 amendment was made to MS 1118 to

create MS 1167 which amended conditions relating to the offset strategies in May 2021. MS1118 and MS1167 were significantly amended (replaced) by MS 1199 on 23 November 2022. MS 1199 replaces and superseded all previous conditions and procedures of MS 1118 and MS 1167.

The Proposal was also granted environmental approval in February 2020 through the EPBC Decision 2017/7950 approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* by the Commonwealth Department of Agriculture, Water and the Environment (DAWE).

2. Current Status

Covalent Lithium commenced the construction of the Project in April 2021. Construction and commissioning activities have been undertaken in 2023. The total amount of spodumene concentrate produced during commissioning was 15,339 tonnes.

Two management plans required by the State and Commonwealth-approvals have been in place during the reporting period:

- The Flora and Vegetation Management Plan (MS 1199: M2.6); and
- The Terrestrial Fauna Management Plan (MS 1199: M3.4).

The Flora Offset and Threatened Fauna Land Acquisition Strategies and *Microcorys elatoides* Conservation Plan have not been approved by DWER.

3. Audit Methodology

3.1 Audit Plan

3.1.1 Purpose & Scope

Conditions M8.1, M8.2, M8.3, and M8.6 of MS 1199 state:

M8.1: The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 8-6, or prior to implementation of the proposal, whichever is sooner.

M8.2 The Compliance Assessment Plan shall indicate:

(1) the frequency of compliance reporting;

(2) the approach and timing of compliance assessments;

(3) the retention of compliance assessments;

(4) the method of reporting of potential non-compliances and corrective actions taken;

(5) the table of contents of Compliance Assessment Reports; and

(6) public availability of Compliance Assessment Reports.

M8.3 After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 8-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 8-1.

M8.6 The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;

(2) include a statement as to whether the proponent has complied with the conditions;

(3) identify all potential non-compliances and describe corrective and preventative actions taken;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 8-1.

A Compliance Assessment Plan (CAP) (Revision 0) was submitted to the Department of Water and Environmental Regulation (DWER) on 29 April 2024. This CAR has been prepared for Covalent Lithium to fulfil the requirements of 1199: M4-3 by assessing compliance with the conditions of MS 1199 in accordance with the CAP.

As per the 2022 CAR:

- the audit period for this compliance report is from 1 January 2023 to 31 December 2023; and
- this CAR is due to be submitted to DWER by 30 April 2024.

3.1.2 Methodology

The audit was undertaken over the course of the reporting period and included email correspondence with relevant personnel (Table 3.1) and review of relevant documents provided by the Proponent.

Table 3.1: Personnel Consulted During the Audit

Personnel	Business	Position	Purpose
Anthea Pate	Covalent Lithium	Approvals Manager	To obtain verifiable evidence to assist in determining Covalent Lithium's compliance with MS 1199 and associated management plans.
Brigitta Longbottom	Covalent Lithium	Environmental Superintendent	
Lisa McGrath	Covalent Lithium	Environment Manager	
Annette Latto	JBS&G	Principal	

3.1.3 Audit Terminology

The 'Status' field of the audit table describes the implementation of the action and compliance with the audit element. Although the Chief Executive Officer (CEO) of DWER makes the final determination of compliance, it is necessary to update this field each reporting period, as a given project progresses. Formerly the Office of the Environmental Protection Authority (OEPA) (2012a; 2012b; 2012c; and 2012d), DWER has prepared updated guidance related to the preparation of compliance audits, including generic expressions that are used to identify the status of each action (Table 3.2).

Table 3.2: Action Implementation Status

Status	Description
Compliant	Implementation of the proposal has been carried out in accordance with requirements of the audit.
Completed	A requirement with a finite period of application has been satisfactorily completed.
Not Required At This Stage (NRATS)	The requirements of the audit element were not triggered during the reporting period.
Potentially Non-compliant	Possible or likely failure to meet the requirements of the audit element.

Source: The Office of the Environmental Protection Authority (OEPA) 2012b.

4. Audit Results

4.1 Proposed Changes to the Compliance Assessment Plan

Covalent Lithium submitted the CAP as required under MS1199:8.1 on 28 April 2024.

4.2 Compliance Assessment

The results of the audit are presented in Table 5.1, Appendix C and Appendix D below. A signed Statement of Compliance has been included in Appendix B.

4.2.1 Compliance with the Conditions of Ministerial Statement 1199

Of the 63 conditions of MS 1199 (Table 5.1):

- 39 were found to be 'Compliant'
- None were found to be 'Completed'
- 21 were found to be 'Not Required At This Stage'
- Three were found to be 'Potentially Non-compliant'

4.2.2 Conformance with the Commitments of FVEMP

Of the 95 conditions of the FVEMP (Appendix C):

- 70 were found to be 'Conformant'
- Five were found to be 'Completed'
- 14 were found to be 'Not Required At This Stage'
- Six were found to be 'Potentially Non-conformant'

The potential non-conformances relate to:

- the autumn vegetation health monitoring was not undertaken
- exceedance of the dust trigger was not reported to DWER within 7 days
- a Dieback Management Plan was not submitted
- a dieback monitoring programme has not been put in place

4.2.3 Conformance with the Commitments of TFEMP

Of the 95 conditions of the TFEMP (Appendix D):

- 74 were found to be 'Conformant'
- None were found to be 'Completed'
- 21 were found to be 'Not Required At This Stage'
- Zero were found to be 'Potentially Non-conformant'

4.3 Corrective Actions

The following corrective actions are suggested:

- Review the FVEMP to determine the most optimal way of achieving the objectives of the Ministerial Statement. There are currently commitments which are not being met across more than one reporting year. There are also commitments that were to be reviewed for a new frequency after 12 months but do not have the new frequency included.
- Update the Induction to ensure that the material specified in the TFEMP is included.

4.4 Opportunities for Improvement

The following opportunities for improvement have been identified:

- Where issues are identified during workplace inspections, follow up action should be documented on the workplace inspection record.
- Section 2.5 of the FVEMP should be amended to reflect condition 2-7 of MS1199.
- The fauna register does not include observer name. If this is not relevant, amend the TFEMP.

Table 5.1: Ministerial Statement 1199 Audit Table

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:1.1(1)	Limitations and Extent of Proposal	When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents: Development Envelope 2,347 ha	Implement proposal to the stated extent	Overall	Prior to November 2062	G01_a2765 CAR23 f01 03 - Fig3 Clearing	The proponent has not exceeded the development envelope of 2,347 ha.	Compliant
M1199:1.1(2)	Limitations and Extent of Proposal	When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents: Indicative Disturbance Footprint 882 ha	Implement proposal to the stated extent	Overall	Prior to November 2062	G01_a2765 CAR23 f01 03 - Fig3 Clearing	The proponent has not exceeded the indicative disturbance footprint of 882 ha.	Compliant
M1199:1.1(3)	Limitations and Extent of Proposal	When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents: Clearing Extent: Clearing of no more than 442 ha of native vegetation	Implement proposal to the stated extent	Overall	Prior to November 2062	G01_a2765 CAR23 f01 03 - Fig3 Clearing	Clearing in reporting period of 27.9 ha.	Compliant
M1199:1.1(4)	Limitations and Extent of Proposal	When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents: Mine and associated infrastructure: Mining operations and mining infrastructure including a mine pit, waste rock landforms, tailings storage facility, processing plant, airstrip, accommodation village, water supply pipeline, solar plant, and associated infrastructure.	Implement proposal to the stated extent	Overall	Prior to November 2062	G01_a2765 CAR23 f01 03 - Fig3 Clearing	All additional works are within the development envelope.	Compliant
M1199:1.1(5)	Limitations and Extent of Proposal	When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents: Project life: Up to 40 years from the date of this Statement	Implement proposal to the stated extent	Overall	Prior to November 2062	NRATS	The Ministerial Statement is dated 23/11/2022. The date of the audit is within the 40 year life of the proposal.	Compliant
M1199:2.1(1)	Flora and Vegetation	The proponent shall implement the proposal to meet the following environmental outcomes: (1) clearing of no more than 442 ha of native vegetation;	Implement proposal to the stated extent	Overall	Prior to November 2062	Refer to M1199:1.1(3)	Refer to M1199:1.1(3)	Compliant
M1199:2.1(2)	Flora and Vegetation	The proponent shall implement the proposal to meet the following environmental outcomes: (2) no direct or indirect disturbance to flora and vegetation in the exclusion zones as shown on Figure 3;	Implement proposal to the stated extent	Overall	Life of the proposal	G01_a2765 CAR23 f01 03 - Fig3 Clearing	No disturbance evident in the exclusion zones shown in Figure 3 of MS 1199	Compliant
M1199:2.1(3)	Flora and Vegetation	The proponent shall implement the proposal to meet the following environmental outcomes: (3) no more than 9,732 individuals of Microcorys elatoides and two (2) individuals of Banksia sphaerocarpa var. dolichostyla to be subject to direct disturbance inside the development envelope;	Implement proposal to the stated extent	Overall	Prior to November 2062	G02_CAR23 Calcs 20240429	The proponent ensured that there was no proposal related impacts on more than the thresholds. The total number of *Microcorys elatoides* directly impacted by EGLP activities: 6,583 individuals. The total number of *Banksia dolichostyla* directly impacted by EGLP activities: 0 individuals	Compliant
M1199:2.1(4)	Flora and Vegetation	The proponent shall implement the proposal to meet the following environmental outcomes: (4) The loss of no more than: • 7% of the known population of Labichea rossii; • 7% of the known population of Microcorys sp. Mt Holland broad-leaf; • 5% of the known population of Acacia lachnocarpa; • 2% of the known population of any other priority 1 flora species.	Implement proposal to the stated extent	Overall	Prior to November 2062	G02_CAR23 Calcs 20240429	The proposal has been implemented to meet the following outcomes: • The loss of 3.4988% of the known population of Labichea rossii • The loss of 0.0861% of the known population of Microcorys sp. Mt Holland broad-leaf • The loss of 0.3286% of the known population of Acacia lachnocarpa • No loss of 2% of the known population of any other priority 1 species	Compliant

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:2.2(1)	Flora and Vegetation	The proponent shall implement the proposal to achieve the following environmental objectives: (1) avoid, where practicable, and otherwise minimise direct disturbance to priority flora species outside the flora exclusion zones detailed on Figure 3;	Avoid and minimise direct disturbance to priority flora species outside the flora exclusion zone	Overall	Life of the proposal	R04_Flora and Vegetation Management Plan Rev 7 R01_Covalent Lithium CAR 2023 (Rev 0) Appendix C	The proponent has implemented the Flora and Vegetation Environmental Management Plan. Conformance with the plan has been assessed in Appendix C: • 70 commitments were found to be conformant • Five were found to be completed • 13 commitments were found to be not required at this stage • seven commitments were found to be potentially non-conformant	Compliant
M1199:2.2(2)	Flora and Vegetation	The proponent shall implement the proposal to achieve the following environmental objectives: (2) avoid, where practicable and otherwise minimise indirect impacts to flora and vegetation including but not limited to impacts from clearing, dust, weeds and fire.	Avoid and minimise indirect impacts to flora and vegetation from clearing, dust, weeds and fire.	Overall	Life of the proposal	R04_Flora and Vegetation Management Plan Rev 7 R01_Covalent Lithium CAR 2023 (Rev 0) Appendix C	The proponent has implemented the Flora and Vegetation Environmental Management Plan. Conformance with the plan has been assessed in Appendix C: • 70 commitments were found to be conformant • Five were found to be completed • 13 commitments were found to be not required at this stage • seven commitments were found to be potentially non-conformant	Compliant
M1199:2.3	Flora and Vegetation	Prior to clearing within the areas subject to the significant amendment as described in section 1 of the proponent's section 38 Referral Supporting Document (Revision 3, April 2022), the proponent must undertake pre-clearance vegetation and flora survey(s), in accordance with Technical guidance – Flora and vegetation surveys for environmental impact assessment, or any approved updates of these guidelines.	Undertake preclearance vegetation and flora surveys	Planning phase	Prior to clearing within areas subject to significant amendment as described in section 1 of the proponent's Section 38 Referral Supporting Document	R04_Flora and Vegetation Management Plan Rev 7	All pre-clearance flora surveys within Development Envelope were completed prior to the issue of the FVMP Rev 7 (R04).	Compliant
M1199:2.4	Flora and Vegetation	In order to meet the outcomes of condition 2-1, and the objectives of condition 2-2, within six (6) months of the date of this Statement, the proponent shall update the Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan (July 2022). This plan shall: (1) include details of the timing, methods, limitations, and results of the pre-clearance surveys required by condition 2-3 and demonstrate how the findings of the survey(s) have been considered, including provision of mitigation measures; (2) describe how impacts to threatened and priority flora species outside the flora exclusion zones will be avoided where possible, and/or minimised; (3) include actions to ensure that dust, weeds, and fire are appropriately managed within the development envelope; (4) specify trigger criteria that must provide an early warning that the threshold criteria identified in condition 2-4(5) may not be met; (5) specify threshold criteria to demonstrate compliance with the environmental outcomes specified in condition 2-1; (6) specify monitoring to determine if trigger criteria and threshold criteria are exceeded; (7) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded; (8) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded;	Update of the EGLP Flora and Vegetation Environmental Management Plan with details in Condition 2-4.	Planning phase	By 23 May 2023	R04_Flora and Vegetation Management Plan Rev 7 C02_MS1199 - FVEMP Rev 7 approval letter	The FVEMP was submitted 12/12/2022 and approved 09/03/2023. The plan includes the details listed (1) to (10): (1) Section 1.3 (2) Section 1.3.3 (3) Section 2.2 (4) Section 2.1 (5) Section 2.1 (6) Section 2.4 (7) Section 2.1 (8) Section 2.1 (9) Section 2.1 and Section 2.2 (10) Section 2.5	Compliant

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
		(9) provide contingency measures and adaptive management techniques to ensure the outcomes of conditions 2-1 and 2-2 are met, and include options for changes to operations and reductions in disturbance; and (10) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that the outcome of condition 2-1 and the objectives of condition 2-2 have been met over the reporting period in the Compliance Assessment Report required by condition 8-6.						
M1199:2.5	Flora and Vegetation	The proponent must not commence clearing exceeding the extent of the original authorised proposal until the CEO has confirmed by notice in writing that the Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan satisfies the requirements of condition 2-4.	Must not commence clearing until EGLP FVEMP has been approved.	Planning.	Prior to clearing.	C02_MS1199 - FVEMP Rev 7 approval letter	The FVEMP Rev 7 was approved 09/03/2023. On site clearing was undertaken 13 to 19/03/2023 and included 386 ha of clearing exceeding the original extent.	Compliant
M1199:2.6	Flora and Vegetation	The proponent must implement the most recent version of Flora and Vegetation Environmental Management Plan confirmed for implementation by the CEO, with the objective of ensuring the outcomes of condition 2-1 and objectives of condition 2-2 are achieved/met, until the CEO has confirmed by notice in writing that the proponent has demonstrated that the environmental outcomes in condition 2-1 have been achieved and the objectives of 2-2 have been met.	Implement the most recent version of the approved EGLP FVEMP.	Overall	Life of the proposal	R04_Flora and Vegetation Management Plan Rev 7 C02_MS1199 - FVEMP Rev 7 approval letter R01_Covalent Lithium CAR 2023 (Rev 0) Appendix C	The previous revision of the FVEMP (Rev 6) was implemented from 01/01/2023 to 09/03/2023. The updated revision of the FVEMP (Rev 7) was implemented from 10/03/2023 to 31/12/2023. Appendix C assessed the conformance of the project with the FVEMP and found: • 70 commitments were found to be conformant • Five were found to be completed • 13 commitments were found to be not required at this stage • seven commitments were found to be potentially non-conformant	Compliant
M1199:2.7	Flora and Vegetation	In the event that monitoring, or investigations indicates exceedance of threshold criteria specified in the confirmed Flora and Vegetation Environmental Management Plan, the proponent shall: (1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;	Report exceedance to the CEO.	Overall	Within 7 days of event identified	M01_Covalent CAR Evidence Request Response Rev 0	There was no exceedance of a threshold criteria in the audit period.	Compliant
		(2) implement the threshold contingency actions specified in the Flora and Vegetation Environmental Management Plan within twenty-four (24) hours of the exceedance being reported as required by condition 2-7 (1) and continue implementation of those actions until the CEO has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and the implementation of the threshold contingency actions is no longer required;	Implement contingency actions until the CEO has confirmed by writing that threshold criteria have been met and actions are no longer required.	Overall	Implement actions within 24 hours of event reported. Action to be continuously implemented until CEO of DWER notifies that actions			

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
		(3) investigate to determine the cause of the threshold criteria being exceeded; (4) investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and (5) provide a report to the CEO within twenty-one (21) days of the exceedance being reported as required by condition 2-7(1). The report shall include: (a) details of threshold contingency actions implemented; (b) the effectiveness of the threshold contingency actions implemented, against the threshold criteria; (c) the findings of the investigations required by conditions 2-7(3) and 2-7(4); (d) measures to prevent the threshold criteria being exceeded in the future; (e) measures to prevent, control or abate the environmental harm which may have occurred; and (f) justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.	Submit Incident Report to the CEO of DWER	Overall	are no longer required.			
M1199:2.8	Flora and Vegetation	The proponent shall make the Flora and Vegetation Environmental Management Plan required by condition 2-4 publicly available.	EGLP FVEMP shall be publicly available.	Overall	Ongoing	R04_Flora and Vegetation Management Plan Rev 7 E01_Website Screenshot 20240405	The FVEMP is publicly available on the Covalent website.	Compliant
M1199:2.9	Flora and Vegetation	The proponent: (1) may review and revise the confirmed Flora and Vegetation Environmental Management Plan and submit it to the CEO; (2) shall review and revise the confirmed Flora and Vegetation Environmental Management Plan and submit it to the CEO as and when directed by the CEO by a notice in writing.	Review the management plan if required or if directed by the CEO of DWER to do so.	Overall	As required	R04_Flora and Vegetation Management Plan Rev 7 C02_MS1199 - FVEMP Rev 7 approval letter	Refer to M1199:2.4	Compliant
M1199:2.10	Flora and Vegetation	The proponent shall implement the latest revision of the Flora and Vegetation Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 2-4.	Always implement latest approved version of plan.	Overall	As required	R01_Covalent Lithium CAR 2023 (Rev 0) Appendix C	Refer to M1199:2.6	Compliant
M1199:3.1(1)	Terrestrial Fauna	The proponent shall implement the proposal to meet the following environmental outcomes and objectives: (1) no direct or indirect impacts to malleefowl mounds within the exclusion areas as shown on Figure 4;	Ensure that proposal has no direct or indirect impacts on Malleefowl mounds within the exclusion zones as shown in Figure 4.	Construction phase	During ground disturbing activities.	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	The Project did not have any direct or indirect impacts on Malleefowl mounds within the exclusion areas (R10).	Compliant
M1199:3.1(2)	Terrestrial Fauna	The proponent shall implement the proposal to meet the following environmental outcomes and objectives: (2) no direct or indirect adverse impacts to malleefowl and chuditch within the development envelope;	Ensure no direct or indirect impacts to Malleefowl and Chuditch within the development envelope.	Construction phase	During ground disturbing activities.	R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring R10_20230725 ECO 2022_23 Malleefowl Monitoring	Monitoring was undertaken of both malleefowl and chuditch in the reporting period. Neither report indicated that there is direct or indirect proposal-related significant adverse impacts to malleefowl and chuditch within the development envelope.	Compliant
M1199:3.1(3)	Terrestrial Fauna	The proponent shall implement the proposal to meet the following environmental outcomes and objectives: (3) no removal of active malleefowl mounds within the development envelope;	Ensure that no active Malleefowl mounds within the development envelope is removed.	Construction phase	During ground disturbing activities.	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	Monitoring indicated that all previously monitored mallefowl mounds had not been disturbed. Pre-clearance surveys were undertaken prior to clearing activities.	Compliant

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:3.1(4)	Terrestrial Fauna	The proponent shall implement the proposal to meet the following environmental outcomes and objectives: (4) minimise proposal-related direct or adverse indirect impacts to malleefowl from feral animals within the development envelope.	Ensure no direct or indirect impacts on malleefowl from feral animals within the development envelope	Overall	Ongoing	R10_20230725 ECO 2022_23 Malleefowl Monitoring E18_20230425_APAS_Feral Cat Control Program Report	Monitoring has indicated a slight increase in malleefowl breeding pairs. Trail cameras indicated the presence of two cats and one wild dog (R10). A feral animal control program was conducted April 2023	Compliant
M1199:3.2	Terrestrial Fauna	In order to meet the requirements of condition 3-1, within six (6) months of approval of this Statement, the proponent shall update the Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan (April 2022). This plan shall: (1) outline how the pre-clearance surveys will be undertaken using LIDAR or similar technology; (2) outline the procedure for capture and release of chuditch, and malleefowl if required, prior to clearing of native vegetation; (3) specify trigger criteria that must provide an early warning that the environmental outcomes and objectives identified in condition 3-1 may not be met; (4) specify threshold criteria to demonstrate compliance with the environmental outcomes and objectives specified in condition 3-1; (5) specify monitoring to determine if trigger criteria and threshold criteria are exceeded; (6) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded; (7) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded; (8) provide contingency measures and adaptive management techniques to ensure the outcomes of conditions 3-1 are met, and include options for changes to operations and reductions in disturbance; and (9) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that condition 3-1 has been met over the reporting period in the Compliance Assessment Report required by condition 8-6.	Update of the EGLP Terrestrial Fauna Environmental Management Plan with details in Condition 3-2.	Planning phase	By 23 May 2023	R03_Terrestrial Fauna Management Plan Rev 5 C03_MS1199 - TFEMP approved	The TFEMP was submitted 12/12/2022 and approved 09/03/2023. The plan includes the details listed (1) to (9): (1) Section 2.5.2 (2) Section 2.5.2 (3) Section 2.1 (4) Section 2.1 (5) Section 2.5 (6) Section 2.1 (7) Section 2.1 (8) Section 3 (9) Section 2.6	Compliant
M1199:3.3	Terrestrial Fauna	The proponent must not commence clearing exceeding the extent of the original authorised proposal until the CEO has confirmed by notice in writing that the Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan satisfies the requirements of condition 3-2.	Must not commence clearing until EGLP TFEMP has been approved.	Planning.	Prior to clearing.	C03_MS1199 - TFEMP approved G01_a2765 CAR23 f01 03 - Fig3 Clearing	The TFEMP Rev 5 was approved 09/03/2023. On site clearing was undertaken 13 to 19/03/2023 and included 20.5 ha.	Compliant
M1199:3.4	Terrestrial Fauna	The proponent must implement the most recent version of Terrestrial Fauna Environmental Management Plan until the CEO has confirmed by notice in writing that the proponent has demonstrated that the environmental outcomes and objectives in condition 3-1 have been met.	Implement the most recent version of the approved EGLP TFEMP.	Overall	Life of the proposal	R03_Terrestrial Fauna Management Plan Rev 5 C03_MS1199 - TFEMP approved R01_Covalent Lithium CAR 2023 (Rev 0) Appendix D	The previous revision of the TFEMP (Rev 4) was implemented from 01/01/2023 to 09/03/2023. The updated revision of the TFEMP (Rev 5) was implemented from 10/03/2023 to 31/12/2023. Appendix D assessed the conformance of the project with the TFEMP and found: • 73 commitments were conformant • 21 commitments were not required at this stage • one commitment was potentially non-conformant	Compliant
M1199:3.5	Terrestrial Fauna	In the event that monitoring or investigations indicate exceedance of threshold criteria specified in the Terrestrial Fauna Environmental Management Plan, the proponent shall: (1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;	Report exceedance to the CEO.	Overall	Within 7 days of event identified	M01_Covalent CAR Evidence Request Response Rev 0	There was no exceedance of a threshold criteria in the audit period.	Compliant

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
		(2) implement the threshold contingency actions specified in the Terrestrial Fauna Environmental Management Plan within twenty-four (24) hours of the exceedance being reported as required by condition 3-5(1) and continue implementation of those actions until the CEO has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and the implementation of the threshold contingency actions is no longer required;	Implement contingency actions until the CEO has confirmed by writing that threshold criteria have been met and actions are no longer required.	Overall	Implement actions within 24 hours of event reported. Action to be continuously implemented until CEO of DWER notifies that actions are no longer required.			
		(3) investigate to determine the cause of the threshold criteria being exceeded; (4) investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; (5) provide a report to the CEO within twenty-one (21) days of the exceedance being reported as required by condition 3-5(1). The report shall include: (a) details of threshold contingency actions implemented; (b) the effectiveness of the threshold contingency actions implemented, against the threshold criteria; (c) the findings of the investigations required by conditions 3-5(3) and 3-5(4); (d) measures to prevent the threshold criteria being exceeded in the future; (e) measures to prevent, control or abate the environmental harm which may have occurred; and (f) justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.	Submit Incident Report to the CEO of DWER	Overall				
M1199:3.6	Terrestrial Fauna	The proponent: (1) may review and revise the Terrestrial Fauna Environmental Management Plan; (2) shall review and revise the Terrestrial Fauna Environmental Management Plan as and when directed by the CEO.	Review the management plan if required or if directed by the CEO of DWER to do so.	Overall	As required	R03_Terrestrial Fauna Management Plan Rev 5 C03_MS1199 - TFEMP approved	Refer to M1199:3.2	Compliant
M1199:3.7	Terrestrial Fauna	The proponent shall implement the latest revision of the Terrestrial Fauna Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 3-2.	Always implement latest approved version of plan.	Overall	As required	R03_Terrestrial Fauna Management Plan Rev 5 C03_MS1199 - TFEMP approved R01_Covalent Lithium CAR 2023 (Rev 0) Appendix D	Refer to M1199:3.4	Compliant
M1199:4.1	Offsets	The proponent must implement offsets to counterbalance the significant residual impacts of the proposal on the following environmental values: (1) 436 ha of foraging and breeding habitat for malleefowl (Leipoa ocellata); (2) 442 ha of foraging and potential breeding habitat for chuditch (Dasyurus geoffroii); (3) 2 individuals of Ironcap Banksia (Banksia sphaerocarpa var. dolichostyla); and (4) 9,732 individuals of Microcorys elatoides, as a result of the implementation of the proposal and the significant amendment to the approved proposal described in section 1 of the proponent's section 38 Referral Supporting Document.	Undertake offsets to counterbalance significant residual impacts.	Overall	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	The Offset Strategies have not been approved by DWER to date.	NRATS
M1199:4.2	Threatened Fauna Land	In order to meet the requirements of conditions 4-1 (1) and 4-1(2), the proponent shall submit for approval, the Earl Grey Lithium Project Fauna Offset Strategy within six (6) months of the date of this Statement. This strategy shall:	Submit Threatened Fauna Land Acquisition Strategy	Planning	Submit by 23 May 2023.	C04_DWER TFOS Review 20231026 C01_Offsets Revised Compliance Schedule	The last submission of the Earl Grey Lithium Project Threatened Fauna Offset Management Plan under MS1118 was 17/01/2022. No submission under MS1199 was made by	PNC

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
	Acquisition Strategy	(1) identify an initially unprotected area, or areas, to be acquired and protected for conservation that contains malleefowl and chuditch foraging and breeding habitat, in consultation with the Department of Biodiversity, Conservation and Attractions; (2) demonstrate how the proposed offset counterbalances the significant residual impact to 436 ha of foraging and breeding habitat for malleefowl, and 442 ha of foraging and potential breeding habitat for chuditch, as identified in condition 4-1, through application of the principles and completion of the WA Offsets Template, as described in the WA Environmental Offsets Guidelines 2014, and the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy Assessment Guide (October 2012), or any approved updates of these guidelines, to demonstrate how the proposed offset counterbalances the significant residual impact to malleefowl and chuditch, as identified in condition 4-1; (3) demonstrate how the proposed offset aligns with the National Recovery Plan for Malleefowl (Leipoa ocellata) and the Chuditch (Dasyurus geoffroii) Recovery Plan, or any subsequent revisions of these plans; (4) identify the environmental values of the offset area(s); (5) identify and commit to a protection mechanism for any area(s) of land acquisition, being either the area(s) is ceded to the Crown for the purpose of management for conservation, or the area(s) is managed under other suitable mechanisms for the purpose of conservation as agreed by the CEO; (6) identify how the ongoing performance of the offset measures, and whether they are achieving the outcomes in conditions 4-1(1) and 4-1(2), will periodically be made publicly available; (7) if any land is to be ceded to the Crown for the purpose of management for conservation, the proponent will identify: (a) the quantum of, and provide funds for, the upfront works associated with establishing the conservation area; (b) the quantum of, and provide a contribution of funds for, the management of this area for seven (7) years after completion of purchase; and (c) an appropriate management body for the ceded land; (8) detail the monitoring, reporting and evaluation mechanisms for management and/or rehabilitation actions; and (9) define the role of the proponent and/or any relevant management authority.	to the CEO of DWER.				23/05/2023 as Covalent were waiting for DWER feedback on the 17/01/2022 submission. Covalent met with DWER 24 July 2023 where the non-submission of the TFOMP was raised and that DWER were made aware by Covalent that compliance with this condition was not able to be achieved in the absence of comments. DWER reviewed Rev 2 of the TFOS 23/10/2023 and noted that Covalent were "currently non-compliant with condition 4 of MS 1199" (C04). A letter was provided by Covalent to DWER 17/11/2023 reporting non-compliance with condition 4-2..	
M1199:4.3	Threatened Fauna Land Acquisition Strategy	Within six (6) months of receiving notice in writing from the CEO, on advice of the Department of Biodiversity, Conservation and Attractions, that the Threatened Fauna Land Acquisition Strategy satisfies the requirements of conditions 4-1 and 4-2, the proponent shall implement the approved Threatened Fauna Land Acquisition Strategy.	Implement approved Threatened Fauna Land Acquisition Strategy.	As required	Within 6 months since approval of Threatened Fauna Land Acquisition Strategy.	C04_DWER TFOS Review 20231026	The proponent has not received notice in writing from the CEO that the TFOS satisfies the conditions. Comments for amendments were provided 26/10/2023.	NRATS
M1199:4.4	Threatened Fauna Land Acquisition Strategy	The proponent: (1) may review and revise the Threatened Fauna Land Acquisition Strategy; or (2) shall review and revise the Threatened Fauna Land Acquisition Strategy as and when directed by the CEO.	Review the plan as required or if directed by the CEO of the DWER.	As required	As required	C04_DWER TFOS Review 20231026	The proponent is currently reviewing the TFOS to address MS 1199 requirements, WA Offsets requirements and EPA requested amendments.	Compliant
M1199:4.5	Threatened Fauna Land Acquisition Strategy	The proponent shall implement the latest version of the Threatened Fauna Land Acquisition Strategy, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 4-2.	Always implement latest approved version of the plan.	Overall	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	No TFOS has been approved to date.	NRATS

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:4.6	Flora Offset Strategy	The proponent must, in consultation with Department of Biodiversity, Conservation and Attractions, prepare a Flora and Vegetation Offset Strategy that demonstrates how the following environmental outcome will be achieved, and how this achievement will be substantiated, and submit it to the CEO: (1) counterbalance the significant residual impacts listed in conditions 4-1(3) and 4-1(4).	Submit to the CEO of DWER a Flora and Vegetation Offset Strategy.	Planning phase	As per the *Microcorys elatoides* Conservation Plan required by 23/11/2023	M01_Covalent CAR Evidence Request Response Rev 0 C06_DWER Flora OS Review 20231116 C01_Offsets Revised Compliance Schedule	Covalent anticipated that they would not meet the submission date requirement for the Flora and Vegetation Offset Management Plan. DWER noted in their FVOMP feedback on 16/11/2023 (C06) that Covalent was in the process of contacting the DWER Compliance Branch to rectify the potential non-compliance with not submitting the Flora and Vegetation Offset Management Plan by the required submission date. A letter was provided by Covalent to DWER 17/11/2023 (C01) (prior to the required submission date) requesting approval for an amended submission date for the Flora and Vegetation Offset Management Plan. The letter (C01) requests submission of the FVOMP in Q2 / Q3 2024 CY.	Compliant
M1199:4.7	Flora Offset Strategy	The Flora and Vegetation Offset Management Plan must: (1) identify an area, or areas, to be protected, managed and/or rehabilitated for conservation that contains the flora values identified in conditions 4-1(3) and 4-1(4) on advice of the Department of Biodiversity, Conservation and Attractions; (2) identify an area, or areas for on-ground management; (3) demonstrate how the environmental values within the Proposed Offset Conservation Areas will be maintained and improved in order to counterbalance the significant residual impact to the environmental values in condition 4-1 and achieve the environmental outcomes in condition 4-6(1); (4) demonstrate application of the principles of the WA Environmental Offsets Policy, the WA Environmental Offsets Metric and the WA Offsets Template, as described in the WA Environmental Offsets Guidelines, and the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy Assessment Guide, or any subsequent revisions of these documents; (5) identify how the ongoing performance of the offset measures, and whether they are achieving the outcomes in condition 4-6, will periodically be made publicly available; (6) identify how the Proposed Offset Conservation Areas will be protected, being either the sites are ceded to the Crown for the purpose of management for conservation, or the sites are managed under other suitable mechanism for the purpose of conservation as agreed by the CEO by notice in writing; and (7) for offsets acquired specify: (a) a timeframe and works associated with establishing the Proposed Offset Conservation Areas, including a contribution for maintaining the offset for at least twenty (20) years after completion of purchase; (b) identify the relevant management body for the ongoing management of the Proposed Offset Conservation Areas, including its role, and the role of the proponent, and confirmation in writing that the relevant management body accepts responsibility for its role.	The proponent must include the aspects in MS1199:M4.7 in the EGLP FVOS.	Overall	Life of proposal.	C06_DWER Flora OS Review 20231116	The revised Flora Offset Strategy has not been submitted.	NRATS
M1199:4.8	*Microcorys elatoides* Conservation Plan	The proponent shall fund and undertake an offset for *Microcorys elatoides* to meet the following outcome: (1) ensure the long-term viability of *Microcorys elatoides*.	Fund and undertake offsets	Ongoing	Ongoing	M01_Covalent CAR Evidence Request Response Rev 0	The *Microcorys elatoides* Conservation Plan is a new condition required under MS 1199. The *Microcorys elatoides* Conservation Plan was not approved in the reporting period.	NRATS

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:4.9	*Microcorys elatoides* Conservation Plan	Within twelve (12) months of the date of this Statement, or as otherwise agreed in writing by the CEO, as part of the Flora Offset Strategy, the proponent shall prepare and submit to the CEO a *Microcorys elatoides* Conservation Plan, for the offset required by condition 4-8, which identifies on-ground conservation and research projects to be undertaken that contribute to long-term conservation outcomes for the species. The plan shall be to the satisfaction of the CEO on advice of the Department of Biodiversity, Conservation and Attractions.	Submit to the CEO of DWER a *Microcorys elatoides* Conservation Plan	Planning phase	Submit by 23/11/2023	M01_Covalent CAR Evidence Request Response Rev 0 C01_Offsets Revised Compliance Schedule	Covalent anticipated that they would not meet the submission date requirement for the *Microcorys elatoides* Conservation Plan (within the FVOMP). DWER noted in their FVOMP feedback on 16/11/2023 that Covalent was in the process of contacting the DWER Compliance Branch to rectify the potential non-compliance with not submitting the Conservation Plan by the required submission date. A letter was provided by Covalent to DWER 17/11/2023 (C01) (prior to the required submission date) requesting approval for an amended submission date for the *Microcorys elatoides* Conservation Plan. The letter (C01) requests submission of the FVOMP in Q2 / Q3 2024 CY.	Compliant
M1199:4.10(1)	*Microcorys elatoides* Conservation Plan	The *Microcorys elatoides* Conservation Plan shall: (1) On ground management (a) state the targets to be achieved, including completion criteria, which will result in a tangible improvement to the environmental values being offset; (b) demonstrate the consistency of the targets with environmental outcomes in conditions 4-6(1) and 4-8, and the objectives of any relevant guidance, including but not limited to, recovery plans or area management plans; (c) detail the on-ground management actions, with associated timeframes for implementation and completion, to achieve the targets identified in conditions 4-6(1) and 4-8; and (d) detail the monitoring, reporting and evaluation mechanisms for the targets and actions identified under condition 4-10(1)(a).	Submit to the CEO of DWER a *Microcorys elatoides* Conservation Plan	Planning phase	Submit by 23/11/2023	Ref to M1199:4.9	The FVOMP with the *Microcorys elatoides* Conservation Plan has not been submitted.	NRATS

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:4.10(2)	*Microcorys elatoides* Conservation Plan	The *Microcorys elatoides* Conservation Plan shall: (2) Where research is proposed, prepare a research program that: (a) identifies the objectives and intended outcomes, and specifies the deliverables and competition criteria; (b) identifies how the research will result in a positive conservation outcome, and will either improve management and protection, address priority knowledge gaps that have been identified as a research priority needed to improve management and protection, for the environmental values identified in condition 4-1(4); (c) demonstrate consistency of the objectives in condition 4-10(2) with any relevant guidance, including but not limited to, recovery plans or area management plans, the principles of the WA Environmental Offsets Policy, the WA Environmental Offsets Guidelines, or any subsequent revisions of these documents; (d) identifies and justifies the proportion and allocation of resources for each specific offset addressed by the Flora and Vegetation Offset Strategy; (e) provides an implementation and reporting schedule, including an outline of key activities, all deliverables, stages of implementation, reporting of research results (including interim results), reporting on implementation status, and milestones towards completion criteria; (f) identifies the governance arrangements including responsibilities for implementing, and oversight of, the research program, agreements with government agencies, agreements with any third parties, and contingency measures; (g) identify how a research program summary, and the results (including interim results) of the research program will be communicated and/or published in an open access format; and (h) identifies the third party to carry out the work required to meet the outcomes of conditions 4-1(4) and 4-8 who is satisfactory for the role to the CEO. In applying to the CEO for endorsement of the selected third parties, the proponent shall provide: • demonstration of the track record, experience, qualifications and competencies of the proposed third party to carry out the work and achieve the outcomes.	Submit to the CEO of DWER a *Microcorys elatoides* Conservation Plan	Planning phase	Submit by 23/11/2023	Ref to M1199:4.9	The FVOMP with the *Microcorys elatoides* Conservation Plan has not been submitted.	NRATS
M1199:4.11	*Microcorys elatoides* Conservation Plan	Within six (6) months of receiving notice in writing from the CEO that the Microcorys elatoides Conservation Plan satisfies the requirements of conditions 4-9 to 4-10, the proponent shall commence the implementation of the conservation plan.	Implement the Conservation Plan within 6 months of approval	Overall	Within 6 months of approval of Conservation Plan.	M01_Covalent CAR Evidence Request Response Rev 0	The FVOMP with the *Microcorys elatoides* Conservation Plan has not been submitted.	NRATS
M1199:4.12	*Microcorys elatoides* Conservation Plan	The proponent shall make the Microcorys elatoides Conservation Plan required by condition 4-10 publicly available.	Make the Conservation Plan publicly available	Overall	Following approval of the plan.	Refer to 4.11	The *Microcorys elatoides* Conservation Plan will be made publicly available once the proponent has received notification from the CEO that the plan satisfies the requirements of the conditions.	NRATS
M1199:5.1(1)	Rehabilitation	The proponent must implement the proposal to ensure the following environmental outcomes are achieved: (1) rehabilitated areas are capable of sustaining the long-term viability of Banksia sphaerocarpa var. dolichostyla and Microcorys elatoides impacted from the proposal;	Implement rehabilitation to achieve the outcomes of MS1199:M5.1.	Overall	Life of proposal.	M01_Covalent CAR Evidence Request Response Rev 0	There are no areas under rehabilitation or planned for rehabilitation at the current time.	NRATS
M1199:5.1(2)	Rehabilitation	The proponent must implement the proposal to ensure the following environmental outcomes are achieved: (2) rehabilitated landforms are stable and do not cause pollution or environmental harm;	Implement rehabilitation to achieve the outcomes of MS1199:M5.1.	Overall	Life of proposal.	Refer to MS1199:5.1(1)	Refer to MS1199:5.1(1)	NRATS

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:5.1(3)	Rehabilitation	The proponent must implement the proposal to ensure the following environmental outcomes are achieved: (3) rehabilitated vegetation is self-sustaining; and	Implement rehabilitation to achieve the outcomes of MS1199:M5.1.	Overall	Life of proposal.	Refer to MS1199:5.1(1)	Refer to MS1199:5.1(1)	NRATS
M1199:5.1(4)	Rehabilitation	The proponent must implement the proposal to ensure the following environmental outcomes are achieved: (4) rehabilitated areas are consistent with the species diversity and abundance of native vegetation within comparative analogue or reference sites.	Implement rehabilitation to achieve the outcomes of MS1199:M5.1.	Overall	Life of proposal.	Refer to MS1199:5.1(1)	Refer to MS1199:5.1(1)	NRATS
M1199:5.2	Rehabilitation	In order demonstrate the outcomes of condition 5-1 can be met, the proponent shall commence rehabilitation trials within twelve (12) months of the date of this Statement, or as otherwise agreed in writing by the CEO.	Commence rehabilitation trials within 12 months.	Overall	To commence 23/11/2023	M01_Covalent CAR Evidence Request Response Rev 0 C01_Offsets Revised Compliance Schedule	No rehabilitation commenced within 12 months of the date of the statement. Planning commenced for Bounty Airstrip rehabilitation. A letter was provided to DWER 17/11/2023 (prior to the required commencement date) requesting approval for an amended submission date for rehabilitation trials (C01). The letter (C01) requests submission of the FVOMP in Q2 / Q3 2024 CY.	Compliant
M1199:5.3	Rehabilitation	The proponent shall submit annually to the CEO, with the annual compliance assessment report required by condition 8-6, a rehabilitation trial progress report, which identifies: (1) results of rehabilitation trials; and (2) contingency measures and actions in the event trials indicate the rehabilitation objective may not be achieved.	Submit a rehabilitation trial progress report annually	Overall	Life of proposal.	Refer to MS1199:5.2	Refer to MS1199:5.2	NRATS
M1199:5.4	Rehabilitation	The proponent shall continue to implement the rehabilitation trials required by condition 5-2 until the proponent has demonstrated that the outcomes of condition 5-1 will be met, or as otherwise agreed by the CEO.	Continue rehabilitation trials until condition MS1199:M5.1 has been met or agreement with CEO.	Overall	Until the proponent has demonstrated that the outcomes of condition 5-1 will be met, or as otherwise agreed by the CEO.	Refer to MS1199:5.2	Refer to MS1199:5.2	NRATS
M1199:6.1	Environmental Performance Report	The proponent shall submit an Environmental Performance Report to the Minister every five (5) years.	Submit an Environmental Performance Report every 5 years.	Overall	Life of Proposal.	NRATS	Ministerial date is 23/11/2022, Environmental Performance Report is due in 2027.	NRATS
M1199:6.2	Environmental Performance Report	The first Environmental Performance Report shall be submitted within three months after five (5) years from substantial commencement, or such other time as may be approved by the CEO.	Submit Environment Performance Report five years and three months after substantial commencement of the project.	Overall	Within 3 months after 5 years from substantial commencement (due 30 July 2027)	Refer to 6.1	Refer to 6.1	NRATS
M1199:6.3	Environmental Performance Report	Each Environmental Performance Report shall report on proposal impacts on the following environmental values: (1) state of flora and vegetation; (2) state of terrestrial fauna; and (3) state of the holistic environment.	The Environmental Performance Report must report on: (1) state of flora and vegetation; (2) state of terrestrial fauna; and (3) state of the holistic environment.	Overall	Life of Proposal.	Refer to 6.1	Refer to 6.1	NRATS

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:6.4	Environmental Performance Report	The Environmental Performance Report must include: (1) a comparison of the environmental values identified in condition 6-3 at the end of the five (5) year period; against the state of each environmental value at the beginning of the five (5) year period; (2) a comparison of the environmental values identified in condition 6-3 at the end of the five (5) year period; against the state of the environmental values identified in first Environmental Performance Report submitted in accordance with condition 6-2; and (3) proposed adaptive management and continuous improvement strategies.	The Environmental Performance Report must include the aspects in MS1199:M6.4.	Overall	Life of Proposal.	Refer to 6.1	Refer to 6.1	NRATS
M1199:6.5	Environmental Performance Report	The Environmental Performance Report may be in whole, or part prepared in conjunction with other proponents where there are cumulative impacts from their proposals.	The Environmental Performance Report may include cumulative impacts	Overall	Life of Proposal.	Refer to 6.1	Refer to 6.1	NRATS
M1199:7.1	Contact Details	The proponent shall notify the CEO of any change of its name, physical address, or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.	Notify the CEO of any change in proponent details	Overall	Within 28 days of any change of name, physical address, or postal address for the serving of notices or other correspondence.	M01_Covalent CAR Evidence Request Response Rev 0	There is no change to the name, physical address or postal address of the proponent.	Compliant
M1199:8.1	Compliance Reporting	The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the CEO at least six (6) months prior to the first Compliance Assessment Report required by condition 8-6, or prior to implementation of the proposal, whichever is sooner.	Prepare and submit a Compliance Assessment Plan to the CEO.	Planning phase	Plan to be submitted before 23 July 2023.	R11_CAP for MS1199	The Compliance Assessment Plan (CAP) was drafted in March 2022 by JBS&G. The CAP was not submitted at the time. The first CAR was submitted 1 May 2023. The CAP was submitted 28 April 2024.	PNC
M1199:8.2	Compliance Reporting	The Compliance Assessment Plan shall indicate: (1) the frequency of compliance reporting; (2) the approach and timing of compliance assessments; (3) the retention of compliance assessments; (4) the method of reporting of potential non-compliances and corrective actions taken; (5) the table of contents of Compliance Assessment Reports; and (6) public availability of Compliance Assessment Reports.	CAP must contain details specified in Condition 8-2	Planning phase	Plan to be submitted before 23 July 2023.	R11_CAP for MS1199	The CAP addresses all of the following: (1) the frequency of compliance reporting; (2) the approach and timing of compliance assessments; (3) the retention of compliance assessments; (4) the method of reporting of potential non-compliances and corrective actions taken; (5) the table of contents of Compliance Assessment Reports; and (6) public availability of Compliance Assessment Reports.	Compliant
M1199:8.3	Compliance Reporting	After receiving notice in writing from the CEO that the Compliance Assessment Plan satisfies the requirements of condition 8-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 8-1.	Assess compliance in accordance with approved CAP.	Overall	23/02/2024 (first CAR due) and then annually on this date.	R11_CAP for MS1199	The proponent had not received approval for the CAP when the first CAR was submitted. The proponent commenced assessing compliance against the draft CAP for the 23 November to 31 December 2022 period (in line with MS 1118 and MS 1167 reporting year) and submitted the report 1 May 2023 prior to submission and approval of the CAP. The intention was to continue reporting on a calendar year basis as per the existing statements with the same due date.	PNC
M1199:8.4	Compliance Reporting	The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 8-1 and shall make those reports available when requested by the CEO.	Retain all CARs and submit to CEO upon request.	Overall	Ongoing	R02_Covalent Lithium CAR 2022 (Rev 0)	The first MS1199 CAR (2022) for 23/11/2022 to 31/12/2022 is publicly available at: https://www.covalentlithium.com/sustainability	Compliant
M1199:8.5	Compliance Reporting	The proponent shall advise the CEO of any potential non-compliance within seven (7) days of that non-compliance being known.	Notify the CEO of potential non-compliance.	Overall	Within seven (7) days of event identified.	M01_Covalent CAR Evidence Request Response Rev 0 L01_Covalent CAP NC Notification	The proponent reported the above potential non-compliances with conditions MS 1199 8-1 and 8-3 on 26 April 2024 (L01).	Compliant

Audit Code	Subject	Requirement	How	Phase	Timeframe	Evidence	Comment	Status
M1199:8.6	Compliance Reporting	The proponent shall submit to the CEO the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the CEO. The Compliance Assessment Report shall: (1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf; (2) include a statement as to whether the proponent has complied with the conditions; (3) identify all potential non-compliances and describe corrective and preventative actions taken; (4) be made publicly available in accordance with the approved Compliance Assessment Plan; and (5) indicate any proposed changes to the Compliance Assessment Plan required by condition 8-1.	Submit CAR in accordance with approved CAP.	Overall	First CAR is due by 23 February 2024 and then annually by 30 April	R02_Covalent Lithium CAR 2022 (Rev 0)	The 2022 CAR for the period 23 November to 31 December 2022 was submitted to DWER on 1 May 2023 within 15 months of the issue of the statement. The document was: 1) Signed by the CEO's delegate 2) Included a statement of compliance 3) Identified all potential non-compliances and corrective and preventative actions 4) Made publicly available 5) Noted that no amendments were required to the CAP that had been compiled	Compliant
M1199:9.1	Public Availability of Data	Subject to condition 9-2, within a reasonable time period approved by the CEO of the issue of this Statement and for the remainder of the life of the proposal, the proponent shall make publicly available, in a manner approved by the CEO, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)), management plans and reports relevant to the assessment of this proposal and implementation of this Statement.	Make validated information on the project publicly available except for sensitive and confidential information as agreed with the CEO.	Overall	Ongoing	E01_Website Screenshot 20240405	At the link below https://www.covalentlithium.com/sustainability The following information is publicly available: • EPA Report and Recommendations • TFEMP • FVEMP • Ironcaps Banksia Conservation Plan • Monitoring • 2021 CAR • 2022 CAR	Compliant
M1199:9.2	Public Availability of Data	If any data referred to in condition 9-1 contains particulars of: (1) a secret formula or process; or (2) confidential commercially sensitive information, the proponent may submit a request for approval from the CEO to not make these data publicly available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publicly available.	Submit request to CEO to keep sensitive information confidential.	Overall	As required	M01_Covalent CAR Evidence Request Response Rev 0	There has been no request to not make data publicly available.	NRATS

5. Monitoring Results

Monitoring data results are contained in Appendix G, H, I, J and K.

5.1 Summary of Monitoring Results

5.1.1 Chuditch Monitoring

Ecoscape undertook Chuditch monitoring in April and June 2023 which included monitoring for predators and monitoring in the breeding season. The control site was established more than 5km from the development envelope boundary and close to the 2017 capture sites. The impact site was established within the development envelope boundary outside the infrastructure footprint. Results for 2023:

- The monitoring fell within the optimum period for monitoring Chuditch, aligning with the known mate-seeking and denning period
- 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 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.

5.1.2 Malleefowl Monitoring

Monitoring of Malleefowl mounds was undertaken by Ecoscape during the mound building and egg laying summer season in 2022-23. Mounds identified as Annual monitoring were revisited and remeasured. Trail cameras were deployed on mounds to capture activity of Malleefowl and other fauna species including feral predators. Results for 2022-23:

- The 2022-23 monitoring period recorded one active breeding mound within the development envelope (DE) and five active breeding mounds outside the DE.
- Twelve mounds 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.
- Activity patterns compared over the previous monitoring events indicate an ongoing increase in breeding activity during the 2022-23 season compared to previous monitoring events.
- Trail cameras deployed detected feral cats and wild dogs.

5.1.3 Dust Monitoring

Dust deposition gauges are considered the most appropriate means by which to measure dust fall on flora and vegetation. Dust deposition gauges were installed and monitored in accordance with Australian Standard AS/NZS 3580.10.1:2003 methods for sampling and analysis of ambient air.

The measurements were performed using two methods:

- Realtime PM10 concentration at two locations
- Realtime wind speed and wind direction measurements at one location
- Monthly dust composition at the two Realtime monitoring locations
- Monthly average dust concentrations and composition at 9 locations using dust deposition gauges

Monitoring occurred between October 2022 and June 2023:

- Eleven sampling events occurred over the reporting period for each transect.
- There were 12 exceedances of the NEMP limit for dust concentrations (50ug/m3 /24 hr) for the Realtime Monitoring sample during the reporting period.
- Insoluble solids exceeded the early response trigger (5 g/m2/month) five times at transect 10 in the reporting period.
- There were no exceedances on the threshold (10 g/m2/month) at any of the transect sites in the reporting period.

5.1.4 Vegetation Monitoring Spring

Mattiske undertook vegetation condition monitoring in October / November 2023 with the intent of assessing vegetation condition at permanent representative sites within the development envelope and control sites away from any proposal related indirect effects. No autumn monitoring was undertaken due to time constraints.

The results were:

- A total of 182 species were recorded across the 18 transects surveyed.
- No introduced (exotic) species were recorded at any of the transects surveyed.
- Several species collected could not be identified to species level, primarily due to the specimens being from juvenile or sterile plants.
- Banksia dolichostyla, a threatened plant taxon under the Biodiversity Conservation Act 2016 was recorded during the survey. This taxon is also listed as vulnerable under the Environmental Protection and Biodiversity Conservation Act 1999.
- Seventeen priority plant taxa were recorded during the survey.
- A total of twenty individual plants were tagged at each transect for a more detailed plant condition assessment. 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.
- In comparison with the September 2022 monitoring, the overall trend shows an average decline in canopy health by -3.89%.

The initiation of the use of the plant pigment efficiency analyser (PEA) has been recommended again in the Mattiske Report. However, Covalent have been unable to determine a scientifically valid methodology to use a PEA in this manner. External expertise is currently being sought.

5.1.5 Dieback Monitoring

Glevan Consulting undertook an assessment for dieback presence in December 2022 in the project area following previous assessments in 2019 and 2021. Samples taken did not add to the known occurrence of Phytophthora. Some of the sites previously sampled positive have since been cleared. The survey recommends that boundaries of disturbed areas are to be assessed biennially.

Covalent considers that further monitoring is required to bring the baseline assessment to the necessary standard to determine ongoing monitoring and management actions. This work is currently being planned for 2024.

5.2 Trigger and Threshold Criteria

Table 5.1 presents the status of compliance with criteria in the Management Plans for 2023.

Table 5.2: Determination of Criteria Exceedance

Environmental objective	Environmental criteria	Determination
No proposal related direct impact to flora and vegetation within a VEZ (Figure 1-2)	Trigger criteria: • Vegetation clearing without an authorised internal permit within the Development Envelope, but outside of the VEZs • Trigger criteria: • Authorised clearing has occurred within 5 m of a VEZ Trigger criteria: • Unauthorised access by personnel to a VEZ	Trigger criteria has not been exceeded
	Threshold criteria: • Proposal related direct vegetation disturbance of any kind or extent within a VEZ resulting in the mortality of flora and vegetation. For example, vegetation clearing.	Threshold criteria has not been exceeded
No proposal related indirect impact to flora and vegetation within a VEZ resulting in an adverse impact (Figure 1-2)	Trigger criteria: • Statistically significant reduction in mean condition ratings (more than 20% difference for qualitative or quantitative) of vegetation health within a VEZ in comparison to control sites, or a mean Fv/FM <0.6 (index of chlorophyll inflorescence)	This criteria has not been determined as quantitative vegetation health measurements have not been undertaken.
	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 or Project impacts).	Threshold criteria has not been exceeded
	Threshold criteria: • Conservation significant species within a VEZ experiences a statistically significant higher foliage cover loss rate than that of control sites (where that foliage cover loss is not attributed to direct or Project impacts).	Threshold criteria has not been exceeded
Minimise of dust emissions	Trigger criteria: • Dust deposition results at a single VEZ site exceeds 5 g/m2 for two consecutive months.	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. Despite reporting to DWER not being undertaken within 7 days, 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 was reviewed and found that canopy health at D10 was still below the 20% trigger set out in the FVEMP • Cause was investigated and found to be traffic on Blue Vein Road • Planned road closure of Blue Vein Road was completed 30 March 2023

Environmental objective	Environmental criteria	Determination
	Management target: • Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month.	Management target was not exceeded in the reporting year
Minimise new weeds introduced to site	Trigger criteria: • One new weed species sighted during annual monitoring but with limited to negligible coverage.	Trigger criteria has not been exceeded
Prevent fires attributed to mining and associated activities	Trigger criteria: • A fire occurrence within the Development Envelope that impacts on native vegetation.	Trigger criteria has not been exceeded
10% regional population total impact for any conservation significant species; with the exception of total impact to Microcorys elatoides and Acacia undosa;	Trigger criteria: • Pre-clearance surveys result in total impacts to a conservation significant species population impact exceeding 10%	Trigger criteria has not been exceeded
Any impact to EPBC Act listed species; with the exception of the assessed and approved impact for Banksia sphaerocarpa var. dolichostyla	Trigger criteria: • Pre-clearance surveys result in total impacts to a conservation significant species population impact exceeding 10%	Trigger criteria has not been exceeded
MS1199 Condition 3-1(1) – No direct or indirect impacts to Malleefowl mounds within the exclusion areas as shown on Figure 4. MS1199 Condition 3-1(3) – No removal of active Malleefowl mounds within the Development Envelope.	Trigger criteria: • Clearing without an authorised internal permit within the Development Envelope, but outside of the Malleefowl Mound Exclusion Zone (MMEZ) as shown on Figure 4 of MS1199.	Trigger criteria has not been exceeded
	Trigger criteria: • Unauthorised access by personnel to a MMEZ.	Trigger criteria has not been exceeded
	Threshold criteria: • Clearing or disturbance of vegetation up to the MMEZ and / or up to 100 m of any newly identified active Malleefowl mounds.	Threshold criteria has not been exceeded
MS1199 Condition 3-1(2) - No direct or indirect adverse impacts to Malleefowl and Chuditch within the Development Envelope. MS1199 Condition 3-1(4) - Minimise proposal-related direct or adverse indirect impacts to Malleefowl from feral animals within the Development Envelope.	Chuditch Trigger Criteria: • A 25 % decrease at impact sites in female abundance for two consecutive monitoring events.	Trigger criteria has not been exceeded
	Malleefowl Trigger Criteria: • A 25 % decrease in the estimated local population number (based on temporal analysis) over a consecutive two-year period.	Trigger criteria has not been exceeded
MS1199 Condition 3-1(1) – No direct or indirect impacts to Malleefowl mounds within the exclusion areas as shown on Figure 4. MS1199 Condition 3-1(3) – No removal of active Malleefowl mounds within the Development Envelope.	Trigger Criteria: • Clearing without an authorised internal permit within the Development Envelope, but outside of the Malleefowl Mound Exclusion Zone (MMEZ) as shown on Figure 4 of MS1199.	Trigger criteria has not been exceeded
	Trigger Criteria: • Unauthorised access by personnel to a MMEZ	Trigger criteria has not been exceeded
	Threshold criteria: • Clearing or disturbance of vegetation within 100 m of any newly identified active Malleefowl mounds and / or the MMEZs.	Threshold criteria has not been exceeded
MS1199 Condition 3-1(2) – No direct or indirect adverse impacts to Malleefowl and	Chuditch Trigger Criteria: • A 25 % decrease at impact sites in female abundance for two consecutive monitoring events.	Trigger criteria has not been exceeded

Environmental objective	Environmental criteria	Determination
Chuditch within the Development Envelope. MS1199 Condition 3-1(4) – Minimise proposal-related direct or adverse indirect impacts to Malleefowl from feral animals within the Development Envelope.	Malleefowl Trigger Criteria: • A 25 % decrease in the estimated local population number (based on temporal analysis) over a consecutive two-year period.	Trigger criteria has not been exceeded
	Chuditch Threshold Criteria: • A 50 % decrease at impact sites in female abundance for two consecutive monitoring events.	Threshold criteria has not been exceeded
	Malleefowl Threshold Criteria: • A Project-related 50 % decrease in the estimated local population (based on temporal analysis) over a consecutive two-year period.	Threshold criteria has not been exceeded
Minimise the risk of incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike or mining related fire.	Early Response Trigger: • 25 % decrease in Malleefowl or Chuditch sightings within or adjacent to Development Envelope over 2 consecutive years.	Trigger criteria has not been exceeded
Minimise the risk of a decline in Malleefowl or Chuditch populations due to predation from introduced fauna.	Early Response Trigger: 25 % increase in introduced predators (fox or cat) sightings (opportunistic sightings and remote camera) over two consecutive years.	Trigger criteria has not been exceeded
Minimise the risk of a decline in Malleefowl or Chuditch populations due to dust, light, noise, vibration or displacement.	Early Response 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 year	Trigger criteria has not been exceeded

Appendix A MS 1199

Published on: 23 November 2022 Statement No. 1199

STATEMENT THAT A SIGNIFICANT AMENDMENT TO AN APPROVED PROPOSAL MAY BE IMPLEMENTED
(Environmental Protection Act 1986)

EARL GREY LITHIUM PROJECT (SIGNIFICANT AMENDMENT)

Proposal: The proposal is to amend the existing Earl Grey Lithium Project.

Proponent: Covalent Lithium Pty Ltd
Australian Company Number 623 090 139

Proponent Address: Level 17, 109 St Georges Terrace

Assessment Number: 2315

Report of the Environmental Protection Authority: 1730

Previous Assessment Numbers: 2123 and 2279

Previous Reports of the Environmental Protection Authority: 1651 and 1697

Previous Statement Numbers: 1118 and 1167

Pursuant to section 45 of the *Environmental Protection Act 1986*, read with section 40AA of the Act, it has been agreed that:

1. the significant amendment to the approved proposal described in section 1 of the proponent's section 38 Referral Supporting Document (Revision 3, April 2022) may be implemented; and

2. the implementation of the significant amendment to the approved proposal to which the above reports of the Environmental Protection Authority relate is subject to the following conditions and procedures, which replace and supersede all previous conditions and procedures of Statements 1118 and 1167.

1 Limitations and Extent of Proposal

1-1 When implementing the proposal, the proponent shall ensure the proposal does not exceed the following extents:

Physical elements	Location	Maximum extent or range
Development envelope	Figure 2	2,347 ha
Indicative Disturbance Footprint	Figure 2	882 ha
Clearing Extent	Figure 2	Clearing of no more than 442 ha of native vegetation
Operational elements		
Mine and associated infrastructure	Figure 2	Mining operations and mining infrastructure including a mine pit, waste rock landforms, tailings storage facility, processing plant, airstrip, accommodation village, water supply pipeline, solar plant, and associated infrastructure.
Timing elements		
Project life	-	Up to 40 years from the date of this Statement

2 Flora and Vegetation

2-1 The proponent shall implement the proposal to meet the following environmental outcomes:

(1) **clearing** of no more than 442 ha of native vegetation;

(2) no direct or indirect disturbance to flora and vegetation in the exclusion zones as shown on Figure 3;

(3) no more than 9,732 individuals of *Microcorys elatoides* and two (2) individuals of *Banksia sphaerocarpa var. dolichostyla* to be subject to direct disturbance inside the development envelope;

(4) The loss of no more than:

- 7% of the **known population** of *Labichea rossii*;
- 7% of the **known population** of *Microcorys sp. Mt Holland broad-leaf*;
- 5% of the **known population** of *Acacia lachnocarpa;*
- 2% of the **known population** of any other priority 1 flora species.

2-2 The proponent shall implement the proposal to achieve the following environmental objectives:

(1) avoid, where practicable, and otherwise minimise direct disturbance to **priority flora species** outside the flora exclusion zones detailed on Figure 3; and

(2) avoid, where practicable and otherwise minimise indirect impacts to flora and vegetation including but not limited to impacts from clearing, dust, weeds and fire.

2-3 Prior to clearing within the areas subject to the significant amendment as described in section 1 of the proponent's section 38 Referral Supporting Document (Revision 3, April 2022), the proponent must undertake pre-clearance vegetation and flora survey(s), in accordance with *Technical guidance – Flora and vegetation surveys for environmental impact assessment,* or any approved updates of these guidelines.

2-4 In order to meet the outcomes of condition 2-1, and the objectives of condition 2-2, within six (6) months of the date of this Statement, the proponent shall update the *Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan* (July 2022). This plan shall:

(1) include details of the timing, methods, limitations, and results of the pre-clearance surveys required by condition 2-3 and demonstrate how the findings of the survey(s) have been considered, including provision of mitigation measures;

(2) describe how impacts to threatened and **priority flora species** outside the flora exclusion zones will be avoided where possible, and/or minimised;

(3) include actions to ensure that dust, weeds, and fire are appropriately managed within the development envelope;

(4) specify trigger criteria that must provide an early warning that the threshold criteria identified in condition 2-4(5) may not be met;

(5) specify threshold criteria to demonstrate compliance with the environmental outcomes specified in condition 2-1;

(6) specify monitoring to determine if trigger criteria and threshold criteria are exceeded;

(7) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded;

(8) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded;

(9) provide contingency measures and adaptive management techniques to ensure the outcomes of conditions 2-1 and 2-2 are met, and include options for changes to operations and reductions in disturbance; and

(10) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that the outcome of condition 2-1 and the objectives of condition 2-2 have been met over the reporting period in the Compliance Assessment Report required by condition 8-6.

2-5 The proponent must not commence clearing exceeding the extent of the original authorised proposal until the CEO has confirmed by notice in writing that the Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan satisfies the requirements of condition 2-4.

2-6 The proponent must implement the most recent version of Flora and Vegetation Environmental Management Plan confirmed for implementation by the **CEO**, with the objective of ensuring the outcomes of condition 2-1 and objectives of condition 2-2 are achieved/met, until the **CEO** has confirmed by notice in writing that the proponent has demonstrated that the environmental outcomes in condition 2-1 have been achieved and the objectives of 2-2 have been met.

2-7 In the event that monitoring, or investigations indicates exceedance of threshold criteria specified in the confirmed Flora and Vegetation Environmental Management Plan, the proponent shall:

(1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;

(2) implement the threshold contingency actions specified in the Flora and Vegetation Environmental Management Plan within twenty-four (24) hours of the exceedance being reported as required by condition 2-7 (1) and continue implementation of those actions until the CEO has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and the implementation of the threshold contingency actions is no longer required;

(3) investigate to determine the cause of the threshold criteria being exceeded;

(4) investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and

(5) provide a report to the CEO within twenty-one (21) days of the exceedance being reported as required by condition 2-7(1). The report shall include:

(a) details of threshold contingency actions implemented;

(b) the effectiveness of the threshold contingency actions implemented, against the threshold criteria;

(c) the findings of the investigations required by conditions 2-7(3) and 2-7(4);

(d) measures to prevent the threshold criteria being exceeded in the future;

(e) measures to prevent, control or abate the environmental harm which may have occurred; and

(f) justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.

2-8 The proponent shall make the Flora and Vegetation Environmental Management Plan required by condition 2-4 publicly available.

2-9 The proponent:

(1) may review and revise the confirmed Flora and Vegetation Environmental Management Plan and submit it to the **CEO**; and

(2) shall review and revise the confirmed Flora and Vegetation Environmental Management Plan and submit it to the **CEO** as and when directed by the **CEO** by a notice in writing.

2-10 The proponent shall implement the latest revision of the Flora and Vegetation Environmental Management Plan, which the **CEO** has confirmed by notice in writing, satisfies the requirements of condition 2-4.

3 Terrestrial Fauna

3-1 The proponent shall implement the proposal to meet the following environmental outcomes and objectives:

(1) no direct or indirect impacts to malleefowl mounds within the exclusion areas as shown on Figure 4;

(2) no direct or indirect adverse impacts to malleefowl and chuditch within the development envelope;

(3) no removal of active malleefowl mounds within the development envelope; and

(4) minimise proposal-related direct or adverse indirect impacts to malleefowl from feral animals within the development envelope.

3-2 In order to meet the requirements of condition 3-1, within six (6) months of approval of this Statement, the proponent shall update the *Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan* (April 2022). This plan shall:

(1) outline how the pre-clearance surveys will be undertaken using LIDAR or similar technology;

(2) outline the procedure for capture and release of chuditch, and malleefowl if required, prior to clearing of native vegetation;

(3) specify trigger criteria that must provide an early warning that the environmental outcomes and objectives identified in condition 3-1 may not be met;

(4) specify threshold criteria to demonstrate compliance with the environmental outcomes and objectives specified in condition 3-1;

(5) specify monitoring to determine if trigger criteria and threshold criteria are exceeded;

(6) specify trigger level actions to be implemented in the event that trigger criteria have been exceeded;

(7) specify threshold contingency actions to be implemented in the event that threshold criteria are exceeded;

(8) provide contingency measures and adaptive management techniques to ensure the outcomes of conditions 3-1 are met, and include options for changes to operations and reductions in disturbance; and

(9) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that condition 3-1 has been met over the reporting period in the Compliance Assessment Report required by condition 8-6.

3-3 The proponent must not commence clearing exceeding the extent of the original authorised proposal until the **CEO** has confirmed by notice in writing that the *Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan* satisfies the requirements of condition 3-2.

3-4 The proponent must implement the most recent version of Terrestrial Fauna Environmental Management Plan until the CEO has confirmed by notice in writing that the proponent has demonstrated that the environmental outcomes and objectives in condition 3-1 have been met.

3-5 In the event that monitoring or investigations indicate exceedance of threshold criteria specified in the Terrestrial Fauna Environmental Management Plan, the proponent shall:

(1) report the exceedance in writing to the CEO within seven (7) days of the exceedance being identified;

(2) implement the threshold contingency actions specified in the Terrestrial Fauna Environmental Management Plan within twenty-four (24) hours of the exceedance being reported as required by condition 3-5(1) and continue implementation of those actions until the **CEO** has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and the implementation of the threshold contingency actions is no longer required;

(3) investigate to determine the cause of the threshold criteria being exceeded;

(4) investigate to provide information for the **CEO** to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and

(5) provide a report to the **CEO** within twenty-one (21) days of the exceedance being reported as required by condition 3-5(1). The report shall include:

(a) details of threshold contingency actions implemented;

(b) the effectiveness of the threshold contingency actions implemented, against the threshold criteria;

(c) the findings of the investigations required by conditions 3-5(3) and 3-5(4);

(d) measures to prevent the threshold criteria being exceeded in the future;

(e) measures to prevent, control or abate the environmental harm which may have occurred; and

(f) justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.

3-6 The proponent:

(1) may review and revise the Terrestrial Fauna Environmental Management Plan; or

(2) shall review and revise the Terrestrial Fauna Environmental Management Plan as and when directed by the **CEO**.

3-7 The proponent shall implement the latest revision of the Terrestrial Fauna Environmental Management Plan, which the CEO has confirmed by notice in writing, satisfies the requirements of condition 3-2.

4 Offsets

4-1 The proponent must implement offsets to counterbalance the significant residual impacts of the proposal on the following environmental values:

(1) 436 ha of foraging and breeding habitat for malleefowl (*Leipoa ocellata*);

(2) 442 ha of foraging and potential breeding habitat for chuditch (*Dasyurus geoffroii*);

(3) 2 individuals of Ironcap Banksia (*Banksia sphaerocarpa var. dolichostyla*); and

(4) 9,732 individuals of *Microcorys elatoides*,

as a result of the implementation of the proposal and the significant amendment to the approved proposal described in section 1 of the proponent's section 38 Referral Supporting Document.

Threatened Fauna Land Acquisition Strategy

4-2 In order to meet the requirements of conditions 4-1 (1) and 4-1(2), the proponent shall submit for approval, the Earl Grey Lithium Project Fauna Offset Strategy within six (6) months of the date of this Statement. This strategy shall:

(1) identify an initially unprotected area, or areas, to be acquired and protected for conservation that contains malleefowl and chuditch foraging and breeding habitat, in consultation with the Department of Biodiversity, Conservation and Attractions;

(2) demonstrate how the proposed offset counterbalances the significant residual impact to 436 ha of foraging and breeding habitat for malleefowl, and 442 ha of foraging and potential breeding habitat for chuditch, as identified in condition 4-1, through application of the principles and completion of the WA Offsets Template, as described in the *WA Environmental Offsets Guidelines 2014*, and the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*

Assessment Guide (October 2012), or any approved updates of these guidelines, to demonstrate how the proposed offset counterbalances the significant residual impact to malleefowl and chuditch, as identified in condition 4-1;

(3) demonstrate how the proposed offset aligns with the National Recovery Plan for Malleefowl (*Leipoa ocellata*) and the Chuditch (*Dasyurus geoffroii*) Recovery Plan, or any subsequent revisions of these plans;

(4) identify the environmental values of the offset area(s);

(5) identify and commit to a protection mechanism for any area(s) of land acquisition, being either the area(s) is ceded to the Crown for the purpose of management for conservation, or the area(s) is managed under other suitable mechanisms for the purpose of conservation as agreed by the **CEO**;

(6) identify how the ongoing performance of the offset measures, and whether they are achieving the outcomes in conditions 4-1(1) and 4-1(2), will periodically be made publicly available;

(7) if any land is to be ceded to the Crown for the purpose of management for conservation, the proponent will identify:

(a) the quantum of, and provide funds for, the upfront works associated with establishing the conservation area;

(b) the quantum of, and provide a contribution of funds for, the management of this area for seven (7) years after completion of purchase; and

(c) an appropriate management body for the ceded land;

(8) detail the monitoring, reporting and evaluation mechanisms for management and/or rehabilitation actions; and

(9) define the role of the proponent and/or any relevant management authority.

4-3 Within six (6) months of receiving notice in writing from the **CEO**, on advice of the Department of Biodiversity, Conservation and Attractions, that the **Threatened Fauna** Land Acquisition Strategy satisfies the requirements of conditions 4-1 and 4-2, the proponent shall implement the approved **Threatened Fauna** Land Acquisition Strategy.

4-4 The proponent:

(1) may review and revise the **Threatened Fauna** Land Acquisition Strategy; or

(2) shall review and revise the **Threatened Fauna** Land Acquisition Strategy as and when directed by the **CEO**.

4-5 The proponent shall implement the latest version of the **Threatened Fauna** Land Acquisition Strategy, which the **CEO** has confirmed by notice in writing, satisfies the requirements of condition 4-2.

Flora Offset Strategy

4-6 The proponent must, in consultation with Department of Biodiversity, Conservation and Attractions, prepare a Flora and Vegetation Offset Strategy that demonstrates how the following environmental outcome will be achieved, and how this achievement will be substantiated, and submit it to the **CEO**:

(1) counterbalance the significant residual impacts listed in conditions 4-1(3) and 4-1(4).

4-7 The Flora and Vegetation Offset Management Plan must:

(1) identify an area, or areas, to be protected, managed and/or rehabilitated for conservation that contains the flora values identified in conditions 4-1(3) and 4-1(4) on advice of the Department of Biodiversity, Conservation and Attractions;

(2) identify an area, or areas for **on-ground management**;

(3) demonstrate how the environmental values within the **Proposed Offset Conservation Areas** will be maintained and improved in order to counterbalance the significant residual impact to the environmental values in condition 4-1 and achieve the environmental outcomes in condition 4-6(1);

(4) demonstrate application of the principles of the WA Environmental Offsets Policy, the *WA Environmental Offsets Metric* and the WA Offsets Template, as described in the *WA Environmental Offsets Guidelines,* and *the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy Assessment Guide*, or any subsequent revisions of these documents;

(5) identify how the ongoing performance of the offset measures, and whether they are achieving the outcomes in condition 4-6, will periodically be made publicly available;

(6) identify how the Proposed Offset Conservation Areas will be protected, being either the sites are ceded to the Crown for the purpose of management for conservation, or the sites are managed under other suitable mechanism for the purpose of conservation as agreed by the **CEO** by notice in writing; and

(7) for offsets acquired specify:

(a) a timeframe and works associated with establishing the **Proposed Offset Conservation Areas**, including a contribution for maintaining the offset for at least twenty (20) years after completion of purchase;

(b) identify the relevant management body for the ongoing management of the **Proposed Offset Conservation Areas**, including its role, and the role of the proponent, and confirmation in writing that the relevant management body accepts responsibility for its role.

***Microcorys elatoides* Conservation Plan**

4-8 The proponent shall fund and undertake an offset for *Microcorys elatoides* to meet the following outcome:

(1) ensure the long-term viability of *Microcorys elatoides*.

4-9 Within twelve (12) months of the date of this Statement, or as otherwise agreed in writing by the **CEO**, as part of the Flora Offset Strategy, the proponent shall prepare and submit to the **CEO** a *Microcorys elatoides* Conservation Plan, for the offset required by condition 4-8, which identifies on-ground conservation and research projects to be undertaken that contribute to long-term conservation outcomes for the species. The plan shall be to the satisfaction of the **CEO** on advice of the Department of Biodiversity, Conservation and Attractions.

4-10 The *Microcorys elatoides* Conservation Plan shall:

(1) On ground management

(a) state the targets to be achieved, including completion criteria, which will result in a tangible improvement to the environmental values being offset;

(b) demonstrate the consistency of the targets with environmental outcomes in conditions 4-6(1) and 4-8, and the objectives of any relevant guidance, including but not limited to, recovery plans or area management plans;

(c) detail the on-ground management actions, with associated timeframes for implementation and completion, to achieve the targets identified in conditions 4-6(1) and 4-8; and

(d) detail the monitoring, reporting and evaluation mechanisms for the targets and actions identified under condition 4-10(1)(a).

(2) Where research is proposed, prepare a research program that:

(a) identifies the objectives and intended outcomes, and specifies the deliverables and competition criteria;

(b) identifies how the research will result in a positive conservation outcome, and will either improve management and protection, address priority knowledge gaps that have been identified as a research priority needed to improve management and protection, for the environmental values identified in condition 4-1(4);

(c) demonstrate consistency of the objectives in condition 4-10(2) with any relevant guidance, including but not limited to, recovery plans or area management plans, the principles of the *WA Environmental Offsets Policy,* the *WA Environmental Offsets Guidelines*, or any subsequent revisions of these documents;

(d) identifies and justifies the proportion and allocation of resources for each specific offset addressed by the Flora and Vegetation Offset Strategy;

(e) provides an implementation and reporting schedule, including an outline of key activities, all deliverables, stages of implementation, reporting of research results (including interim results), reporting on implementation status, and milestones towards completion criteria;

(f) identifies the governance arrangements including responsibilities for implementing, and oversight of, the research program, agreements with government agencies, agreements with any third parties, and contingency measures;

(g) identify how a research program summary, and the results (including interim results) of the research program will be communicated and/or published in an open access format; and

(h) identifies the third party to carry out the work required to meet the outcomes of conditions 4-1(4) and 4-8 who is satisfactory for the role to the **CEO**. In applying to the **CEO** for endorsement of the selected third parties, the proponent shall provide:

- demonstration of the track record, experience, qualifications and competencies of the proposed third party to carry out the work and achieve the outcomes.

4-11 Within six (6) months of receiving notice in writing from the **CEO** that the *Microcorys elatoides* Conservation Plan satisfies the requirements of conditions

4-9 to 4-10, the proponent shall commence the implementation of the conservation plan.

4-12 The proponent shall make the *Microcorys elatoides* Conservation Plan required by condition 4-10 publicly available.

5 Rehabilitation

5-1 The proponent must implement the proposal to ensure the following environmental outcomes are achieved:

(1) rehabilitated areas are capable of sustaining the long-term viability of *Banksia sphaerocarpa var. dolichostyla* and *Microcorys elatoides* impacted from the proposal;

(2) rehabilitated landforms are stable and do not cause pollution or environmental harm;

(3) rehabilitated vegetation is self-sustaining; and

(4) rehabilitated areas are consistent with the species diversity and abundance of native vegetation within comparative analogue or reference sites.

5-2 In order demonstrate the outcomes of condition 5-1 can be met, the proponent shall commence rehabilitation trials within twelve (12) months of the date of this Statement, or as otherwise agreed in writing by the **CEO**.

5-3 The proponent shall submit annually to the **CEO**, with the annual compliance assessment report required by condition 8-6, a rehabilitation trial progress report, which identifies:

(1) results of rehabilitation trials; and

(2) contingency measures and actions in the event trials indicate the rehabilitation objective may not be achieved.

5-4 The proponent shall continue to implement the rehabilitation trials required by condition 5-2 until the proponent has demonstrated that the outcomes of condition 5-1 will be met, or as otherwise agreed by the **CEO**.

6 Environmental Performance Report

6-1 The proponent shall submit an Environmental Performance Report to the Minister every five (5) years.

6-2 The first Environmental Performance Report shall be submitted within three months after five (5) years from substantial commencement, or such other time as may be approved by the **CEO**.

6-3 Each Environmental Performance Report shall report on proposal impacts on the following environmental values:

(1) state of flora and vegetation;

(2) state of terrestrial fauna; and

(3) state of the holistic environment.

6-4 The Environmental Performance Report must include:

(1) a comparison of the environmental values identified in condition 6-3 at the end of the five (5) year period; against the state of each environmental value at the beginning of the five (5) year period;

(2) a comparison of the environmental values identified in condition 6-3 at the end of the five (5) year period; against the state of the environmental values identified in first Environmental Performance Report submitted in accordance with condition 6-2; and

(3) proposed adaptive management and continuous improvement strategies.

6-5 The Environmental Performance Report may be in whole, or part prepared in conjunction with other proponents where there are cumulative impacts from their proposals.

7 Contact Details

7-1 The proponent shall notify the **CEO** of any change of its name, physical address, or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

8 Compliance Reporting

8-1 The proponent shall prepare and maintain a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition 8-6, or prior to implementation of the proposal, whichever is sooner.

8-2 The Compliance Assessment Plan shall indicate:

(1) the frequency of compliance reporting;

(2) the approach and timing of compliance assessments;

(3) the retention of compliance assessments;

(4) the method of reporting of potential non-compliances and corrective actions taken;

(5) the table of contents of Compliance Assessment Reports; and

(6) public availability of Compliance Assessment Reports.

8-3 After receiving notice in writing from the **CEO** that the Compliance Assessment Plan satisfies the requirements of condition 8-2 the proponent shall assess compliance with conditions in accordance with the Compliance Assessment Plan required by condition 8-1.

8-4 The proponent shall retain reports of all compliance assessments described in the Compliance Assessment Plan required by condition 8-1 and shall make those reports available when requested by the **CEO**.

8-5 The proponent shall advise the **CEO** of any potential non-compliance within seven (7) days of that non-compliance being known.

8-6 The proponent shall submit to the **CEO** the first Compliance Assessment Report fifteen (15) months from the date of issue of this Statement addressing the twelve (12) month period from the date of issue of this Statement and then annually from the date of submission of the first Compliance Assessment Report, or as otherwise agreed in writing by the **CEO**.

The Compliance Assessment Report shall:

(1) be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;

(2) include a statement as to whether the proponent has complied with the conditions;

(3) identify all potential non-compliances and describe corrective and preventative actions taken;

(4) be made publicly available in accordance with the approved Compliance Assessment Plan; and

(5) indicate any proposed changes to the Compliance Assessment Plan required by condition 8-1.

9 Public Availability of Data

9-1 Subject to condition 9-2, within a reasonable time period approved by the **CEO** of the issue of this Statement and for the remainder of the life of the proposal, the proponent shall make publicly available, in a manner approved by the **CEO**, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)),

management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

9-2 If any data referred to in condition 9-1 contains particulars of:

(1) a secret formula or process; or

(2) confidential commercially sensitive information,

the proponent may submit a request for approval from the **CEO** to not make these data publicly available. In making such a request the proponent shall provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

[signed on 23 November 2022]

Hon Reece Whitby MLA
MINISTER FOR ENVIRONMENT; CLIMATE ACTION

Key decision-making authorities consulted under section 45(2):
Minister for Water Minister for Mines and Petroleum

Table 1: Abbreviations and definitions

Acronym or abbreviation	Definition or term
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *EP Act*, or the CEO's delegate.
EP Act	*Environmental Protection Act 1986*
Clearing	Has the same meaning as in section 51A of the *Environmental Protection Act 1986*
Ground disturbing activities	Any ground disturbing activity undertaken in the implementation of the proposal, including any clearing, civil works, or construction, other than preliminary works to which approval has been given under the EP Act.
ha	Hectare
known population	Number of individuals for species as defined by *Earl Grey Lithium Project Revised Proposal Environmental Review Document* (Rev 3, April 2022) or by any biological field survey that is undertaken subsequent to the *Earl Grey Lithium Project Revised Proposal Environmental Review Document* (Rev 3, April 2022) that has been submitted to the CEO.
LIDAR	A remote sensing technology which uses the pulse from a laser to collect measurements which can then be used to create 3D models and maps of objects and environments. LIDAR is an acronym of Light Detection and Ranging.
m	metre
On-ground management	This includes revegetation (re-establishment of native vegetation in degraded areas) and rehabilitation (repair of ecosystem processes and management of weeds, disease or feral animals) with the objective to achieve a tangible improvement to the environmental values in the offset area.
Priority flora species	As defined in the Conservation Codes for Western Australian Flora and fauna
Threatened fauna	Fauna listed as Threatened under the *Environment Protection and Biodiversity Conservation Act 1999* or *Biodiversity Conservation Act 2016.*

Figures (attached)

Figure 1 Regional Location
Figure 2 Earl Grey Lithium Project Development Envelope and Indicative Disturbance Footprint
Figure 3 Conservation Significant Flora Exclusion Zones
Figure 4 Malleefowl Mound Exclusion Zones

Figure 1: Regional location

Figure 2: Earl Grey Lithium Project development envelope and disturbance footprint

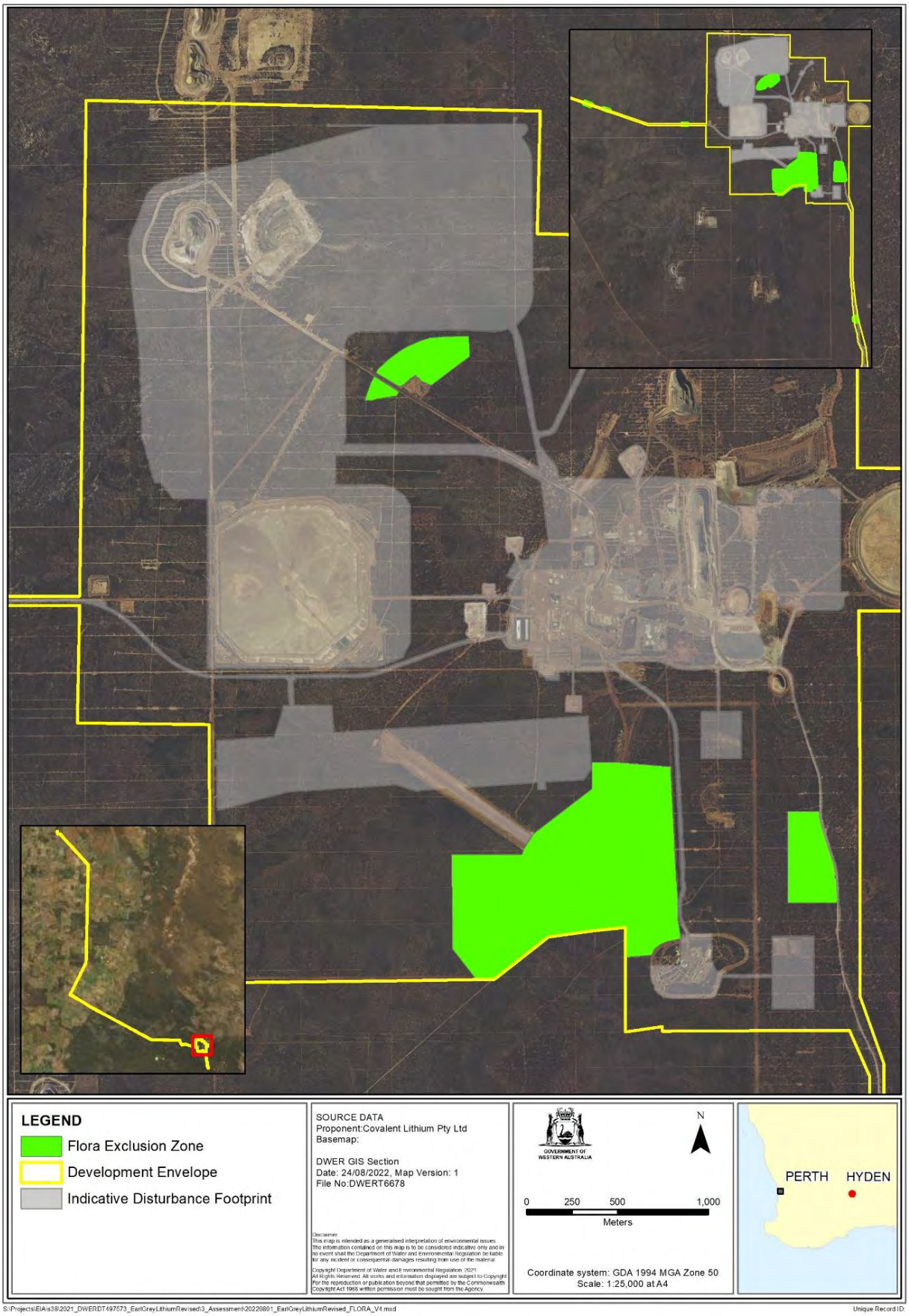


Figure 3: Conservation significant flora exclusion zones

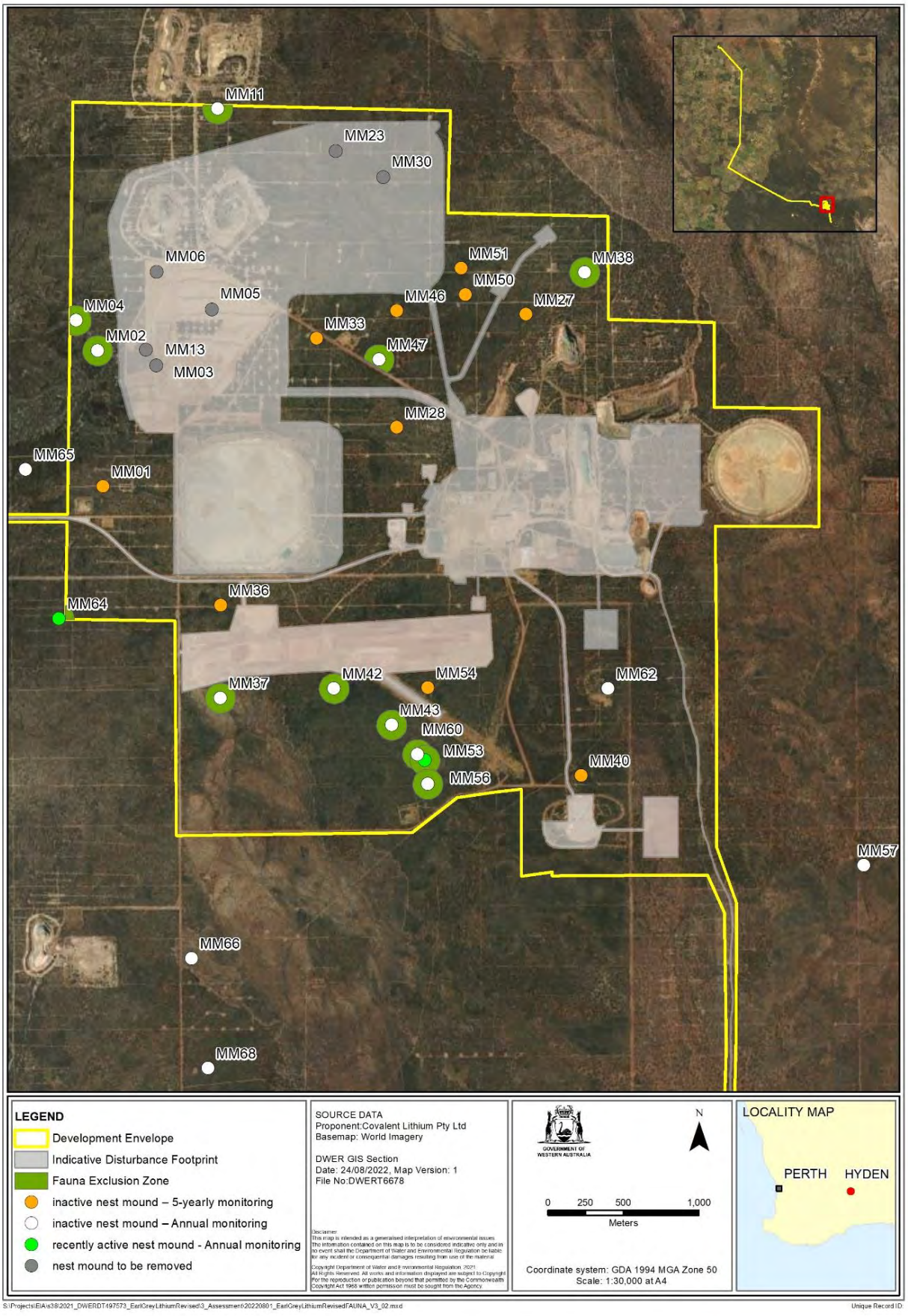


Figure 4: Malleefowl mound exclusion zones

Appendix B Statement of Compliance

Statement of Compliance

1. Proposal and Proponent Details

Proposal Title	*Earl Grey Lithium Project*
Statement Number	*1199*
Proponent Name	*Covalent Lithium Pty Ltd*
Proponent's Australian Company Number *(where relevant)*	*623 090 139*

2. Statement of Compliance Details

Reporting Period	*1/01/23* to *31/12/23*

Implementation phase(s) during reporting period (please tick ✓ relevant phase(s))							
Pre-construction		Construction	X	Operation		Decommissioning	

Audit Table for Statement addressed in this Statement of Compliance is provided at Attachment:	Table 4.1
An audit table for the Statement addressed in this Statement of Compliance must be provided as Attachment 2 to this Statement of Compliance. The audit table must be prepared and maintained in accordance with the Department of Water and Environmental Regulation (DWER) *Post Assessment Guideline for Preparing an Audit Table*, as amended from time to time. The 'Status Column' of the audit table must accurately describe the compliance status of each implementation condition and/or procedure for the reporting period of this Statement of Compliance. The terms that may be used by the proponent in the 'Status Column' of the audit table are limited to the Compliance Status Terms listed and defined in Table 1 of Attachment 1.	

Were all implementation conditions and/or procedures of the Statement complied with within the reporting period? (please tick ✓ the appropriate box)			
No (please proceed to Section 3)	✓	Yes (please proceed to Section 4)	

3. Details of Non-compliance(s) and/or Potential Non-compliance(s)

The information required Section 3 must be provided for each non-compliance or potential non-compliance identified during the reporting period covered by this Statement of Compliance.

Non-compliance/potential non-compliance 3-1

Which implementation condition or procedure was non-compliant or potentially non-compliant?
MS1199:M4.2
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Potentially non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
24 May 2023

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☑ Yes ▣ Reported to DWER verbally Date _24/07/2023_____ ▣ Reported to DWER in writing Date _17/11/2023_____	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
The potential non-compliance relates to the requirement to submit the Earl Grey Lithium Project Fauna Offset Strategy (Threatened Fauna Offset Management Plan) within six months of the date of MS1199.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
Not applicable
What was the cause(s) of the non-compliance or potential non-compliance?
Covalent were waiting for DWER to review the previous revision of the TFOMP.
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
Covalent met with DWER, received feedback on the previous revision of the TFOMP and provided DWER with a request for additional time for resubmission of an updated TFOMP.
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
A draft TFOMP was under review by DWER prior to the potential non-compliance.
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance.

(the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-2

Which implementation condition or procedure was non-compliant or potentially non-compliant?
MS1199:M8.1
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Potentially non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
14 March 2023

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☑ Yes ☐ Reported to DWER verbally Date _____ ◉ Reported to DWER in writing Date _26/04/2024_____	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
Proposal was implemented prior to submission of Compliance Assessment Plan (CAP) to CEO.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
Not applicable
What was the cause(s) of the non-compliance or potential non-compliance?
Miscommunication
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
The potential non-compliance was reported to DWER 26 April 2024. The CAP was submitted 28 April 2024.
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
The CAP had been drafted ready to send in March 2023 however due to miscommunication it was not sent.
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

Non-compliance/potential non-compliance 3-3

Which implementation condition or procedure was non-compliant or potentially non-compliant?
MS1199:M8.3
Was the implementation condition or procedure non-compliant or potentially non-compliant?
Potentially non-compliant
On what date(s) did the non-compliance or potential non-compliance occur (if applicable)?
N/A

Was this non-compliance or potential non-compliance reported to the Chief Executive Officer, DWER?	
☑ Yes ☐ Reported to DWER verbally Date _____ ☒ Reported to DWER in writing Date _26/04/2024_____	☐ No

What are the details of the non-compliance or potential non-compliance and where relevant, the extent of and impacts associated with the non-compliance or potential non-compliance?
The potential non-compliance relates to the Covalent commencing to assess compliance with conditions in accordance with the Compliance Assessment Plan (CAP) prior to receiving notice from the CEO that the CAP satisfies the requirements. The assessment occurred for the period 23 November 2022 to 31 December 2023.
What is the precise location where the non-compliance or potential non-compliance occurred (if applicable)? (please provide this information as a map or GIS co-ordinates)
Not applicable
What was the cause(s) of the non-compliance or potential non-compliance?
Miscommunication
What remedial and/or corrective action(s), if any, were taken or are proposed to be taken in response to the non-compliance or potential non-compliance?
The potential non-compliance was reported to DWER 26 April 2024. The CAP was submitted 28 April 2024.
What measures, if any, were in place to prevent the non-compliance or potential non-compliance before it occurred? What, if any, amendments have been made to those measures to prevent re-occurrence?
The CAP had been drafted ready to send in March 2023 however due to miscommunication it was not sent.
Please provide information/documentation collected and recorded in relation to this implementation condition or procedure: • in the reporting period addressed in this Statement of Compliance; and • as outlined in the approved Compliance Assessment Plan for the Statement addressed in this Statement of Compliance. (the above information may be provided as an attachment to this Statement of Compliance)

For additional non-compliance or potential non-compliance, please duplicate this page as required.

4. Proponent Declaration

I, Anthea Pate (Environment Manager) declare that I am authorised on behalf of Covalent Lithium Pty Ltd to submit this form and that the information contained in this form is true and not misleading.

Signature: DocuSigned by: Anthea Pate FDBBFDD8035F44E... Date: 30/4/2024

Please note that:

- it is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give or cause to be given information that to his knowledge is false or misleading in a material particular; and
- the Chief Executive Officer of the DWER has powers under section 47(2) of the *Environmental Protection Act 1986* to require reports and information about implementation of the proposal to which the statement relates and compliance with the implementation conditions.

5. Submission of Statement of Compliance

One hard copy and one electronic copy (preferably PDF on CD or thumb drive) of the Statement of Compliance are required to be submitted to the Chief Executive Officer, DWER, marked to the attention of Manager, Compliance (Ministerial Statements).

Please note, the DWER has adopted a procedure of providing written acknowledgment of receipt of all Statements of Compliance submitted by the proponent, however, the DWER does not approve Statements of Compliance.

6. Contact Information

Queries regarding Statements of Compliance, or other issues of compliance relevant to a Statement may be directed to Compliance (Ministerial Statements), DWER:

Manager, Compliance (Ministerial Statements)

Department of Water and Environmental Regulation

Postal Address:	Locked Bag 10 Joondalup DC WA 6919
Phone:	(08) 6364 7000
Email:	compliance@dwer.wa.gov.au

7. Post Assessment Guidelines and Forms

Post assessment documents can be found at www.epa.wa.gov.au

ATTACHMENT 1

Table 1 Compliance Status Terms

Compliance Status Terms	Abbrev	Definition	Notes
Compliant	C	Implementation of the proposal has been carried out in accordance with the requirements of the audit element.	This term applies to audit elements with: • ongoing requirements that have been met during the reporting period; and • requirements with a finite period of application that have been met during the reporting period, but whose status has not yet been classified as 'completed'.
Completed	CLD	A requirement with a finite period of application has been satisfactorily completed.	This term may only be used where: • audit elements have a finite period of application (e.g. construction activities, development of a document); • the action has been satisfactorily completed; and • the DWER has provided written acceptance of 'completed' status for the audit element.
Not required at this stage	NR	The requirements of the audit element were not triggered during the reporting period.	This should be consistent with the 'Phase' column of the audit table.
Potentially Non-compliant	PNC	Possible or likely failure to meet the requirements of the audit element.	This term may apply where during the reporting period the proponent has identified a potential non-compliance and has not yet finalized its investigations to determine whether non-compliance has occurred.
Non-compliant	NC	Implementation of the proposal has not been carried out in accordance with the requirements of the audit element.	This term applies where the requirements of the audit element are not "complete" have not been met during the reporting period.
In Process	IP	Where an audit element requires a management or monitoring plan be submitted to the DWER or another government agency for approval, that submission has been made and no further information or changes have been requested by the DWER or the other government agency and assessment by the DWER or other government agency for approval is still pending.	**The term 'In Process' may not be used for any purpose other than that stated in the Definition Column.** The term 'In Process' may not be used to describe the compliance status of an implementation condition and/or procedure that requires implementation throughout the life of the project (e.g. implementation of a management plan).

Appendix C Flora and Vegetation Environmental Management Plan Compliance Assessment

Table C.1: Flora and Vegetation Environmental Management Plan audit table (Rev 7)

Reference	Action	Timing	Conformance status	Evidence	Findings
FVEMP 01	Management targets • no unauthorised clearing of native vegetation	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register Management advice 26/04/2026	There was no unauthorised clearing of native vegetation.
FVEMP 02	Management targets • no unauthorised access within the Vegetation Exclusion Zones (VEZ's)	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register	There was no reported unauthorised access within the Vegetation Exclusion Zones.
FVEMP 03	Management targets • minimise dust deposition from mining and related activities	Overall	C	E35_Dust Suppression FY23 R06_20230915_Maxy Engineering_Dust Report E22_INX 2023 MTH Environmental Incident Register	Dust suppression is in place to minimise dust deposition. Monitoring is undertaken to determine dust generation performance (R06). The incident register (E22) documents five breaches of the early response trigger.
FVEMP 04	Management targets • minimise spread of weeds or dieback	Overall	C	R05_COV-0000-EN-PLN-0001_1 Construction EMP E36_Weed Hygiene_Register	Hygiene protocols are implemented to minimise the spread of weeds and dieback (Section 7.5 of R05).
FVEMP 05	Management targets • minimise alteration of fire regimes or surface hydrology	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No fires or surface flooding events as a result of the proposal have occurred during the reporting period.
FVEMP 06	The internal vegetation clearing procedure and permit will be utilised to control clearing within the Development Envelope.	Overall	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	Clearing for the SWRL and TSF Construction were completed in accordance with the ground disturbance permit procedure.
FVEMP 07	Furthermore, the VEZs will be surveyed and delineated by an appropriate means (for example flagging tape, fencing or signage) to prevent unauthorised access.	Overall	C	E26_Exclusion Signage 1 E27_Exclusion Signage 2 E28_Exclusion Signage 3	VEZ is delineated by signage and tape to prevent unauthorised access.
FVEMP 08	Access will be limited to foot access only or vehicle access only to existing cleared tracks and controlled by a procedure and permitting process. This will aim to ensure the area is only accessed for monitoring or rehabilitation activities to meet the requirement of this FVMP.	Overall	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure	The GDP Procedure outlines access control.
FVEMP 09	All personnel will be made aware of the requirement to avoid the VEZS through the site induction process.	Overall	C	E06_2023_MtHollandGDPAwarenessScript	Slide 6 of the GDP Awareness covers exclusion zones.
FVEMP 10	No proposal related direct impact to flora and vegetation within a VEZ	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Spring monitoring does not report proposal related direct impact to flora and vegetation within a VEZ
FVEMP 11	If there is vegetation clearing without an authorised internal permit within the Development Envelope, but outside of the VEZs: • Report internally as an incident in accordance with internal procedures.	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register Management advice 26/04/2024	There was no unauthorised clearing of native vegetation.
FVEMP 12	If there is vegetation clearing without an authorised internal permit within the Development Envelope, but outside of the VEZs:	Overall	NRATS	Refer to FVEMP 11	Refer to FVEMP 11

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Review management strategies and implement changes to prevent future occurrences. Management measures may include: o Undertake incident investigation o Review proximity of potential disturbance within/to VEZ. Should disturbance occur to threatened or Priority flora as a result of unauthorised access, report to DWER within 7 days of identification o Review and upgrade VEZ signage/delineation where appropriate o Audit and review of training and staff inductions (ie. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures) o Ground disturbance permit training competency training o Review impact of unauthorised clearing and report any noncompliance to DWER within 7 days of identification o Undertake rehabilitation of unauthorised clearing (ie disturbance from vehicle tracks, vegetation clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedure.				
FVEMP 13	If there is unauthorised access by personnel to a VEZ: • Report internally as an incident in accordance with internal procedures.	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register	No incidents of unauthorised access by personnel to VEZ.
FVEMP 14	If there is unauthorised access by personnel to a VEZ: •Review management strategies and implement changes to prevent future occurrences. Management measures may include: o Undertake incident investigation o Review proximity of potential disturbance within/to VEZ. Should disturbance occur to threatened or Priority flora as a result of unauthorised access, report to DWER within 7 days of identification o Review and upgrade VEZ signage/delineation where appropriate o Audit and review of training and staff inductions (ie. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures) o Ground disturbance permit training competency training o Review impact of unauthorised clearing and report any noncompliance to DWER within 7 days of identification o Undertake rehabilitation of unauthorised clearing (ie disturbance from vehicle tracks, vegetation	Overall	NRATS	Refer to FVEMP 13	Refer to FVEMP 13

Reference	Action	Timing	Conformance status	Evidence	Findings
	clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedure.				

FVEMP 15	If there is proposal related direct vegetation disturbance of any kind or extent within a VEZ resulting in the mortality of flora and vegetation. For example, vegetation clearing initiated by the proponents mining activities.
	• Cease clearing activities
	• Immediately report internally
	• Undertake investigation to determine source of and extent of disturbance and if the disturbance is likely to result in the key environmental outcome not being achieved.
	• If disturbance is attributed to Proposal activities, undertake a review of layout to determine if impact can be minimised, development actions to prevent a recurrence and communicate findings to relevant personnel
	• A suitably qualified flora specialist to undertake an assessment of impact
	• Notification to DAWE, DWER and DBCA within 7 days
	• If necessary (deemed to be proposal related), consider measures to prevent an incident
	• occurring and/or remediation strategies to address the impact. Report submitted to DWER with remediation actions proposed. Management measures may include the following:
	  • Audit and review of training and staff inductions (ie. Increase in staff training and awareness to include information on VEZ's, legislative requirements, appropriate clearing procedures, 5 m trigger response criteria for authorised clearing approaching a VEZ)
	  • Undertake rehabilitation of unauthorised access as required in accordance with internal rehabilitation procedures.
	• Engagement with key stakeholders including DBCA, and relevant specialists where required to determine key actions.
	Provide a report of the incident to EPA as detailed by condition 6-7(5) of MS1118 within 21 days.
		Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0
				E22_INX 2023 MTH Environmental Incident Register
				R08_Mattiske Veg Condition Monitoring Spring 2023 Management advice 26/04/2024
					There was no vegetation disturbance within a VEZ.

FVEMP 16	If there is Statistically significant reduction in mean condition ratings (more than 20% difference for qualitative or quantitative) of vegetation health	Overall	NRATS	R08_Mattiske Veg Condition Monitoring Spring 2023	The qualitative measurements in the Spring monitoring did not identify changes in canopy health score at the 20% trigger (R08).

Reference	Action	Timing	Conformance status	Evidence	Findings
	within a VEZ in comparison to control sites, or a mean Fv/FM <0.6 (index of chlorophyll inflorescence): • Report internally as an incident in accordance with site procedures. • 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 proposal related impacts. • Review dust, weather and weed monitoring to compare VEZ and control sites. Determine whether the changes observed in the impact sites are comparable to the observations in the reference sites. • Investigate potential causes for the observed decline in vegetation health which may include but are not limited to: • seasonal conditions (e.g., rainfall and temperatures) • effectiveness of weed control • spatial variation (near-impact areas) versus sites located further from impact • Develop strategies based on the outcomes of the investigation to prevent a recurrence and if necessary or possible reverse the decline in health of the VEZ flora and vegetation. Management measures may include the following: • Change in frequency of vegetation health monitoring Increase in staff training and awareness on factors which have implications to vegetation health for example dust, changes to hydrology				
FVEMP 17	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 or Project impacts). • Report internally as an incident • Investigate cause and extent of mortality and if it is likely to result in the key environmental outcome not being achieved • If necessary (deemed to be proposal related) consider measures to prevent a reoccurrence of the incident and/or remediation strategies to address the impact • Notification to DAWE, EPA and DBCA within 7 days • Engagement with key stakeholders including DBCA, and relevant specialists where required to determine key actions.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Vegetation monitoring did not report a statistically higher mortality rate within VEZ than that of control sites (R08).

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Provide a report of the incident to EPA as detailed by condition 6-7(5) of MS1118 within 21 days.				
FVEMP 18	Conservation significant species within a VEZ experiences a statistically significant higher foliage cover loss rate than that of control sites (where that foliage cover loss is not attributed to direct or Project impacts). • Report internally as an incident • Investigate cause and extent of mortality and if it is likely to result in the key environmental outcome not being achieved • If necessary (deemed to be proposal related) consider measures to prevent a reoccurrence of the incident and/or remediation strategies to address the impact • Notification to DAWE, EPA and DBCA within 7 days • Engagement with key stakeholders including DBCA, and relevant specialists where required to determine key actions. • Provide a report of the incident to EPA as detailed by condition 6-7(5) of MS1118 within 21 days.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Appendix C of the Spring Monitoring (R08) did not report a statistically higher foliage cover loss rate within VEZ than that of control sites.
FVEMP 19	No proposal related indirect impact to flora and vegetation within a VEZ resulting in an adverse impact (Figure 1-1)	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Vegetation monitoring report (R08) indicates that vegetation condition in impact transects, best represented by the mean canopy health score, were all less than 20% different to the corresponding control transects. No adverse impacts were observed and the differences in health rating scores from Spring 2022 was most likely a variation in different observers' qualitative canopy health scores.
FVEMP 20	Survey records of all clearing undertaken during operation of the Project to be kept.	Overall	C	G01_a2765 CAR23 f01 03 - Fig3 Clearing	Survey records of all clearing undertaken during the reporting period were maintained (G01).
FVEMP 21	Objective: No unauthorised clearing of vegetation within the Development Envelope or personnel access within the VEZs Target: No unauthorised clearing within the Development Envelope or VEZs. No unauthorised access to a VEZ. Action: Implementation of an internal clearing permit procedure	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register Management advice 26/04/2024	There was no unauthorised clearing of native vegetation within the DE or within the VEZ.
FVEMP 22	Objective: No unauthorised clearing of vegetation within the Development Envelope or personnel access within the VEZs Target: No unauthorised clearing within the Development Envelope or VEZs. No unauthorised access to a VEZ.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register	In the reporting period there was no reported unauthorised access to a VEZ.

Reference	Action	Timing	Conformance status	Evidence	Findings
	Action: Implementation of an internal procedure limiting access to VEZs by foot only or only by car where there is an existing track.				
FVEMP 23	Objective: No unauthorised clearing of vegetation within the Development Envelope or personnel access within the VEZs Target: No unauthorised clearing within the Development Envelope or VEZs. No unauthorised access to a VEZ. Action: VEZs to be delineated with flagging tape, physical barrier, signage or similar to alert all personnel of their location	Overall	C	E26_Exclusion Signage 1 E27_Exclusion Signage 2 E28_Exclusion Signage 3	VEZ is delineated by signage and tape to prevent unauthorised access.
FVEMP 24	Objective: No unauthorised clearing of vegetation within the Development Envelope or personnel access within the VEZs Target: No unauthorised clearing within the Development Envelope or VEZs. No unauthorised access to a VEZ Action: Inductions of all site personnel to include information on the location of VEZs, management targets, measures and expectations.	Overall	C	E06_2023_MtHollandGDPAwarenessScript	Slide 6 of the GDP Awareness covers exclusion zones and requirements to avoid them. The presentation covers management targets, measures and expectations.
FVEMP 25	Dust deposition rates will be measured monthly using dust deposition gauges for the first 24 months from implementation of the proposal. The dataset gained will be reviewed to inform the dust monitoring regime for the next revision of the FVMP.	Overall	C	R06_20230915_Maxy Engineering_Dust Report E32_Event16-01-2023 E33_Event23-02-2023 E34_Event20-03-2023 C05_DWER correspondence - Dust compliance query	Dust deposition gauges were in place from 2021. Dust monitoring continued in the reporting period monthly (R06).
FVEMP 26	Objective: Minimise dust deposition on vegetation from mining and related activities Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: dust suppression on cleared areas	Overall	C	E35_Dust Suppression FY23	Dust suppression of cleared unsealed roads, cleared areas and active stockpiles was undertaken by water carts as per water volumes (E35).
FVEMP 27	Objective: Minimise dust deposition on vegetation from mining and related activities Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: maximise efficiency of loads when transporting ore or concentrate (including haul trucks and conveyers)	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	Haul trucks and road haulage trucks are operated at or near capacity to maximise efficiency.
FVEMP 28	Objective: Minimise dust deposition on vegetation from mining and related activities Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: use dust covers on machinery and dust suppressants on exposed areas where possible	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	The use of dust covers is not yet applicable to the operation.
FVEMP 29	Objective: Minimise dust deposition on vegetation from mining and related activities	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	There are no areas that are no longer required for mining but yet to be rehabilitated.

Reference	Action	Timing	Conformance status	Evidence	Findings
	Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: minimise open area footprint and rehabilitate or cover (using vegetation, rock, water and/or dust suppressant) exposed areas as soon as practicable.				
FVEMP 30	Objective: Minimise dust deposition on vegetation from mining and related activities Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: design the mine layout to minimise dust emissions to VEZs where practicable	Overall	C	R06_20230915_Maxy Engineering_Dust Report	Dust deposition monitoring shows breach of the trigger criteria 5 g/m2/month at Transect 10 Control FVEZ Airstrip indicating no breaches of the 10 g/m2/month threshold.
FVEMP 31	Objective: Minimise dust deposition on vegetation from mining and related activities Target: Dust deposition (present as insoluble solids) at any gauge in excess of 10 g/m2/month. Action: access roads will be sealed with an emulsion or suitable alternative, as shown in Figure 2-1	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	The access road has been sealed in 2023.
FVEMP 32	Annual weed monitoring to be conducted across Development Envelope.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	No weed species were identified in the Spring 2023 monitoring (R08).
FVEMP 33	A Dieback Management Plan will be produced and provided to DBCA, following the completion of baseline monitoring.	Overall	PNC	M01_Covalent CAR Evidence Request Response Rev 0 R02_Covalent Lithium CAR 2022 (Rev 0) R12_Glevan Dieback Monitoring 2022	Not producing or providing a Dieback Management Plan to DBCA was found to be a non-conformance with the FVEMP in the 2022 CAR. Dieback monitoring was undertaken in 2019 (R02) and 2022 (R12) however the Dieback Management Plan has not been developed or provided to DBCA.
FVEMP 34	Dieback monitoring programme to be developed.	Overall	PNC	M01_Covalent CAR Evidence Request Response Rev 0 R05_COV-0000-EN-PLN-0001_1 Construction EMP	The Weed and Pathogens Management section of the CEMP does not specify the requirement or timing for dieback monitoring.
FVEMP 35	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.	Overall	Completed	R02_Covalent Lithium CAR 2022 (Rev 0)	Baseline observations were made October 2020 to October 2021. Monitoring methodology, frequency and monitoring sites were reviewed in a previous auditing period with monitoring to be undertaken Spring and Summer.
FVEMP 36	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.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Spring monitoring report (R08) includes observations for all taxa.
FVEMP 37	Objective: Minimise spread of weeds / dieback Target: Minimise new weeds introduced to site. Prevent spread of weeds to VEZs. Prevent spread of dieback onsite. Action: implementation of a vehicle hygiene procedure, dieback management procedure and weed control	Overall	C	E36_Weed Hygiene Register E37_Example Vehicle Hygiene Record R05_COV-0000-EN-PLN-0001_1 Construction EMP	Vehicle and Material hygiene inspections are conducted on all vehicles and materials that enter the Mt Holland Project (E36). Management Controls for Weeds and Pathogens are detailed in the Environmental Management Plan (R05).
FVEMP 38	Objective: Minimise spread of weeds / dieback Target: Minimise new weeds introduced to site. Prevent spread of weeds to VEZs. Prevent spread of dieback onsite.	Overall	C	E39_20230321_Environmental Inspection Weeds E40_20230705_Environmental Inspection Weeds E41_20230903_Environmental Inspection Weeds E38_Weed Control Register	Weed management undertaken by site personnel. Environmental inspections of site areas include weed monitoring (E39, E40, E41). Follow up weed control is conducted (E38).

Reference	Action	Timing	Conformance status	Evidence	Findings
	Action: 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				
FVEMP 39	Objective: Minimise spread of weeds / dieback Target: Minimise new weeds introduced to site. Prevent spread of weeds to VEZs. Prevent spread of dieback onsite. Action: Phytophthora (dieback) controls including signage, cleandown points, vehicle hygiene shall be implemented.	Overall	NRATS	Refer to FVEMP 32	No Dieback signage or cleandown points additional to site entry in place. Requirement for additional measures would be determined if there was a Dieback Management Plan in place.
FVEMP 40	Fire incidents to be reported.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No fire incidents attributable to proposal in the reporting period.
FVEMP 41	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.	Overall	Completed	R02_Covalent Lithium CAR 2022 (Rev 0)	Baseline observations were made October 2020 to October 2021. Monitoring methodology, frequency and monitoring sites were reviewed in a previous auditing period with monitoring to be undertaken Spring and Summer.
FVEMP 42	Objective: Avoid alteration of fire regimes Target: Prevent fires attributed to mining and associated Project activities. Action: 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 fire fighting equipment).	Overall	C	R07_COV-M000-HS-PLN-0005.1.IFU MTH Emergency Management Plan	The Emergency Management Plan is in place and Section 7 outlines emergency response including fire, emergency response teams and training.
FVEMP 43	Objective: Avoid alteration of fire regimes Target: Prevent fires attributed to mining and associated Project activities. Action: implement fire management procedures (e.g. maintenance of fire breaks, Hot Work Permit system, firefighting training, Emergency Response Plan)	Overall	C	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.
FVEMP 44	Objective: Avoid alteration of fire regimes Target: Prevent fires attributed to mining and associated Project activities Action: firefighting equipment will be located on site and in vehicles.	Overall	C	E14_Fire Hydrants_Hose Reels E13_Fire Extinguisher Workshop E10_Fire Equipment Service register E07_Truck Example Fire Suppression System Photo 1 E08_Dozer Example Fire Suppression System Photo 1 E09_Dozer Example Fire Suppression System Photo 2 E11_Fire Extinguisher Workshop Vehicle Example E12_Fire Extinguisher Workshop Vehicles Tag	Firefighting equipment is located on site (E14, E13, E10) and in vehicles (E07, E08, E09, E11, E12).
FVEMP 45	Objective: Avoid alteration of fire regimes Target: Prevent fires attributed to mining and associated Project activities Action: lightning protection equipment will be installed as part of Project design where necessary.	Overall	C	E02_Lightning Protection Infrastructure	Lightning protection infrastructure is installed on buildings and infrastructure (E02) to redirect and minimise potential lightning caused fires.
FVEMP 46	Objective: Avoid alteration of fire regimes	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No prescribed burns were undertaken during the audit period.

Reference	Action	Timing	Conformance status	Evidence	Findings
	Target: Prevent fires attributed to mining and associated Project activities Action: coordination with DBCA and Department of Fire and Emergency Services (DFES) to undertake prescribed burns.				
FVEMP 47	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.	Overall	Completed	R02_Covalent Lithium CAR 2022 (Rev 0)	Baseline observations were made October 2020 to October 2021. Monitoring methodology, frequency and monitoring sites were reviewed in a previous auditing period with monitoring to be undertaken Spring and Summer.
FVEMP 48	Quarterly health monitoring at vegetation quadrats within VEZs and control sites (observations for hydrology)	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	The Spring monitoring report (R08) lists that the monitoring undertaken is to determine potential impacts on factors "including altered local hydrology as a result of changes to surface water flow patterns, water table draw down, including the associated potential to cause erosion".
FVEMP 49	Objective: Avoid alteration surface hydrology Target: Prevent changes to surface water hydrology attributed to mining and associated Project activities. Action: Drainage measures designed and constructed to minimise changes to natural surface water flow, including diversion drains, rock cladding and contouring as required.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	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 armouring.
FVEMP 50	Objective: Avoid alteration surface hydrology Target: Prevent changes to surface water hydrology attributed to mining and associated Project activities. Action: Rehabilitation and closure to follow contours of natural landforms	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	No rehabilitation was undertaken during the audit period.
FVEMP 51	Covalent will undertake consultation with DBCA's Species and Communities Program if activities related to seeding, germinating or planting Banksia sphaerocarpa var. dolichostyla are being considered.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No consultation relating to translocation of *Banksia sphaerocarpa* was undertaken in the reporting period.
FVEMP 52	The preparation and approval of a translocation proposal as required in Part 7 of the Biodiversity Conservation Regulations 2018 will be undertaken, including consultation with DBCA's Species and Communities Program.	Overall	C	Refer to FVEMP 45	Refer to FVEMP 45
FVEMP 53	Impact to threatened flora as outlined in the Biodiversity Conservation Act 2016 is defined as 'taking all or part of an individual'. Damage to all or any part of a threatened flora individual requires a section 40 authorisation.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No surveys were undertaken requiring a Section 4 permit.
FVEMP 54	The Proponent will require all workers, both during construction and operation of the mine, to attend a worker awareness training/environmental induction covering the following topics. • Conservation significance of the flora and vegetation within the VEZs	Overall	C	E06_2023_MtHollandGDPAwarenessScript	Slide 6 of the GDP Awareness covers exclusion zones and requirements to avoid them. The presentation covers management targets, measures and expectations.

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Compliance and legislative requirements of the VEZs • Management measures and expectations of all personnel to ensure the key environmental outcome is achieved				
FVEMP 55	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.	Overall	C	E22_INX 2023 MTH Environmental Incident Register	Fifty incidents were reported to the environmental Manager in the reporting period including five dust reports and one ground disturbance without a ground disturbance permit.
FVEMP 56	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.	Overall	PNC	E22_INX 2023 MTH Environmental Incident Register C05_DWER correspondence - Dust compliance query	There were four exceedances of the dust deposition trigger criteria. Three were confirmed breaches of the 7 day reporting trigger criteria (5 g/m2/month for two months) at transect 10 in the reporting period. Two of these breaches were reported 04/03/2023 and 27/04/2023 (outside of the required reporting timeframe).
FVEMP 57	The monitoring program will involve 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 VEZs • assess whether any changes in flora and vegetation are due to the Project or external/natural factors • provide a methodology for ongoing monitoring to enable time-based comparisons.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023 R06_20230915_Maxy Engineering_Dust Report	Ongoing monitoring program involves monitoring of plant condition, weeds and dust deposition.
FVEMP 58	2.4.1 Plant condition monitoring 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. Each monitoring site will consist of a quadrat 10 m by 40 m arranged linearly with four sub quadrats of 10m x 10m, thereby providing an area equivalent to 20m x 20m and conforming to the recommended quadrat size for the bioregion (EPA Technical Guidance 2016). The locations of monitoring quadrats have been reviewed based on recommendations provided by DBCA and locations were revised to monitor the following sub-set of conservation significant species individuals in the monitoring program	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	The Spring Monitoring Report (R08) indicates that each monitoring site consists of a transect comprising four 10 m x 10 m sub-quadrats arranged as a belt transect. The qualitative assessments are being conducted at the DBCA recommended locations with the exception of transect 6 which was part of the mine expansion.
FVEMP 59	2.4.1 Baseline plant condition monitoring will consist of two baseline monitoring events conducted prior to commencement of construction and operations in spring and summer.	Overall	PNC	R02_Covalent Lithium CAR 2022 (Rev 0) R08_Mattiske Veg Condition Monitoring Spring 2023	Baseline observations were made October 2020 to October 2021 (R02). Monitoring during operations required in spring and summer was conducted in spring 2023 only (R08).
FVEMP 60	On commencement of the Proposal, plant condition monitoring will be undertaken quarterly for the first 12 months during construction and operations. The data gained over this period will be used to review monitoring and inform the methodology and frequency of future monitoring.	Commencement	Completed	R02_Covalent Lithium CAR 2022 (Rev 0)	Undertaken in previous audit period. Monitoring to be undertaken 6-monthly.

Reference	Action	Timing	Conformance status	Evidence	Findings
FVEMP 61	Should triggers be exceeded at any point, monitoring intensity shall be reviewed, and potentially increased if required and remain increased until such time as the trigger is no longer exceeded.	Where trigger exceeded	PNC	C05_DWER correspondence - Dust compliance query	Dust triggers were exceeded in January to April 2023 at monitoring site D10, September 2022 vegetation health monitoring was reviewed and found that D10 had deteriorated at that previous monitoring event. However, monitoring frequency was not increased (autumn monitoring was not undertaken).
FVEMP 62	Within or adjacent to each of the monitoring quadrats detailed by section 2.4.1, 25 plants (five from each keystone species) will be selected for testing with a plant pigment efficiency analyser (PEA). Given control sites will be monitored, the requirement for monitoring prior to commencement of construction and operations is not considered necessary.	Quarterly following implementation	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E54_PEA Order Confirmation OA00047164 E55_Kings Park Science Restoration Research	Testing of control sites with a plant pigment efficiency analyser has not been undertaken. Covalent have purchased a 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.
FVEMP 63	2.4.3 Dust deposition rates will be measured with dust deposition gauges (DDGs) in accordance with AS/NZS 3580.10.1:2003. Data will be recorded monthly, commencing prior to construction or production enabling a baseline level to be established.	Overall	Completed	R02_Covalent Lithium CAR 2022 (Rev 0)	Undertaken in previous audit period.
FVEMP 64	2.4.3 Nine DDGs will be installed at the select monitoring quadrats as detailed by Table 2-5 and shown by Figure 2-1. This will enable a comparison of results between VEZs and control sites and assist with determining any proposal related indirect effects.	Overall	C	R06_20230915_Maxy Engineering_Dust Report	DDGs are installed as per Figure 2-1.
FVEMP 65	2.4.3 The management target of 10 g/m2 has been adopted for this FVMP, however, this will be reviewed based on monitoring of the health and condition of the keystone species and may be reduced or increased after the initial 24 months of monitoring. As detailed by section 4.1 an early response trigger of 5 g/m2 has also been adopted.	Overall	C	R06_20230915_Maxy Engineering_Dust Report	Results of dust monitoring are being compared to the early response trigger and management target.
FVEMP 66	2.4.4 In order to increase understanding as to the degree of potential long term impacts of the Project on conservation significant species, a census of the highest ranked conservation significant species will be undertaken in 10 years if a Proposal related decline is identified at VEZ monitoring locations. This census will be designed in consultation with an appropriate flora specialist consistent with monitoring undertaken within this plan.	Overall	NRATS	N/A	Proposal not 10 years from implementation.
FVEMP 67	2.4.5 Weed and dieback monitoring will be undertaken in conjunction with plant condition monitoring, as outlined in section 2.4.1 at both VEZs and control sites. This will allow for quarterly monitoring for the first 12 months, with the frequency to be reviewed following this period.	Overall	C	R02_Covalent Lithium CAR 2022 (Rev 0)	Weed and dieback monitoring were undertaken in conjunction with plant condition monitoring in previous audit period. Frequency has not been officially reviewed however, monitoring is now being undertaken annually.
FVEMP 68	2.4.5 Furthermore, annual monitoring across the Development Envelope will be undertaken for the	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023 R12_Glevan Dieback Monitoring 2022	The Spring 2023 annual health monitoring includes a full list of plant species recorded at each monitoring transect (R08). The

Reference	Action	Timing	Conformance status	Evidence	Findings
	occurrence of new weeds, the spread of existing weeds and evidence of dieback.				last dieback monitoring was undertaken in December 2022 and is due early 2024.
FVEMP 69	2.4.5 A Dieback Management Plan will be produced and provided to DBCA following the completion of baseline monitoring. This plan will include Phytophthora (dieback) management controls such as signage, clean down points, vehicle hygiene and the inspection and monitoring of dieback infested areas.	Overall	PNC	Refer to FVEMP 32	Refer to FVEMP 32
FVEMP 70	2.4.7 Monitoring of flora and vegetation as outlined in (sections 2.4.1 and 2.4.2) will be continued during rehabilitation and closure to confirm that rehabilitation and closure activities and outcomes are not contributing to any increased impacts on conservation significant flora species. Populations of conservation significant flora and vegetation within protection areas (Table 2-5) will continue for a suitable time period after mining has ceased and whilst rehabilitation and closure actions are ongoing.	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	No rehabilitation undertaken in the audit period.
FVEMP 71	A summary of all monitoring results against trigger and threshold criteria will be provided within the Annual Compliance Assessment Report.	Overall	C	R01_Covalent Lithium CAR 2023 (Rev 0)	Refer to Section 5.
FVEMP 72	The summary of monitoring will detail if any trigger or threshold criteria has been exceeded and the actions taken to prevent a recurrence and/or remediation strategies.	Overall	C	R01_Covalent Lithium CAR 2023 (Rev 0)	Refer to Section 5
FVEMP 73	The summary of data will also contain raw monitoring data against management measures such as dust deposition, weeds, fire and climate (such as annual rainfall and temperature) will also be provided for comparison to flora and vegetation health and condition monitoring.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023 R06_20230915_Maxy Engineering_Dust Report	Refer to Appendix F and G.
FVEMP 74	Reporting of exceedances of threshold criteria will be undertaken to meet condition 6-7 of MS1118. This shall include: • A report on the exceedance in writing to the EPA within seven (7) days of the exceedance being identified; • An investigation to determine the cause of the threshold criteria being exceeded; • An investigation to provide information to the EPA to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; and • a report to the EPA within twenty-one (21) days of the exceedance being reported as required by condition 6-7(1) of MS1118. The report shall include: o details of threshold contingency actions implemented;	Overall	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register	No threshold was exceeded **OFI** Section 2.5 of the FVMP should be amended to reflect condition 2-7 of MS1199.

Reference	Action	Timing	Conformance status	Evidence	Findings
	o the effectiveness of the threshold contingency actions implemented, against the threshold criteria; o the findings of the investigations required by conditions 6-7(3) and 6-7(4) of MS1118; o measures to prevent the threshold criteria being exceeded in the future; o measures to prevent, control or abate the environmental harm which may have occurred; and o justification of the threshold remaining, or being adjusted based on better understanding, demonstrating that objectives will continue to be met.				
FVEMP 75	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 1. Adjust site layout to ensure population impact target is not exceeded Action: Investigate alternate site layouts whereby the project may still be feasible, but reduces direct and potential indirect impacts.	As required	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	As part of the GDP Clearing Process, the disturbance footprint is assessed against the vegetation spatial dataset in GIS to determine the number of priority flora impacted by the clearing. GDP conditions are developed to minimise impact.
FVEMP 76	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 1. Adjust site layout to ensure population impact target is not exceeded Action: A review of the Proposed Layout shall be undertaken to ensure population impact targets (Section 3.2) are not exceeded. If any clearing is planned outside of the Proposed Layout, revised population impacts (as per Table 3-3) will be undertaken to ensure Population Impact Targets are met.	Prior to clearing	C	Refer to FVEMP 69	Refer to FVEMP 69
FVEMP 77	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 1. Adjust site layout to ensure population impact target is not exceeded Action: Implementation of an internal clearing permit procedure which includes demarcation of clearing area to ensure accurate clearing boundaries	Prior to clearing	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	GDP Procedure requires demarcation of clearing area.
FVEMP 78	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 2. Undertake further surveys within local and regional areas to reduce the direct impact to an acceptable level against impact assessment criteria Action: Identify areas locally and regionally which may provide habitat for the species	As required	C	M01_Covalent CAR Evidence Request Response Rev 0 E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	Additional species or increased population impacts not identified.

Reference	Action	Timing	Conformance status	Evidence	Findings
FVEMP 79	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 2. Undertake further surveys within local and regional areas to reduce the direct impact to an acceptable level against impact assessment criteria Action: Undertake further surveys in accordance with relevant technical guidance (EPA 2016a) and within the appropriate season.	Within 12 months of identifying further survey areas	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 80	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 2. Undertake further surveys within local and regional areas to reduce the direct impact to an acceptable level against impact assessment criteria Action: Develop and present survey report (including impact assessment against management targets) to EPA and DBCA	Within two months of completing surveys	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 81	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 2. Undertake further surveys within local and regional areas to reduce the direct impact to an acceptable level against impact assessment criteria Action: EPA and DBCA review and accept report	Within three months of receiving final survey report	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 82	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 3. Minimise indirect impacts through implementation of FVMP Action: Implement FVMP management measures, including monitoring requirements	Ongoing	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 83	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 4. Develop research programs for species revegetation Action: In consultation with research institutions, investigate programs to research and develop a greater scientific understanding of the species for the purpose of revegetation. Develop proposal and scope for the research program. Potential topics may include: • Habitat modelling and necessary biotic and abiotic factors for establishment and long-term survival • Seed ecology including germination cues • Seedling establishment via the collection and growth of cuttings	Within three months of Mitigation Measures 1, 2 and 3 proving to be unfeasible	C	Refer to FVEMP 72	Refer to FVEMP 72

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Revegetation trials				
FVEMP 84	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 4. Develop research programs for species revegetation Action: Submit research proposal to DBCA for review and acceptance.	Within one month of receiving research proposal.	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 85	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 4. Develop research programs for species revegetation Action: Implement research proposal and produce report on the outcomes.	Complete within 24 months of receiving DBCA acceptance.	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 86	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 4. Develop research programs for species revegetation Action: Submit report to EPA and DBCA on research outcomes for acceptance.	Review and accept within three months of receiving report.	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 87	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 4. Develop research programs for species revegetation Action: Implement research program outcomes.	Within one month of accepting the report.	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 88	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 5. Apply the Residual Significant Impact Model (RSIM) Action: Apply the RSIM as per the WA Environmental Offset Guidelines (2014)	Within three months of Mitigation Measures 1, 2 and 3 proving to be unfeasible	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 89	In the event that pre-clearance surveys identify additional species, individuals or an increase in population impacts, apply mitigation measures: Measure: 5. Apply the Residual Significant Impact Model (RSIM) Action: Liaise with EPA and DBCA on the outcomes of the RISM and further actions required.	Within one month of applying the model.	C	Refer to FVEMP 72	Refer to FVEMP 72
FVEMP 90	If dust deposition results at a single VEZ site exceeds 5 g/m2 for two consecutive months, the proponent will: • Report internally that early response trigger has been met in accordance with internal procedures.	Overall	C	E22_INX 2023 MTH Environmental Incident Register C05_DWER correspondence - Dust compliance query	Dust deposition results at a single VEZ site exceeded 5 g/m2 for two consecutive months on three occasions in 2023; 16/01/2023, 23/02/2023, 20/03/2023,26/04/2023. Despite reporting to DWER not being undertaken within 7 days, management actions were implemented:

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Review dust monitoring program. Determine whether the changes observed in the VEZ are comparable with control monitoring sites. • Review dust mitigation measures • Investigate and determine improvement strategy • Investigate the cause of the exceedance to determine if it is attributable to proposal related 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.				• 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 was reviewed and found that canopy health at D10 was still below the 20% trigger set out in the FVEMP • Cause was investigated and found to be traffic on Blue Vein Road • Planned road closure of Blue Vein Road was completed 30 March 2023
FVEMP 91	If one new weed species sighted during annual monitoring but with limited to negligible coverage, the proponent will: • Report internally that early response trigger has been met in accordance with internal procedures. • Review weed control programme and amend as required. • Staff training and awareness to include information on weed species and preventative measures such as vehicle/ weed hygiene procedures. • Review weed monitoring program. Trigger response actions may include the following: o Review monitoring frequency (quarterly for initial 12 months then annually), adjust accordingly. o 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. o Review suitability of weed monitoring locations, adjust accordingly. o Determine whether the changes observed are comparable with control monitoring sites. o If after the two consecutive monitoring events, a threshold exceedance has not been identified, resume standard monitoring.	Overall	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Vegetation monitoring reports (R08) that no exotic species were observed.
FVEMP 92	If there is a fire occurrence within the Development Envelope that impacts on native vegetation, the proponent will: • Report internally that early response trigger has been met in accordance with internal procedures. • Internal audit of fire management plan • Review fire mitigation strategies to limit 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.	Overall	C	M01_Covalent CAR Evidence Request Response Rev 0	No fires in the development envelope in the audit period.

Reference	Action	Timing	Conformance status	Evidence	Findings
FVEMP 93	If pre-clearance surveys result in total impacts to a conservation significant species population impact exceeding 10%, the proponent will: • Apply the Mitigation Measures detailed in Section 3.4 • Undertake consultation with EPA and DBCA regarding outcome of mitigation measures • Project activities which may exceed the regional population total impact target will not proceed.	Prior to clearing	C	M01_Covalent CAR Evidence Request Response Rev 0	The disturbance footprint has not exceeded more than 10% of the known distribution of any conservation significant species, as such consultation with the EPA and DBCA regarding additional mitigation measures has yet to be required.
FVEMP 94	The proponent will update this Management Plan 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 EPA for review. If the Proponent has gathered sufficient information through research and long-term monitoring to propose revisions to management targets, the plan may be revised and resubmitted to the EPA for approval.	Overall	C	Refer to MS1118:6.8	Refer to MS1118:6.8
FVEMP 95	Furthermore, in accordance with condition 6-8(2) of MS1118, the proponent will update this FVMP as and when directed by the EPA.	Overall	C	Refer to MS1118:6.8	Refer to MS1118:6.8

Appendix D Terrestrial Fauna Environmental Management Plan Compliance Assessment

Table D.2: Terrestrial Fauna Environmental Management Plan audit table (Rev 5)

Reference	Action	Timing	Conformance status	Evidence	Findings
TFEMP 01	Management targets: • Avoid removal of any active malleefowl mounds.	Ongoing	C	Refer to TFEMP 01	Refer to TFEMP 01
TFEMP 02	Management targets: • Avoid clearing of vegetation within 100 m of malleefowl mounds.	Ongoing	C	E05_GDP60_V7_SWRL Fauna Preclearance R10_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.
TFEMP 03	Management targets: • Minimise mortality of malleefowl or chuditch from clearing activity, entrapment, vehicle strike or mining related fire.	Ongoing	C	R03_Terrestrial Fauna Management Plan Rev 5 E22_INX 2023 MTH Environmental Incident Register	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.
TFEMP 04	Management targets: • Minimise decline of Malleefowl and Chuditch population due to predation from introduced predators.	Ongoing	C	E18_20230425_APAS_Feral Cat Control Program Report R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_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.
TFEMP 05	Management targets: • Minimise decline of Malleefowl and Chuditch population due to dust, noise, light, vibration and displacement.	Ongoing	C	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Monitoring has not indicated a change in malleefowl or chuditch population.
TFEMP 06	Management targets: • Minimise potential risk of a decline in fauna habitat condition due to change in fire regime.	Ongoing	C	M01_Covalent CAR Evidence Request Response Rev 0	There were no fires in the development envelope in the audit period.
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.	Ongoing	C	E22_INX 2023 MTH Environmental Incident Register Management Advice 26/04/2024	There were no incidents of unauthorised clearing in the audit period.

Reference	Action	Timing	Conformance status	Evidence	Findings
	• Undertake rehabilitation of unauthorised clearing (i.e. disturbance from vehicle tracks, vegetation clearing) by appropriately qualified personnel as required, in accordance with rehabilitation procedures.				
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	NRATS	E22_INX 2023 MTH Environmental Incident Register	No unauthorised access to a Malleefowl mound exclusion zone occurred during the reporting period.
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	NRATS	E22_INX 2023 MTH Environmental Incident Register	There was no clearing and/or disturbance of vegetation within 100m of a newly identified active malleefowl mound occurred during the reporting period.
TFEMP 10	Conduct internal audit of recorded malleefowl mounds against areas of clearing.	Ongoing	C	R10_20230725 ECO 2022_23 Malleefowl Monitoring E05_GDP60_V7_SWRL Fauna Preclearance	No clearing of active Malleefowl mounds occurred during the reporting period.

Reference	Action	Timing	Conformance status	Evidence	Findings
				E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	
TFEMP 11	Undertake monitoring of incident reports for over clearing, light and noise disturbance and fire.	Ongoing	C	E22_INX 2023 MTH Environmental Incident Register	No incidents of over clearing, light or noise disturbance or fire.
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.	Ongoing	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger criteria was not met.

Reference	Action	Timing	Conformance status	Evidence	Findings
	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).				
TFEMP 13	Undertake pre-clearance monitoring	Prior to clearing	C	E05_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance monitoring was undertaken in the reporting period.
TFEMP 14	Annual monitoring of malleefowl activity using motion sensor cameras	Ongoing	C	R10_20230725 ECO 2022_23 Malleefowl Monitoring	Annual monitoring with motion sensor cameras undertaken in the reporting period.
TFEMP 15	Annual monitoring of malleefowl as per NMRT (2019) guidelines	Ongoing	C	R10_20230725 ECO 2022_23 Malleefowl Monitoring	Annual monitoring of malleefowl undertaken as per NMRT Monitoring Manual (2022).
TFEMP 16	Annual monitoring of chuditch using cage trapping	Ongoing	C	R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Annual monitoring of chuditch using cage trapping undertaken in the reporting period.
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.	Ongoing	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger criteria was not met.

Reference	Action	Timing	Conformance status	Evidence	Findings
	• 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).				
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	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	Implementation of GDP Procedure requires demarcation and notification and limits access to MMEZ.
TFEMP 19	Management Target: Minimise Incidental mortality of Malleefowl and Chuditch from clearing activity, entrapment, vehicle strike.	Ongoing	C	E26_Exclusion Signage 1 E27_Exclusion Signage 2 E28_Exclusion Signage 3	MMEZ is delineated by signage and / or tape to prevent unauthorised access.

Reference	Action	Timing	Conformance status	Evidence	Findings
	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.				
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	C	E06_2023_MtHollandGDPAwarenessScript	Slide 6 of the GDP Awareness covers exclusion zones and requirements to avoid them. The presentation covers management targets, measures and expectations.
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	C	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	Item 38 of the GDP60 v9 and 31 of GDP 71 cover conducting activities to minimise harm to fauna.
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	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	Mining areas ready for rehabilitation will not be available until Q4 2024.
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E05_GDP60_V7_SWRL Fauna Preclearance	Clearing has been undertaken during periods operationally suitable. The clearing for SWRL was undertaken 13th to 19th March 2023.
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	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E05_GDP60_V7_SWRL Fauna Preclearance	No mounds were removed in the reporting period.
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	NRATS	E05_GDP60_V7_SWRL Fauna Preclearance	No mounds were removed in the reporting period.

Reference	Action	Timing	Conformance status	Evidence	Findings
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	C	E26_Fauna Register	The fauna register includes malleefowl sightings. **OFI** The fauna register does not include observer name. If this is not relevant, amend the TFEMP.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance surveys were undertaken as described by Section 2.5.2 and in accordance with the NMRT.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	Pre-clearance surveys and annual surveys are being undertaken. Five year population monitoring is due in 2025.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	Monitoring post initial LiDAR survey is being undertaken.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance survey employs LiDAR.
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	Ongoing	C	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	The fauna preclearance documents chudditch 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.

Reference	Action	Timing	Conformance status	Evidence	Findings
	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.				
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	C	E05_GDP60_V7_SWRL Fauna Preclearance R10_20230725 ECO 2022_23 Malleefowl Monitoring	No active mounds were cleared.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance	Fauna Pre-clearance surveys were completed by licence fauna handlers from Ecoscape during the reporting period.
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E25_GDP0071_TSFConstruction_V1	Clearing has been undertaken during periods operationally suitable. The clearing for TSF was undertaken 13th to 19th March 2023.
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 day time only, when chuditch are generally less active.	Ongoing	C	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.
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	C	E05_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 E05.

Reference	Action	Timing	Conformance status	Evidence	Findings
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E05_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.
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	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	Clearing was not undertaken during the September to November period.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance	Fauna pre-clearance surveys were completed by licence fauna handlers from Ecoscape during the reporting period.
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	Ongoing	C	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.

Reference	Action	Timing	Conformance status	Evidence	Findings
	conditions, reduced speed limits within suitable habitat, malleefowl and chuditch signage).				
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	C	E26_Fauna Register	There is a fauna register which includes malleefowl chuditch sightings in the reporting period.
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	C	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.
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	C	E06_2023_MtHollandGDPAwarenessScript	Personnel undergo GDP Awareness Training which includes information on Malleefowl and Chuditch and the requirements for fauna clearance.
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	C	E29_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing E22_INX 2023 MTH Environmental Incident Register	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.
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	C	E29_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.
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.	Ongoing	C	E29_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing E30_DMIRS 2023_Fauna Egress	Steep walled holes and trenches are secured against animal entry or provided with fauna egress.

Reference	Action	Timing	Conformance status	Evidence	Findings
	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.				
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	C	E03_Landfill inspection Nov 2023 P01_COV-M000-EN-PRO-0003.1.IFU Landfill Facility Management Procedure E15_Landfill Fencing E16_Landfill Fencing E17_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 (E03). Photos of the fencing 26/04/2024 show that issue has been rectified. **OFI** Where issues are identified during workplace inspections, follow up action should be documented on the workplace inspection record.
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	C	E04_Putrescible skip	Skip bins are closed when not in use (E04).
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	C	E30_DMIRS 2023_Fauna Egress	Permanent water sources (tanks, ponds and dams) are fenced and / or have fauna egress mats installed.
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	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	Site is not under closure.
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	C	E26_Fauna Register	Introduced predators are recorded on the fauna register.

Reference	Action	Timing	Conformance status	Evidence	Findings
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	C	E04_Putrescible skip E03_Landfill inspection Nov 2023 E15_Landfill Fencing E16_Landfill Fencing E17_Landfill Fencing	The landfill is fenced (E15, E16, E17) and checked regularly (E03), putrescible waste is covered with secure lids on bins (E04).
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	C	E18_20230425_APAS_Feral Cat Control Program Report	Feral animal control was undertaken in April 2023 in cooperation with a mine 100km south of Covalent.
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	C	M01_Covalent CAR Evidence Request Response Rev 0	Personnel are inducted on waste management.
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	C	E18_20230425_APAS_Feral Cat Control Program Report R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_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.
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	C	E18_20230425_APAS_Feral Cat Control Program Report R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_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.
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	C	E35_Dust Suppression FY23	Dust suppression of cleared unsealed roads, cleared areas and active stockpiles was undertaken by water carts as per water volumes (E35).
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	C	E35_Dust Suppression FY23	Dust suppression of cleared unsealed roads and laydown areas was undertaken by water carts in the audit period.
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	C	M01_Covalent CAR Evidence Request Response Rev 0	Machinery and equipment meets health and safety requirements for noise and vibration.

Reference	Action	Timing	Conformance status	Evidence	Findings
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	C	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.
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	C	R02_Covalent Lithium CAR 2022 (Rev 0)	All equipment and machinery is designed and tested to comply with Australian Noise Limit Standards. Periodical Occupational Noise and Dust exposure monitoring is conducted by Occupational Hygiene Consultants.
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	C	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.
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	C	E14_Fire Hydrants_Hose Reels E13_Fire Extinguisher Workshop E10_Fire Equipment Service register E07_Truck Example Fire Supression System Photo 1 E08_Dozer Example Fire Supression System Photo 1 E09_Dozer Example Fire Supression System Photo 2 E11_Fire Extinguisher Workshop Vehicle Example E12_Fire Extinguisher Workshop Vehicles Tag	Firefighting equipment is located on site (E14, E13, E10) and in vehicles (E07, E08, E09, E11, E12).
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	C	E02_Lightning Protection Infrastructure	Lightning protection infrastructure is installed on buildings and infrastructure (E02) to redirect and minimise potential lightning caused fires.
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	C	E22_INX 2023 MTH Environmental Incident Register	There were no incidents of vehicles leaving access tracks or cleared areas.
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	C	M01_Covalent CAR Evidence Request Response Rev 0	No prescribed burns were undertaken during the audit period.
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).	Ongoing	PNC	E21_Mt Holland Environmental Induction E46_20230116 TBT Reporting Fauna Sightings E47_20230823 Reporting Fauna Sightings E48_20230912 TBT Site Speed Limits E49_20231203 TBT Protect Our Malleefowl E50_20230418 Introduced Predator Control	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)

Reference	Action	Timing	Conformance status	Evidence	Findings
	• 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.			E51_20230809 TBT Malleefowl Breeding Season E52_20230903 TBT Snake Awareness E53_20230907 TBT Threatened Species Day	• 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)
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register Management advice 26/04/2024	There were no breaches or non-adherences to objectives and procedures.
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	C	Refer to TFEMP 68	Refer to TFEMP 68
TFEMP 70	Annual Population monitoring of Malleefowl and Chuditch as per Section 2.51	Annual	C	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Annual monitoring is undertaken in accordance with Section 2.51.
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	C	E05_GDP60_V7_SWRL Fauna Preclearance	Pre-clearance surveys undertaken as per Section 2.5.2.
TFEMP 72	Mortality monitoring Monitoring of incident reports for malleefowl and chuditch predation, vehicle strike, speeding and night driving.	Ongoing and annual review	NRATS	M01_Covalent CAR Evidence Request Response Rev 0 E22_INX 2023 MTH Environmental Incident Register	No records of predation, vehicle strike, speeding and night driving incidents with malleefowl and chuditch.
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	C	E19_IntroducedPredatorMonitoring E20_20230720_ECO_2022PredatorMonitoring E18_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.
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	C	G01_a2765 CAR23 f01 03 - Fig3 Clearing E24_GDP0060_V9_SWRL_ExistingTSF2 E25_GDP0071_TSFConstruction_V1	Monitoring of clearing is being undertaken.

Reference	Action	Timing	Conformance status	Evidence	Findings
TFEMP 75	Clearing monitoring Internal audit and inspection of areas of clearing, areas of potential entrapment, speeding and night driving.	Ongoing and annual review	C	E39_20230321_Environmental Inspection E40_20230705_Environmental Inspection E41_20230903_Environmental Inspection	Internal auditing and inspections being undertaken.
TFEMP 76	Fauna habitat monitoring Annual monitoring of vegetation condition as an indicator of fauna habitat quality.	As FVEMP	C	R08_Mattiske Veg Condition Monitoring Spring 2023	Vegetation health is reported in the vegetation monitoring report (R08).
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	C	R01_Covalent Lithium CAR 2023 (Rev 0) R02_Covalent Lithium CAR 2022 (Rev 0)	Previous CAR (R02) submitted in 2023.
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	C	M01_Covalent CAR Evidence Request Response Rev 0	No trigger was exceeded
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	C	M01_Covalent CAR Evidence Request Response Rev 0	No threshold was exceeded
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	NRATS	M01_Covalent CAR Evidence Request Response Rev 0	No threshold was exceeded
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E26_Fauna Register	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

Reference	Action	Timing	Conformance status	Evidence	Findings
					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
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	C	M01_Covalent CAR Evidence Request Response Rev 0 E26_Fauna Register	No conservation significant fauna deaths in 2023.
TFEMP 83	Evaluation and revision of the TFEMP Review and submit to CEO DWER as per Condition 3-6 of MS1199.	As required.	C	Refer to MS1199:3-6	Refer to MS1199:3-6
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	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.
TFEMP 85	Trigger: 25% increase in malleefowl or chuditch sightings within or adjacent to mining activity areas over two consecutive years. Action: Due diligence check 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	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.
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	Ongoing	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.

Reference	Action	Timing	Conformance status	Evidence	Findings
	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.				
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	NRATS	E18_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.
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	NRATS	E20_20230720_ECO_2022 Predator Monitoring E19_IntroducedPredatorMonitoring 2021 E18_20230425_APAS_Feral Cat Control Program Report	Monitoring in April 2023 showed predator numbers reduced from monitoring undertaken in 2022 and 2021.
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 chudditch populations, no feeding of feral species, reducing availability of food waste to feral animals and all sightings of feral species to be reported).	Ongoing	NRATS	Refer to TFEMP 87	Refer to TFEMP 87
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	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.
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.	Ongoing	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.

Reference	Action	Timing	Conformance status	Evidence	Findings
	Consider changes to the mining operations (for example, change in the location, duration and/or method(s) of mining operations).				
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	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.
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	NRATS	R10_20230725 ECO 2022_23 Malleefowl Monitoring R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	Trigger not met.
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	C	Refer to M1199:3.2	Refer to M1199:3.2
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	C	Refer to M1199:3.2	Refer to M1199:3.2

Appendix E Evidence Register

Table E.3: Evidence Register

Code	Reference	Author	Electronic	Hard-copy	Topic
C01	C01_Offsets Revised Compliance Schedule	Covalent	X		Letter from Covalent to DWER requesting an extension for the timeframe of submission of plans required under MS1199.
C02	C02_MS1199 - FVEMP Rev 7 approval letter	DWER	X		DWER approval letter for the FVEMP under MS1199
C03	C03_MS1199 - TFEMP approved	DWER	X		DWER approval letter for the TFEMP under MS1199
C04	C04_DWER TFOS Review 20231026	DWER	X		DWER review of the TFOMP 26/10/2023
C05	C05_DWER correspondence - Dust compliance query	Covalent	X		Letter from Covalent to DWER (incorrect address) notifying DWER of dust deposition trigger criteria exceedance.
C06	C06_DWER Flora OS Review 20231116	DWER	X		DWER review of the FVOMP 16/11/2023
E01	E01_Website Screenshot 20240405	JBS&G	X		Screenshot of Covalent website: https://www.covalentlithium.com/sustainability
E02	E02_Lightning Protection Infrastructure	Covalent	X		Photo of Lightning Protection Infrastructure
E03	E03_Landfill inspection Nov 2023	Covalent	X		Landfill inspection record from Nov 2023
E04	E04_Putrescible skip	Covalent	X		Photo of Putrescible waste skip
E05	E05_GDP60_V7_SWRL Fauna Preclearance	Covalent	X		Fauna Pre-clearance Survey Form for GDP0060_V7 (16/03/2023)
E06	E06_2023_MtHollandGDPAwarenessScript	Covalent	X		Ground Disturbance Permit Training Online Induction Script
E07	E07_Truck Example Fire Supression System Photo 1	Covalent	X		Photo of Fire Supression System on Truck

Code	Reference	Author	Electronic	Hard-copy	Topic
E08	E08_Dozer Example Fire Supression System Photo 1	Covalent	X		Photo of Fire Supression System on Dozer
E09	E09_Dozer Example Fire Supression System Photo 2	Covalent	X		Photo of Fire Supression System on Dozer
E10	E10_Fire Equipment Service register	Covalent	X		Service Register for Mine Site Fire Equipment
E11	E11_Fire Extinguisher Workshop Vehicle Example	Covalent	X		Photo of Fire Extinguisher in Workshop Vehicle
E12	E12_Fire Extinguisher Workshop Vehicles Tag	Covalent	X		In service tag on Fire Extinguisher in Workshop Vehicles
E13	E13_Fire Extinguisher Workshop	Covalent	X		Photo of Fire Extinguisher in Workshop Building
E14	E14_Fire Hydrants_Hose Reels	Covalent	X		Schematic of locations of fire hydrants and hose reels on mine site
E15	E15_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E16	E16_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E17	E17_Landfill Fencing	Covalent	X		Photo of Landfill Fencing
E18	E18_20230425_APAS_Feral Cat Control Program Report	APAS	X		ALPHA Pest Animal Solutions report on feral cat control at Covalent Lithium Mt Holland April 2023
E19	E19_IntroducedPredatorMonitoring	Ecoscape	X		2021 Predator Monitoring
E20	E20_20230720_ECO_2022PredatorMonitoring	Ecoscape	X		2022 Predator Monitoring
E21	E21_Mt Holland Environmental Induction	Covalent	X		Environmental Section of the Mt Holland Induction
E22	E22_INX 2023 MTH Environmental Incident Register	Covalent	X		Covalent Environmental Incident Register for 2023
E23	E23_COV-000-EN-PRO-0012.2.IFU GDP Procedure	Covalent	X		Ground Disturbance Permit (GDP) Procedure Rev 2 (11/03/2022)
E24	E24_GDP0060_V9_SWRL_ExistingTSF2	Covalent	X		South Waste Rock Landform footprint (SWRL) Ground Disturbance Permit No. 60 V9

Code	Reference	Author	Electronic	Hard-copy	Topic
E25	E25_GDP0071_TSFConstruction_V1	Covalent	X		TSF Construction Ground Disturbance Permit No. 71 V1
E26	E26_Exclusion Signage 1	Covalent	X		Photo of EEZ Signage “Please Keep Out”
E27	E27_Exclusion Signage 2	Covalent	X		Photo of EEZ Signage “Please Keep Out”
E28	E28_Exclusion Signage 3	Covalent	X		Photo of Protected Vegetation Zone “Start”
E29	E29_COV-M000-EN-PRO-0001 Fauna Management Trench Clearing	Covalent	X		Covalent Fauna Management and Trench Clearing Procedure Rev 1 (22/08/2022)
E30	E30_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)
E31	E26_Fauna Register	Covalent	X		Covalent Register of: • Fauna Sightings • Fauna Deaths
E32	E32_Event16-01-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 16/01/2023
E33	E33_Event23-02-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 23/02/2023
E34	E34_Event20-03-2023	Covalent	X		Incident report for exceedance of dust deposition trigger criteria 20/03/2023
E35	E35_Dust Suppression FY23	Covalent	X		Register of water use for dust suppression in 2023 FY
E36	E36_Weed Hygiene Register	Covalent	X		Weed hygiene register for vehicles and mobile equipment
E37	E37_Example Vehicle Hygiene Record	Covalent	X		Vehicle hygiene inspection record for Cat Model 980 on 31/10/2023
E38	E38_Weed Control Register	Covalent	X		Register of weed control undertaken in 2023
E39	E39_20230321_Environmental Inspection	Covalent	X		Environmental Inspection Record of LV Washbay on 21/03/2023

Code	Reference	Author	Electronic	Hard-copy	Topic
E40	E40_20230705_Environmental Inspection	Covalent	X		Environmental Inspection Record of Village, Aerodrome, Gatehouse, Primero Workshop & Washbay on 05/07/2023
E41	E41_20230903_Environmental Inspection	Covalent	X		Environmental Inspection Record of Village on 03/09/2023
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
L01	L01_Covalent CAP NC Notification	Covalent	X		Covalent letter to DWER notifying them of potential non-compliance with condition 8 of MS1199
M01	M01_Covalent CAR Evidence Request Response Rev 0	Covalent	X		Covalent resposponse to JBS&G's request for evidence to undertake the compliance assessment for 2023.
P01	P01_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_Covalent Lithium CAR 2023 (Rev 0)	JBS&G	X		This document
R02	R02_Covalent Lithium CAR 2022 (Rev 0)	JBS&G	X		Covalent Lithium Pty Ltd Earl Grey Lithium Project Compliance Assessment Report (Ministerial Statement 1118, 1167 and 1199) Rev 0 (1 May 2023)
R03	R03_Terrestrial Fauna Management Plan Rev 5	Covalent	X		Covalent Lithium Earl Grey Lithium Project Terrestrial Fauna Environmental Management Plan Rev 5 (29/11/2022)
R04	R04_Flora and Vegetation Management Plan Rev 7	Covalent	X		Covalent Lithium Earl Grey Lithium Project Flora and Vegetation Environmental Management Plan Rev 7 (20/07/2022)

Code	Reference	Author	Electronic	Hard-copy	Topic
R05	R05_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)
R06	R06_20230915_Maxy Engineering_Dust Report	Maxy	X		Maxy Engineering Covalent Lithium dust report – 2022-2023 Version 2
R07	R07_COV-M000-HS-PLN-0005.1.IFU MTH Emergency Management Plan	Covalent	X		Mt Holland Emergency Management Plan Rev 1 (30/09/2023)
R08	R08_Mattiske Veg Condition Monitoring Spring 2023	Mattiske	X		Earl Grey Lithium Project Vegetation Condition Monitoring Spring 2023 V2 (08/12/2023)
R09	R09_20240216 ECO 2023 Mt Holland Chuditch Monitoring	ecoscape	X		ecoscape Covalent Lithium 2023 Mt Holland Chuditch Monitoring (16/02/2024)
R10	R10_20230725 ECO 2022_23 Malleefowl Monitoring	ecoscape	X		ecoscape Covalent Lithium 2022-23 Malleefowl Monitoring (25/07/2023)
R11	R11_CAP for MS1199	Covalent	X		Covalent Lithium Earl Grey Lithium Project Ministerial Statement 1199 Compliance Assessment Plan Rev 0 (26/04/2024)
R12	R12_Glevan Dieback Monitoring 2022	Glevan	X		Covalent Lithium Mt Holland Phytophthora species occurrence assessment
E46	E46_20230116 TBT Reporting Fauna Sightings	Covalent	X		Toolbox talk on Reporting Fauna Sightings
E47	E47_20230823 Reporting Fauna Sightings	Covalent	X		Toolbox talk on Reporting Fauna Sightings
E48	E48_20230912 TBT Site Speed Limits	Covalent	X		Toolbox talk on TBT Site Speed Limits
E49	E49_20231203 TBT Protect Our Malleefowl	Covalent	X		Toolbox talk on TBT Protect Our Malleefowl
E50	E50_20230418 Introduced Predator Control	Covalent	X		Toolbox talk on Introduced Predator Control
E51	E51_20230809 TBT Malleefowl Breeding Season	Covalent	X		Toolbox talk on TBT Malleefowl Breeding Season
E52	E52_20230903 TBT Snake Awareness	Covalent	X		Toolbox talk on TBT Snake Awareness
E53	E53_20230907 TBT Threatened Species Day	Covalent	X		Toolbox talk on TBT Threatened Species Day
E54	E54_PEA Order Confirmation OA00047164		X		Order confirmation for PEA analyser

Code	Reference	Author	Electronic	Hard-copy	Topic
E55	E55_Kings Park Science Restoration Research	Kings Park Research	X		Kings Park Research Proposal including investigation of the viability of the use of the PEA

Appendix F Spring Vegetation Monitoring

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**
V1	Internal review	J. Marshall	D. Angus	6/12/2023
V2	Draft for client	J. Marshall	L. Mattiske	8/12/2023
FINAL	Final report			

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

PO Box 437
Kalamunda WA 6926
Phone: +61 8 9257 1625
Email: admin@mattiske.com.au

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

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

Mattiske Consulting Pty Ltd
28 Central Road, Kalamunda WA 6076 ~ Tel: 9257 1625 ~ Fax: 9257 1640
Author: E M Matttiske | MCPL Ref: CLL2302/036/23
Drawn: CAD Resources ~ www.cadresources.com.au
Tel: (08) 9246 3242 ~ Fax (08) 9246 3202

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.

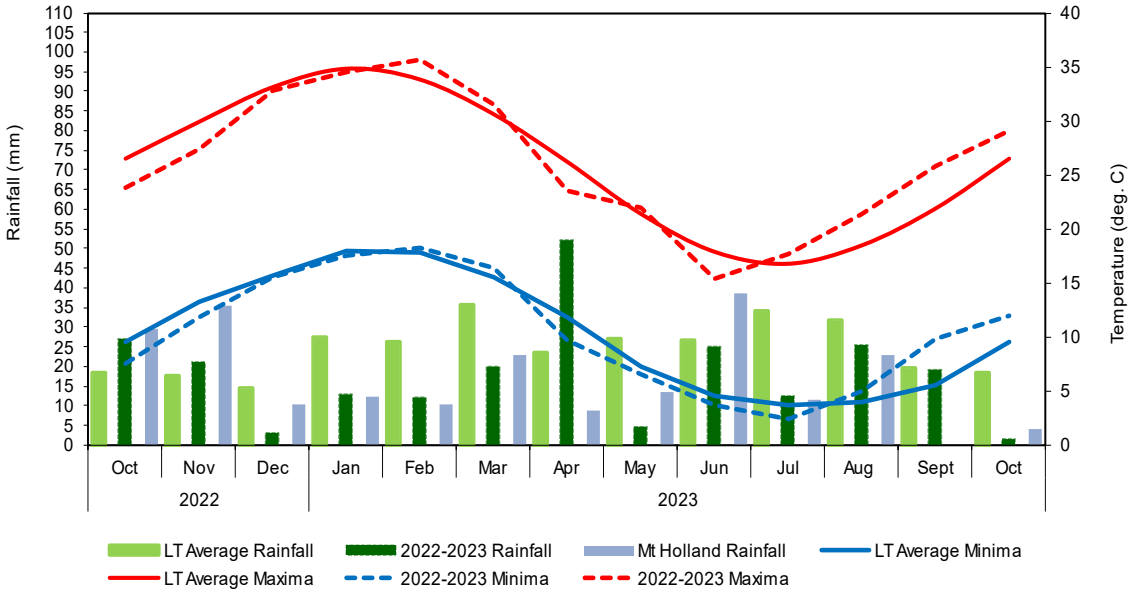


Figure 2: Rainfall and temperature data for Southern Cross Airfield (Station No. 012320) and Mt Holland

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

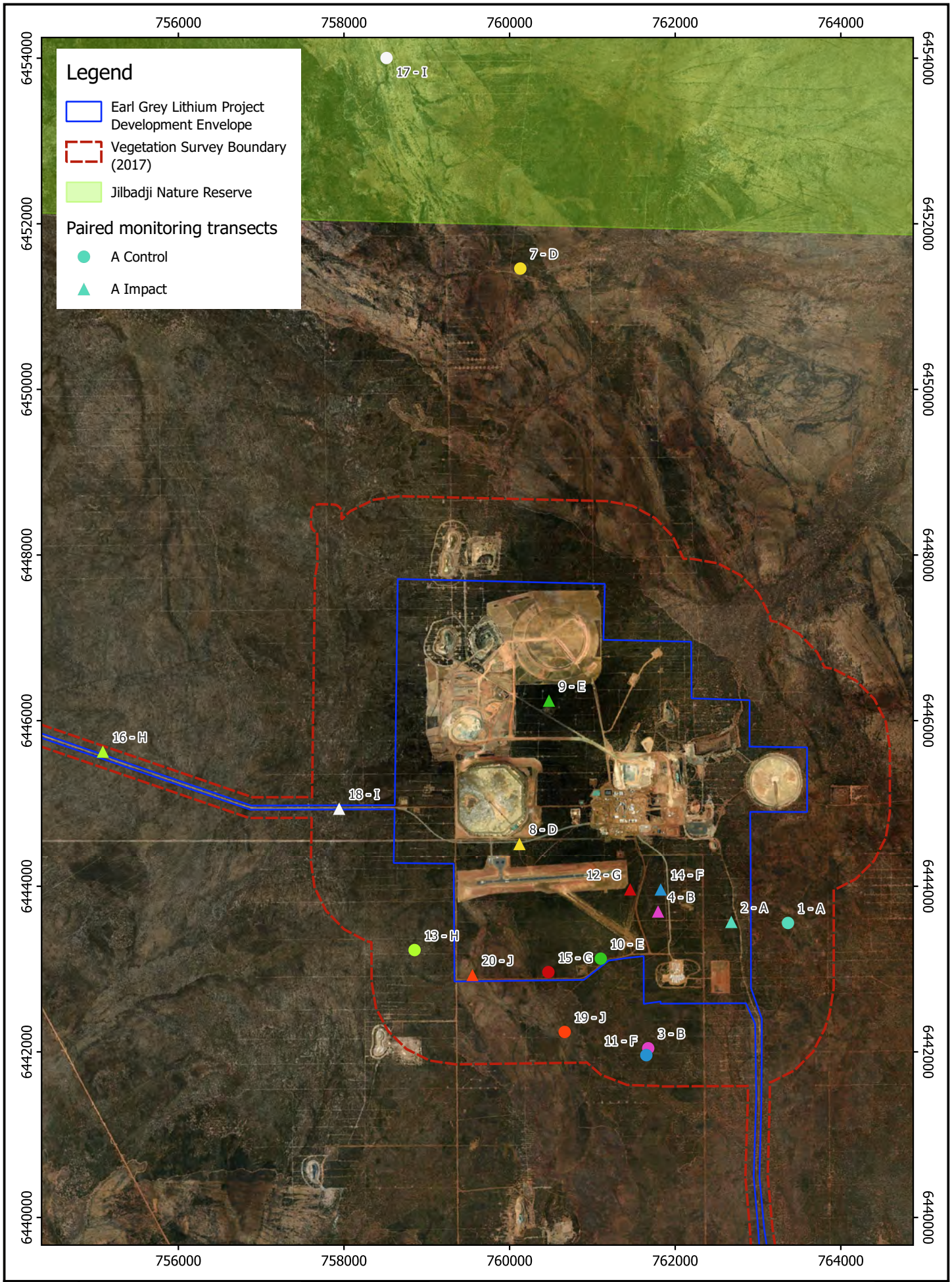
Permanent plant condition monitoring transects cover an area equivalent to a 20 m x 20 m quadrat in size, to conform to the recommended survey quadrat size for the bioregion (Environmental Protection Authority (EPA) Technical Guidance, 2016). Each transect comprises four 10 m x 10 m sub-quadrats arranged 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

Author: J. Marshall, 06/12/23

Mattiske

28 Central Rd
Kalamunda WA 6076
Tel: 92571625

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

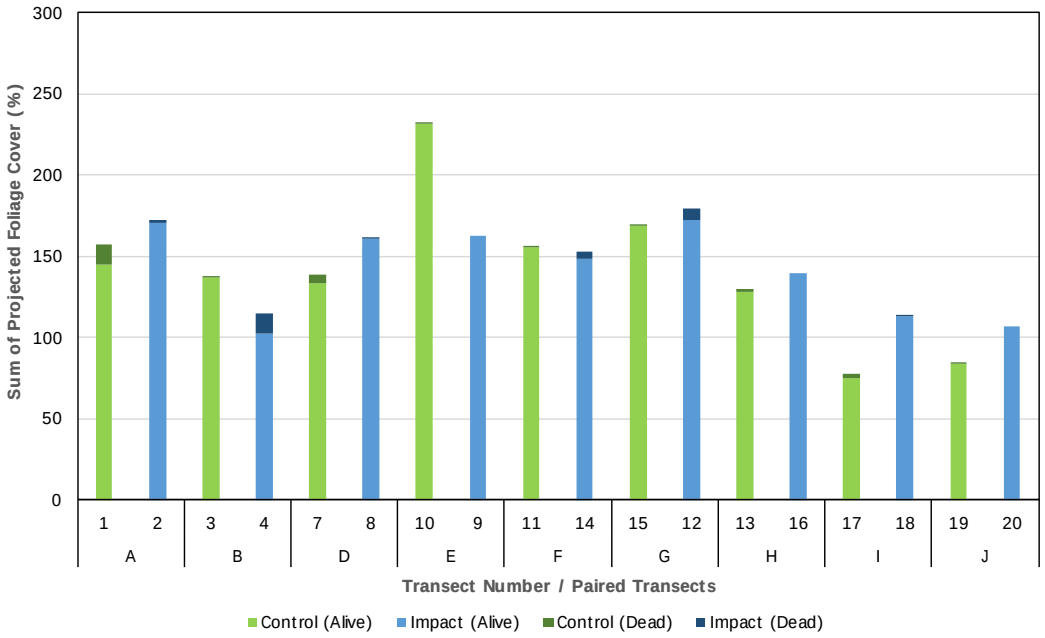


Figure 4: Sum of alive and dead projected foliage cover at plant condition monitoring transects, November 2023
Paired control/impact transects are indicated by the letters A through J.

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.

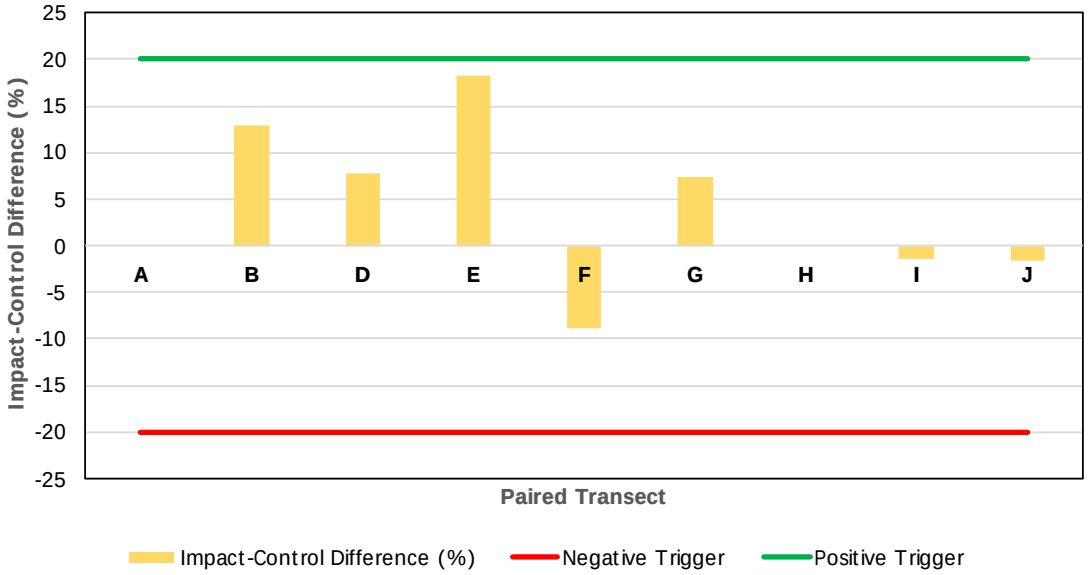


Figure 6: Control-Impact paired transect differential health scores, November 2023
The percentage difference between the control, and impact transects are shown, together with positive and negative trigger values.

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%.

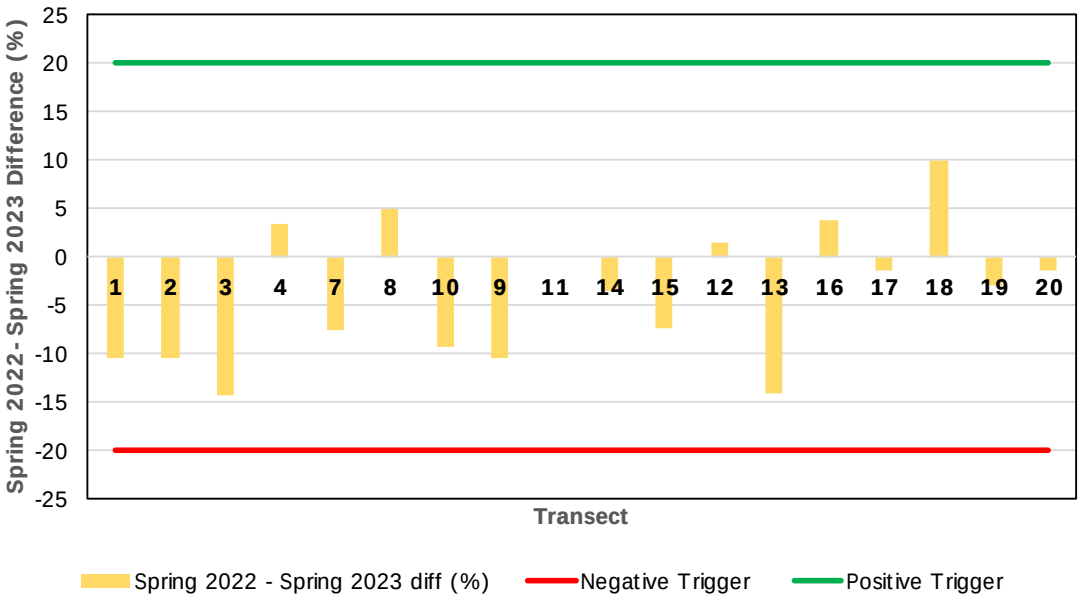


Figure 7: Percentage difference in average canopy health scores for 20 tagged plants, between September 2022 (last spring survey) and November 2023 (this survey) at each vegetation health monitoring transect

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

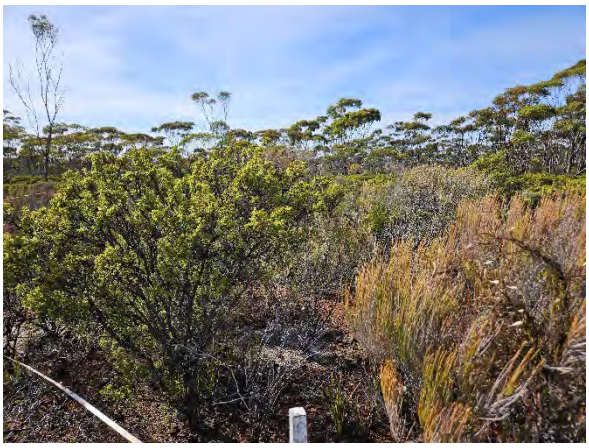
APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

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

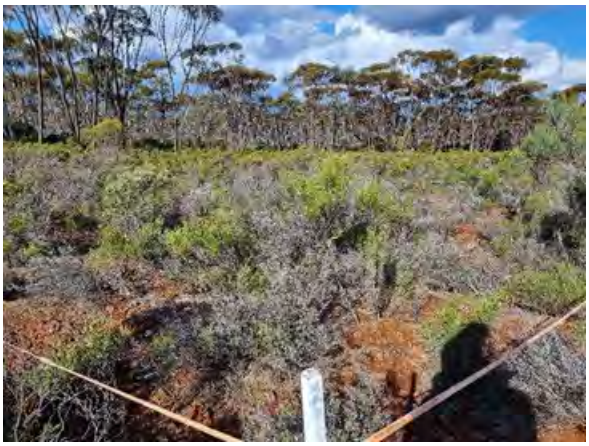
Quadrat 3d, September 2022



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

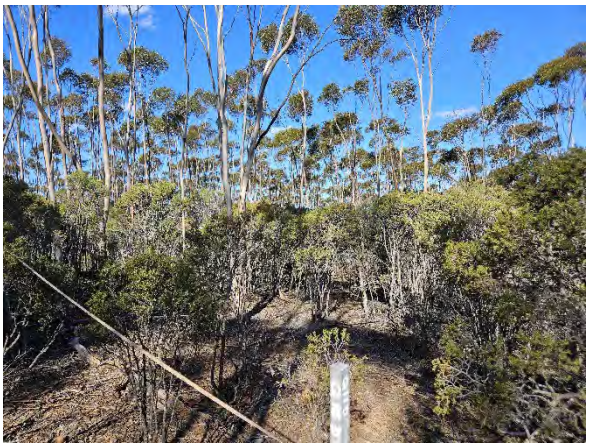
APPENDIX D: PHOTOGRAPHIC RECORD OF PLANT CONDITION MONITORING TRANSECTS, NOVEMBER 2023

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

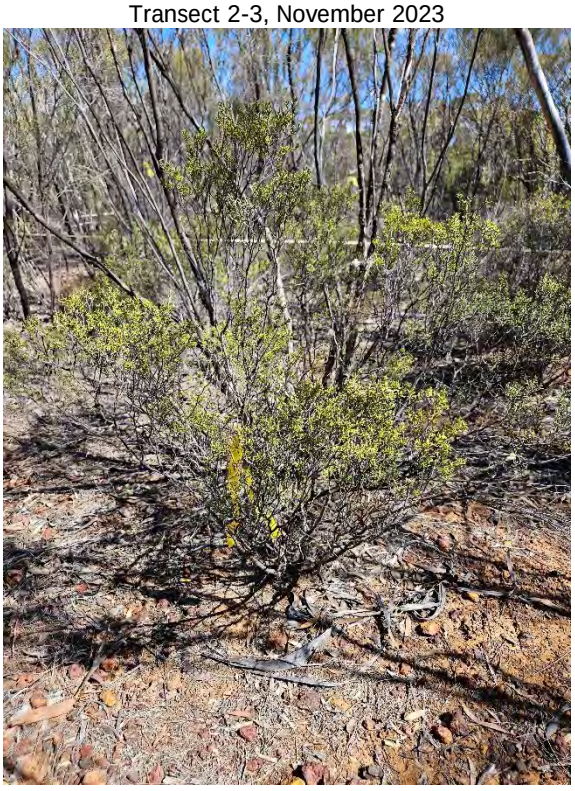
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

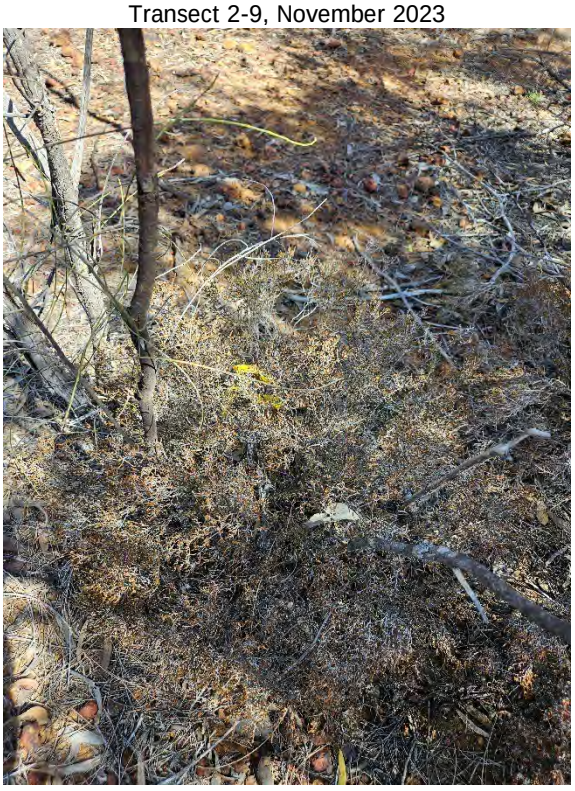
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

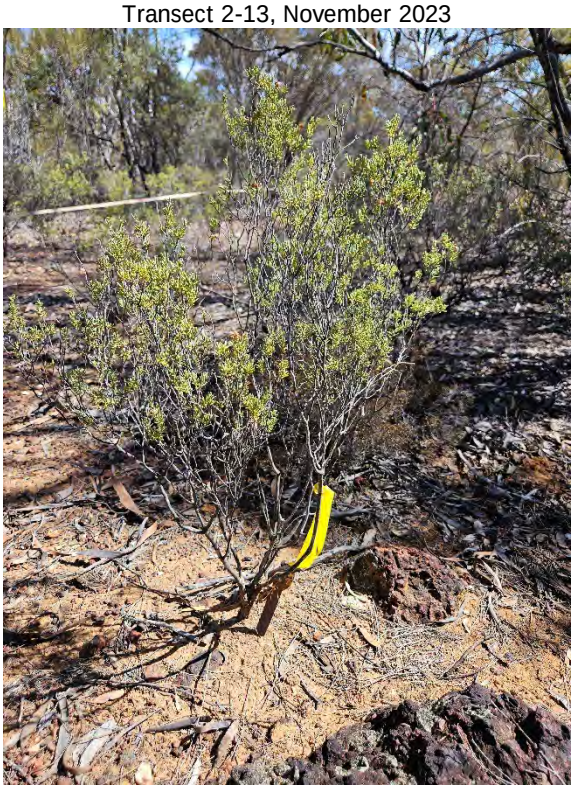
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

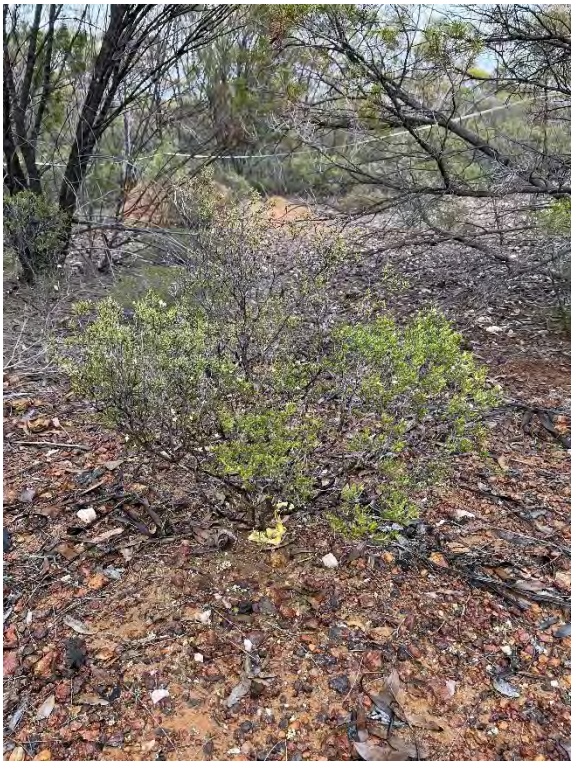
Transect 2-15, November 2023

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

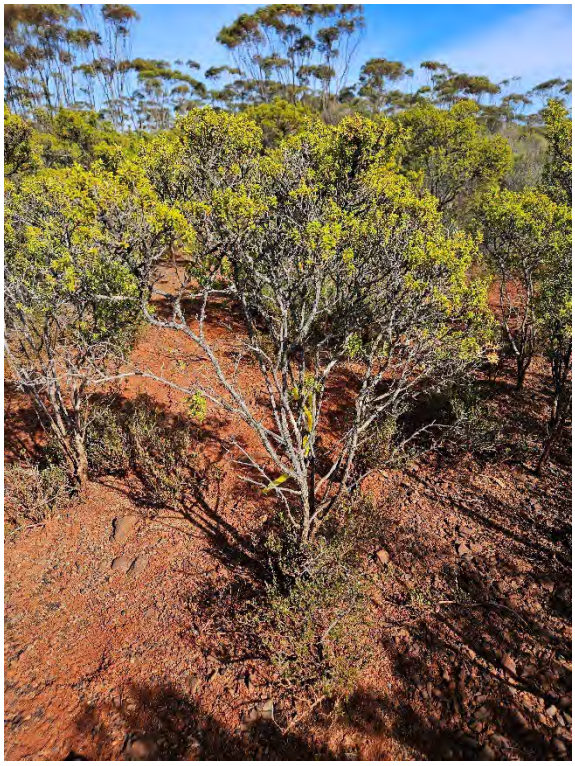
Transect 2-20, September 2022

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

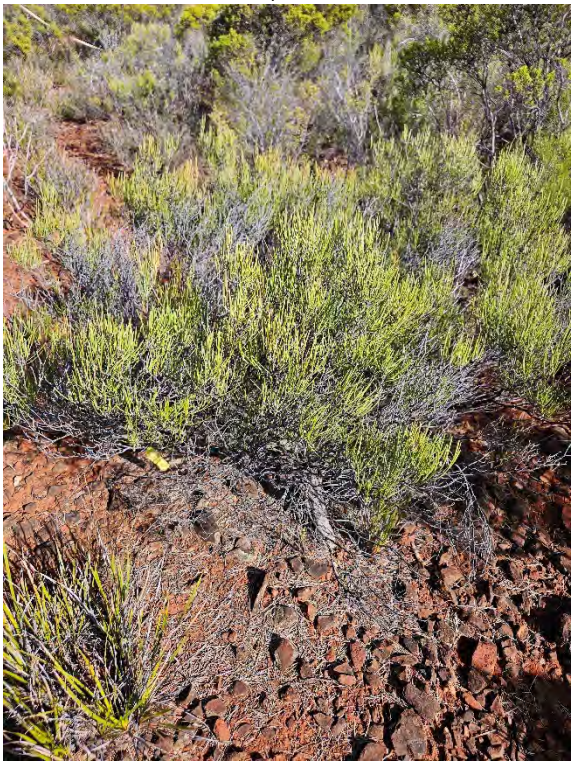
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

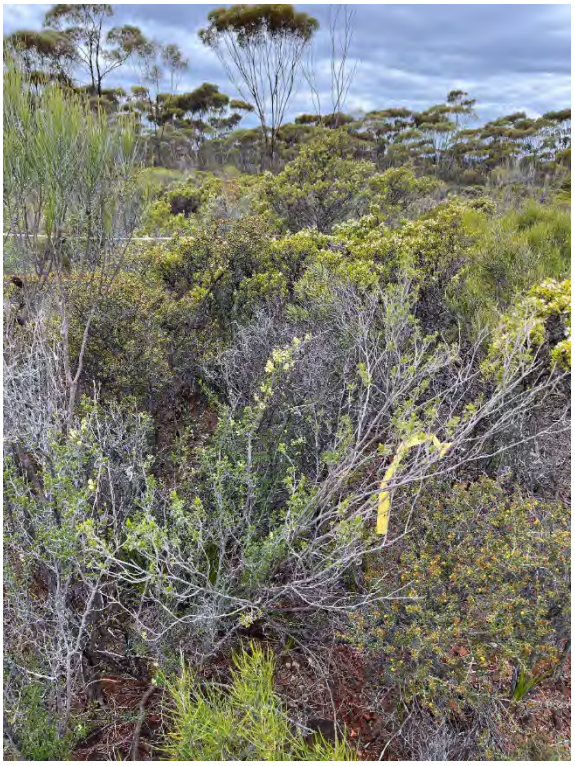
Transect 3-13, November 2023

Transect 3-14, September 2022

Transect 3-14, November 2023

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

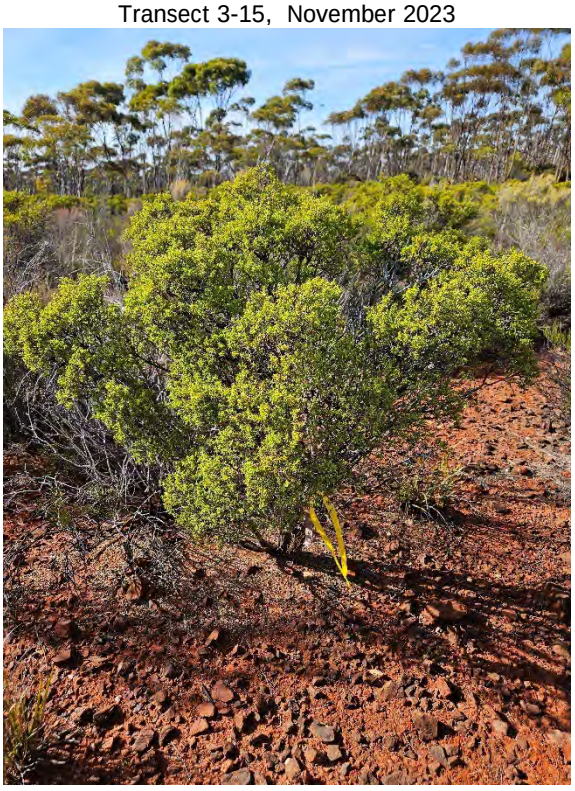
Photographs are labelled in sequence by transect and tagged plant number.



Transect 3-15, September 2022

Transect 3-15, November 2023

Transect 3-16, September 2022



Transect 3-16, November 2023

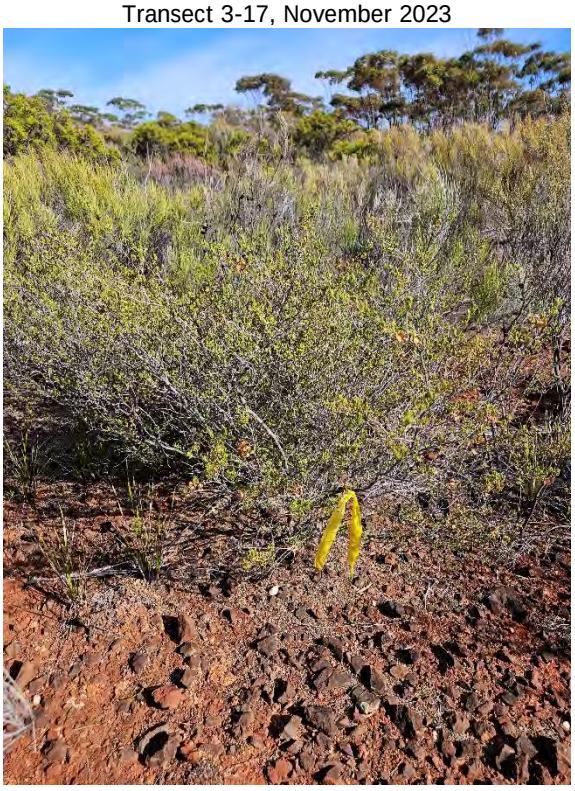
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

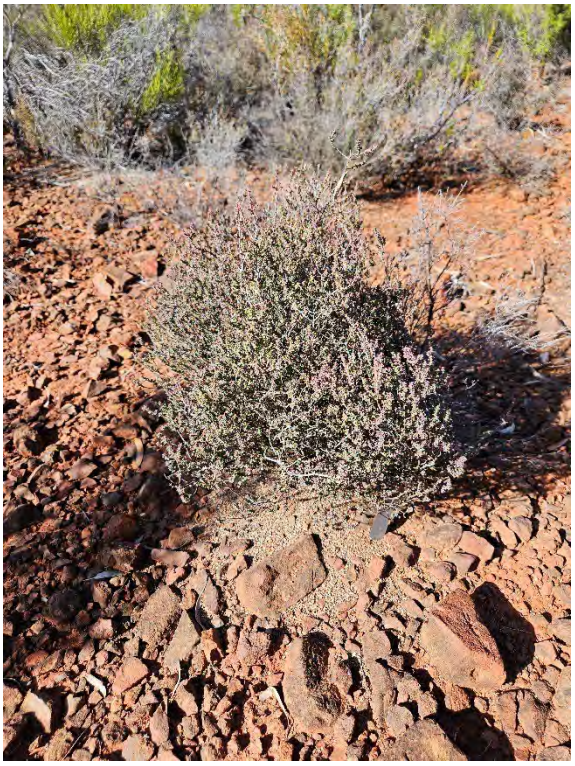
Transect 4-10, September 2022

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

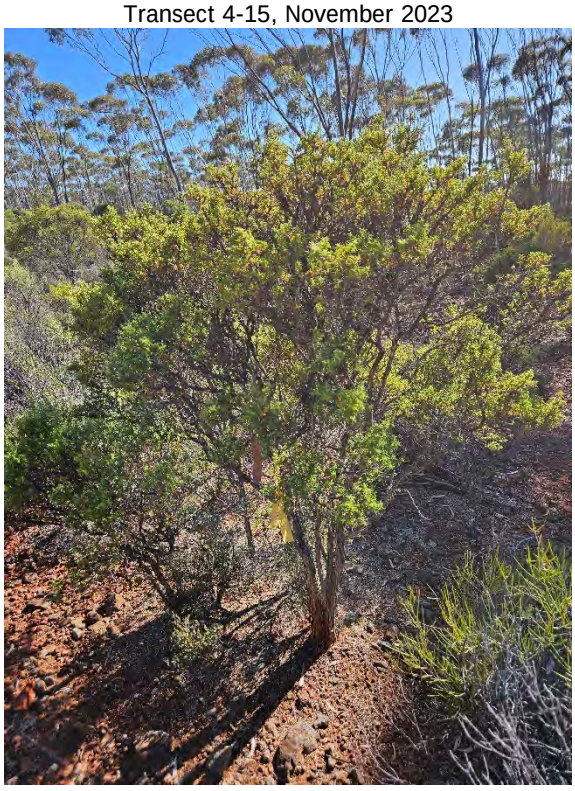
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

Transect 4-15, September 2022

Transect 4-15, November 2023

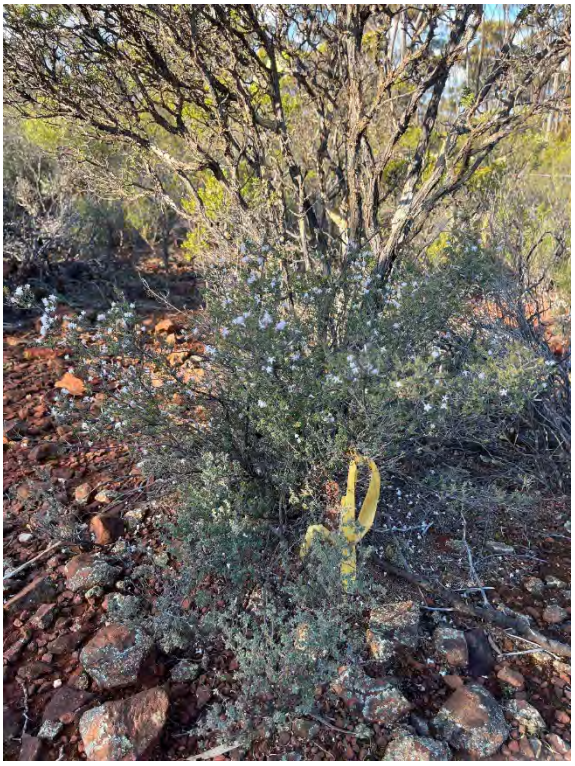
Transect 4-16, September 2022



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

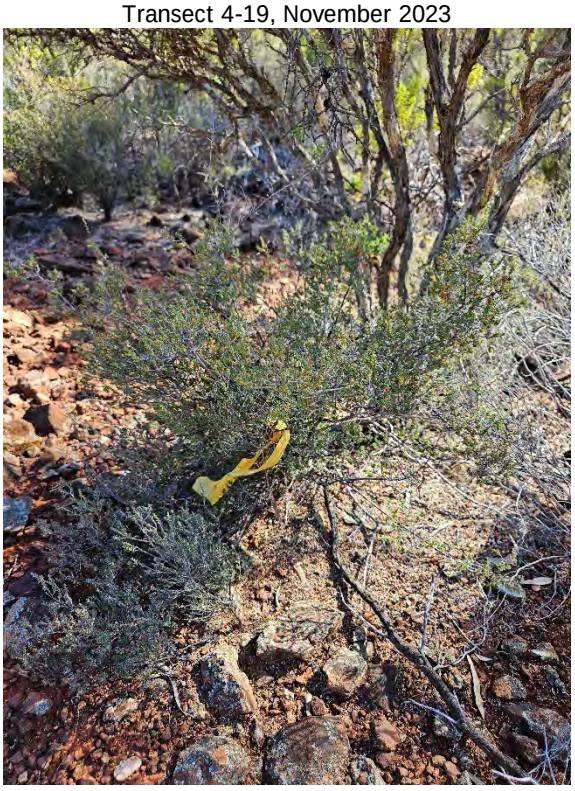
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

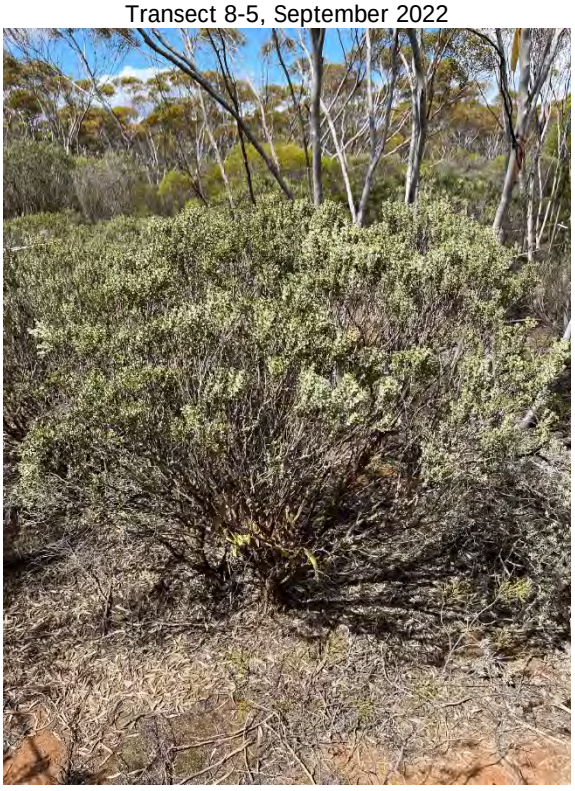
Transect 8-4, November 2023

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

5

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

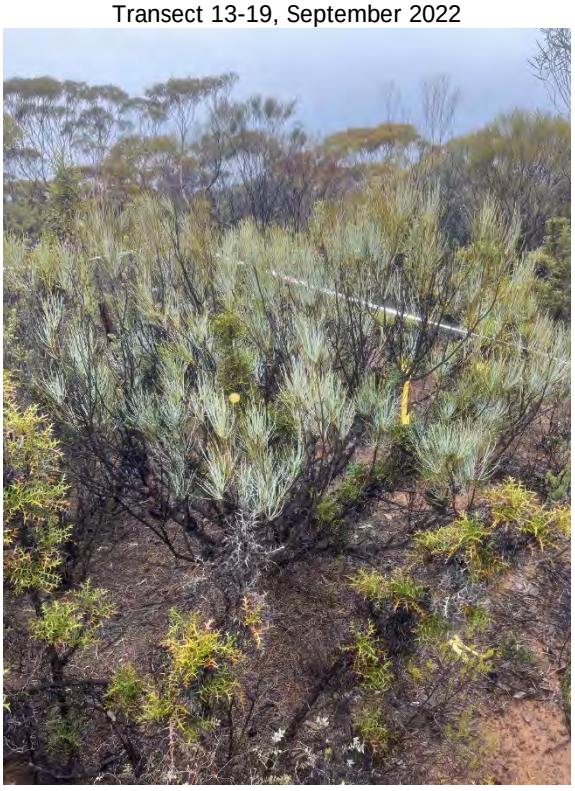
Transect 13-18, November 2023

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

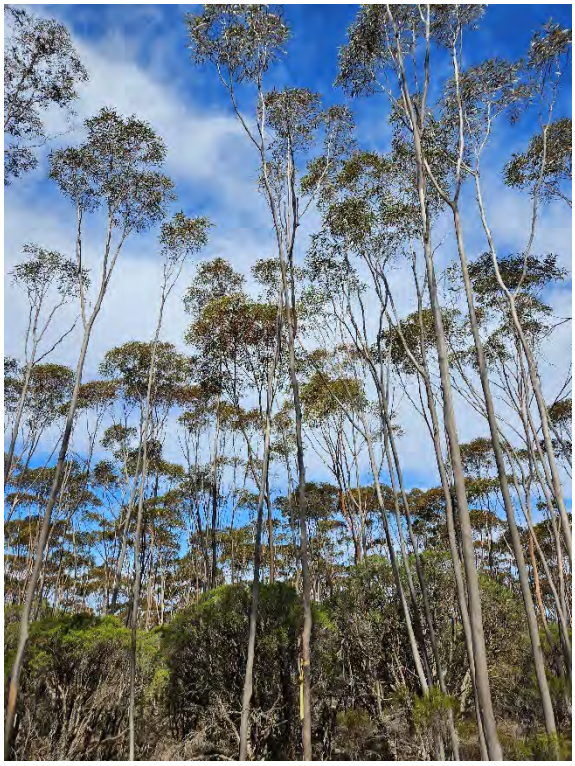
Transect 14-4, September 2022

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

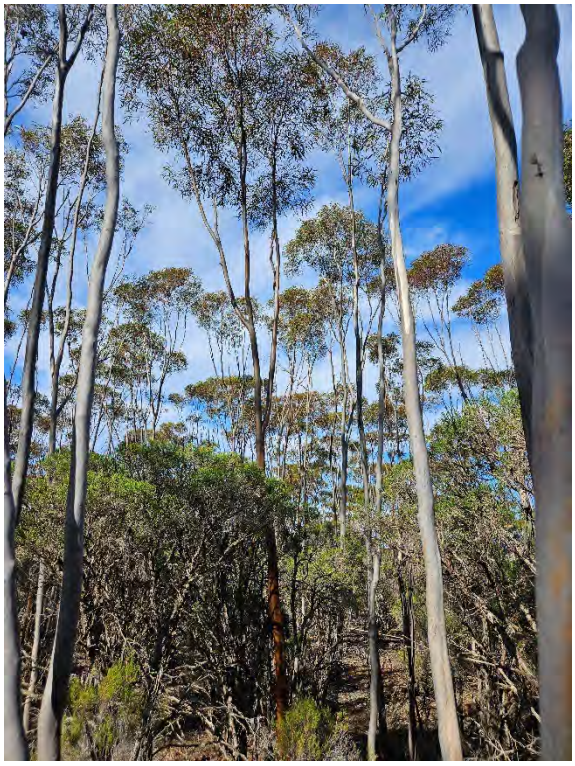
Transect 14-8, September 2022

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

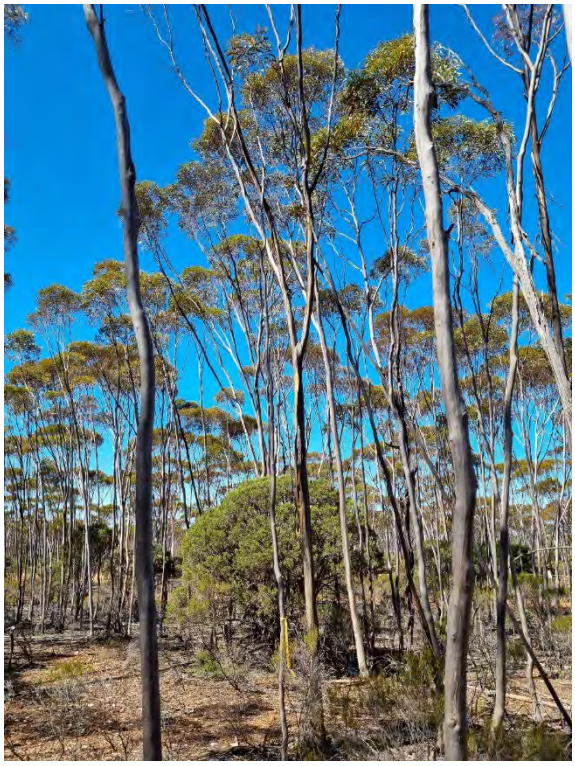
Transect 14-11, November 2023

Transect 14-12, September 2022

Transect 14-12, November 2023

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

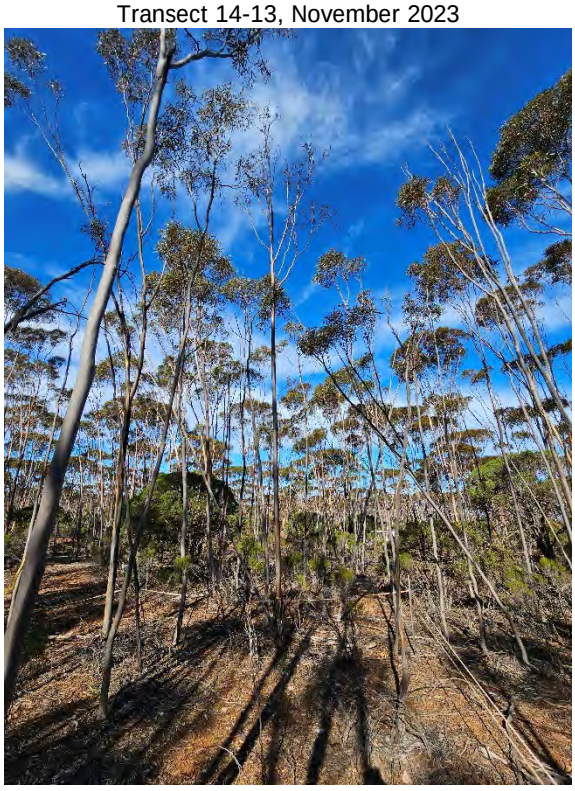
Photographs are labelled in sequence by transect and tagged plant number.



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

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

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.

Transect 15-17, September 2022

Transect 15-17, November 2023

Transect 15-18, September 2022

Transect 15-18, November 2023

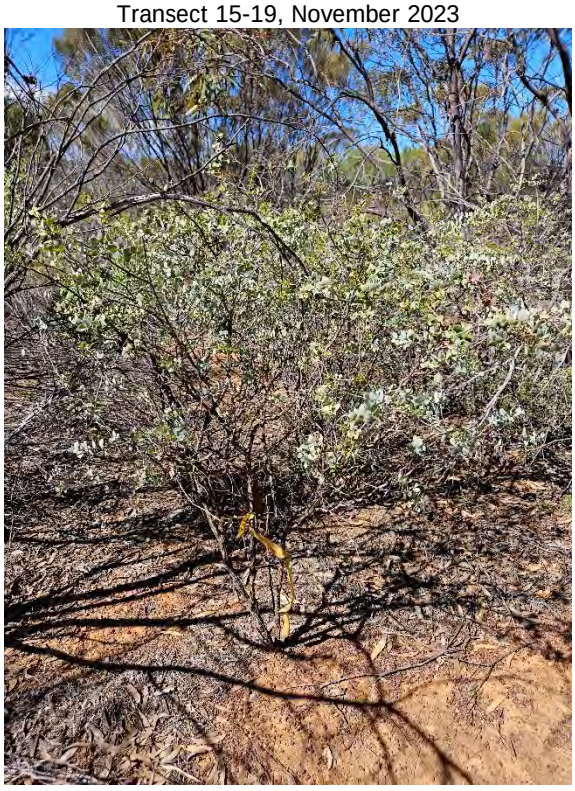
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

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

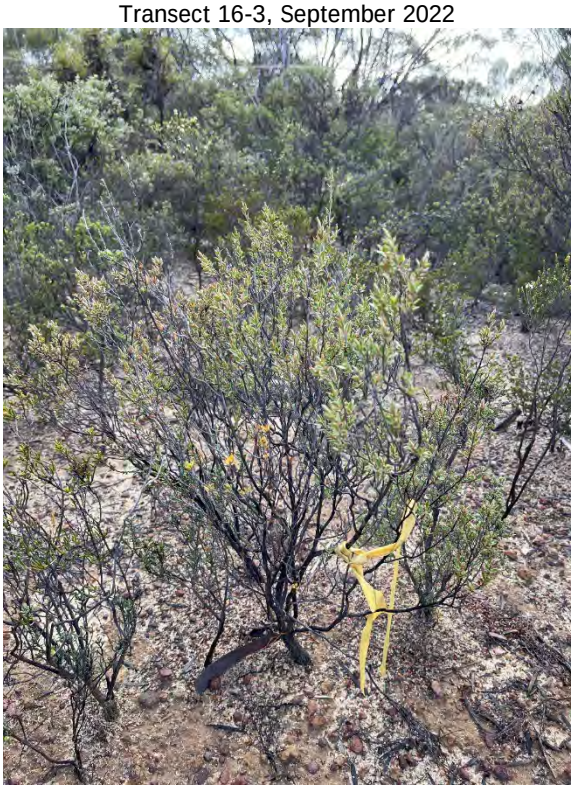
Transect 16-2 (new), November 2023

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.

Transect 16-5, September 2022

Transect 16-5, November 2023

Transect 16-6, September 2022

Transect 16-6, 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 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

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

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

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

Transect 16-11, September 2022

Transect 16-11, November 2023

Transect 16-12, September 2022

Transect 16-12, 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 16-13, September 2022

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

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

Transect 16-15, September 2022

Transect 16-15, November 2023

Transect 16-16, September 2022

Transect 16-16, 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 16-17, September 2022

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

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

Transect 17-1, September 2022

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

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

Transect 17-11, September 2022

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

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

Transect 17-13, September 2022

Transect 17-13, November 2023

Transect 17-14, September 2022

Transect 17-14, 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 17-15, September 2022

Transect 17-15, November 2023

Transect 17-16, September 2022

Transect 17-16, 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 17-17, September 2022

Transect 17-17, November 2023

Transect 17-18, September 2022

Transect 17-18, 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 17-19, September 2022

Transect 17-19, November 2023

Transect 17-20, September 2022

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.

Transect 18-1, September 2022

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.

Transect 18-3, September 2022

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

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

Transect 18-9, September 2022

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

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

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

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

Transect 18-13, September 2022

Transect 18-13, November 2023

Transect 18-14, September 2022

Transect 18-14, 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 18-15, September 2022

Transect 18-15, November 2023

Transect 18-16, September 2022

Transect 18-16, 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 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

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

Transect 18-19, September 2022

Transect 18-19, November 2023

Transect 18-20, September 2022

Transect 18-20, November 2023

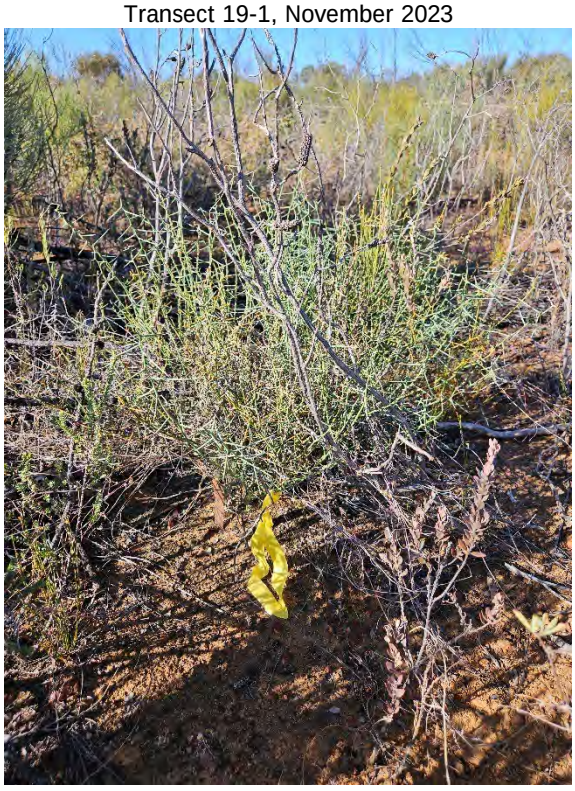
APPENDIX E: PHOTOGRAPHIC RECORD OF TAGGED SPECIES AT EACH PLANT CONDITION MONITORING TRANSECT

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

Transect 19-8, September 2022

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

Transect 19-11, November 2023

Transect 19-12, September 2022

Transect 19-12, 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 19-13, September 2022

Transect 19-13, November 2023

Transect 19-14, September 2022

Transect 19-14, 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 19-15, September 2022

Transect 19-15, November 2023

Transect 19-16, September 2022

Transect 19-16, 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 19-17, September 2022

Transect 19-17, November 2023

Transect 19-18, September 2022

Transect 19-18, 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 19-19, September 2022

Transect 19-19, November 2023

Transect 19-20, September 2022

Transect 19-20, 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 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

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

Transect 20-3, September 2022

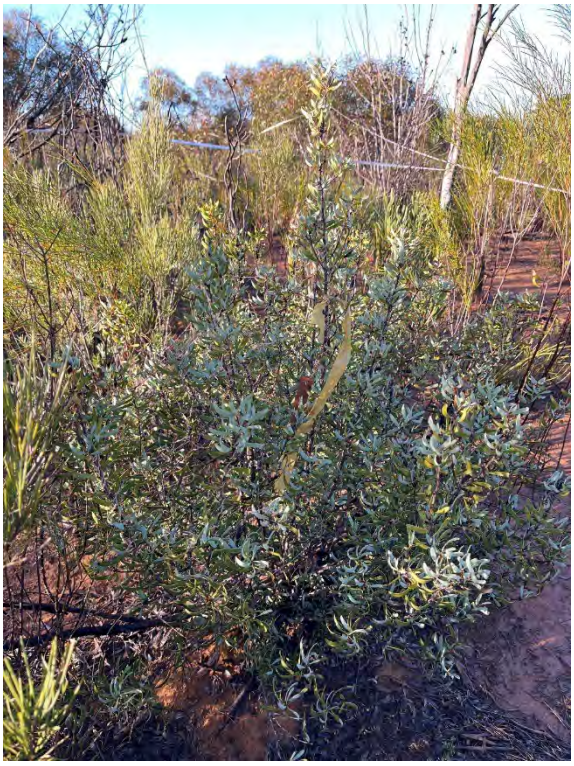
Transect 20-3, November 2023

Transect 20-4, September 2022

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

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

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

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

Transect 20-11, September 2022

Transect 20-11, November 2023

Transect 20-12, September 2022

Transect 20-12, 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 20-13, September 2022

Transect 20-13, November 2023

Transect 20-14, September 2022

Transect 20-14, 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 20-15, September 2022

Transect 20-15, November 2023

Transect 20-16, September 2022

Transect 20-16, 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 20-17, September 2022

Transect 20-17, November 2023

Transect 20-18, September 2022

Transect 20-18, 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 20-19, September 2022

Transect 20-19, November 2023

Transect 20-20, September 2022

Transect 20-20, November 2023

Appendix G Dust Monitoring

MAXY Engineering
www.MAXYengineering.com.au

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

Covalent Lithium dust report – 2022-2023

Prepared for: Covalent Lithium

September 2023

Version 2

Prepared by:

MAXY Engineering – Razvan Vlad

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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.

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
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

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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.

MAXY Engineering
www.MAXYengineering.com.au
36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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).

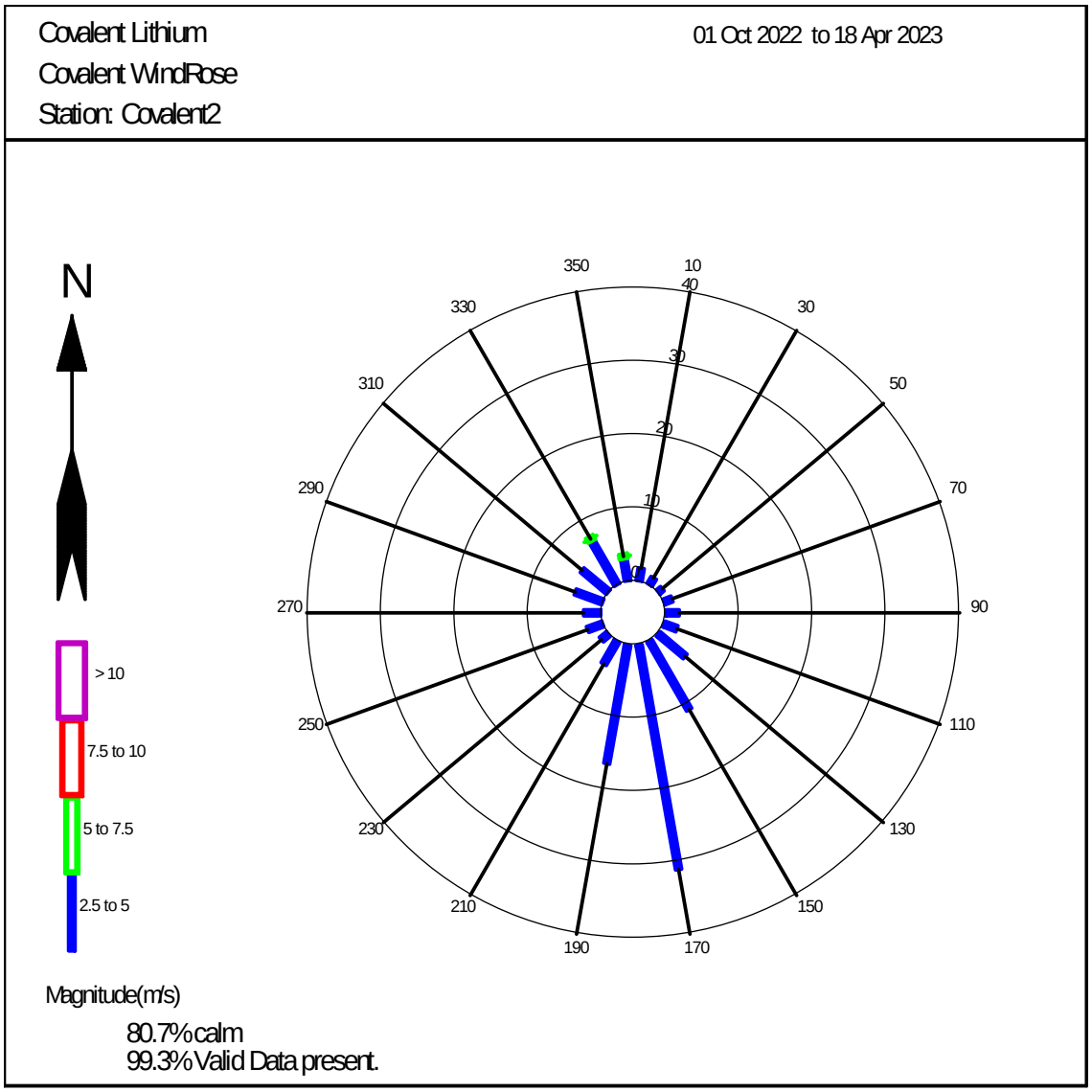


Image 2 – Wind Rose, Station 2, 01/10/2022 – 18/4/2023

MAXY Engineering
www.MAXYengineering.com.au

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

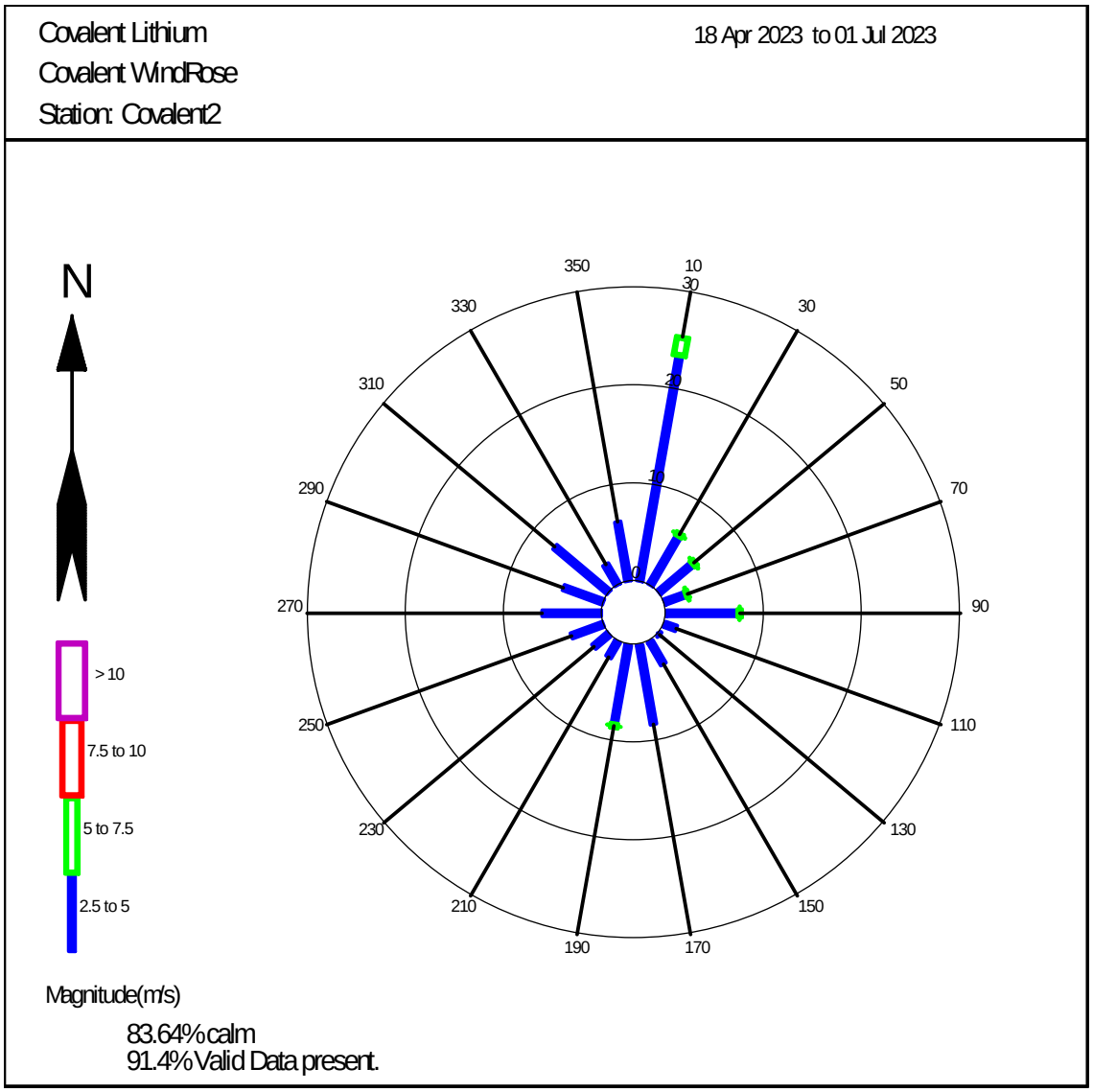


Image 3 – Wind Rose, Station 2, 18/4/2023 – 30/6/2023

MAXY Engineering
www.MAXYengineering.com.au
36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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.

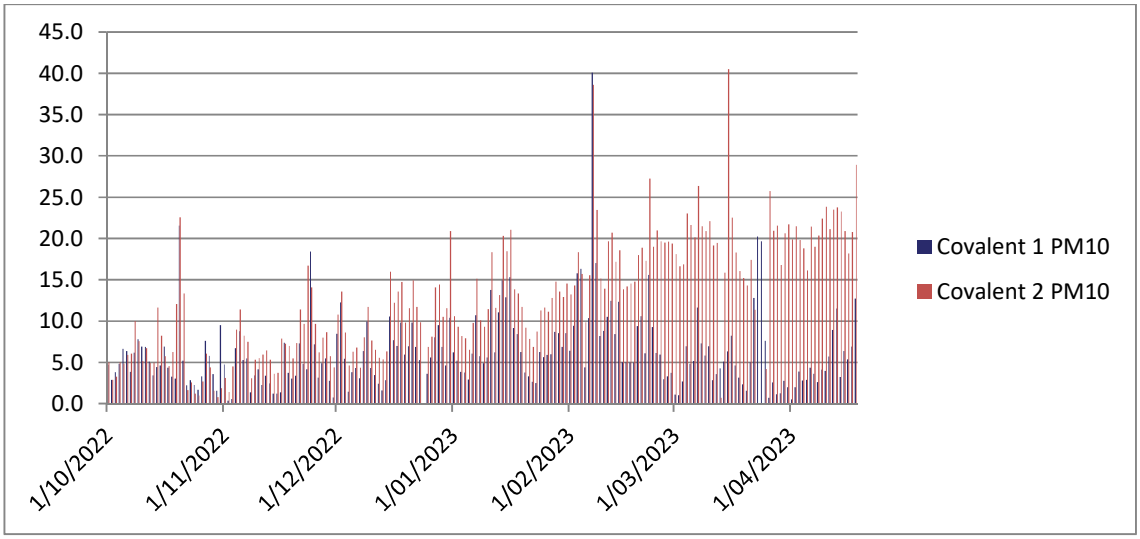


Image 4 – PM10 24 hours concentrations 01/10/2022 – 17/4/2023

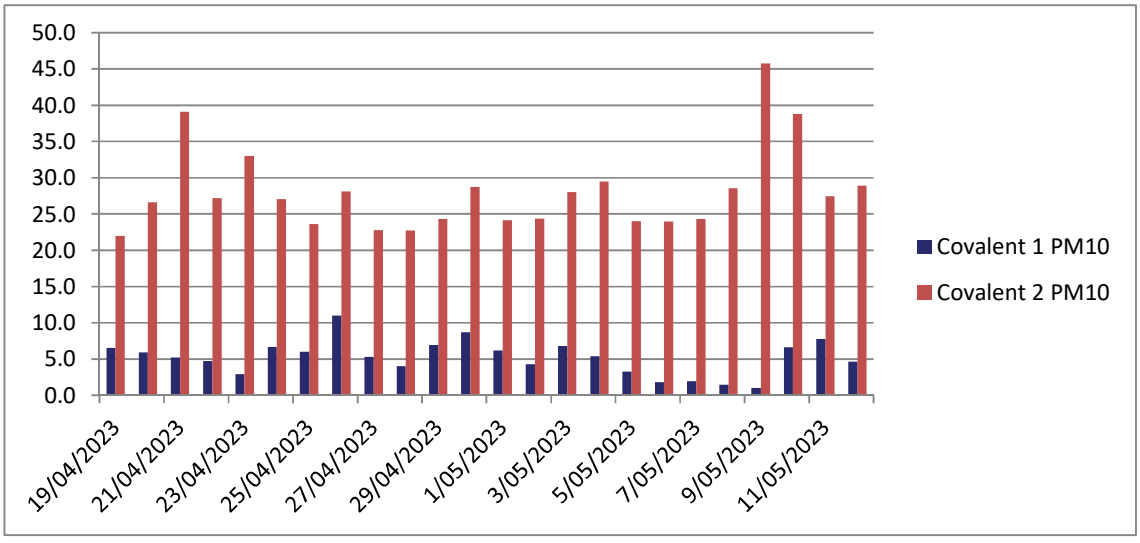


Image 5 – PM10 24 hours concentrations 18/4/2023 – 12/5/2022

MAXY Engineering
www.MAXYengineering.com.au
36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

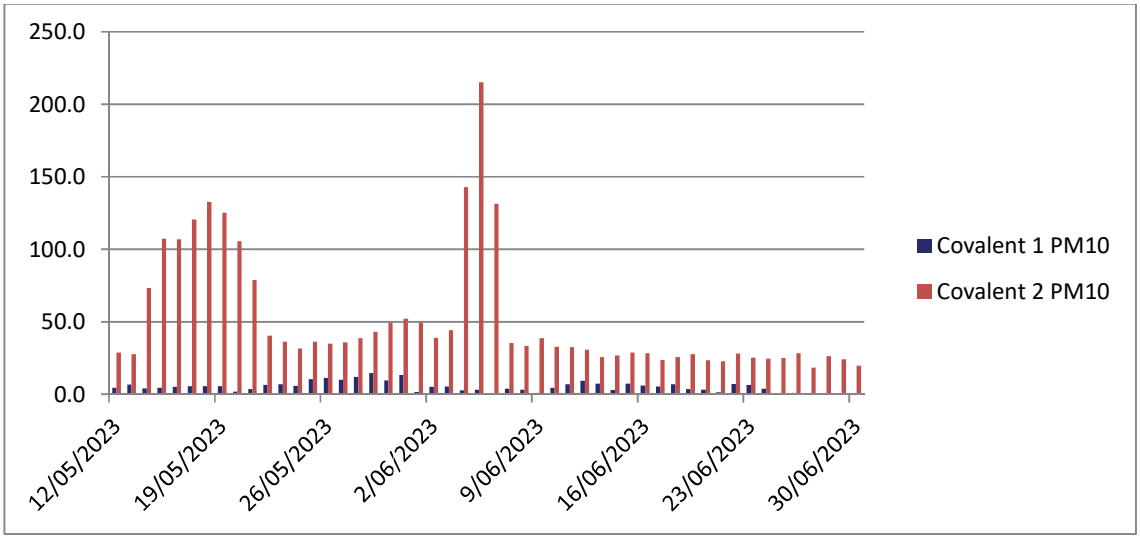


Image 6 – PM10 24 hours concentrations 12/5/2023 – 30/6/2023

A dust source identification was compiled for Station 2 at the second location.

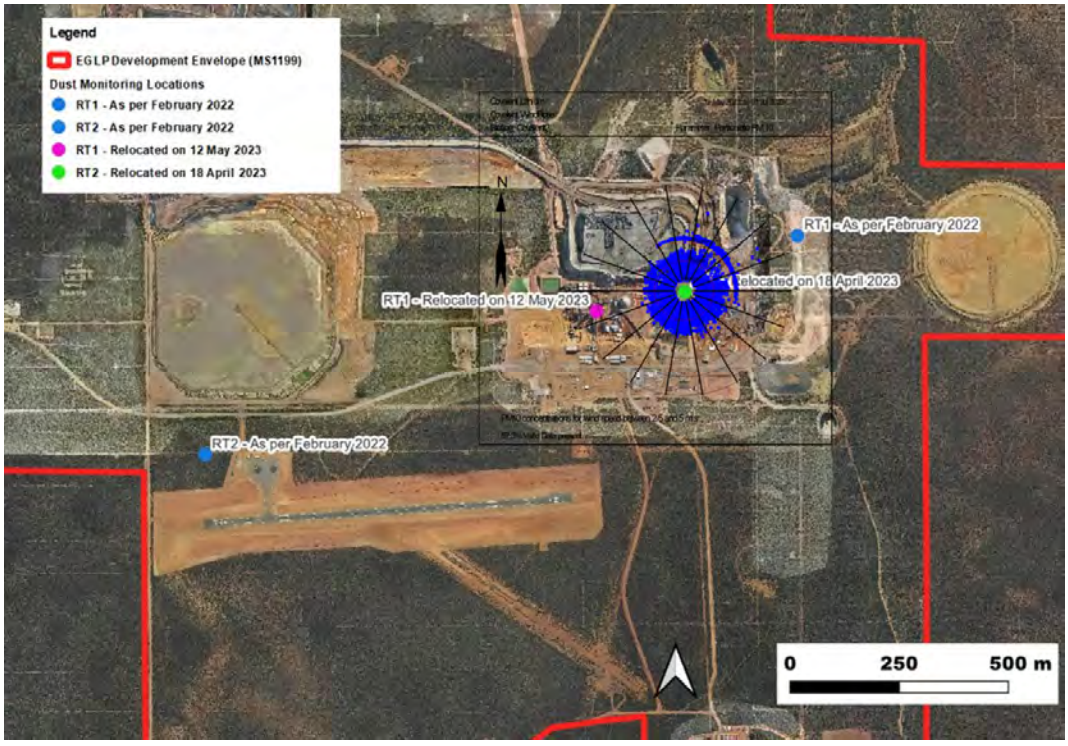


Image 7 – PM10 10 min dust sources, Station 2, 18/4/2023 – 30/6/2023

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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.

MAXY Engineering
www.MAXYengineering.com.au

36/10 Geddes St, Balcatta WA6021
0478 221 776
Email: office@maxyengineering.com.au
ABN: 95 154 819 100

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 H Malleefowl Monitoring

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

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

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

IMAGES

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).

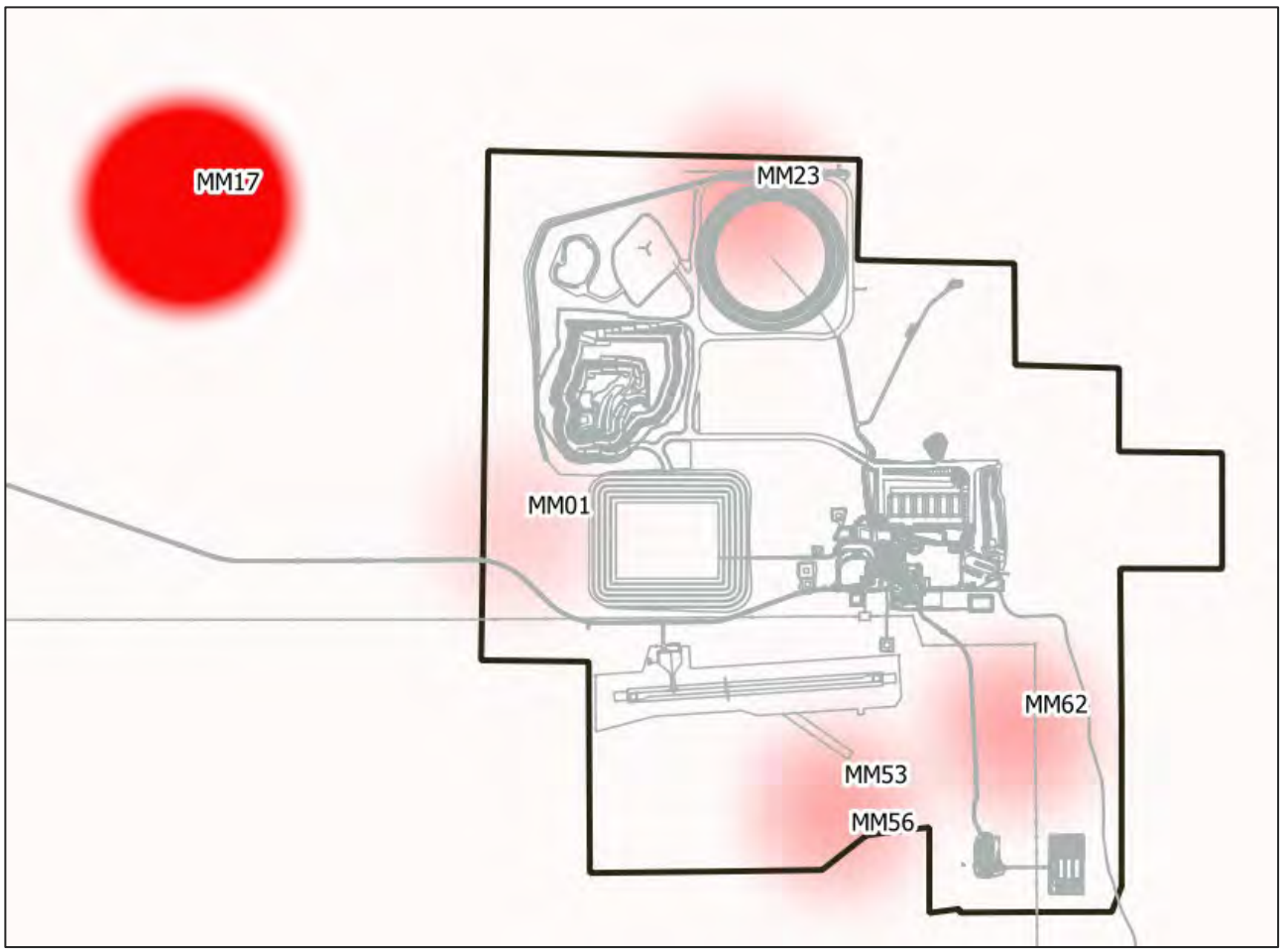


Figure 1: Malleefowl activity heat map based on number of events recorded 2019-20 at camera monitored mounds

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.

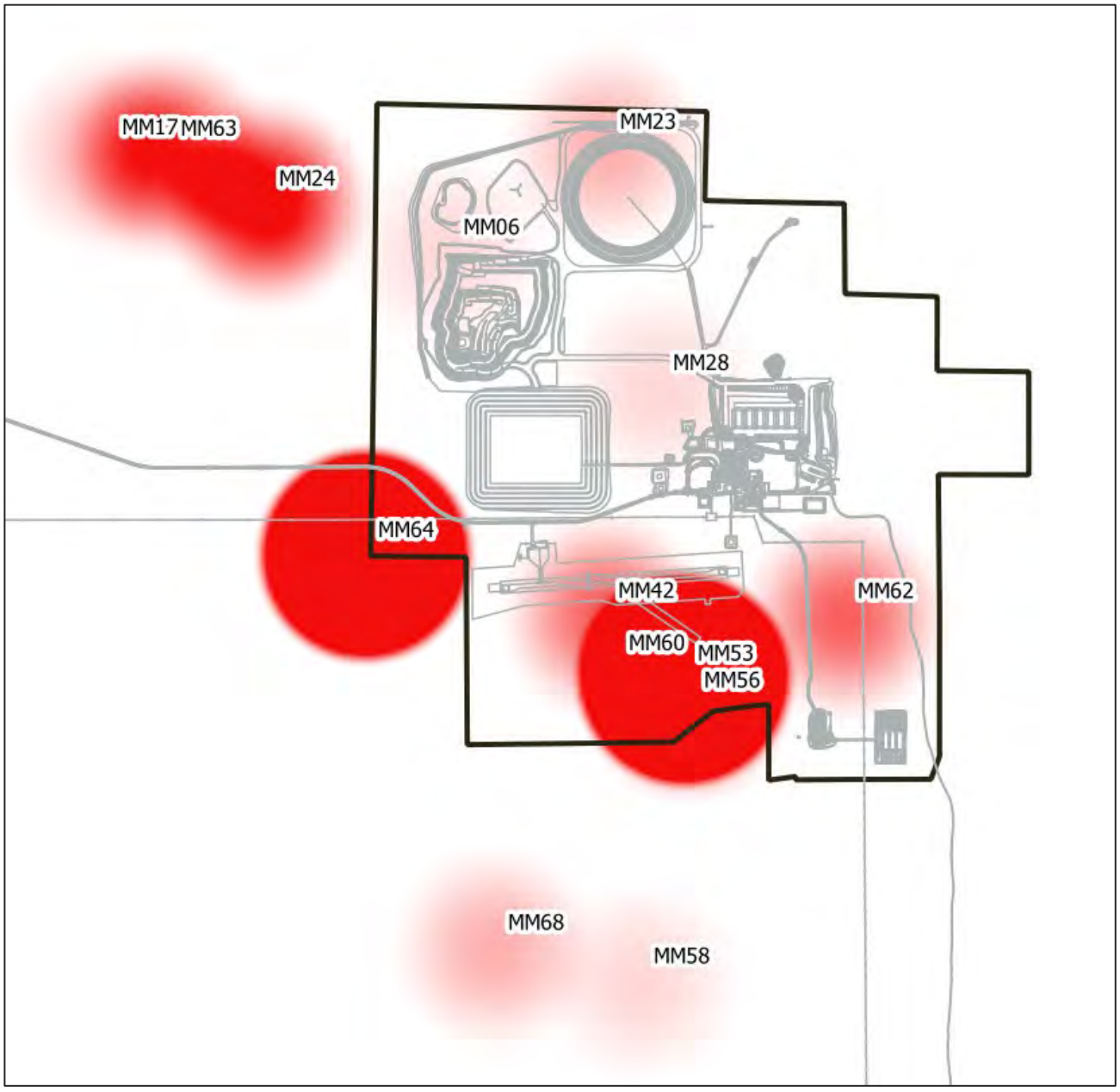


Figure 2: Malleefowl activity heat map based on number of events recorded in 2020-21 at camera monitored mounds

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.

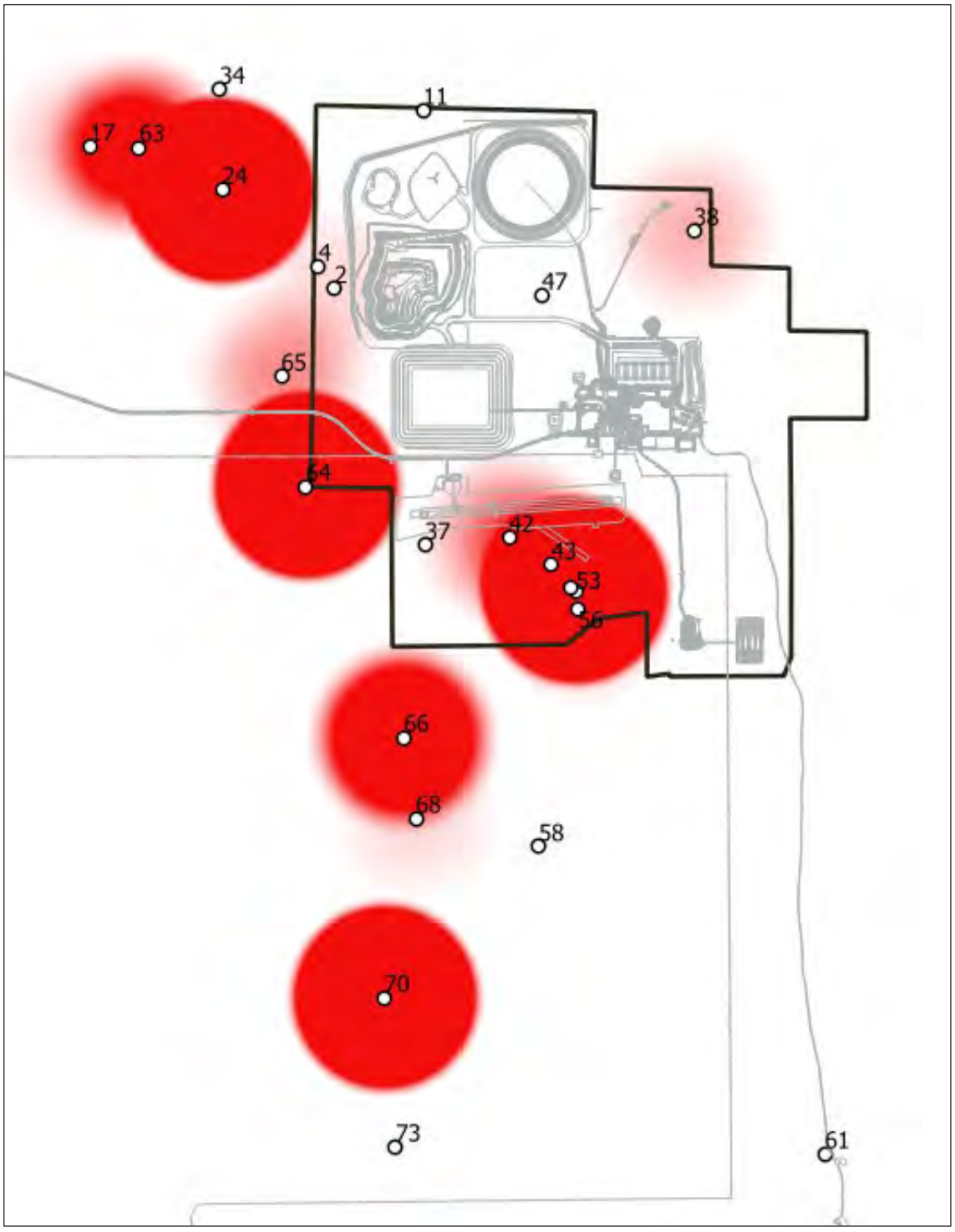


Figure 3: Malleefowl activity heat map based on number of events recorded in 2021-22 at camera monitored mounds

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.

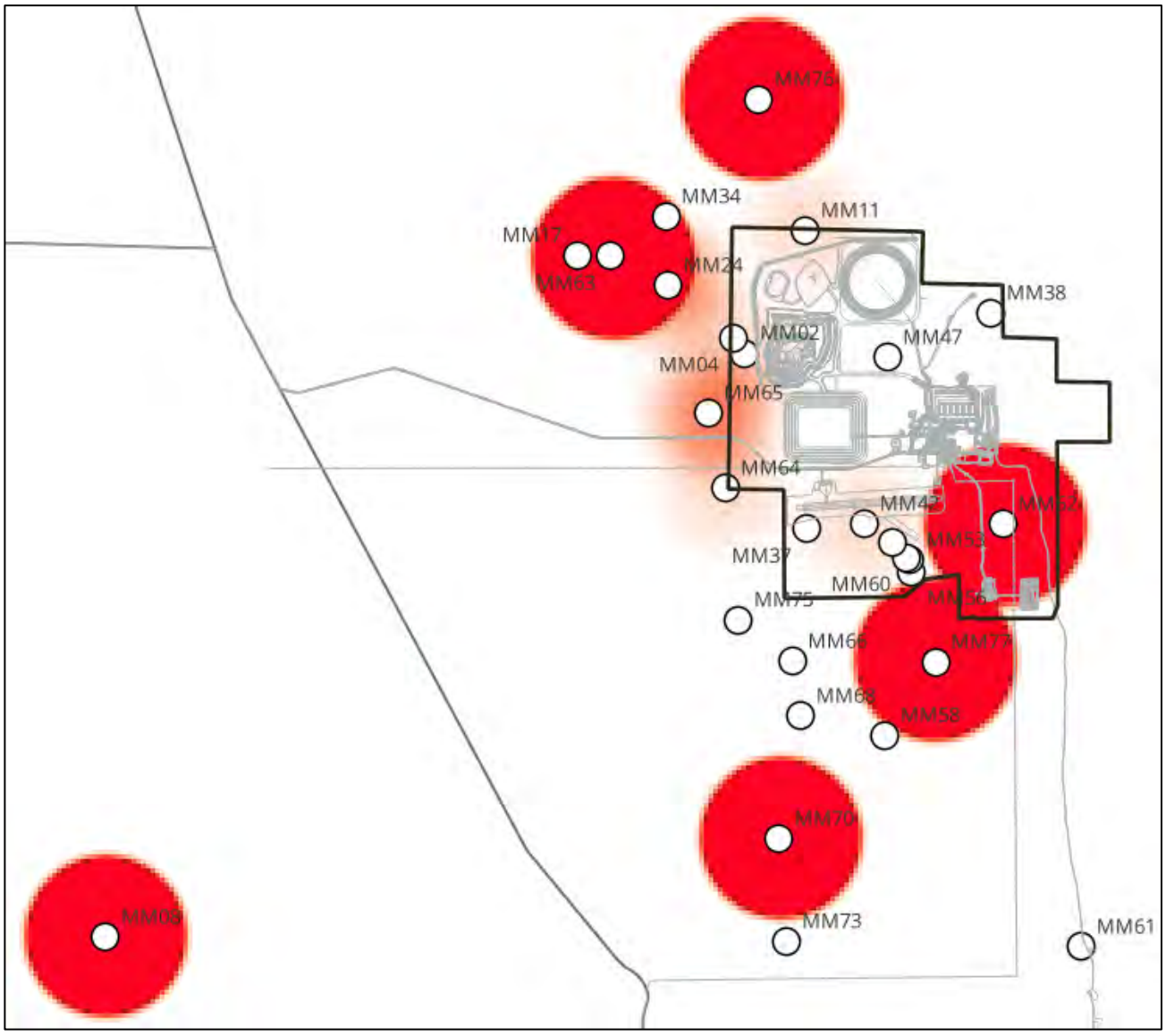


Figure 4: Malleefowl activity heat map based on number of events recorded in 2022-23 at camera monitored mounds

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.

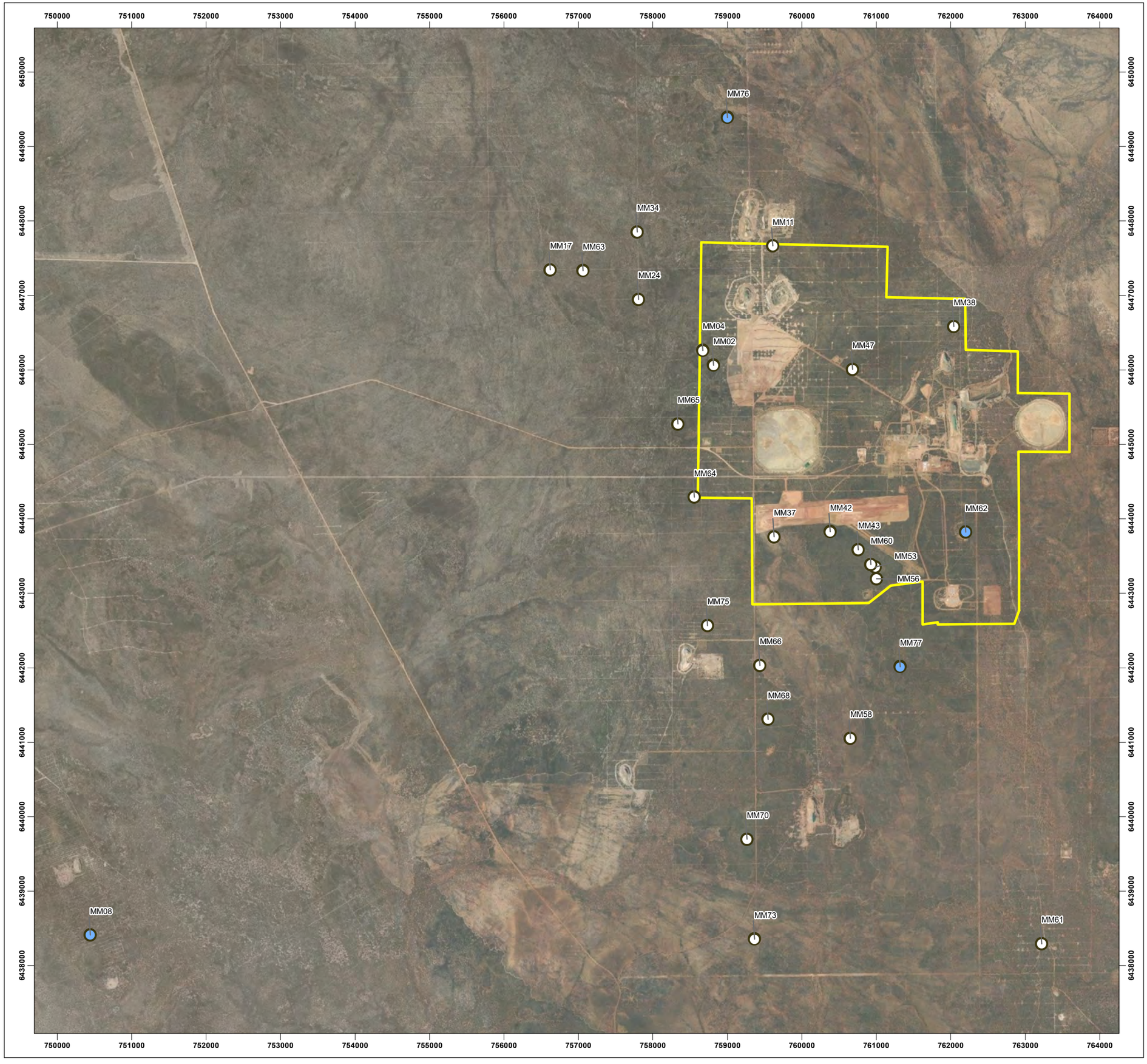
Fox, E, Mcnee, S & Douglas, T 2016, *Birds of the Great Western Woodlands. Report for The Nature Conservancy*.

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

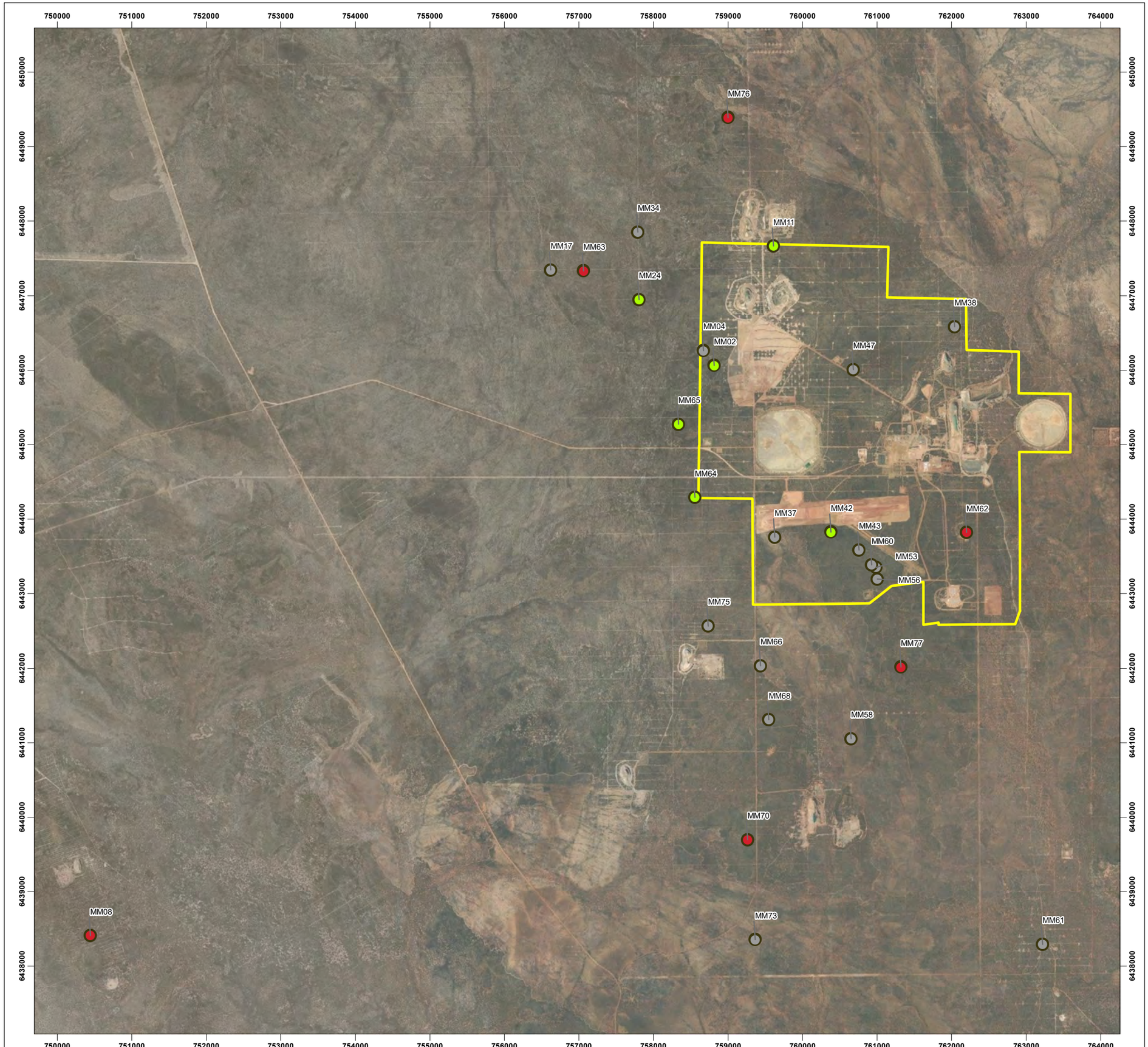
SCALE: 1:50,000 @ A3

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

ecoscape

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 I Chuditch Monitoring

2023 MT HOLLAND CHUDITCH MONITORING

Covalent Lithium

ecoscape

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

Direct all inquiries to:
Ecoscape (Australia) Pty Ltd
Lvl 1 38 Adelaide Street Fremantle (Walyalup) WA 6160
Whadjuk Boodja
Ph: (08) 9430 8955

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

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

IMAGES

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).

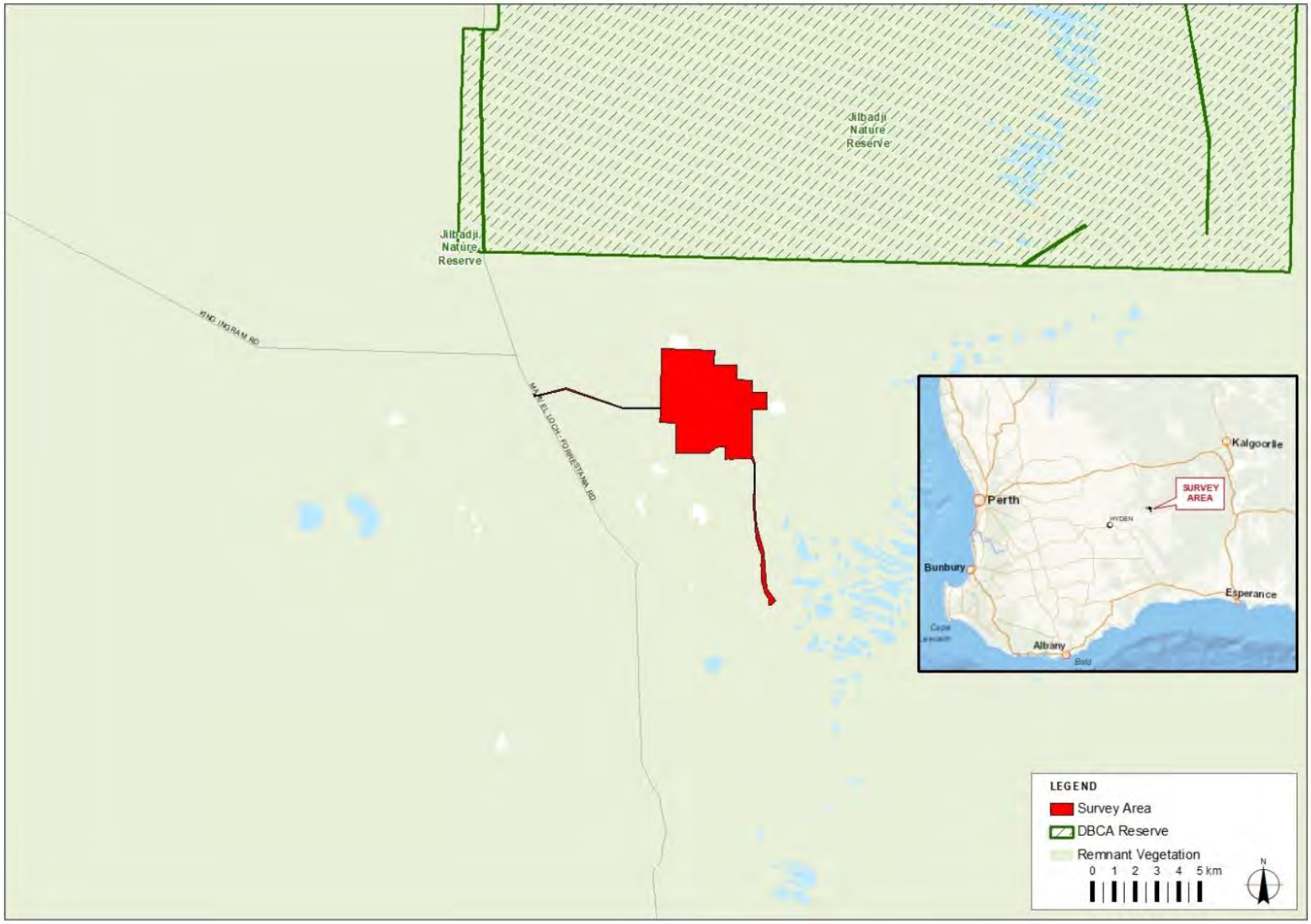


Figure 1: Project location

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.

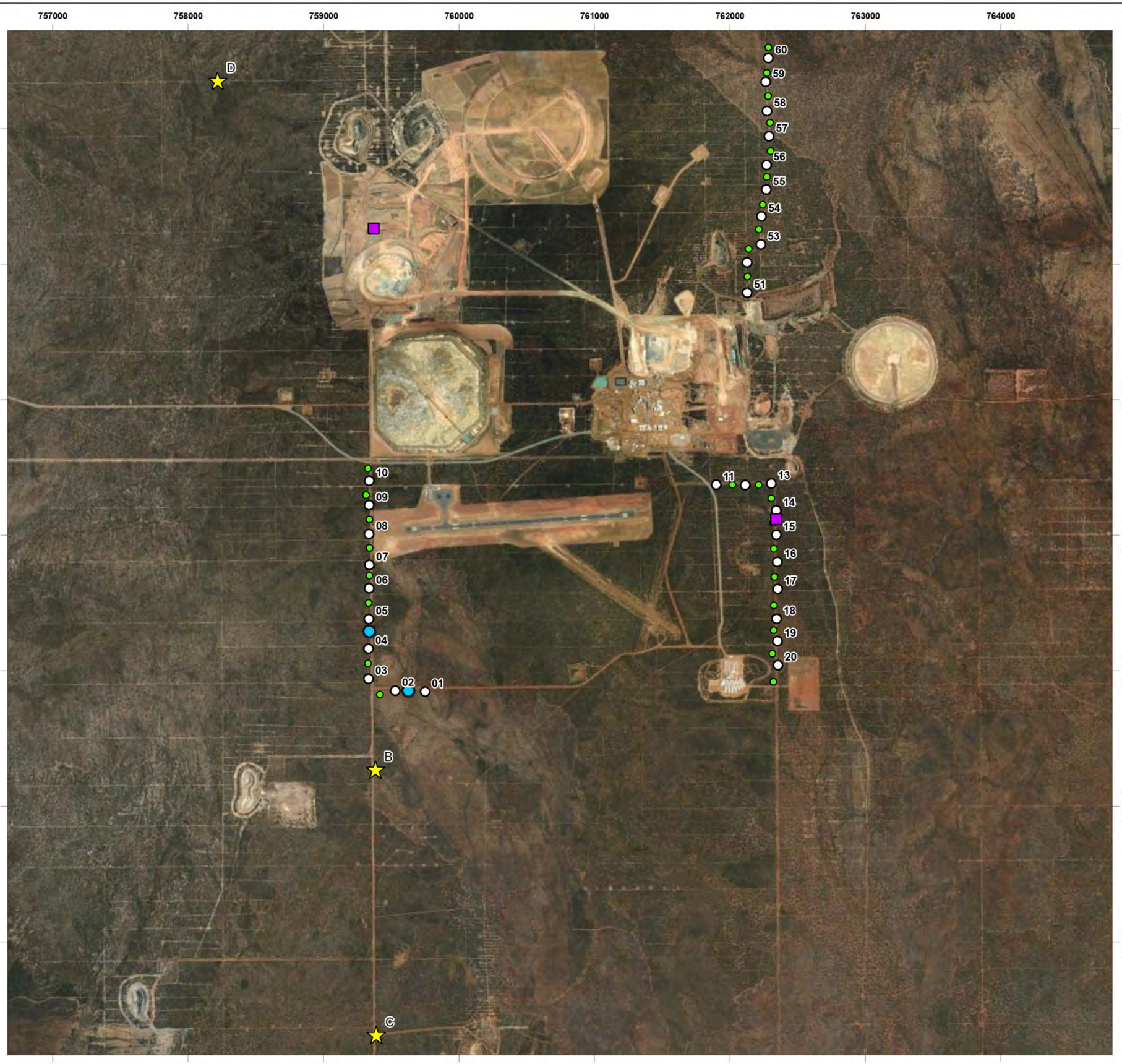
2.3 SITE SELECTION

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

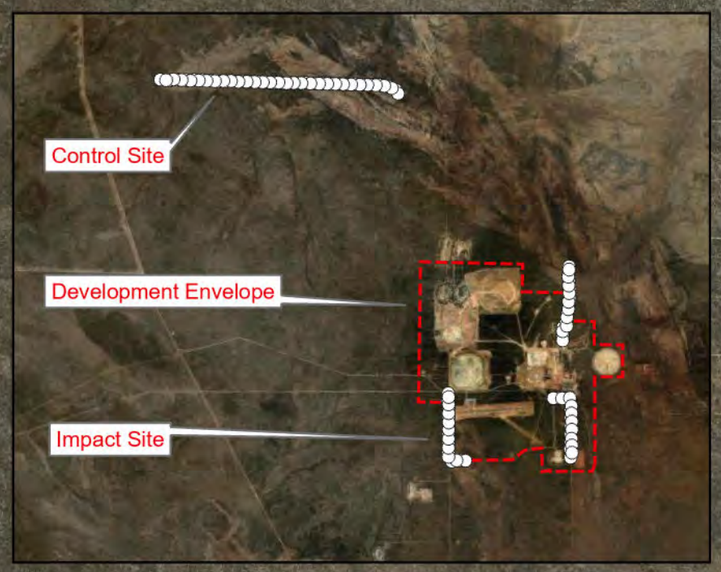
MAP 01

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 J Dieback Monitoring

Covalent Lithium

Mt Holland

Phytophthora species occurrence assessment

GLEVAN
CONSULTING

Document properties			
This report has been prepared per the agreed scope of work and contains time-limited results specific to the project. Therefore, results and recommendations in this report should not be referenced for other projects without the written consent of Glevan Consulting.			
Document prepared by	E*B*	Date	
Reviewer		Date	
Document version	*0.10*		

Table of Contents

Index of Figures

Index of Tables

Index of Maps

Glossary

Assessment area	The portion of the Project Area where Phytophthora occurrence assessment is possible or will be possible after recovery of vegetation
Biomass	The total quantity or weight (density) of organisms in a given area
Buffer	The area between the edge of visible disease symptoms and the demarcation
Clean On Entry	A requirement at a defined, signposted point, where entering machinery and vehicles are to be free of soil, plant and other material to minimise the risk of spreading weeds, pests and diseases
Demarcation	The physical installation and representation of boundaries between hygiene categories after the interpretation
Phytophthora Dieback	The disease of plants caused by infection by the soil-borne organisms of the genus *Phytophthora*, of which *P. cinnamomi* is the most widespread and destructive.
Disease impact	The degree of harm caused by Phytophthora Dieback (high, moderate, low).
Excluded area	An area of high disturbance where natural vegetation is unlikely to recover
Host	A plant species that may be infested with the pathogen but not cause disease.
Indicator species	Plant species susceptible to Phytophthora disease and reliably show early symptoms.
Infection	The invasion of the disease to an individual plant and not the population
Infestation	The invasion of the disease into a population of plants.
Infested	An area that a registered interpreter has determined is expressing disease symptoms that indicate the presence of the pathogen *Phytophthora cinnamomi*.
Insipient disease	A disease that is not visibly symptomatic
Interpretation	Determining disease presence or absence in natural ecosystems using observable factors.
Not yet resolved	Phytophthora occurrence diagnosis cannot be made because of inconsistent evidence
Pathogen	Phytophthora species
Phytophthora occurrence assessment	The entire scope of work that relates to the delivery of a Phytophthora occurrence map and report

Project area	The proponent's area of interest, including; the area where disturbance activities could occur, including access and egress to activity areas
Protectable area	Portions of the Project Area over which hygiene management rules for the plant pathogen *Phytophthora*, including clean on entry, will apply. These areas are generally free of disease
Susceptible	Likely or liable to be harmed by Phytophthora pathogen
Uninfested	An area that a registered interpreter has determined may be free of plant disease symptoms that indicate the presence of the pathogen *Phytophthora cinnamomi*.
Uninterpretable	A natural area with inadequate visible symptoms present to make a diagnosis.
Temporarily uninterpretable	A naturally vegetated area that has had disturbance and is likely to recover from that disturbance in the short term
Unprotectable	A disease-free area that is likely to become infested within a given time.
Vector	Any agent that acts as a carrier or transporter

Executive Summary

1 Introduction

The Covalent Lithium Mount Holland mining and concentrator operations have long-term potential, with an expected mine life of over 40 years at the proposed production rate. The mine and concentrator are located in a brownfield area, previously the Bounty Gold Operation, that was left mainly un-rehabilitated.

1.1 Scope

Covalent Lithium requested that Glevan Consulting review the results of previous sampling programs in the Earl Grey Lithium Project Disturbance Footprint (EGLP) and view the vegetation within the proposed expansion area (PEA).

This assessment aimed to determine the impact of Phytophthora on the vegetation within the Project Area and the subsequent hygiene implications and requirements for the site. Sites where Phytophthora was known to exist (from previous sample recoveries), were also to be observed to determine whether the pathogen was still impacting the vegetation.

1.2 Description of the Project Area

1.2.1 Location

The Project Area (EGLP and PEA, Map 1) covers 4,096 hectares (EGLP - 1,984 ha, PEA - 2,112 ha) and is located around 500 kilometres (km) to the east of Perth and 105 km south of Southern Cross in Western Australia. The Project Area is within the Great Western Woodlands, the largest and most intact eucalypt woodland in Western Australia (Department of Environment and Conservation). The northern boundary of the PEA is less than two kilometres south of the Jilbadji Nature Reserve.

1.2.2 Environmental characteristics

Climate

The Project Area is expected to receive approximately 300mm of annual rainfall (Bureau of Meteorology, n.d.). This expectation is based on extrapolating data from the Mulgara weather station

(50 km NNW of the Project Area) and the Lake Carmody weather station (54 km SW of the Project Area). The previous 15 years of data are shown in Table 1 and spatially in Map 2.

Table 1 - Rainfall data, Mulgara and Lake Carmody

Year	Lake Carmody (mm/annum)	Mulgara (mm/annum)
2007	256.9	206.1
2008	356.1	346.1
2009	345.3	294.4
2010	180	167.1
2011	449.7	426
2012	(incomplete data)	240.8
2013	358.9	292.6
2014	(incomplete data)	292.6
2015	294.1	377.2
2016	(incomplete data)	369
2017	(incomplete data)	311.6
2018	285.3	367.6
2019	190.7	246
2020	(incomplete data)	281
2021	(incomplete data)	303.4
15-year average	302.6	301.4

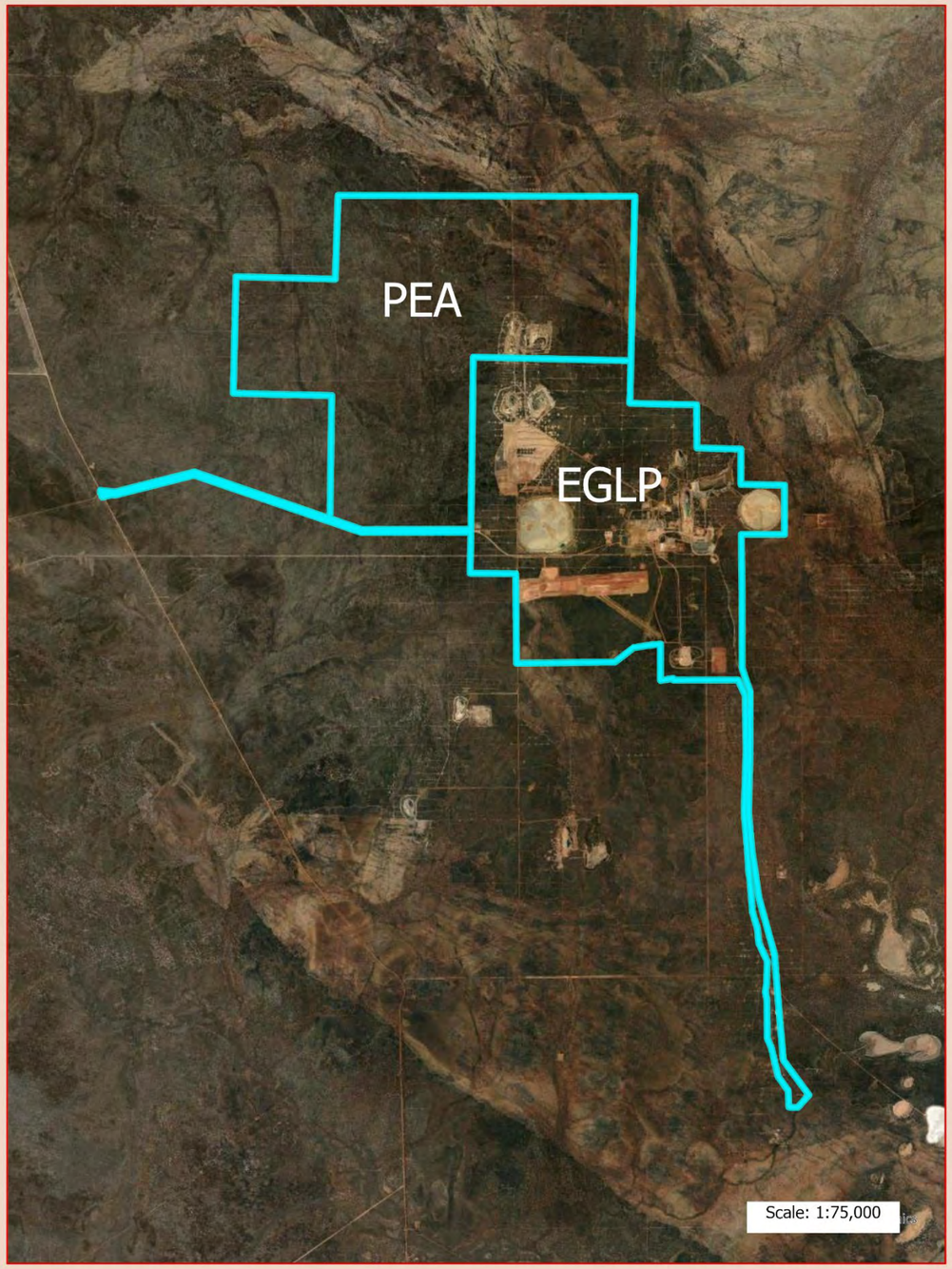
Physical features.

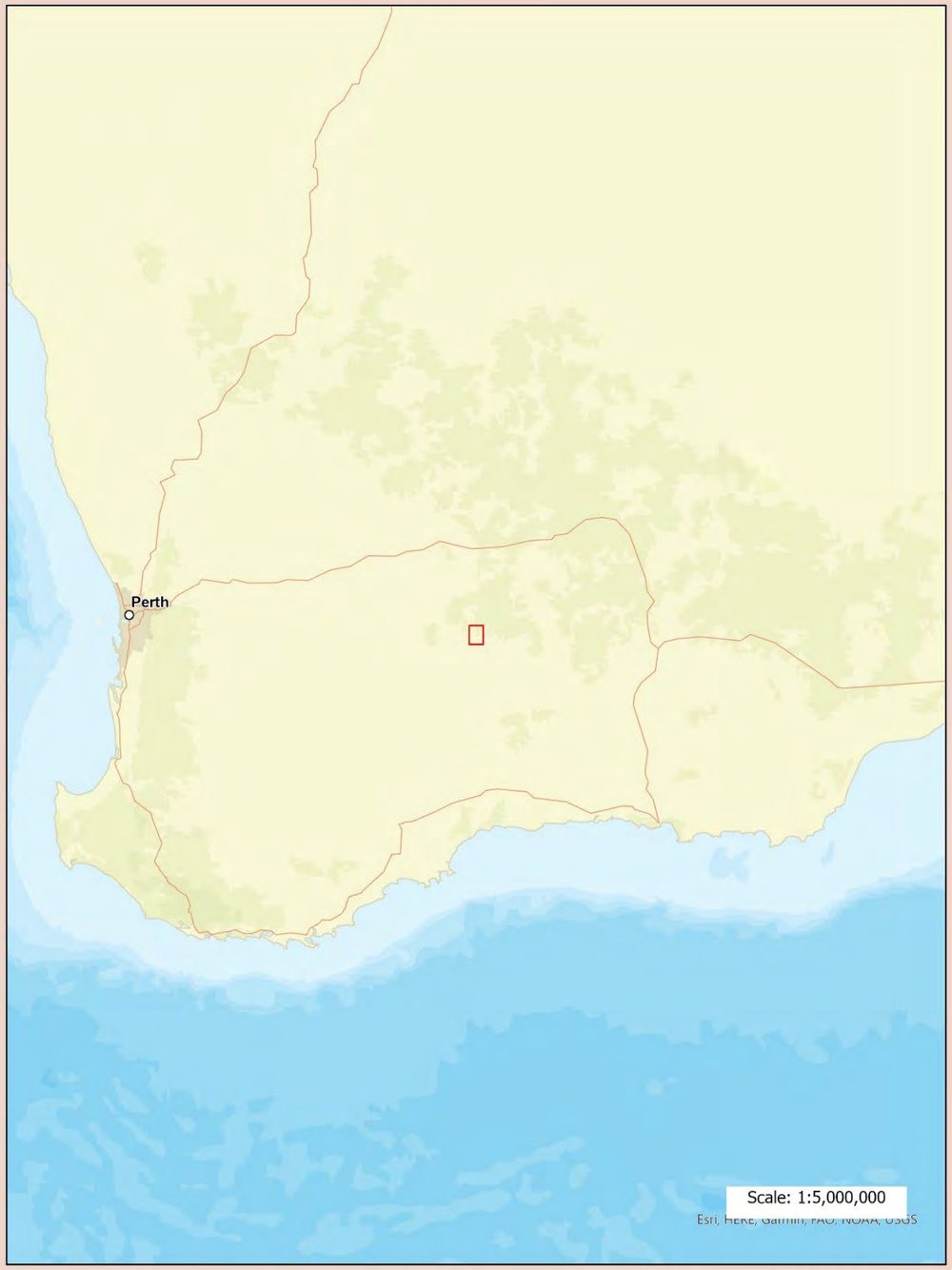
Vegetation communities have been described and mapped across the EGLP, and most of the PEA (Mattiske Consulting Pty Ltd, 2018). The descriptions of these vegetation communities are summarised in Table 4.

1.3 Previous assessments of the Project Area

The Project Area was sampled in 2019 and assessed again in 2021, with 51 samples (2019) taken of symptomatic plants, asymptomatic plants or soil only, and 20 samples (2021) of symptomatic plants (Table 5).

These sampling programs proved the existence of *P. arenaria*, *P. boodjera* and *P. nicotianae* within the Project Area.



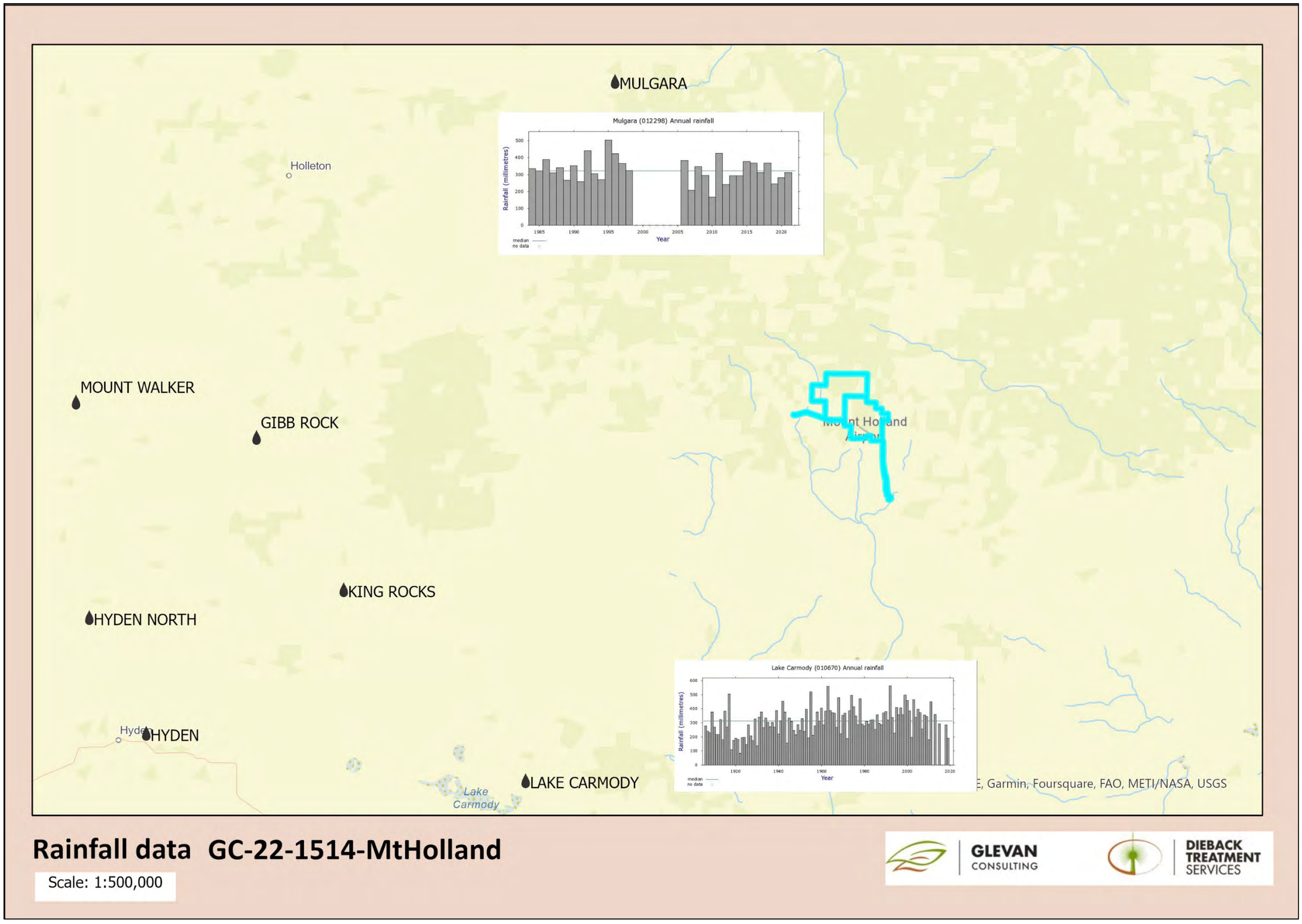


Project Location **GC-22-1514-MtHolland**

GLEVAN CONSULTING | DIEBACK TREATMENT SERVICES

Spatial Reference Name: GDA 1994 MGA Zone 50 Projection: Transverse Mercator

Map 1 - Project Area location



Map 2 - Rainfall data

2 Background

Thousands of Australian native plant species are susceptible to Phytophthora Dieback—a destructive disease caused by the pathogen *Phytophthora cinnamomi* and other Phytophthora species. This disease is a major threat to Australia's biodiversity, placing important plant species at risk of death, local extirpation or even extinction. Its dramatic impact on plant communities can also result in major declines in some insect, bird and animal species due to the loss of shelter, nesting sites and food sources. Phytophthora dieback can cause permanent damage to ecosystems. Once an area is infested with the pathogen, eradication is usually impossible. Awareness that human activity can easily spread the pathogen . . . will help prevent an increase in the extent of this disease. (Commonwealth of Australia, 2018)

Phytophthora is a microscopic water mould that belongs to the class Oomycetes. Oomycetes organisms are filamentous and absorptive and reproduce both sexually and asexually. *Phytophthora* is considered parasitic. It behaves largely as a necrotrophic pathogen causing damage to the host plant's root tissues because of infection and invasion. (Department of Parks and Wildlife, 2015) The pathogen infects a host when it enters at a cellular level and damages the cell structure.

Phytophthora Dieback results from the interaction between three physical components forming a 'disease triangle': the pathogen (*Phytophthora species*), the environment and the host. All three components are needed for the disease to develop over time.

The relationship between the presence of *Phytophthora* and the development of Phytophthora Dieback disease is variable based on the susceptibility of native plant species and the different environmental characteristics, landform types and rainfall zones across bioregions.

Phytophthora arenaria has been isolated in Western Australia (primarily) from kwongan heathland stands since the early 1980s (Rea, Burgess, Hardy, Stukely, & Jung, 2011) but was misidentified as *P. citricola*. Further surveys have extended the known range of *P. arenaria*. *Phytophthora arenaria* was named based on its association with sandy soils. Most isolates were associated with dead or dying *Banksia* spp. (Proteaceae). When active, symptomatic plants are scattered in the landscape. However, the overall impact of this species within the natural environment is low due to the low rainfall in the region and the sporadic nature of the disease (Burgess, Phytophthora arenaria). *P. arenaria* and *P. boodjera* are closely related and appear to be very widespread across the drier regions of WA. They are (I think) both native, and whether they were initially co-located, they must have been

geographically isolated to speciate. Then human activity may have spread them around 'within WA' (Burgess, 2021).

Phytophthora boodjera was named from the Noongar (local Aboriginal) name for the earth, ground, or sandplain. *Phytophthora boodjera* forms a species complex with *Phytophthora arenaria* and *Phytophthora alticola* and is morphologically very similar to these species but has a higher optimum and maximum for growth. Known hosts include *Agonis flexuosa, Eucalyptus marginata, E. polybracta, E. kochii*, *E. loxophleba, Xanthorrhoea preissii,* and *Corymbia calophylla* (Simamora AV).

Phytophthora nicotianae was first isolated in Indonesia from tobacco in 1896. *P. nicotianae* has a cosmopolitan distribution both within Australia and throughout the world. The pathogen infects plants from approximately 90 families, and different isolates have distinct host ranges. This pathogen infects several important agricultural and horticultural crops, including members of the Nightshade family, cotton, citrus, several tropical fruit crops, ornamentals such as petunia and some Banksia and Eucalypt species. Although *P. nicotianae* infects native species, it is not regarded as an important ecological pathogen. It is an important pathogen in many Australian plant industries. Yield losses can be up to 15% in citrus and 6% in tobacco enterprises (Australian Plant Pathology Society, 2011). *P. nicotianae* has definitely been introduced (to the Project Area); it is not native to Australia but is unfortunately very widespread. In Western Australia, it is found in urban parks and gardens, orchards, field crops and our forests (Burgess, 2021).

The Project Area is situated in an area receiving less than 400mm of annualised rainfall. The DBCA states, ' Vulnerable areas are defined as native vegetation occurring west of the 400-millimetre rainfall isohyet, in the Southwest and Midwest corner of Western Australia. Within this zone, Phytophthora Dieback disease ranges from barely perceptible to full-scale environmental destruction' (Department of Parks and Wildlife, 2015). However, it should be noted that the document is focused on Phytophthora Dieback caused by *P. cinnamomi,* and very few assessments have been conducted in 'non-vulnerable' areas.

The Department of Mines and Petroleum, now the Department of Mines, Industry Regulation and Safety (DMIRS), states in their guidance document regarding the management of Dieback disease in mineral exploration, 'This guide is directed to mineral explorationists - to help individuals, company staff, and contractors to define and accept standards of field operation that will help to prevent the spread of the disease. A condition will be placed on mineral exploration tenements by the Minister for State Development at the time of grant. The intent of the condition is to reduce the risk of spreading dieback during exploration activities authorised on the tenement. The condition will require explorers, when they apply to the State Mining Engineer for approval to conduct ground-disturbing activities, to

present a plan of action. This plan will firstly identify those parts of the tenement where unmanaged exploration activities could spread dieback, and then specify the management procedures that will be adopted to prevent the spread. The area to which this condition will be applied is that part of the southwest of Western Australia that receives more than 450 mm of rain per year (Department of Mines and Petroleum, 2006). At the time of the production of this document, *P. arenaria* and *P. boodjera* were unknown and incorrectly classified as *P. citricola*. These documents also highlight the non-unanimity in the Departments' expectations.

3 Results and Discussion

3.1 The assessment area

The Project Area (EGLP and PEA, Map 1) covers 4,096 hectares (Table 2).

Table 2 - Site area summary

Site	Total Area	Vegetated area
EGLP	1,984 ha	1,121 ha
PEA	2,112 ha	2,042 ha
Total	4,096 ha	3,163 ha

3.2 The assessment method

Evan Brown and Shannon Hewitt from Glevan Consulting conducted the assessment for Phytophthora presence in December 2022 using standards and procedures consistent with the DBCA Interpreters Manual (Department of Parks and Wildlife, 2015). Mr Brown is registered (DPW-PDI-004) with the Department of Biodiversity, Conservation and Attractions, which acknowledges Mr Brown's Phytophthora species diagnosis credentials.

Procedures and guidelines in the Department of Biodiversity, Conservation and Attractions (DBCA) "Phytophthora Dieback Interpreters Manual for lands managed by the Department" are applied as the base methodology used by Glevan Consulting for the delivery of the services and products required by this scope of work. This report text references the manual as 'Interpreter's Manual'. These guidelines, overarching peer review and quality standards ensure that all results are presented to the highest standard.

All Phytophthora species detection, diagnosis and mapping procedures are based on the presence in the vegetation of Indicator Species and the observance of deaths in these plants. An indicator species is a plant species reliably susceptible to a species of *Phytophthora*. As the knowledge of reliable indicator species for all potential *Phytophthora* species is limited, all recent deaths of all plant species were considered to possibly suggest the presence of *Phytophthora.*

Other causes of plant deaths were considered when determining the possible presence of Phytophthora, including:

- various cankers and insects;
- fire and lightning;

- senescence and competition, and;
- physical damage.

The Project Area is located in a region that receives less than 400mm of annualised rainfall. The DBCA Interpreters Manual (Department of Parks and Wildlife, 2015) states that "the pathogen and the disease it causes occur in areas that receive more than 400 millimetres of rainfall a year". While the manual emphasises *Phytophthora cinnamomi*, it suggests that significant disease development from known Phytophthora species within the vegetation in the Project Area is unlikely.

Previous sampling has recorded *Phytophthora arenaria*, *P. boodjera* and *P. nicotianae* within the Project Area. It is the author's experience that at sites receiving much higher annual rainfall than the Project Area, these pathogens do not cause sustained vegetation decline and tend to cause decline episodically.

As stated, *P. arenaria* and *P. boodjera* are native species and are as likely to be associated with undisturbed vegetation as with disturbance areas. Conversely, *P. nicotianae* is most likely to be identified along the boundaries of disturbed areas where there is a likelihood of it being introduced. Therefore, to methodically target any possible introduced Phytophthora species, the vegetation adjacent to disturbance areas was prioritised.

The Project Area contains many vegetation types with varying susceptibility to each Phytophthora species. For example, *P. arenaria* is stated to impact Proteacaea species, and *P. boodjera* is known to impact Eucalypts, though Banksia species have also been affected. In addition, introduced species in Western Australia (which are not known within the Project Area) are more likely to impact vegetation with Proteaceae, Ericaceae, or Xanthorrhoeaceae species (Department of Parks and Wildlife, 2015).

All samples taken within the Project Area have covered the dominant vegetation types (Figure 4), with nearly all types sampled. This spread has not been a part of the sampling strategy but rather the opportunistic sampling of disturbed areas within these vegetation types.

3.3 Assessment limitations

The personnel from Glevan Consulting have assessed the Project Area based on historical data and evidence presented during the assessment. The Phytophthora pathogen may exist in the soil as an incipient disease and may not display symptoms. Very new centres of infestation that do not present visible evidence may remain undetected during the assessment.

3.4 Assessment results

During previous surveys in the EGLP area, seventy-one samples were taken of either soil, symptomatic plants or non-symptomatic plants to determine the presence of Phytophthora. The sampling proved the presence of three Phytophthora species (Map 5).

Samples taken in the PEA and additional samples in the EGLP did not add to the known occurrence of Phytophthora.

Of the eight pre-existing sites (6 X *P. arenaria*, 1 X *P. boodjera*, 1 X *P. nicotianae*) where Phytophthora has been recovered, two (2 x *P. arenaria*) have been subsequently cleared for construction and mining activities.

The *P. nicotianae* site (Figure 1) identified in 2019 (Sample ID CC2031, Table 5) was sampled again in 2021 (Sample ID 1, Table 5) and 2022 (Sample ID 3, Table 5). These subsequent samples have not recovered Phytophthora. This site has a small drainage line which may have allowed the site to achieve optimal conditions in 2019 to express the disease.

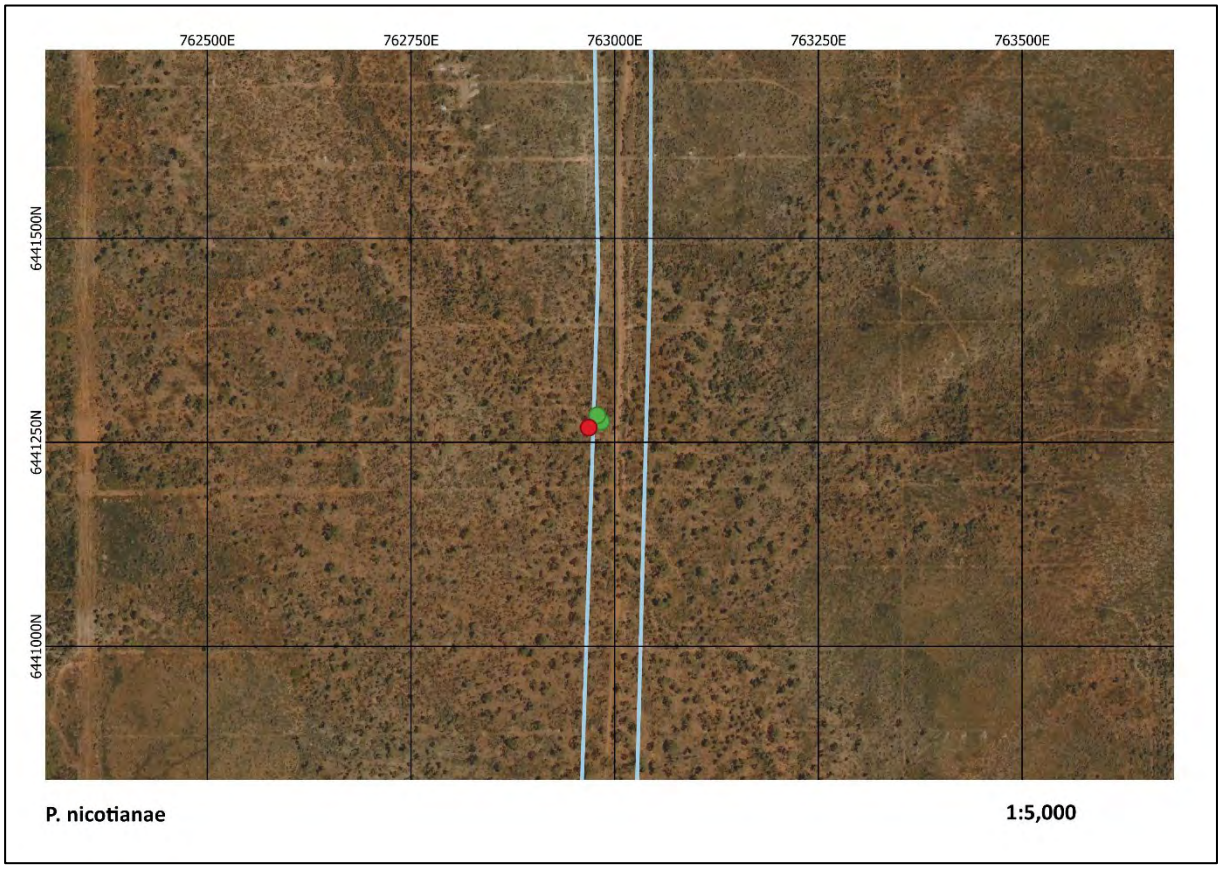


Figure 1 - P. nicotianae site

The remaining *P. boodjera* (Sample ID CC2010, Table 5) site and *P. arenaria* sites from the 2019 sampling program (Sample ID's CC2003 and CC2015, Table 5) were observed to assess if any disease expression was occurring during the current assessment, but no deaths were observed.

The two P. arenaria sites from the 2021 sampling program were also revisited. Sample ID 12 (Table 5) was a single death when sampled in 2021. No disease expression was observed during the current survey.

Sample ID 20 (Table 5) is located adjacent to the access road, approximately 1,200 m from the Marvel Loch Forrestania Road intersection. At this site in 2021, multiple deaths were noted in an area where it appeared water was draining from the access road.

Sand from the bounds of the access road seemed to have been spread by the water into the vegetation, and the pattern of deaths was very typical of a Phytophthora infestation.

When the site was revisited in 2022, no recent deaths were observed, which again is typical of the author's experience with other *P. arenaria* sites in Western Australia.

Figure 2 - Sample ID 20, photo from 2021 survey

Figure 3 - Sample ID 20, photo from 2022 survey

Table 3 - Samples taken by vegetation type

Veg Type	Result						Total
	Negative	P. arenaria	P. boodjera	P. nicotianae	Phytopythium	Pythium	
Cleared / Unknown	4						4
MW6	3				1		4
MW7	3				1		4
S1	1						1
S2	**3**	**1**				**1**	**5**
S3	**4**	**2**					**6**
W11	**11**	**1**					**12**
W12	**6**	**1**					**7**
W13	7					1	8
W14	**2**			**1**			**3**
W18	3						3
W19	1						1
W27	4						4
W5	2						2
W6	**4**	**1**					**5**
W9	**8**		**1**				**9**
W20	1						1

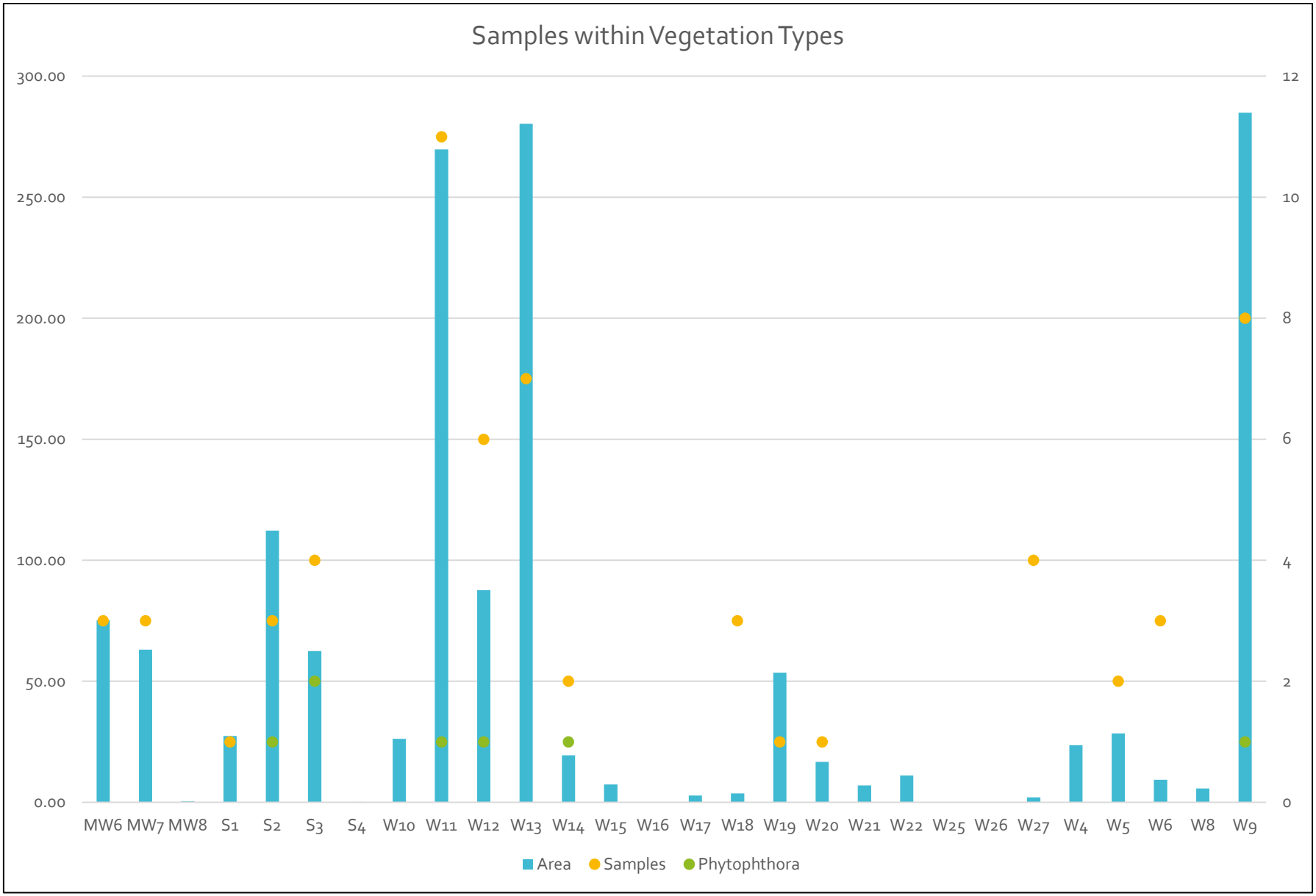


Figure 4 - Samples within each vegetation type

4 Recommendations

Boundaries of disturbed areas are to be assessed biennially to determine if Phytophthora species have been introduced. Assessments to target potentially susceptible vegetation.

Monitoring by Covalent employees for recent deaths in roadside vegetation or vegetation adjacent to disturbance activities, particularly in months following a significant rainfall event. Any observance to trigger an interim or targeted sampling program.

Continued enforcement of Clean on Entry rules for equipment coming to site, particularly those vehicles originally travelliing from the south or west of the Project Area.

5 Bibliography

Australian Plant Pathology Society. (2011, May). *Pathogen of the Month.*

Bureau of Meteorology. (n.d.). *Monthly rainfall*. Retrieved from bom.gov.au

Burgess, T. (2021, 08 09).

Burgess, T. (n.d.). Phytophthora arenaria. *Forest Phytophthoras*.

Commonwealth of Australia. (2018). *Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi.*

Department of Environment and Conservation. (n.d.). *A Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands.*

Department of Mines and Petroleum. (2006). *Management of Dieback Disease in Mineral Exploration.*

Department of Parks and Wildlife. (2015). *FEM047 Phytophthora Dieback Interpreter's Manual for lands managed by the department.* Unpublished.

Mattiske Consulting Pty Ltd. (2018). *Flora and Vegetation Assessment Earl Grey Lithium Project.* Prepared for Kidman Resources Ltd.

Rea, A., Burgess, T., Hardy, G., Stukely, M., & Jung, T. (2011). Two novel and potentially endemic species of Phytophthora associated with episodic dieback of Kwongan vegetation in the south-west of Western Australia. *Plant Pathology*, 60,1055-1068.

Simamora AV, S. M. (n.d.). Phytophthora boodjera sp. nov., a damping-off pathogen in production nurseries and from urban and natural landscapes, with an update on the status of P. alticola. *IMA Fungus*.

6 Appendices

6.1 Vegetation types in Project Area

Table 4 - Vegetation types in Project Area

Veg Code	Description	EGLP		PEA*	
		Area	%	Area	%
MW6	*Allocasuarina spinosissima, Eucalyptus burracoppinensis* mid-open mallee woodland over M*elaleuca laxiflora, Acacia acuminata, Thryptomene kochii* mid open shrubland over *Drummondita hassellii, Microcybe ambigua* low sparse heathland	75.21	5.1	34.96	2.0
MW7	*Eucalyptus capillosa* mid open mallee woodland over A*llocasuarina spinosissima, Callitris preissii, Hakea minyma* mid tall sparse shrubland over *Phebalium megaphyllum* low sparse shrubland	63.06	4.3		
MW8	*Eucalyptus eremophila* low open mallee woodland over *Melaleuca hamata, Leptospermum erubescens, Melaleuca lateriflora* mid sparse shrubland over *Thomasia sp. Salmon Gums* (C.A. Gardner s.n. PERTH 02708639), *Darwinia sp*. Karonie (K. Newbey 8503)	0.36	0.0	0.40	0.0
S1	*Allocasuarina acutivalvis, Allocasuarina spinosissima* tall closed shrubland over *Thryptomene kochii, Hakea subsulcata, Micromyrtus erichsenii* mid sparse heathland	27.39	1.8		
S2	*Allocasuarina acutivalvis, Eucalyptus burracoppinensis, Allocasuarina spinosissima*, tall open shrubland over *Thryptomene kochii, Persoonia coriacea, Micromyrtus erichsenii* mid sparse heathland over *Drummondita hassellii, Hibbertia stowardii,*	112.28	7.6	496.64	28.3
S3	*Allocasuarina acutivalvis, Eucalyptus burracoppinensis* tall sparse shrubland over *Banksia purdieana, Melaleuca cordata, Hakea subsulcata* mid sparse heathland over Th*ryptomene kochii, Persoonia coriacea* low isolated shrubs	62.49	4.2	6.75	0.4
S4	*Eucalyptus sp. Southern Wheatbelt* (D. Nicolle & M. French DN 5507), *Allocasuarina spinosissima, Allocasuarina, acutivalvis* low open mallee woodland over *Hakea invaginata, Melaleuca cordata, Micromyrtus erichsenii* mid sparse shrubland over *Acacia sp*.	0.19	0.0		
W10	*Eucalyptus spp. (E. urna, E. cylindrocarpa, E, rigidula, E gracilis)* low mallee woodland over *Melaleuca pauperiflora, Daviesia scoparia* mid sparse shrubland over *Acacia merrallii, Grevillea huegelii, Olearia muelleri* low sparse shrubland	26.21	1.8	5.94	0.3

W11	*Eucalyptus eremophila, Eucalyptus rigidula, Eucalyptus flocktoniae subsp. flocktoniae* low mallee woodland over *Melaleuca lateriflora, Melaleuca eleuterostachya, Melaleuca sp. Broombush* complex mid sparse shrubland over *Grevillea acuaria, Acacia spp*	269.72	18.2	263.56	15.0
W12	*Eucalyptus cylindriflora, Eucalyptus eremophila* low open mallee woodland over *Melaleuca lateriflora, Melaleuca eleuterostachya, Melaleuca sp. Broombush* complex mid sparse shrubland over *Grevillea acuaria, Acacia merrallii, Acacia camptoclada*	87.62	5.9	167.34	9.5
W13	*Eucalyptus rigidula* low open mallee woodland over *Micromyrtus erichsenii, Persoonia coriacea, Allocasuarina spinosissima* mid tall sparse shrubland over *Gastrolobium spinosum* low sparse shrubland	280.27	18.9	57.17	3.3
W14	Burnt *Eucalyptus salmonophloia, Eucalyptus eremophila* mid-open woodland over *Senna artemisioides subsp. filifolia* mid sparse shrubland over *Acacia hemiteles, Olearia muelleri* low sparse shrubland	19.42	1.3		
W15	Burnt *Allocasuarina acutivalvis, Eucalyptus sp. (E. cylindriflora, E. eremophila, E, gracilis, E. rigidula, E. burracoppinensis)* low open mallee woodland over *Hakea minyma, Santalum acuminatum, Micromyrtus erichsenii* mid sparse shrubland	7.40	0.5	6.62	0.4
W16	Burnt *Eucalyptus sp. (E. cylindriflora, E. tenuis, E. burracoppinensis, E. eremophila)* low open mallee woodland over *Persoonia coriacea, Acacia assimilis, Gastrolobium spinosum*, mid sparse shrubland over *Dampiera tenuicaulis subsp. curvula*			224.76	12.8
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	2.79	0.2		
W18	*Eucalyptus rigidula* low open mallee woodland over *Melaleuca sp. Broombush* complex, *Allocasuarina spinosissima, Hakea erecta* mid sparse shrubland *over Hibbertia gracilipes, Phebalium obovatum, Cyathostemon heterantherus* low sparse shrubland	3.73	0.3	14.93	0.9
W19	*Eucalyptus prolixa* low open mallee woodland over *Santalum acuminatum, Daviesia argillacea* mid sparse shrubland over *Acacia merrallii, Grevillea acuaria* low sparse shrubland	53.53	3.6		
W20	*Burnt Eucalyptus urna, Eucalyptus salmonophloia, Eucalyptus tenuis* mid-open mallee woodland over *Melaleuca pauperiflora subsp. pauperiflora* mid sparse shrubland over *Acacia deficiens, Daviesia argillacea, Daviesia grahamii*	16.66	1.1		

W21	*Eucalyptus eremophila, Eucalyptus flocktoniae subsp. flocktoniae* low open mallee woodland over *Melaleuca sp. Broombush* complex, *Microcorys elatoides* (P1) mid sparse shrubland over *Acacia acanthoclada subsp. acanthoclada, Dampiera sacculata*	7.00	0.5		
W22	*Eucalyptus eremophila* low open mallee woodland over *Melaleuca sp. Broombush* complex, *Grevillea oncogyne, Melaleuca eleuterostachya* mid sparse shrubland over *Beyeria sulcata var. brevipes, Phebalium obovatum* low sparse shrubland	11.07	0.7	116.80	6.7
W25	*Eucalyptus spp. (E. eremophila, E. concinna, E. platycorys, E. rigidula, E. cylindriflora, E. flocktoniae subsp. flocktoniae*) mid mallee woodland over *Melaleuca sp. Broombush* complex, *Melaleuca eleuterostachya, Melaleuca lateriflora* mid-open shrubland			27.69	1.6
W26	*Callitris columellaris, Eucalyptus capillosa* low open woodland over Mela*leuca condylosa, Melaleuca sparsiflora, Acrotriche lancifolia* low open shrubland			39.66	2.3
W27	*Eucalyptus burracoppinensis, Allocasuarina acutivalvis subsp. acutivalvis* low open mallee woodland over *Hakea erecta, Banksia laevigata subsp. fuscolutea, Banksia purdieana* mid-sparse shrubland over *Beaufortia puberula, Melaleuca cordata,*	1.99	0.1		
W4	*Eucalyptus eremophila, Eucalyptus flocktoniae subsp. flocktoniae* low open mallee woodland over *Exocarpos aphyllus, Melaleuca eleuterostachya, Melaleuca sparsiflora* mid-tall sparse shrubland over *Acacia tetraptera, Acacia hystrix subsp. hystrix*	23.62	1.6	233.57	13.3
W5	*Eucalyptus rigidula, Eucalyptus burracoppinensis, Allocasuarina acutivalvis* low open mallee woodland over *Persoonia coriacea, Micromyrtus erichsenii, Thryptomene kochii* mid sparse heathland over *Hibbertia stowardii*	28.50	1.9	16.63	0.9
W6	*Eucalyptus burracoppinensis, Allocasuarina spinosissima, Allocasuarina acutivalvis* tall open mallee woodland over *Melaleuca cordata, Hakea erecta, Petrophile stricta* mid sparse heathland over *Drummondita hassellii, Leucopogon sp. Forrestania*	9.37	0.6	31.21	1.8
W8	*Eucalyptus salmonophloia, Eucalyptus prolixa, Eucalyptus urna* mid mallee woodland over *Santalum acuminatum, Daviesia argillacea, Melaleuca eleuterostachya, Melaleuca pauperiflora* mid sparse heathland over *Acacia hemiteles, Acacia merrallii*	5.75	0.4	7.96	0.5
W9	*Eucalyptus urna, Eucalyptus ravida, Eucalyptus prolixa* low mallee woodland over *Dodonaea stenozyga, Melaleuca pauperiflora, Exocarpos aphyllus* mid sparse shrubland over *Acacia merrallii, Grevillea acuaria*, low sparse shrubland	284.90	19.2		

		1481.00		1752.59	

Note 1: Total area is calculated as the vegetated area within each site. Percentage calculated to total of vegetated area.
Note 2. Vegetation mapping does not cover the entire PEA area. Percentage based on mapped area.

6.2 Sample summary

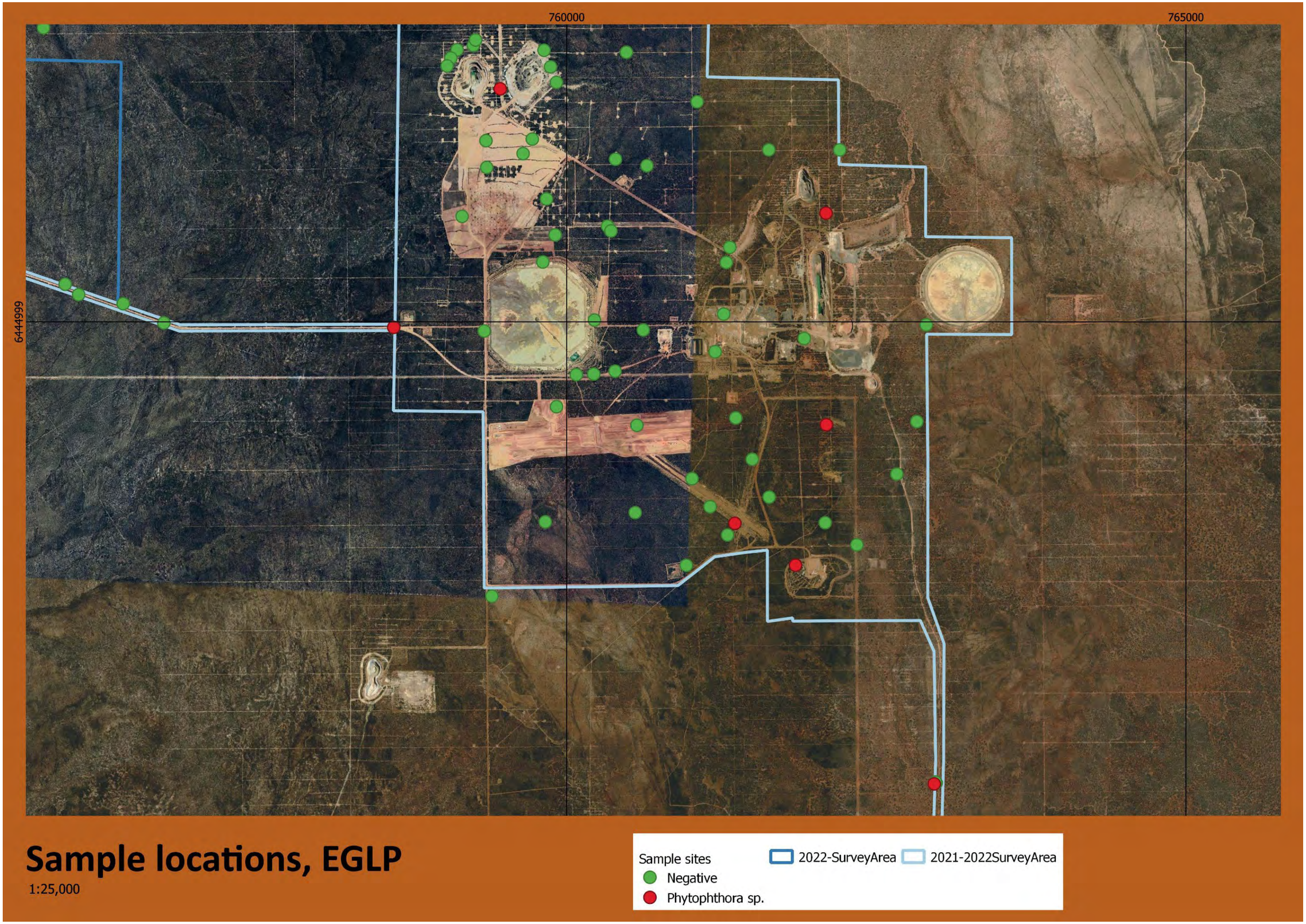
Note: The sample locations in the red text have been cleared, post-sampling.

Table 5 - (Known) Sample summary for the Project Area

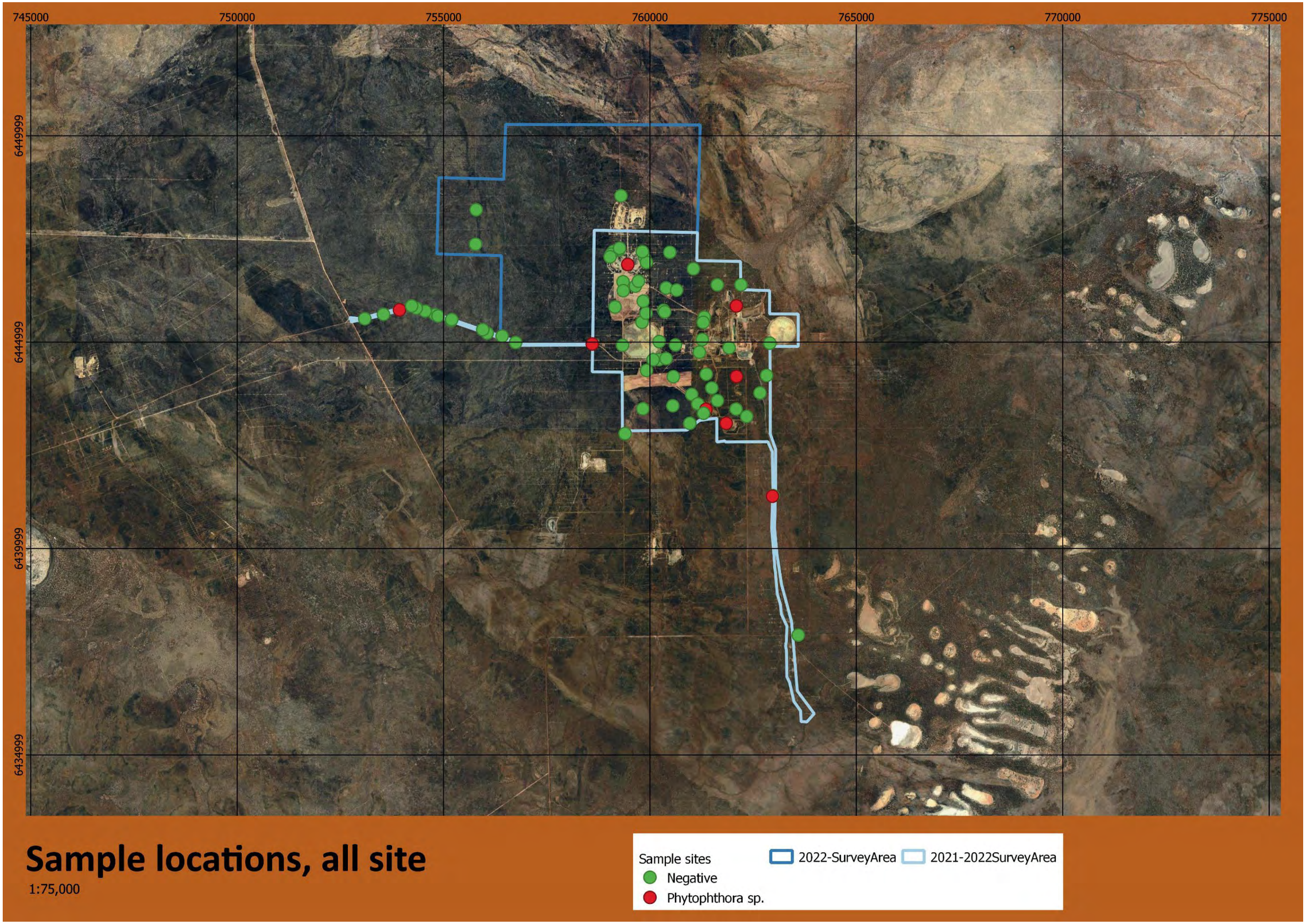
Year sampled	Sample ID.	Easting	Northing	Result
2019	**CC1990**	**761848**	**6443034**	***Phytophthora arenaria***
2019	CC1991	762087	6443377	Negative
2019	CC1992	760966	6443033	Negative
2019	CC1993	761158	6443506	Negative
2019	**CC1994**	**761358**	**6443372**	***Phytophthora arenaria***
2019	CC1995	761635	6443584	Negative
2019	CC1996	753092	6445566	Negative
2019	CC1997	753545	6445672	Negative
2019	CC1998	754227	6445877	Negative
2019	CC1999	754866	6445633	Negative
2019	CC2000	755950	6445303	Negative
2019	CC2001	756418	6445146	Negative
2019	CC2002	756747	6444991	Negative
2019	**CC2003**	**758603**	**6444955**	***Phytophthora arenaria***
2019	CC2004	759334	6444925	Negative
2019	CC2005	759918	6444314	Negative
2019	CC2006	759827	6443384	Negative
2019	CC2007	760553	6443459	Negative
2019	CC2008	760567	6444164	Negative
2019	CC2009	761365	6444223	Negative
2019	**CC2010**	**762097**	**6444168**	***Phytophthora boodjera***
2019	CC2011	761918	6444865	Negative
2019	CC2012	762827	6444194	Negative
2019	CC2013	762666	6443770	Negative
2019	CC2014	762904	6444975	Negative
2019	**CC2015**	**762094**	**6445877**	***Phytophthora arenaria***
2019	CC2016	761632	6446388	Negative
2019	CC2017	762205	6446388	Negative
2019	CC2018	760482	6447176	Negative
2019	CC2019	760394	6446312	Negative
2019	CC2020	760648	6446260	Negative
2019	CC2021	760357	6445733	Negative
2019	CC2022	759907	6445701	Negative
2019	CC2023	759155	6445851	*Phytopythium sp.*
2019	CC2024	759354	6446246	Negative
2019	CC2025	759264	6447275	Negative
2019	CC2026	759817	6447192	Negative

2019	CC2027	759722	6446475	Negative
2019	CC2028	761317	6445601	Negative
2019	CC2029	761268	6445062	Negative
2019	CC2033	759396	6444933	Negative
2019	CC2030	760618	6437902	Negative
2019	**CC2031**	**763593**	**6441268**	***Phytophthora nicotianae***
2019	CC2032	762968	6442784	Negative
2019	CC2034	759298	6448545	Negative
2019	CC2035	761299	6443278	Negative
2019	CC2037	761498	6443889	Negative
2019	CC2038	761199	6444758	Negative
2019	CC2039	760391	6444601	Negative
2019	CC2040	761289	6445479	*Pythium mercuriale*
2019	CC2041	761053	6446776	Negative
2021	1	762980	6441284	Negative
2021	2	759247	6447233	Negative
2021	3	759116	6447198	Negative
2021	4	759065	6447131	Negative
2021	5	759035	6447067	Negative
2021	6	760331	6445773	Negative
2021	7	760225	6445015	Negative
2021	8	759809	6445484	Negative
2021	9	759838	6445993	*Phytopythium mercuriale*
2021	10	759349	6446464	Negative
2021	11	759649	6446359	Negative
2021	**12**	**759464**	**6446882**	***Phytophthora arenaria***
2021	13	759871	6447060	*Pythium aff. anandium*
2021	14	759918	6446934	Negative
2021	15	760219	6444579	Negative
2021	16	760079	6444574	Negative
2021	17	754798	6445670	Negative
2021	18	754556	6445753	Negative
2021	19	754338	6445825	Negative
2021	**20**	**753933**	**6445783**	***Phytophthora arenaria***
2022	1	755777	6447387	Negative
2022	2	755790	6448218	Negative
2022	3	762982	6441277	Negative
2022	4	762335	6443210	Negative
2022	5	756059	6445221	Negative
2022	6	755184	6445531	Negative
2022	7	755198	6445548	Negative
2022	8	761011	6443744	Negative

Map 3 - Sample locations, access road



Map 4 - Sample locations EGLP

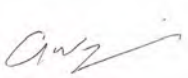


Map 5 - Sample locations, all site

Document Distribution

Rev No.	Copies	Recipient	Date
0	1: Electronic	DWER Compliance Branch	30/04/2024
0	1: Electronic	Anthea Pate, Covalent	30/04/2024

Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
0	A. Wills	A. Winzer	A. Winzer		30/04/2024

www.jbsg.com.au

JBS&G

Adelaide
Kaurna Country | 100 Hutt St,
Adelaide, SA 5000
T: 08 8431 7113

Brisbane
Turrbal/Yuggera Country | Level 37, 123
Eagle Street, Brisbane, QLD 4000
T: 07 3211 5350

Bunbury
Wardandi Noongar Country | 177
Spencer Street Bunbury, WA 6230
T: 08 9792 4797

Canberra
Ngunnawal Country | Level 1, The Realm
18 National Circuit Barton, ACT 2600
T: 02 6198 3278

Darwin
Larrakia Country | Suite G1, Level 1
48-50 Smith Street, Darwin NT 0800
T: 08 8943 0600

Hobart
Muwununa/Nuenon Country | Level 6,
111 Macquarie Street Hobart, TAS 7000
T: 03 6108 9054

Melbourne
Kulin Country | Level 5, 10 Queen
Street, Melbourne, VIC 3000
T: 03 9642 0599

Newcastle
Awabakal/Worimi Country | 61 / 63
Parry Street Newcastle West, NSW 2302
T: 02 8245 0300

Perth
Whadjuk Nyoongar Country | Allendale Square,
Level 9, 77 St Georges Terrace, WA 6000
T: 08 9380 3100

Sydney
Gadigal Country | Level 1, 50
Margaret Street, Sydney, NSW 2000
T: 02 8245 0300

Wollongong
Dharawal Country | Suite 1A, 280 - 286
Keira Street, Wollongong, NSW 2500
T: 02 4225 2647