Department of Transport and Main Roads

DELIVERING FOR QUEENSLAND

Annual Compliance Report 03 Beerburrum to Nambour Rail Upgrade Project, Queensland

EPBC 2020/8803

June 2024 – June 2025

Queensland Government

Document Control

Departmental approvals

Date	Name	Position	Action
13/05/2025	Trina Kateifides	Principal Environmental Officer	Initial draft
25/06/2025	Trina Kateifides	Principal Environmental Officer	Final issue
30/06/2025	Nick Sarai	Project Director	Declaration of Accuracy

Risk level

☒ High risk (but not GACC)

Prepared by	Trina Kateifides
Title	Principal Environmental Officer
District & Region	Rail Infrastructure Delivery Office
Branch & Division	Rail Division
Project/program	Beerburrum to Nambour Rail Upgrade
Project number	TMR: 858087 Commonwealth Approval Number: 097044-17QLD-NRP
Project location	Beerburrum
Status	Detailed Design
DMS ref. no.	

Accessibility Statement

We are committed to making our information accessible to all individuals, including those with disabilities. This commitment is in line with our dedication to inclusive community values and equal access to published information.

Please note there may be content within appendices to this report that are not fully accessible to individuals using assistive technology. This may be due to the technical nature of these documents, which can contain complex tables, graphics, and legal language that are not compatible with certain accessibility tools.

If you require them in an alternative format, please email B2N-Admin@tmr.qld.gov.au or telephone 13 74 68.

Please provide your name, contact information, and a detailed description of the issue you encounter or the format you require.

Proponent and Approval Action

EPBC Act Reference	2020/8803
Project Name:	Beerburrum to Nambour Rail Upgrade Project
Proponent:	Department of Transport and Main Roads
ABN:	39 407 690 291
Proposed Action:	To upgrade the North Coast Line between Beerburrum and Nambour, including a new rail corridor and associated infrastructure, Queensland
Location of Action:	Between Beerburrum and Nambour, Queensland
Reporting Period:	June 2024 - June 2025
Date Prepared:	30 June 2025

Declaration of Accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed 

Full name Nick Sarai

Position Project Director

Organisation Department of Transport and Main Roads (ABN 39 407 690 291)

Date **30 June 2025**

Table of Contents

1. Introduction

1.1 Project Background

The Queensland Department of Transport and Main Roads (TMR) is constructing Beerburrum to Nambour Rail Upgrade. This project encompasses a 39-kilometre section of the North Coast Line (NCL) between Beerburrum and Nambour. This single bi-directional rail line, with passing loops, in its current form hinders the ability of the NLC to meet current and future freight and passenger transport demand.

The Project was referred to the Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW) in October 2020 for determination of whether the Project is likely to have a significant impact on Matters of National Environmental Significance (MNES). Projects likely to cause a significant impact on MNES require approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project was deemed a controlled action in January 2021 and was approved, subject to conditions, on 25 February 2022 (EPBC 2020/8803).

1.2 Purpose of this Report

Condition 14 of approval EPBC 2020/8803 requires the approval holder (TMR) to prepare and publish an annual compliance report for each 12-month period following Action commencement date.

This report is the third annual compliance report for the Project, for the period of 06 June 2024 to the 6 June 2025.

This report has been prepared in accordance with DCCEEW annual compliance report guidelines.

2. Description of Activity

2.1 Project Location

The Project area is located within Sunshine Coast Council (SCC) Local Government Area. The project area is between Beerburrum and Nambour on the North Coast Line, which is Queensland's major north-south rail corridor and the major freight and passenger route from Brisbane to the Sunshine Coast and Cairns.

The project alignment partially follows the existing rail corridor, however there are areas of road reserve, private property and State Forest that are affected where the alignment is outside the existing rail corridor. The total area of the project boundary is approximately 253ha.

2.2 Description of the Project

The scope of the B2N project includes rail duplication between Beerburrum and Landsborough and other infrastructure improvements, such as station upgrades and additional passing loops between Landsborough and Nambour.

The project will be delivered in three separate stages: early works, Stage 1 and Stage 2. A summary of each stage is provided below.

Early works

The early works package has been completed and included:

- The expansion of the Nambour station park ‘n’ ride facility
- The expansion of the Landsborough station park ‘n’ ride facility
- Construction of a new bus interchange at Landsborough
- Realignment of a portion of Steve Irwin Way with associated public utility plant relocations.

Stage 1

Stage 1 has been funded, design commenced in April 2023. Construction is scheduled to commence late 2025. Stage 1 includes:

- Road works to accommodate the new rail corridor and track infrastructure

- Public utility plant (such as Energex, Unitywater, Telstra and other service) relocations and other enabling works
- Duplication of the section of rail between Beerburrum and Glass House Mountains on an improved alignment, and between Glass House Mountains and Beerwah following the existing alignment
- Beerburrum Road and Steve Irwin Way intersection upgrade including a new road overpass on Beerburrum Road
- Replacement of the Barrs Road level crossing in Glass House Mountains with a new road overpass connecting Barrs Road to Moffatt Road
- Replacement of the Burgess Street road-over-rail bridge in Glass House Mountains with a new road overpass
- Expansion of the park 'n' ride facility on the northern side of Beerburrum station (partial)
- Re-signalling of the entire corridor from Beerburrum to the single-line section between Beerwah and Landsborough to meet minimum headway targets and permit bi-directional operation on all tracks
- Power systems upgrades required to facilitate the new track and capacity.

Stage 2

Stage 2 is currently unfunded and timing for construction is unknown. Activities and scope pertaining to Stage 2 include:

- Duplication of the section of rail between Beerwah and Landsborough following the existing alignment
- Replacement of the Caloundra Street level crossing in Landsborough with a road-over-rail, grade-separated crossing
- Extension of existing passing loops at Landsborough, Eudlo and Woombye
- Expansion of park 'n' ride facilities at Beerburrum (remainder), Landsborough (remainder), Palmwoods and Nambour (remainder) stations
- Replacement of the temporary single platforms at Mooloolah, Eudlo, Palmwoods and Woombye stations with permanent dual platforms connected by lifts and overbridges
- Re-signalling of the corridor from Beerwah to Nambour with bi-directional 3 aspect signals including ATP and ETCS level 1 integration
- Public utility plant (such as Energex, Unitywater, Telstra and other service) relocations and enabling works

Figure 1: Project Location

2.3 Project Status

The project will be delivered in three separate stages: early works, Stage 1 and Stage 1

Table 1 Project status

Construction stage	Start date	Completion date	Comments
Early works	06 June 2022	18 September 2023	Early works package completed.
Stage 1 - current stage	2025	2027 (estimated)	Design for Stage 1 commenced April 2023 Construction is scheduled to comment in late 2025
Stage 2	TBC	TBC	Stage 2 is currently unfunded and timing for construction is unknown

2.4 Approval History

EPBC approval and approval documentation dates, compliance reporting dates and status of the annual compliance reports are provided in Table 2 and Table 3.

Table 2: Relevant Dates for EPBC Act Approval

Approval Document	Date of Decision	Expiry Date
EPBC 2020/8803	25 February 2022	27 February 2052
EPBC 2020/8803 Variation of conditions	26 August 2024	
Grey-headed Flying-fox Environmental Management Plan (GHFF EMP)	27 August 2024	
Offset Area Management Plan (OAMP)	19 December 2024	

Table 3: Chronology of Annual Compliance Reports

Reporting Dates	Report No.	Status
June 2022 - June 2023	01	Completed and published
June 2023 - June 2024	02	Completed and published
June 2024 – June 2025	03	Completed (this report)

3. Summary of Compliance

Table 3 details the Project's compliance status for each approval condition over the 12-month reporting period: June 2024 – June 2025.

Where required, reference has been made to relevant Appendices for further evidence of compliance.

The Project was found to be fully compliant with the requirements of the EPBC Approval 2020/8803

3.1 Corrective measures

No non-compliances were recorded during the reporting period.

Table 3: Compliance with conditions of EPBC Approval 2020/8803

No.	Condition	Status	Compliance Status	Evidence / Comments
1	To minimise impacts to the Koala and Grey-headed Flying-fox, the approval holder must not clear more than 64.15 hectares (Ha) of Koala habitat and Grey-Headed Flying-fox foraging habitat within the development area. The approval holder must not clear outside the development area.	Ongoing	Compliant	Clearing for preliminary works within the Stage 1 boundary has been undertaken, this included 1.86ha of mapped Koala and Grey-headed Flying Fox habitat. This with previously reported early works clearing results in 4.13ha of mapped habitat cleared. Clearing outside the approved EPBC boundary has not occurred as demonstrated by preliminary clearing map attached, Appendix A
2	To minimise the risk of injury or death to Koalas and Grey-headed Flying-foxes within the development area during clearing and construction, the approval holder must: a) ensure that a suitably qualified fauna spotter catcher is present during all clearing, and given sufficient authority to ensure that Koalas and Grey-headed Flying-foxes have safely moved out of the area of works of their own volition before Koala habitat and Grey-headed Flying-fox foraging habitat is cleared;	Ongoing	Compliant	Pre-clearing surveys undertaken for the approved 'preliminary works' by suitably qualified fauna spotter catchers and present on day of clearing. No Koalas or Grey-headed Flying-foxes were identified during clearing works. See Appendix B
	b) clear in accordance with the Nature Conservation (Koala) Conservation Plan 2017 under the Nature Conservation Act 1992 (Qld) so as to enable Koalas to safely move into connected areas of Koala habitat when moving out of clearing areas;	Ongoing	Compliant	Appendix B reports describe the management strategies including directional and controlled felling which align with sequential clearing practices as per nature Conservation (Koala) Policy
	c) immediately after clearing and prior to the commencement of construction, install temporary Koala exclusion fencing between any area of Koala habitat and any area of construction works. Temporary Koala exclusion fencing must extend beyond any Koala habitat and construction by a minimum of 50 metres. Temporary Koala exclusion fencing must remain in place between Koala habitat and any construction area until all construction activities adjacent to the temporarily fenced area are completed.	Yet to commence		Stage 1 – Main works clearing has not yet commenced.

No.	Condition	Status	Compliance Status	Evidence / Comments
3	For the ongoing protection of Grey-headed Flying-fox populations, the approval holder must: a) Submit an Environmental Management Plan (EMP) for the Minister's approval that, to the satisfaction of the Minister, details avoidance and mitigation measures to manage the impacts from clearing and construction on Grey-headed Flying-fox roosts;	Completed	Compliant	TMR submitted the 1st version of the plan on 21 July 2023 to DCCEEW.
	b) Prepare the EMP in accordance with the Environmental Management Plan Guidelines;	Completed	Compliant	DCCEEW approved the Plan on 19 December 2024 this is publicly available on the B2N Project website. https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	c) not commence clearing or construction in the areas represented in Attachment A by the zones enclosed by the lines designated 'EPBC Stage 1 Main Works Boundary' and 'EPBC Stage 2 Boundary' identified by the aqua and green boundaries respectively, unless the Minister has approved the EMP in writing; and	Ongoing	Compliant	The letter from the Minister confirming approval of the Plan was received on 27 August 2024. No clearing has commenced for Stage 1 Main Works Clearing occurred in the approved 'preliminary works' area only, as per approved variation on August 2024. See Appendix C – letter from the Minister
	d) implement the approved EMP until the completion of the Action.	Yet to commence		
3A	The approval holder must not undertake preliminary works within 300m of an active Flying Fox Roost. The approval holder must ensure that a suitably qualified field ecologist has conducted a survey to determine whether there are active Flying Fox Roosts within 300m of any area that might be impacted by preliminary works. The preliminary works must not commence more than 20 business days after this survey is undertaken	Ongoing	Compliant	The Technical Memorandum Grey-headed Flying-fox Roost Survey (AWEC Environmental Consultants) - October 2024 confirms that a targeted roost survey was undertaken on 6-13th August 2024 by suitably qualified ecologists. Qualifications of the ecologist who undertook the field survey are included in Section 1.1 of the Technical Memorandum confirming the ecologist is suitably qualified. Spatial data was provided of the known roost locations which confirms the Preliminary Works areas are located over 300m away from known roost locations mapped during the pre-clearance surveys. Preliminary Works vegetation clearing occurred in September (2024) and Feb (2025) as per the provided GA-CON-GA-0563.00-10 Clearing Program for each stage. Clearing dates included September 2, 3, 4, 5, 6, 9, 10, 11, 12, 13,

No.	Condition	Status	Compliance Status	Evidence / Comments
				16, 17, 19 & 20, 2024 which demonstrate that the clearing was undertaken within 20 business days as per the Condition requirements. See appendix D.
4	For the ongoing protection of the local Koala population within the development area and to provide Koala habitat connectivity throughout the landscape that maintains or improves on pre-construction east-west fauna connectivity in the development area, the approval holder must, in addition to installing and maintaining safe movement solutions at the locations identified as 'fauna movement corridors' in Attachment A: a) not create or allow any breaks in contiguous Koala habitat except where safe movement solutions that allow corridor connectivity for the Koala have been installed prior to the completion of construction and are maintained for the life of the approval;	Ongoing	Compliant	In this reporting period no breaks in contiguous Koala habitat have been created or allowed by the project. No clearing has commenced for Stage 1 Main Works or Stage 2 Main Works in this reporting period.
	b) install safe movement solutions prior to opening any road to public motorists, where the presence of Koalas is known or expected. Safe movement solutions as listed in Table 8 and/or Table 6 of Attachment B with listed low effectiveness must only be used when in conjunction with safe movement solutions of moderate and/or high effectiveness;	Ongoing	Compliant	In this reporting period no roads have been open to the public
	c) prior to opening the road to public motorists, install prominent Koala awareness signage consistent with Queensland's wildlife signing guidelines on any road where the presence of Koalas is known or expected and the likelihood of Koala vehicle strike is possible or more likely than possible;	Ongoing	Compliant	In this reporting period no roads have been open to the public
	d) complete baseline weed surveys in each stage prior to the commencement of construction or clearing in each stage, and within one month of the completion of baseline weed surveys, submit the baseline weed survey results to the department;	Ongoing	Compliant	In this reporting period, baseline weed surveys for Stage 1 have been completed with report finalised on 28 August 2024, TMR notified DCCEEW on 30 August 2024. See Appendix E.

No.	Condition	Status	Compliance Status	Evidence / Comments
	e) ensure that within 12 months of construction or clearing commencing in each stage and until the completion of the Action, weed cover within each stage where construction or clearing has commenced remains less or no worse than that of the baseline weed surveys and must not restrict the movement of the Koala; and	Ongoing	Compliant	Clearing for Stage 1 is yet to commence.
	f) within each stage where construction or clearing has commenced, complete annual monitoring of weed cover consistent with the baseline weed surveys, with the results to be included in each annual compliance report or as otherwise requested in writing by the Minister	Ongoing	Compliant	Clearing for Stage 1 is yet to commence
5	The approval holder must submit an Offset Area Management Plan (OAMP) for the Minister's approval that, to the satisfaction of the Minister, compensates for the significant residual impact of clearing 64.15 ha of Koala habitat and Grey-Headed Flying-fox foraging habitat within the development area. The OAMP must, to the satisfaction of the Minister, meet the requirements of the Environmental Offsets Policy and the Environmental Management Plan Guidelines, and must include: a) environmental objectives, relevant EPBC Act protected matter/s and a reference to EPBC Act approval conditions to which the OAMP refers;	Completed	Compliant	On 19 December 2024 DCCEEW approved the B2N OAMP the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	b) a table of commitments to achieve the environmental objectives, and a reference to where the commitments are detailed in the OAMP;	Completed	Compliant	the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	c) reporting and review mechanisms, and documentation standards to demonstrate compliance with the OAMP;	Completed	Compliant	the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1

No.	Condition	Status	Compliance Status	Evidence / Comments
	d) details of the nature and timing of the mechanism to legally secure the offset site/s;	Completed	Compliant	the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	e) an assessment of risks to achieving environmental objectives and risk management strategies that will be applied, including contingency measures and their timing; and	Completed	Compliant	the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	f) a monitoring program to be undertaken by a suitably qualified field ecologist, which must include: i. measurable performance indicators; ii. trigger values for corrective actions; iii. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators; and iv. proposed corrective actions, if trigger values are reached	Completed	Compliant	the approved OAMP is located on TMR B2N project website https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
6	The approval holder must implement the approved OAMP for the life of the approval.	Ongoing	Compliant	The approved Offset Area Management Plan include activities to be completed within in 6 months of the approval such as Weed Surveys and Pest Surveys of the offset Site. ERM completed these baseline surveys in April 2025. See Appendix F A legal agreement has draft between TMR and Sunshine Coast Council for the delivery of the OAMP.
7	The approval holder must not commence clearing or construction in the areas represented in Attachment A by the zones enclosed by the lines designated ‘EPBC Stage 1 Main Works Boundary’ and ‘EPBC Stage 2 Boundary’ identified by the aqua and green boundaries respectively, unless the Minister has approved the OAMP in writing	Yet to commence		The Minister approved the OAMP on 19 December 2024. Stage 1 clearing has not commenced Clearing that has occurring during this reporting period has only been for approved preliminary works

No.	Condition	Status	Compliance Status	Evidence / Comments
8	Within 20 business days of legally securing the offset site/s identified within the approved OAMP, the approval holder must provide the department with legal security documentation demonstrating that the offset site/s identified within the approved OAMP has/have been legally secured, accompanied by shapefiles and the offset attributes.	Yet to commence		
9	The approval holder must notify the Department in writing of the date of: a) commencement of the Action within 10 business days after the date of commencement of the Action; and	Completed	Compliant	Email notification was provided to the Department on 7 June 2022, stating the commencement of the Action/construction works within the approved EPBC early works boundary on 6 June 2022. Refer to Compliance Report 01.
	b) the commencement of works in each stage, within 10 business days after the date of the commencement of works in the particular stage.	Ongoing	Compliant	Early works – completed. Refer to Compliance Report 01 Stage 1 – Yet to commence Stage 2 – yet to commence
10	The approval holder must maintain accurate and complete compliance records	Ongoing	Compliant	Two compliance reports have been prepared since the commencement of the action for the 12 months proceeding.
11	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	Yet to commence		
12	The approval holder must: a) submit plans electronically to the Department for approval by the Minister	Completed	Compliant	The OAMP and Grey-headed Flying-fox EMP were submitted to the Department electronically for approval.
	b) publish each plan on the website within 20 business days of the date the plan is approved by the Minister or of the date a revised Action management plan is submitted to the Minister or the Department, unless otherwise agreed to in writing by the Minister	Completed	Compliant	The OAMP and Grey-headed Flying-fox EMP were made public on the TMR B2N project website within 20 business days. https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
	c) exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public	Completed	Compliant	

No.	Condition	Status	Compliance Status	Evidence / Comments
	d) keep plans published on the website until the end date of this approval.	Ongoing	Compliant	Plans are available on TMR's webpage https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1
13	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps and other spatial and metadata required under conditions of this approval, is prepared in accordance with the Department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the Department in accordance with the requirements of the plan	Ongoing	N/A	
14	The approval holder must prepare a compliance report for each 12-month period following the date of commencement of the Action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister. The approval holder must: a. publish each compliance report on the website within 60 business days following the relevant 12-month period	Ongoing	Compliant	The action commenced on 6 June 2022. Two annual reports for these 12-month periods have been published. This is the third annual compliance report and will cover the period of 6 June 2024 to 6 June 2025.
	b. notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within 5 business days of the date of publication	Ongoing	Compliant	The first annual compliance report (6 June 2022 – 6 June 2023) was published to the TMR website on 18 August 2023. See compliance report 02 The second annual compliance report (6 June 2023 – 6 June 2024) was published to TMR website on 24 June 2024, See Appendix G. Evidence of compliance will be provided within the fourth annual compliance report.
	c. keep all compliance reports publicly available on the website until this approval expires	Ongoing	Compliant	This compliance report, along with past and future compliance reports will be published and remain available on TMR's project webpage (https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1) with contingency for continued publication online when the project webpage is taken offline in future.
	d. exclude or redact sensitive ecological data from compliance reports published on the website	Ongoing	Compliant	Sensitive ecological data (as defined in the Australian Government Department of the Environment (2016) Sensitive *Ecological Data – Access and Management Policy)* has not been included within this compliance report. No information shall need to be excluded or redacted from the compliance report that will be published on TMR's project webpage (https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1)

No.	Condition	Status	Compliance Status	Evidence / Comments
	e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication	Ongoing	Compliant	Not applicable for this annual report
15	The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable, and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify:	Ongoing	Compliant	There have been no incidents or non-compliance with any conditions of the EPBC approval within this reporting period.
	a. any condition which is, or may be, in breach	Ongoing	N/A	
	b. a short description of the incident and/or non-compliance	Ongoing	N/A	
	c. the location (including co-ordinates), date and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	Ongoing	N/A	
16	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying:	Ongoing	Compliant	There have been no incidents or non-compliance with any of the condition of the EPBC approvals within this reporting period
	a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future	Ongoing	N/A	
	b. the potential impacts of the incident or non-compliance	Ongoing	N/A	
	c. the method and timing of any remedial action that will be undertaken by the approval holder.	Ongoing	N/A	
17	The approval holder must ensure that independent audits of compliance with the conditions are conducted for the 36-month period from the date of commencement of the Action and for every subsequent 36-month period until the completion of the Action, or as otherwise requested in writing by the Minister.	Ongoing	Compliant	The action commenced on 6 June 2022. June 2025 is 36 months from the commencement of B2N Early works. This year marks the first 36 months from the commencement of the action/construction. At completion of this report the first Independent Audit had been completed and submitted to DCCEEW on 25 June 2025.

No.	Condition	Status	Compliance Status	Evidence / Comments
18	For each independent audit, the approval holder must: a. provide the name and qualifications of the independent auditor and the draft audit criteria to the Department	Ongoing	Compliant	On 16 January 2025 the draft audit criteria and Auditor details were submitted to DCCEEW.
	b. only commence the independent audit once the audit criteria have been approved in writing by the Department	Ongoing	compliant	DCCEEW approved B2s independent audit criteria on 21 March 2025
	c. submit an audit report to the Department within the timeframe specified in the approved audit criteria	Ongoing	compliant	B2N submitted the report to DCCEEW on 25 June 2025. See Appendix H
19	The approval holder must publish the audit report on the website within 10 business days of receiving the Department's approval of the audit report and keep the audit report published on the website until the end date of this approval.	Yet to commence	N/A	At time of submitting this report, approval had not yet been received.
20	Within 30 days after the completion of the Action, the approval holder must notify the Department in writing and provide completion data.	Yet to commence	N/A	

4. List of Appendices

A. Vegetation Clearing

B. Post Clearing Report

C. Minister's letter approving EMP

D. Grey headed flying fox roost survey

E. Stage 1 Baseline Weed survey

F. Offset Area Baseline Weed Report

G. Notification to DCCEEW of publishing second annual compliance report.

H. TMR email notification to DCCEEW for independent audit

Appendix A – Vegetation clearing

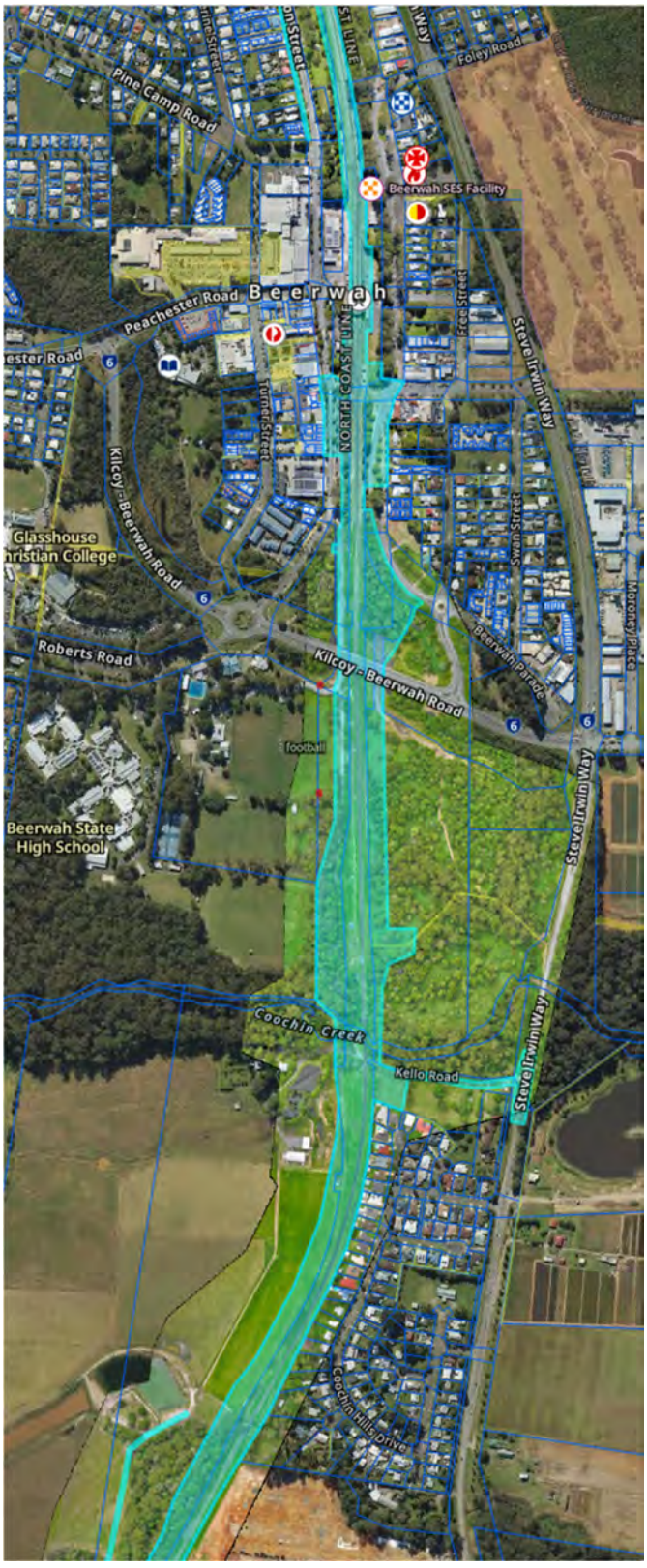
B2N Stage 1 Koala and GHFF Habitat Clearing Register

	Approved Total (ha)	Cleared to date (ha)	Remaining (ha)
Total area	64.15	4.13	60.02
Early Works	2.57	2.27	0.3
Stage 1	**56.26**	**1.86**	**54.40**
Stage 2	5.32	0	5.32

Stage 1 clearing completed

Layer	Date	Habitat Mapping	Area_sq_m	Area_ha
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	907.4	0.091
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	801.0	0.080
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	511.6	0.051
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	28.3	0.003
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	18.7	0.002
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	16.1	0.002
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	77.3	0.008
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	142.4	0.014
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	140.9	0.014
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	314.0	0.031
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	1012.4	0.101
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	621.2	0.062
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	217.0	0.022
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	170.3	0.017
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	83.8	0.008
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	73.2	0.007
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	66.1	0.007
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	225.7	0.023
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	27.7	0.003
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	137.2	0.014
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	99.2	0.010
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	472.4	0.047
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	182.6	0.018
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	245.4	0.025
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	47.7	0.005
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	87.8	0.009
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	115.4	0.012
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	174.2	0.017
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	28.3	0.003
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	347.1	0.035
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	98.7	0.010
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	3371.6	0.337
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	244.4	0.024
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	39.5	0.004
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	62.2	0.006
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	152.6	0.015
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	82.2	0.008
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	718.9	0.072
GHFFKoala_SI_Clearing	Sep-24	ERM 2021	388.1	0.039
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	1751.6	0.175
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	1356.2	0.136
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	690.1	0.069
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	498.2	0.050
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	123.1	0.012
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	71.1	0.007
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	62.2	0.006
PUP_GHFFKoalaHabitat	Sep-24	ERM 2021	27.6	0.003
Koala_GHFF_Energex_CompoundClearing	Feb-25	ERM 2021	676.0	0.068
Koala_GHFF_Energex_CompoundClearing	Feb-25	ERM 2021	34.0	0.003
Koala_GHFF_Energex_CompoundClearing	Feb-25	ERM 2021	24.0	0.002
Koala_GHFF_Energex_CompoundClearing	Feb-25	ERM 2021	641.0	0.064
Koala_GHFF_Energex_CompoundClearing	Feb-25	ERM 2021	52.0	0.005
			Total	1.86 ha
			Remaining	54.40 ha

Preliminary Clearing



Legend EPBC

B2N Preliminary Clearing Areas

Stage 01 No Go Zone

Description

Stage 01 No Go Zone

Stage 01

Description

Stage 01

Image 1: Northern section - Beerwah

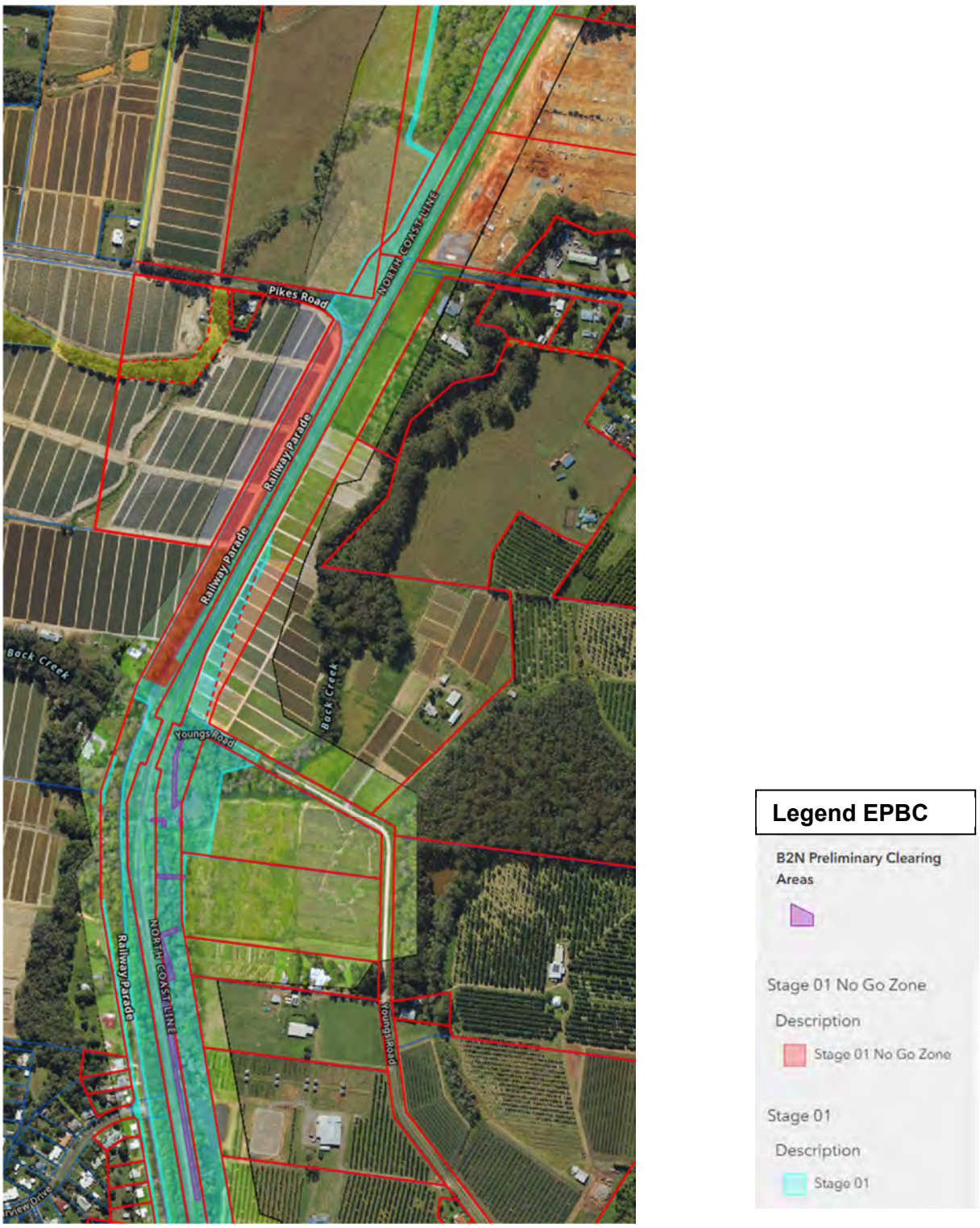
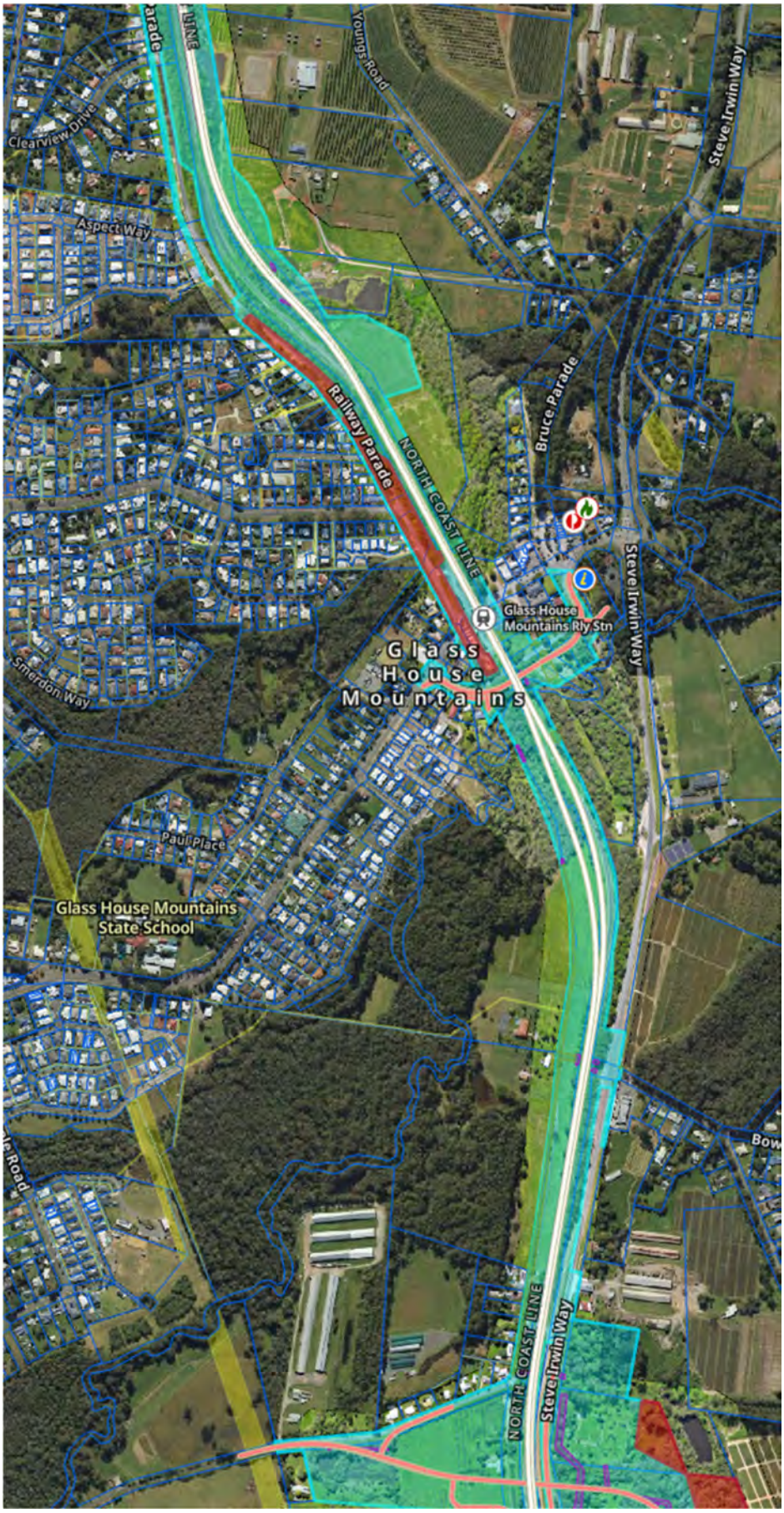


Image 2: Pikes to Young Road



Legend EPBC

B2N Preliminary Clearing Areas

Stage 01 No Go Zone

Description

Stage 01 No Go Zone

Stage 01

Description

Stage 01

Image 3: Youngs Road to Barrs Road

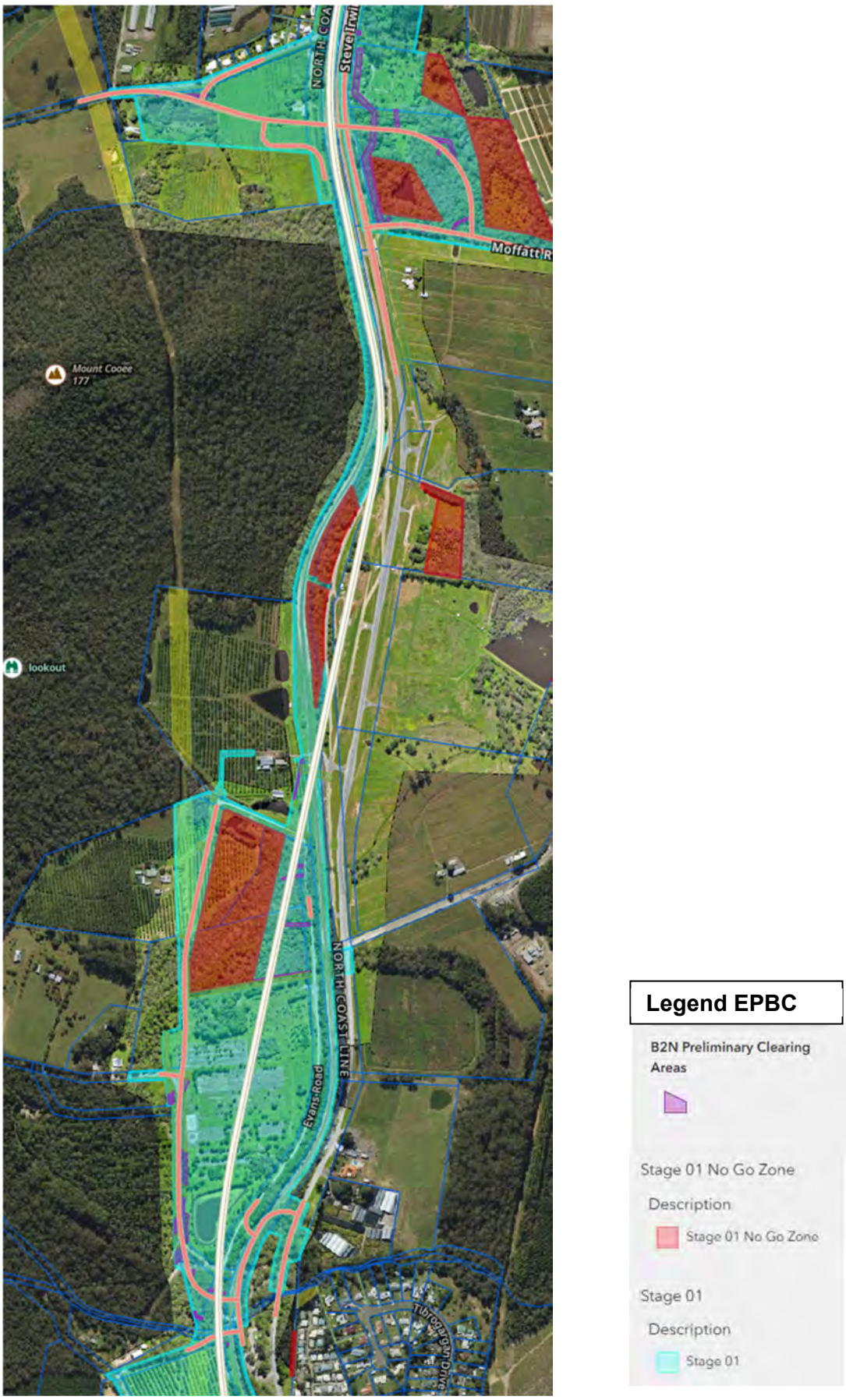


Image 4: Barrs Road to Tibrogargan Creek

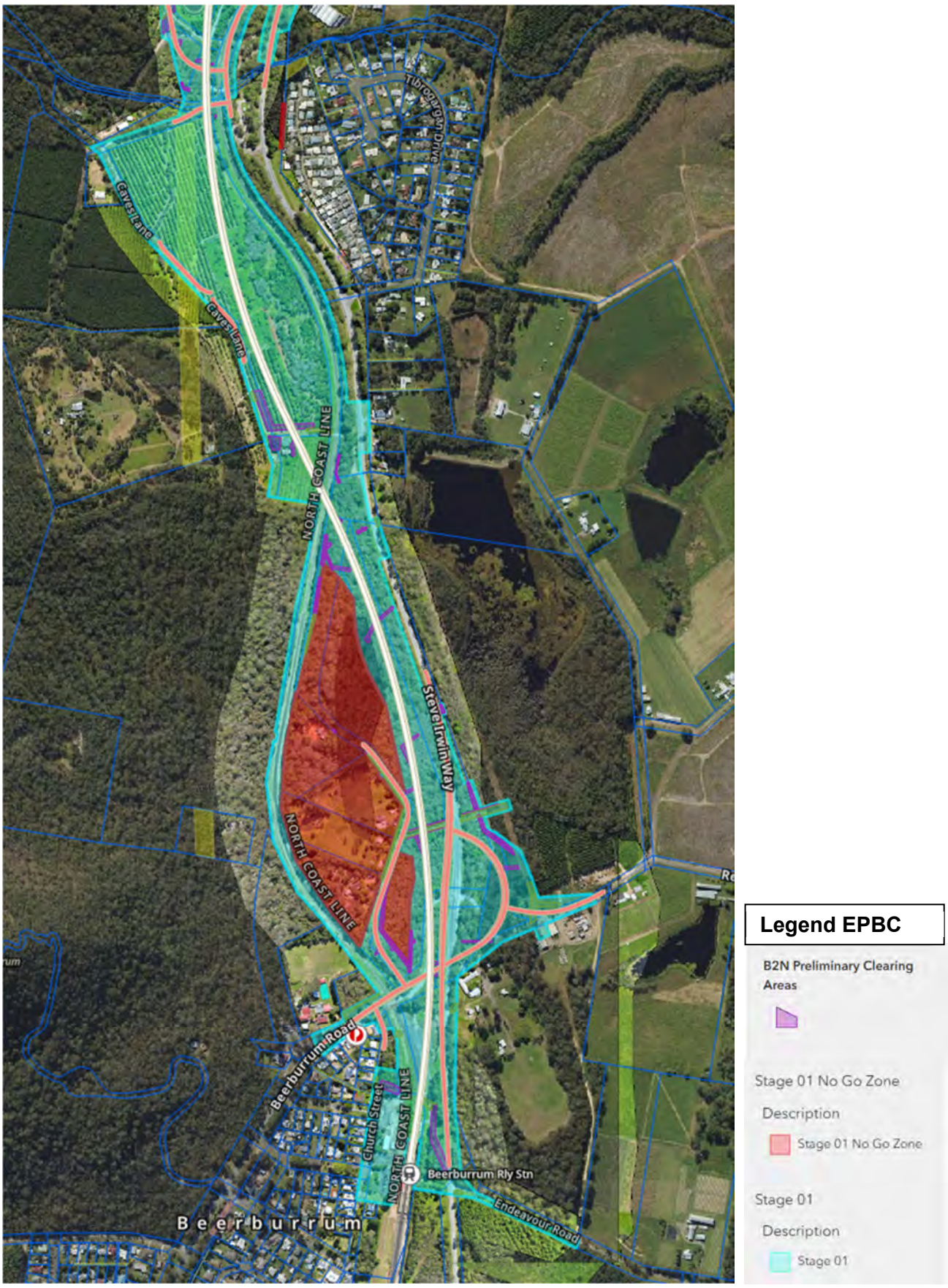


Image 5: Tibrogargan Creek to Beerburrum

Appendix B – Post clearing reports

602-JHSW2405-D

FAUNA POST-CLEARANCE REPORT

ENERGEX AND COMPOUND CLEARING BEERBURRUM TO NAMBOUR PROJECT

Prepared for:
B2NJV

Delivered:
April 2025

AWEC ENVIRONMENTAL CONSULTANTS

Document Prepared by:

Australia Wide Environmental Consultants
ABN 67 618 756 291
307 Bishop Rd, Beachmere
Queensland 4510 Australia
T: 0458 293 759
E: admin@awenv.com.au

Document Control Information

Report Title:	Post-Clearance Report
Prepared For:	B2NJV
Report Reference:	602-JHSW2405-D
Project Address:	Church Street, Beerburrum, QLD, 4517 (Project Offices)

Document Review and Distribution

Document Version	Issued to	Author	Reviewed/Approved	Date
Rev 0	B2NJV	AE	YV	07/04/25

Document Approval

Approvals	Title	Signature
Yolande Venter	Company Director/Senior Ecologist	

Authority

This report has been prepared for use in managing staff and subcontractors relevant to the management and protection of the environment during the project works. Its application is authorised as part of the client undertaking works. The issue and revision of this report are made under the authority of the Project Manager.

Reports and/or Plans

Assessment reports and drawings provided by the client have been used to develop this report and support the document.

Table of Contents

1. Introduction

1.1 Background

Australia Wide Environmental Consultants (AWEC) were commissioned by The Beerburrum to Nambour Rail Upgrade Project/B2NJV ('the Client') to prepare a post-clearance report and provide a Department of Environment, Tourism, Science and Innovation (DETSI) licensed fauna spotter catcher (FSC) to supervise vegetation clearing as part of Energex and Compound Clearing Works, hereafter referred to as the Project.

It is understood that the clearing activities were undertaken within Lots 62 on CP827058 (central GPS location -26.95800, 152.95904), 529 on CG6252 (central GPS location -26.95935, 152.95853), 100 on SP328637 (central GPS location -26.95302, 152.95975), 1 on AP23631 (central GPS location -26.95266, 152.96108), 3 on RP174740 (central GPS location -26.91348, 152.95845) and some areas of adjacent road and/or rail easements, referred to as the 'survey area' as shown in **Figures 1 & 2** below.

This report details the results of the vegetation-clearing activities and wildlife interactions undertaken on February 17, 18, 19, 20, 21, 24 and March 24, 2025, as well as management actions undertaken prior to and during vegetation-clearing activities.

1.2 Scope of Fauna Management

Prior to vegetation clearing, the DETSI-licensed FSC conducted searches of habitat features for potential or active breeding places and of conservation significant fauna species. During clearing, machines were closely supervised to mitigate impacts and ensure the safe capture and relocation of any fauna encountered.

AWEC implemented a process methodology for the management of fauna and habitat in accordance with the following legislation, guidelines, and project-specific documents (**Table 1.2.1**).

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents

Document Title	Purpose of Legislation
Animal Care and Protection Act 2001	The Queensland Animal Care and Protection Act 2001 (the Act) promotes the responsible care and use of animals.
Biosecurity Act (2014)	The Biosecurity Act 2014 provides a framework for an effective biosecurity system for Queensland, to ensure the safety and quality of agricultural inputs, and to align responses to biosecurity risks in the state with national and international obligations.
Environmental Offsets Act (2014)	The main purpose of this Act is to counterbalance the significant residual impacts of particular activities on prescribed environmental matters through the use of environmental offsets.
Environmental Protection Act (1994)	The Environmental Protection Act 1994 (EP Act) lists obligations and duties to prevent environmental harm, nuisances and contamination.
Environment Protection and Biodiversity Conservation Act (1999)	The EPBC Act 1999 focuses on Australian Government interests in the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents	
Document Title	Purpose of Legislation
Nature Conservation Act 1992 (NC Act)	The Nature Conservation Act 1992 (the Act) provides the legislative basis for the conservation of nature through the dedication, declaration and management of protected areas and the protection of native wildlife and its habitat.
Nature Conservation (Animals) Regulation (2020)	The Nature Conservation (Animals) Regulation 2020 (Animals Regulation) introduces a new wildlife licensing framework but incorporates and streamlines existing provisions from the regulations that it replaces.
Nature Conservation (Koala) Conservation Plan (2017)	The main purposes of this plan are— (a) to promote the continued existence of viable koala populations in the wild, and (b) to prevent the decline of koala habitats.
Nature Conservation (Plants) Regulation 2020	The regulatory framework captures clearing and harvesting activities that pose a significant risk to plant biodiversity.
Vegetation Management Act 1999 (VMA)	The Vegetation Management Act 1999 regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions, and allows for sustainable land use.
Water Act 2000 (Qld)	The Water Act 2000 (Qld) (Water Act) provides a framework for the planning, allocation and use of surface water and groundwater in Queensland.
Project documents	Any documents and requirements supplied by the client to abide by.

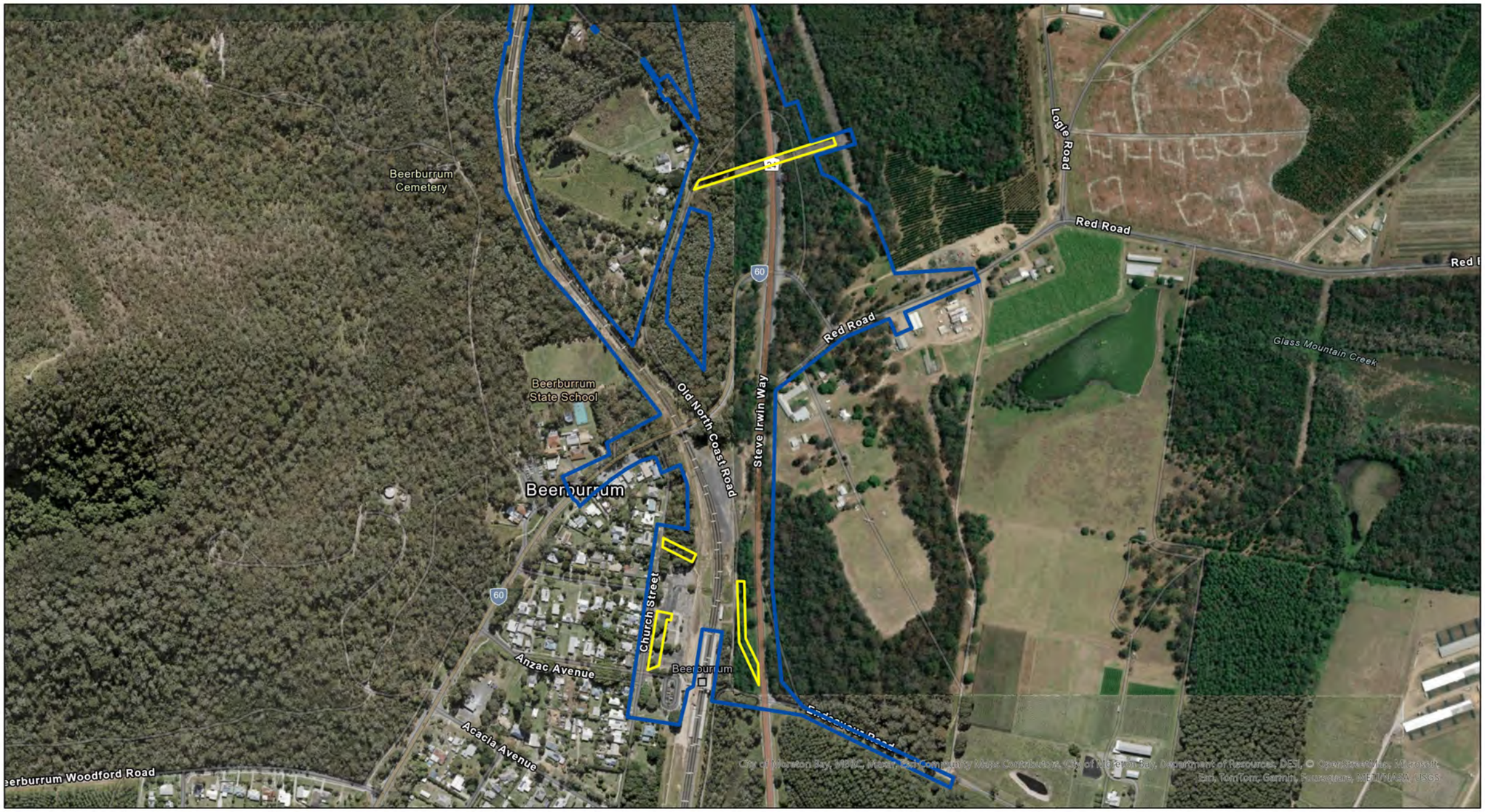
2. Permits and Reporting

AWEC currently holds and operates under a DETSI Rehabilitation Permit for Spotter Catcher Activity, Permit No. WA0055123 and a Damage Mitigation Permit (removal and relocation of wildlife), Permit no. WA0054928 is licensed in the State of Queensland.

Clearing activities that are likely to tamper with breeding places of least concern species (excluding special least concern) are to be undertaken in accordance with the Project specific endorsed Species management program (SMP 1056 – for road corridor works) for tampering with animal breeding places (Low risk of impacts).

The following information relates to data to be collected regarding the relocation of fauna which will be submitted to the Department of Environment, Tourism, Science and Innovation (DETSI) as part of the animal breeding places register returns:

- Fauna species relocated.
- Location of animal breeding place.
- Location of release.
- Date of relocation.



Site Context - Energex and Compound Clearing

Church Street, Beerburrum, QLD, 4517 (Project Offices)

Date: 15/02/2025

Scale: 1:6,100

Spatial Reference
Name: WGS 1984 Web Mercator Auxiliary Sphere
PCS: WGS 1984 Web Mercator Auxiliary Sphere

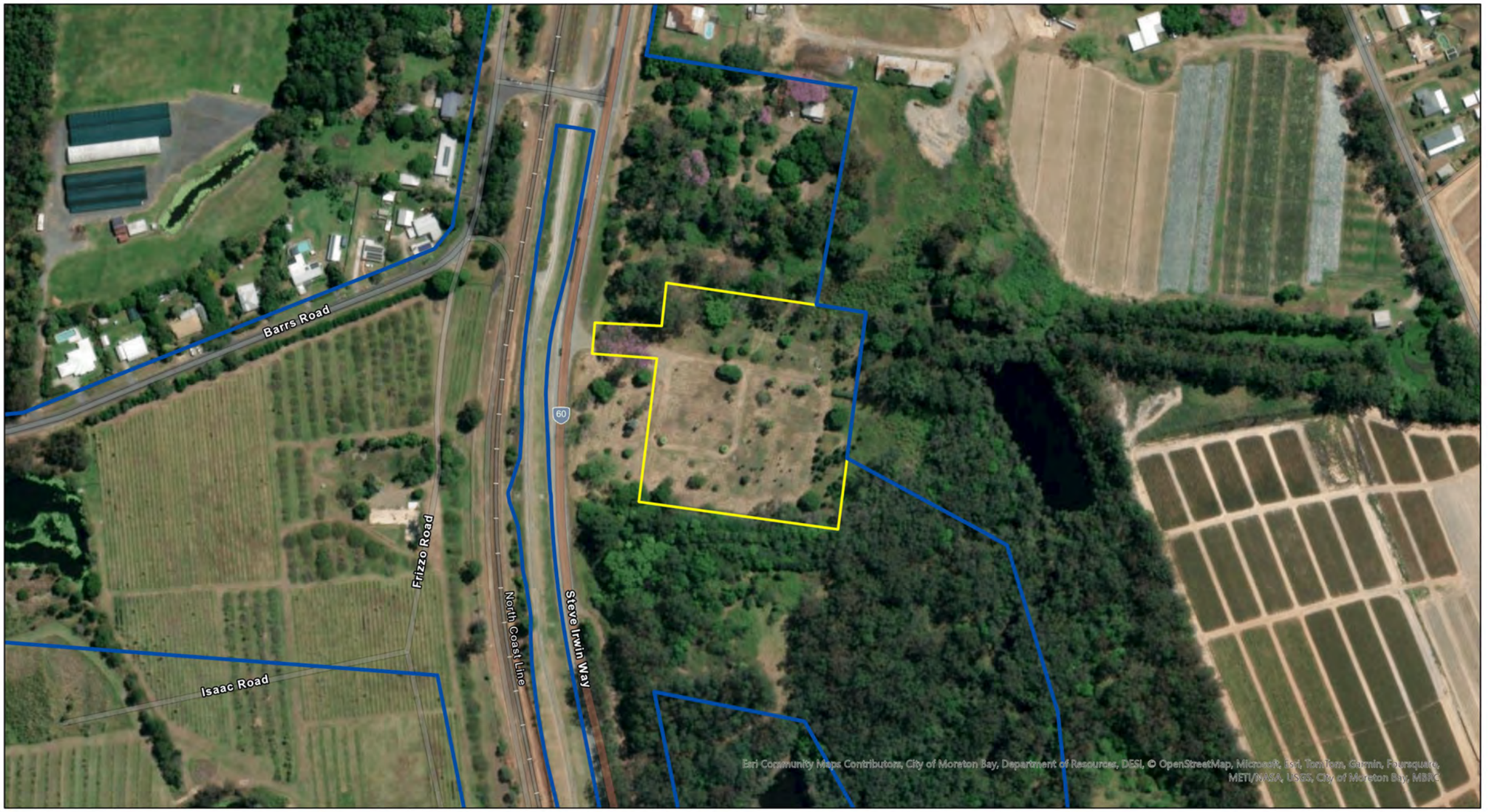
0 250 500 Meters

N

Legend

- EPBC Stage 01
- Energex & Compound Clearing Extents

Figure 1. Survey Area Displaying Limits of Clearing (Indicative Only).



Site Context - Energex and Compound Clearing

Church Street, Beerburrum, QLD, 4517 (Project Offices)

Date: 15/02/2025

Scale: 1:2,500

Spatial Reference
Name: WGS 1984 Web Mercator Auxiliary Sphere
PCS: WGS 1984 Web Mercator Auxiliary Sphere

0 100 200 Meters

N

Legend

- EPBC Stage 01
- Energex & Compound Clearing Extents

Figure 2. Survey Area Displaying Limits of Clearing (Indicative Only).

3. Vegetation Clearing and Fauna Management

3.1 Pre-Clearance Field Survey

The pre-clearance field survey was carried out by a Suitably Qualified and Experienced Person (fauna) on February 4th, 2025.

The survey was completed on foot, employing observational techniques during thorough traverses of the survey area within the Project. Habitat features identified during the survey were marked and recorded using the identification means outlined in the previous pre-clearance report.

Refer (602-JHSW2405-D_Energex_&_Compound_Clearing_Pre_Clearance_Rev1) for the pre-clearance field survey methodology and results, as well as fauna management requirements and strategies to be adopted during vegetation clearing activities.

3.2 Vegetation Clearing Activities

Prior to the commencement of vegetation clearing, the DETSI-licensed FSC conducted searches of habitat features including thick vegetation, ground debris and burrows for potential or active breeding places of fauna and conservation significant fauna species. All GPS locations and representative photographs were taken and stored for reference purposes.

Machines used for vegetation clearing were supervised by a DETSI-licensed FSC at a ratio of one FSC per machine, with constant positive communication upheld between the FSC and the operator, and the arborist. This ensured any fauna sighted during the clearing activities was able to be safely captured and relocated.

Management strategies included directional and controlled felling, utilised as a mitigation measure to reduce impacts on arboreal fauna and to allow opportunistic terrestrial fauna to disperse into suitable areas and away from road and infrastructure hazards.

Before larger vegetation was removed it was gently rustled with machinery to see if any fauna would disperse from the vegetation to minimise fatality from cutting it down. Felled trees were inspected on the ground by the FSC prior to mulching, which was conducted immediately on-site.

General photographs of vegetation clearing activities conducted are displayed in **Figures 2 - 7.**

Figure 2. During Clearing Works:

Figure 3. During Clearing Works:

Figure 4. During Clearing Works:

Figure 5. During Clearing Works:

Figure 6. During Clearing Works:

Figure 7. During Clearing Works:

3.3 Fauna Interactions

No (0) signs of conservation significant fauna species, or active breeding places were observed within the survey area during clearing activities.

No (0) fauna interactions were recorded throughout clearing activities.

3.4 Breeding places

No breeding places were observed within the survey area during clearing activities.

4. Conclusion

No (0) fauna interactions or fatalities occurred during the clearing process.

No (0) sightings of conservation significance fauna species, or breeding places occurred during the clearing activities.

Fauna management throughout the course of vegetation clearing activities on February 17, 18, 19, 20, 21, 24 and March 24, 2025, was considered to be effective in reducing the risk of native fauna fatality.

AWEC can confirm all activities, including vegetation clearing and fauna spotter-catching, were carried out in accordance with the relevant environmental legislation, Project conditions, Project-specific environmental management plans, and the recommendations of in-field ecologists and fauna specialists.

602-JHSW2405-D

FAUNA POST-CLEARANCE REPORT

SI & PUP CLEARING, BEERBURRUM TO NAMBOUR RAIL UPGRADE STAGE 1

Prepared for:
B2NJV

Delivered:
October 2024

AWEC ENVIRONMENTAL CONSULTANTS

Document Prepared by:

Australia Wide Environmental Consultants
ABN 67 618 756 291
307 Bishop Rd, Beachmere
Queensland 4510 Australia
T: 0458 293 759
E: admin@awenv.com.au

Document Control Information

Report Title:	Post-Clearance Report
Prepared For:	B2NJV
Report Reference:	602-JHSW2405-D
Project Address:	Church Street, Beerburrum, QLD, 4517 (Project Offices)

Document Review and Distribution

Document Version	Issued to	Author	Reviewed/Approved	Date
Rev 0	B2NJV	AE	YV	03/10/24
Rev 1	B2NJV	YV	JK	14/10/2024

Document Approval

Approvals	Title	Signature
Yolande Venter	Company Director/Senior Ecologist	

Authority

This report has been prepared for use in managing staff and subcontractors relevant to the management and protection of the environment during the project works. Its application is authorised as part of the client undertaking works. The issue and revision of this report are made under the authority of the Project Manager.

Reports and/or Plans

Assessment reports and drawings provided by the client have been used to develop this report and support the document.

Table of Contents

1. Introduction

1.1 Background

Australia Wide Environmental Consultants (AWEC) were commissioned by The Beerburrum to Nambour Rail Upgrade Project/B2NJV ('the Client') to prepare a post-clearance report and provide a Department of Environment and Science (DES) licensed fauna spotter catcher (FSC) to supervise vegetation clearing related to development works located at the EPBC Stage 1 project extents, hereafter referred to as the Project.

It is understood that the clearing activities were undertaken within an area of the Project to allow access for site investigation works and public utility plant (PUP) relocation, referred to as the 'survey area' as shown in **Figure 1** below.

This report details the results of the vegetation-clearing activities and wildlife interactions undertaken on September 2, 3, 4, 5, 6, 9, 10, 11 12, 13, 16, 17, 19 & 20, 2024, as well as management actions undertaken prior to and during vegetation-clearing activities.

1.2 Scope of Fauna Management

Prior to vegetation clearing, the DES-licensed FSC conducted searches of habitat features for potential or active breeding places and of conservation significant fauna species. During clearing, machines were closely supervised to mitigate impacts and ensure the safe capture and relocation of any fauna encountered.

AWEC implemented a process methodology for the management of fauna and habitat in accordance with the following legislation, guidelines, and project-specific documents (**Table 1.2.1**).

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents

Document Title	Purpose of Legislation
Animal Care and Protection Act 2001	The Queensland Animal Care and Protection Act 2001 (the Act) promotes the responsible care and use of animals.
Biosecurity Act (2014)	The Biosecurity Act 2014 provides a framework for an effective biosecurity system for Queensland, to ensure the safety and quality of agricultural inputs, and to align responses to biosecurity risks in the state with national and international obligations.
Environmental Offsets Act (2014)	The main purpose of this Act is to counterbalance the significant residual impacts of particular activities on prescribed environmental matters through the use of environmental offsets.
Environmental Protection Act (1994)	The Environmental Protection Act 1994 (EP Act) lists obligations and duties to prevent environmental harm, nuisances and contamination.
Environment Protection and Biodiversity Conservation Act (1999)	The EPBC Act 1999 focuses on Australian Government interests in the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.
Nature Conservation Act 1992 (NC Act)	The Nature Conservation Act 1992 (the Act) provides the legislative basis for the conservation of nature through the dedication, declaration and management of protected areas and the protection of native wildlife and its habitat.

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents	
Document Title	Purpose of Legislation
Nature Conservation (Animals) Regulation (2020)	The Nature Conservation (Animals) Regulation 2020 (Animals Regulation) introduces a new wildlife licensing framework but incorporates and streamlines existing provisions from the regulations that it replaces.
Nature Conservation (Koala) Conservation Plan (2017)	The main purposes of this plan are— (a) to promote the continued existence of viable koala populations in the wild, and (b) to prevent the decline of koala habitats.
Nature Conservation (Plants) Regulation 2020	The regulatory framework captures clearing and harvesting activities that pose a significant risk to plant biodiversity.
Vegetation Management Act 1999 (VMA)	The Vegetation Management Act 1999 regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions, and allows for sustainable land use.
Water Act 2000 (Qld)	The Water Act 2000 (Qld) (Water Act) provides a framework for the planning, allocation and use of surface water and groundwater in Queensland.
Project documents	Any documents and requirements supplied by the client to abide by.

2. Permits and Reporting

AWEC currently holds and operates under a DES Rehabilitation Permit for Spotter Catcher Activity, Permit No. WA0055123 and a Damage Mitigation Permit (removal and relocation of wildlife), Permit no. WA0054928 is licensed in the State of Queensland.

Clearing activities will be done under the three SMP's listed below-

1. TMR State wide SMP (low risk of impacts);

2. QR State wide SMP (low risk of impacts)- SMP1624; and

3. B2N SMP (High risk of Impacts)- SMP827

The following information relates to data to be collected regarding the relocation of fauna which will be submitted to the Department of Environment and Science (DES) as part of the animal breeding places register returns:

- Fauna species relocated.
- Location of animal breeding place.
- Location of release.
- Date of relocation.

A breeding place register is included in Appendix A for provision to the principal contractor, where a Tusked Frog (*Adelotus brevis*) egg mass (taken into care) was removed from a breeding place (aquatic leaf litter nest) during clearing activities and recorded for this reporting period.

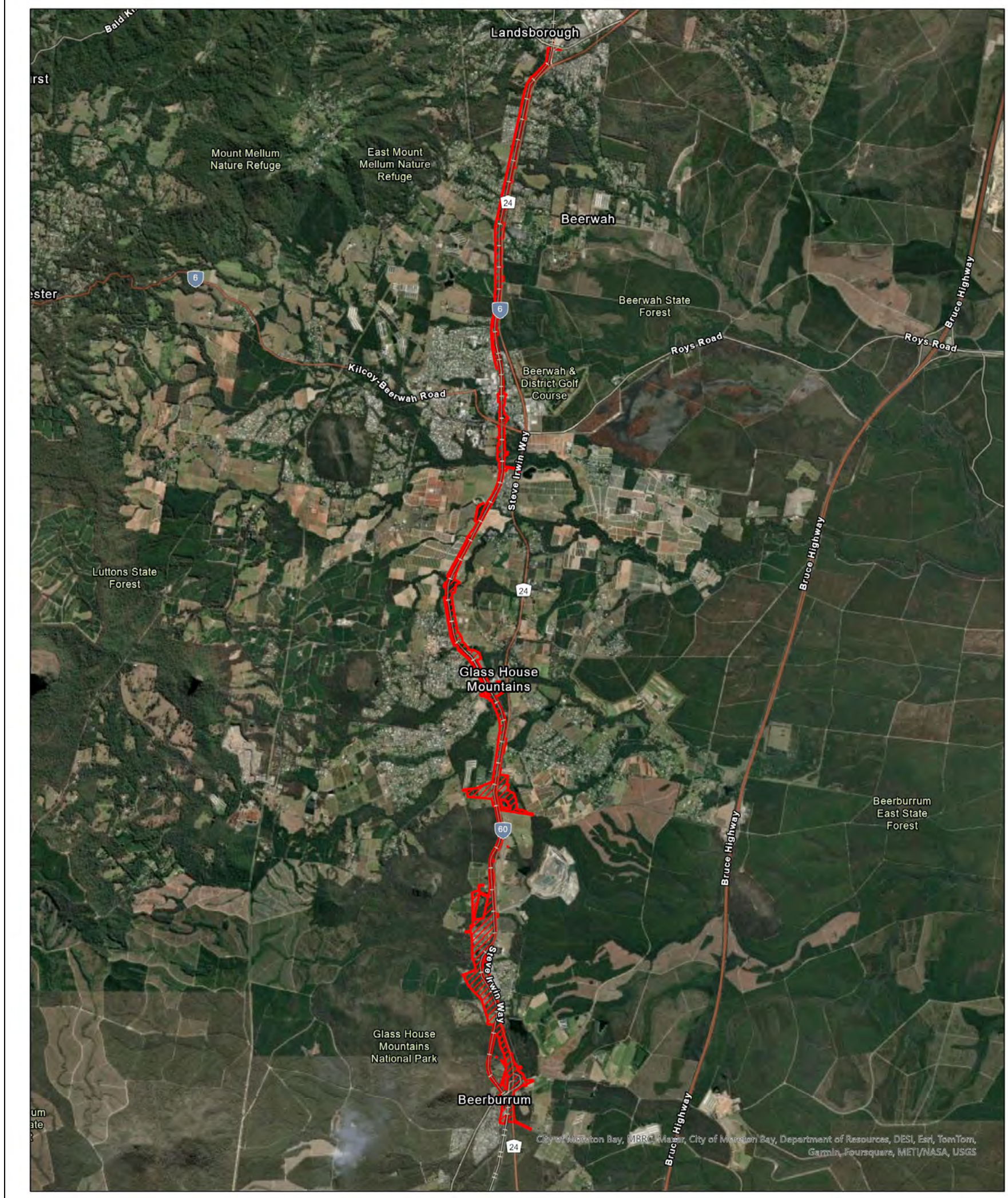


Figure 1. Site Context for EPBC Stage 1 (Indicative Only).

3. Vegetation Clearing and Fauna Management

3.1 Pre-Clearance Field Survey

The pre-clearance field surveys were carried out by a Suitably Qualified and Experienced Person (fauna) on August 6, 13, & 28, 2024.

The survey was completed on foot, employing observational techniques during thorough traverses of the survey area within the Project. Habitat features identified during the survey were marked and recorded using the identification means outlined in the previous pre-clearance report.

Refer (602_JHSW2405_D_Beerburrum_to_Nambour_Rail_Upgrade_Stage1_SI_Pre_Clearance_Rev1) for the pre-clearance field survey methodology and results, as well as fauna management requirements and strategies to be adopted during vegetation clearing activities.

3.2 Vegetation Clearing Activities

Prior to the commencement of vegetation clearing, the DES-licensed FSC conducted searches of habitat features including thick vegetation, ground debris and burrows for potential or active breeding places of fauna and conservation significant fauna species. All GPS locations and representative photographs were taken and stored for reference purposes.

Machines used for vegetation clearing were supervised by a DES-licensed FSC at a ratio of one FSC per machine, with constant positive communication upheld between the FSC and the operator, and the arborists. This ensured any fauna sighted during the clearing activities was able to be safely captured and relocated.

Clearing was carried out with the use of an excavator equipped with a grooming head and chainsaw equipped arborists. Management strategies included directional and controlled felling, utilised as a mitigation measure to reduce impacts on arboreal fauna and to allow opportunistic terrestrial fauna to disperse into suitable areas and away from road hazards.

Before larger vegetation was removed it was gently rustled with machinery to see if any fauna would disperse from the vegetation to minimise fatality from cutting it down. Felled trees were inspected on the ground by the FSC prior to mulching, which was conducted immediately on-site.

General photographs of vegetation clearing activities conducted are displayed in **Figures 2 - 5.**

Figure 2. During Clearing Works: Excavator with grooming head

Figure 3. Post Clearing Works:

Figure 4. During Clearing Works:

Figure 5. Post Clearing Works: SI Clearing extents vegetation clearing and mulched

3.3 Fauna Interactions

One (1) sign of conservation significant fauna species and relevant breeding place was observed within the survey area during clearing activities.

One (1) fauna interaction were recorded throughout clearing activities and are listed in **Table 3.3.1**.

Table 3.3.1 Fauna Interaction Details

Date	#	Scientific Name	Common Name	Capture Lat / Long	Release Lat / Long	Condition, Incidents, Treatment
09/09/24	1	*Morelia Spilota*	Carpet Python	-26.91431, 152.95931	-26.91758, 152.96385	Healthy/Released
TOTAL	**1 Fauna Interactions**					

3.4 Breeding places

One (1) breeding place (Tusked frog aquatic nest) was identified and tampered with during clearing activities. A breeding place register is included in **Appendix A** for provision to the principal contractor, where a Tusked frog (*Adelotus brevis*) egg mass was removed from a breeding place (aquatic leaf litter nest) during clearing activities and taken in by a registered wildlife carer working under a relevant rehabilitation permit and recorded for this reporting period.

Active breeding places identified during clearing activities are listed below in **Table 3.4.1**, and General photographs are displayed in **Figures 6 - 7.**

Table 3.4.1 Breeding Place

Date	#	Type	Species	Capture Location Lat / Long	Release Location Lat / Long	Comments
17/09/24	1	Nest	Tusked frog (Adelotus brevis) egg mass	-26.88549, 152.95019	N/A	Incubating under supervision of wildlife carer
TOTAL	**1 Active Breeding Places**					

Figure 6. Tusked Frog egg mass found within SI Clearing Extent at Youngs Road, Glasshouse Mountains and secured for incubation under permitted wildlife carer.

Figure 7. Carer update: Eggs hatched and developing well.

4. Conclusion

Two (2) fauna interactions occurred during the clearing process with no (0) fatalities.

One (1) sightings of conservation significance fauna species or conservation significant breeding place occurred during the clearing activities.

One (1) breeding place was tampered with during clearing activities and has been accurately recorded in the breeding register provided in Attachment A.

Fauna management throughout the course of vegetation clearing activities on September 2, 3, 4, 5, 6, 9, 10, 11 12, 13, 16, 17, 19 & 20, 2024 was considered to be effective in reducing the risk of native fauna fatality.

AWEC can confirm all activities, including vegetation clearing and fauna spotter-catching, were carried out in accordance with the relevant environmental legislation, Project conditions, Project-specific environmental management plans, and the recommendations of in-field ecologists and fauna specialists.

5. Appendix A

Department of Environment and Science

Animal breeding place register

Wildlife management

Authority holder's name: include Person in Charge where relevant	Department of Transport & Main Roads	**ACTIONS Codes** (mark column with 'X') - **Legend:**				EHP contacts - Wildlife Assessment Team wildlife@des.qld.gov.au
Authority number or description: e.g. SMP project title etc	SMP 827 BHP B2N - Stage 1 - Species Management Program	**R1** = release, no further action	**R2** = Release with first aid - Note V or C in column (V = Vet / C = Carer)	**D** = Death	**I** = Investigation	**Low Risk SMP Email protocol:** annually from the registered date and upon expiry of the SMP.
Approval date/s: e.g. valid from *x*-to *x* / approved on *x* for *x* years	Approval - 18/12/2020 & valid till 30/01/2025					**High Risk SMP Email protocol:** within 6 months of interaction with high risk of impact SMP species and upon expiry of the SMP.

Running report to be completed for all animal breeding places tampered with - all columns must be completed, with form emailed to the department upon expiry of approval and, for high risk SMP within 6 months of each interaction.

DATE (dd/mm/yyyy)	TIME (24 hrs)	SPECIES (Scientific name)	SPECIES (Common name)	LOCATION of animal breeding place				Relocated animal breeding place location details (if applicable)					ACTIONS				COMMENTS / OUTCOME/AUTHORITY HOLDER (e.g. of investigation - further management practices put in place etc. Permit references for DMP - removal and relocation or rehabilitation permit).
				Location Description	Lot on Plan	Latitude - Decimal Degrees	Longitude - Decimal Degrees	Date (dd/mm/yyyy)	Location Description / Lot Plan	Latitude - Decimal Degrees	Longitude - Decimal Degrees	Count	R1	R2	D	I	
17/09/2024	9:00	*Adelotus brevis*	*Tusked Frog*	Culvert and waterway adjoining to dam located against farmland	Road Reserve adjoing Lot 1 on Plan 7660	-26.885491	152.950199	20/09/2024				1		X			Egg mass found within aquatic leaf litter nest, mass acquired by wildlife carer working under rehabilitation permit.

Note: To insert extra lines in Windows 7 select 'Home' tab then click the 'Cells' tab and select 'insert sheet rows' otherwise go to the ' Insert' menu and click 'Rows'.

602-JHSW2405-D

FAUNA PRE-CLEARANCE REPORT

SI CLEARING, BEERBURRUM TO NAMBOUR RAIL UPGRADE STAGE 1

Prepared for:
B2NJV
Delivered:
August 2024

AWEC ENVIRONMENTAL CONSULTANTS

Document Prepared by:

Australia Wide Environmental Consultants
ABN 67 618 756 291
307 Bishop Rd, Beachmere
Queensland 4510 Australia
T: 0458 293 759
E: admin@awenv.com.au

Document Control Information

Report Title:	Pre-Clearance Report
Prepared For:	B2NJV
Report Reference:	602-JHSW2405-D
Project Address:	Church Street, Beerburrum, QLD, 4517 (Project Offices)

Document Review and Distribution

Document Version	Issued to	Author	Reviewed/Approved	Date
Rev 1	B2NJV	AE	YV	29/08/2024

Document Approval

Approvals	Title	Signature
Yolande Venter	Company Director/Senior Ecologist	

Authority

This report has been prepared for use to manage staff and subcontractors relevant to the management and protection of the environment during the Project works. Its application is authorised as part of the client undertaking works. The issue and revision of this report are made under the authority of the Project Manager.

Reports and/or Plans

Assessment reports and drawings provided by the client have been used for the development of this report to support the document.

Table of Contents

1 Introduction

1.1 Background

Australia Wide Environmental Consultants (AWEC) were commissioned by The Beerburrum to Nambour Rail Upgrade Project/B2NJV ('the Client') to conduct a pre-clearance field survey and prepare a pre-clearance report associated with vegetation clearing and dewatering activities as part of SI Clearing Works, located at EPBC Stage 1 project extents, hereafter referred to as the Project.

It is understood the scope of work is localised vegetation clearing to allow access for site investigation works and public utility plant (PUP) relocation.

This report provides a summary of the pre-clearance results based on a field survey conducted on August 6, 13, & 28, 2024, by a suitably qualified and experienced person (fauna) from AWEC, as well as management actions for implementation before and during vegetation clearing activities.

1.2 Scope of Fauna Management

The field survey was conducted on foot to achieve the following objectives:

1. Identify and mark GPS coordinates of any potential habitat and breeding sites for terrestrial, arboreal, and aquatic fauna likely to be impacted by clearing and construction works (e.g., tree hollows, burrows, nests, arboreal termite nests, mulch and rockpiles, and waterbodies).
2. Provide a recommended strategy to aid in the avoidance and/or mitigation of impact by vegetation clearing to conservation significant fauna species and other native fauna.

AWEC implemented a process methodology for the management of fauna and habitat in accordance with the following legislation, guidelines, and project-specific documents (as outlined in **Table 1.2.1**).

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents

Document Title	Purpose of Legislation
Animal Care and Protection Act 2001	The Queensland Animal Care and Protection Act 2001 (the Act) promotes the responsible care and use of animals.
Environmental Offsets Act (2014)	The main purpose of this Act is to counterbalance the significant residual impacts of particular activities on prescribed environmental matters through the use of environmental offsets.
Environmental Protection Act (1994)	The Environmental Protection Act 1994 (EP Act) lists obligations and duties to prevent environmental harm, nuisances, and contamination.
Environment Protection and Biodiversity Conservation Act (1999)	The EPBC Act 1999 focuses on Australian Government interests in the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.
Nature Conservation Act 1992 (NC Act)	The Nature Conservation Act 1992 (the Act) provides the legislative basis for the conservation of nature through the dedication, declaration and management of protected areas and the protection of native wildlife and its habitat.
Nature Conservation (Animals) Regulation (2020)	The Nature Conservation (Animals) Regulation 2020 (Animals Regulation) introduces a new wildlife licensing framework but incorporates and streamlines existing provisions from the regulations that it replaces.

Table 1.2.1 Legislations, Guidelines, and Project-Specific Documents	
Document Title	Purpose of Legislation
Nature Conservation (Koala) Conservation Plan (2017)	The main purposes of this plan are— (a) to promote the continued existence of viable koala populations in the wild, and (b) to prevent the decline of koala habitats.
Nature Conservation (Plants) Regulation 2020	The regulatory framework captures clearing and harvesting activities that pose a significant risk to plant biodiversity.
Vegetation Management Act 1999 (VMA)	The Vegetation Management Act 1999 regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions, and allows for sustainable land use.
Water Act 2000 (Qld)	The Water Act 2000 (Qld) provides a framework for the planning, allocation and use of surface water and groundwater in Queensland.
Project documents	Any documents and requirements supplied by client to abide by.

2 Permits and Reporting

AWEC currently holds and operates under a DES Rehabilitation Permit for Spotter Catcher Activity, Permit No. WA0055123 and a Damage Mitigation Permit (removal and relocation of wildlife), Permit no. WA0054928, licensed in the State of Queensland.

It is understood that the Project currently operates under Species Management Program (SMP) for tampering within animal breeding place(s) where there is a high risk of impacts, SMP 827 BHP B2N – Stage 1 Species Management Program.

All information related to wildlife that will be collected and submitted as part of the Animal Breeding Places Register returns to the Department of Environment and Science (DES) are detailed in **Section 5.5** of the Fauna and Vegetation Management Measures in **Table 5.1**.

A post-clearing report including the provision of an animal breeding place register is to be submitted following the completion of vegetation-clearing activities.

3 Desktop Assessment

Prior to commencing the pre-clearing survey, all previous Project surveys and management plans related to the survey area were reviewed, as well as an extensive desktop assessment of the survey area (refer to **Figure 1**).

The initial assessment for the vegetation clearing activities consisted of a desktop review of publicly available ecological data sources and information on the survey area. The desktop review was followed by an on-ground field survey in conjunction with the pre-clearance field survey to describe the ecological values present and to aid the evaluation of the potential impacts of the Project on identified habitat values.

The following data sources were used to inform the desktop assessment for the survey area.

3.1 Regional Ecosystem Map

The Queensland DNRME Vegetation Management Regional Ecosystem (RE) Map was viewed to determine the extent, type, and status of REs mapped within the survey area.

The existing vegetation across the project is extensive, with a variety of different regional ecosystems within the different survey areas proposed for SI Clearing works.

The following prescribed environmental matters are identified as occurring within the survey area of the Project:

- MSES regulated vegetation [essential habitat]
- MSES regulated vegetation (defined watercourse)
- MSES wildlife habitat [SEQ koala habitat- core]
- Vegetation management watercourse/drainage- 1:25,000

Schedule 2 of the Environmental Offsets Regulation 2014 outlines a list of prescribed environmental matters that are considered matters of state environmental significance (MSES).

3.2 South-East Queensland Koala Mapping

The Department of Environment and Science (DES) released new regulatory koala habitat maps that support the implementation of the South-East Queensland Koala Conservation Strategy 2020–2025 and amended koala conservation protections within the planning framework. It identifies the best quality koala habitat based on modelling of biophysical measures, suitable vegetation for food and shelter, and two decades of records of koala sightings.'

Various survey areas are mapped as containing the following:

- Koala habitat area (core).
- Koala priority area.

3.3 Protected Plants Flora Survey Trigger Map

The Department of Environment and Science (DES) Protected Plants Flora Survey Trigger Map spatial layer was viewed to determine if the vegetation within the survey area is in proximity to a record of a conservation significant flora species.

- Various survey areas are mapped as a 'high-risk area' under the DES Protected Plants for a Survey Trigger mapping. In accordance with Section 5.1 of the Flora Survey Guidelines – Protected Plants (V2.01) (DES 2020), this triggers the requirement for a protected plant flora survey of the clearing impact area.

3.4 Wildlife Online Database

The Queensland Government Wildlife Online database was used to retrieve historical records of flora and fauna species listed under the NC Act previously observed within a 2 km radius of the central coordinates of the survey area.

- The results of the Wildlife Online Extract listed twenty-seven (27) fauna species within a 10 km radius of the central location of the Project and are displayed in **Table 3.4.1**.

Table 3.4.1 Wildlife Online Results

State-Listed Threatened Species	Conservation Status
Fauna Species	
Koala (*Phascolarctos cinereus)*	Endangered
Swamp Crayfish (*Tenuibranchiurus glypticus*)	Endangered
Eastern Curlew (*Numenius madagascariensis*)	Critically Endangered
Curlew Sandpiper (*Calidris ferruginea*)	Critically Endangered

Table 3.4.1 Wildlife Online Results	
State-Listed Threatened Species	Conservation Status
Fauna Species	
Western Alaskan bar-tailed godwit (*Limosa lapponica baueri*)	Endangered
Black-tailed Godwit (*Limosa limosa*)	Endangered
Wallum Rocketfrog (*Litoria freycineti*)	Vulnerable
Wallum Sedgefrog (*Litoria olongburensisl*)	Vulnerable
Cascade Treefrog (*Litoria pearsoniana*)	Vulnerable
Tusked Frog (*Adelotus brevis*)	Vulnerable
Wallum Froglet (*Crinia tinnula*)	Vulnerable
Giant Barred Frog (*Mixophyes iteratus*)	Vulnerable
White-throated Needletail (*Hirandapus caudacutus*)	Vulnerable
Glossy Black-cockatoo (*Calyptorhynchus lathami*)	Vulnerable
Eastern Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*)	Vulnerable
Powerful Owl (*Ninox strenua*)	Vulnerable
Water Mouse (*Xeromys myoides*)	Vulnerable
Grey-headed Flying-fox (*Pteropus poliocephalus*)	Vulnerable
Richmond Birdwing (*Ornithoptera richmondia*)	Vulnerable
Black-faced Monarch (*Monarcha melanopsis*)	Special Least Concern
Spectacled Monarch (*Symposiachrus trivirgatus*)	Special Least Concern
Grey Wagtail (*Motacilla cinerea*)	Special Least Concern
Eastern Osprey (*Pandion haliaetus cristatus*)	Special Least Concern
Short-beaked Echidna (*Tachyglossus aculeatus*)	Special Least Concern
Platypus (*Ornithorhynchus anatinus*)	Special Least Concern
Rufous Fantail (*Rhipidura rufifrons*)	Special Least Concern
Glossy Ibis (*Plegadis falcinellus*)	Special Least Concern

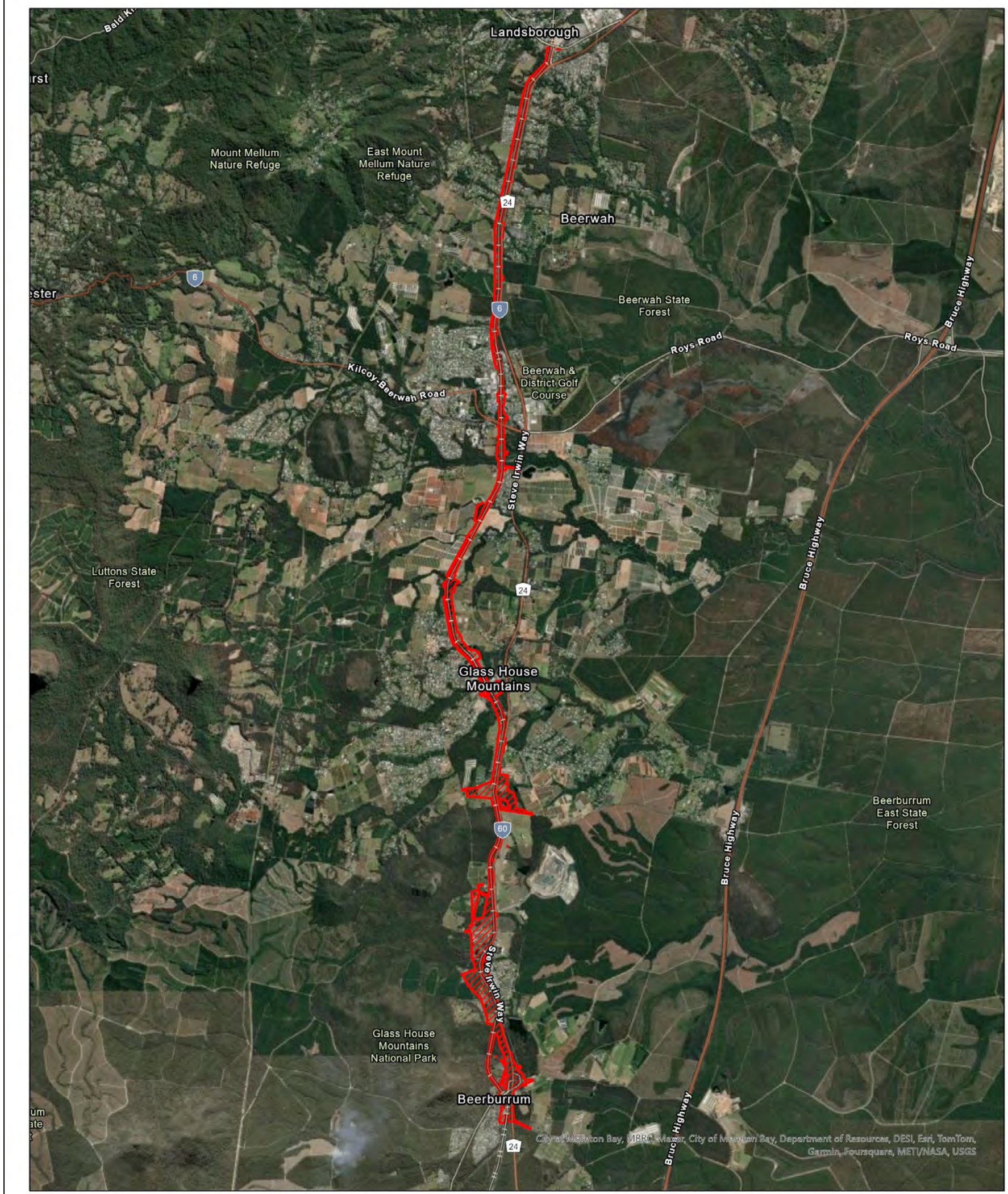


Figure 1. Survey Area Displaying Limits of Clearing (Indicative Only).

4 Field Survey

4.1 Survey Methodology

The field survey was carried out by one (1) Suitably Qualified and Experienced Person (fauna) on August 6, 13, & 28, 2024. The following survey methodologies were employed to identify habitat features requiring further management action (**Table 4.1.1**).

Table 4.1.1 Survey Methodologies

Survey Type	Survey Methodology
Track, scat and sign searches	In the form of footprints and tracks, scats, feeding marks on trees, hairs, feathers, bones, slough, nests, feeding stations and carcasses and incidental surveys
Destructive searches	For indications of occupancy of rocky outcrops, hollow logs, peeling bark, scattered timber, burrows, soil cracks, termite mounds, ground nests, shrubs, leaf litter and grasses
Conduct hand searches	For any terrestrial fauna including high-risk species listed as special least concern, migratory or colonial species and fauna species of conservation significance likely to be impacted by clearing and construction works
Visual searches	For indications of occupancy of nests, hollows, exfoliating bark, fissures, dreys and arboreal termitaria
Aquatic assessment (if applicable)	Of occupancy indicators including amphibian calls or breeding signs, slide marks, burrows or tracks on banks, nesting sites for fish, and breaks in surface tension or bubbles
Opportunistic surveys (if applicable)	To assess the presence of conservation significant flora species likely to occur within areas mapped under the protected plants flora trigger overlay

All features were located using a GPS Kit and the location coordinates were recorded and marked on-site. A description of the above features was recorded and entered into an electronic database. Representative photographs were taken and stored for reference purposes.

4.2 Survey Areas

The survey areas are located in a variety of flagged out areas with a variety of regional ecosystem types across the B2N project extents, which ranges 19km, stretching across a broad geographical region that includes Beerburrum, Glass House Mountains, and Landsborough along Steve Irwin Way, Queensland. Vegetation includes a large number of both native and exotic species, sedge and heavily vegetated wetlands and varying gum tree bushland within both core and priority koala habitat.

All areas have either thick leaf and foliage litter or are comprised of heavily vegetated wetlands, with some water body or stream entities within the proposed clearing extents. Many sections have previously undergone burn off practises, with very little understory layer high vegetation but a dominance in the forest floor, canopy and emergent bush layers. Some survey areas rest against rural farm land, road, rail or other infrastructure.

Several survey areas contain Category Three Invasive Weed species, such as Singapore daisy (*Sphagneticola trilobata)*, *Lantana Camara*, Camphor laurel (*Cinnamomum camphora*).

General vegetation observed within the survey area is displayed in **Figures 2 - 7**.

Figure 2. General survey area of Singapore daisy overgrowth in SI clearing extent

Figure 3. Low-lying swampland.

Figure 4. Low level vegetation composition dominated by invasive species.

Figure 5. Water body present within section of proposed clearing.

Figure 6. Dense leaf litter and open bushland.

Figure 7. Swampland dominated by broadleaved paperbarks and fern/reed wetland species.

4.3 Survey Results

The survey area provides high habitat potential and opportunistic habitat for fauna species such as koalas, wallabies, possums, birds, reptiles and amphibians.

The fauna biodiversity observed/heard within the survey area during the field survey is listed below in **Table 4.3.1.**

Table 4.3.1 Fauna Biodiversity		
Common Name	Scientific Name	NCA Status
Torresian Crow	*Corvus orru*	C
Noisy Miner	*Manorina melanocephala*	C
Rainbow Bee-eater	*Merops ornatus*	C
Australian White Ibis	*Threskiornis molucca*	C
Sacred Kingfisher	*Todiramphus sanctus*	C
Eastern Grey Kangaroo	*Macropus giganteus*	C
Purple Swamphen	*Porphyrio melanotus*	C
Masked Lapwing	*Vanellus miles*	C
Laughing Kookaburra	*Dacelo novaeguineae*	C
Eastern Brown Snake	*Pseudonaja textilis*	C
Red-bellied Black Snake	*Pseudechis porphyriacus*	C
Willie Wagtail	*Rhipidura leucophrys*	C
Eastern Dwarf Tree Frog	*Litoria fallax*	C
Eastern Whipbird	*Psophodes olivaceus*	C
Cane Toad	*Rhinella marina*	I
Koala	*Phascolarctos cinereus*	E
Tusked Frog	*Adelotus brevis*	V

Codes: EX- extinct, PE- extinct in the wild, CR- critically endangered, E- endangered wildlife, V- vulnerable wildlife, NT- near threatened wildlife, SL- special least concern, C- least concern wildlife and I- international wildlife.

Eleven (11) signs of conservation significant fauna species, or breeding places were observed within the survey area. A total of one hundred & forty-six (146) habitat features, and fauna signs were recorded during the survey and displayed in **Table 4.3.2**. Habitat features and fauna signs of significance located 5-10 metres outside of the flagged clearing limits were recorded and tagged.

Among the habitat features listed, water bodies, watercourse systems and aquatic habitat are included within the survey area. Where dewatering of a waterbody is required, refer to **Section 5.12** for guidance on Dewatering Management Measures.

Photographs of habitat features and fauna signs within the survey area are displayed in **Figures 8 - 13,** followed by the distribution of habitat features, and fauna signs identified across the survey area displayed in **Figure 13 – 22.**

Table 4.3.2 Habitat Features & Fauna Signs Records	
Habitat Features	**Count**
Bird Nest	3
Possum Drey	0
Dam/waterbody (Aquatic Habitat)	14
Arboreal Termite Mound	0
Habitat Tree (DBH > 80 cm)	50
Dense Veg	13
Fissured Bark	3
Hollow-Bearing Trees (Total Hollow Count)	20 (52)
Stag Trees	6
Hollow Logs	34
Rocky Outcrops	0
Burrows	5
Woody Debris	13
Total:	161 Habitat Features
Fauna Signs	**Count**
Diggings	36
Scat	7
Tracks	0
Scratch Marks	12
Native Beehive	0
Total:	55 Fauna Signs

Figure 8. Trunk Hollow

Figure 9. Hollow bearing tree (Crown and Branch)

Figure 10. Water Body

Figure 11. Hollow Log

Figure 12. Aquatic Habitat (Creek system)

Figure 13. Diggings

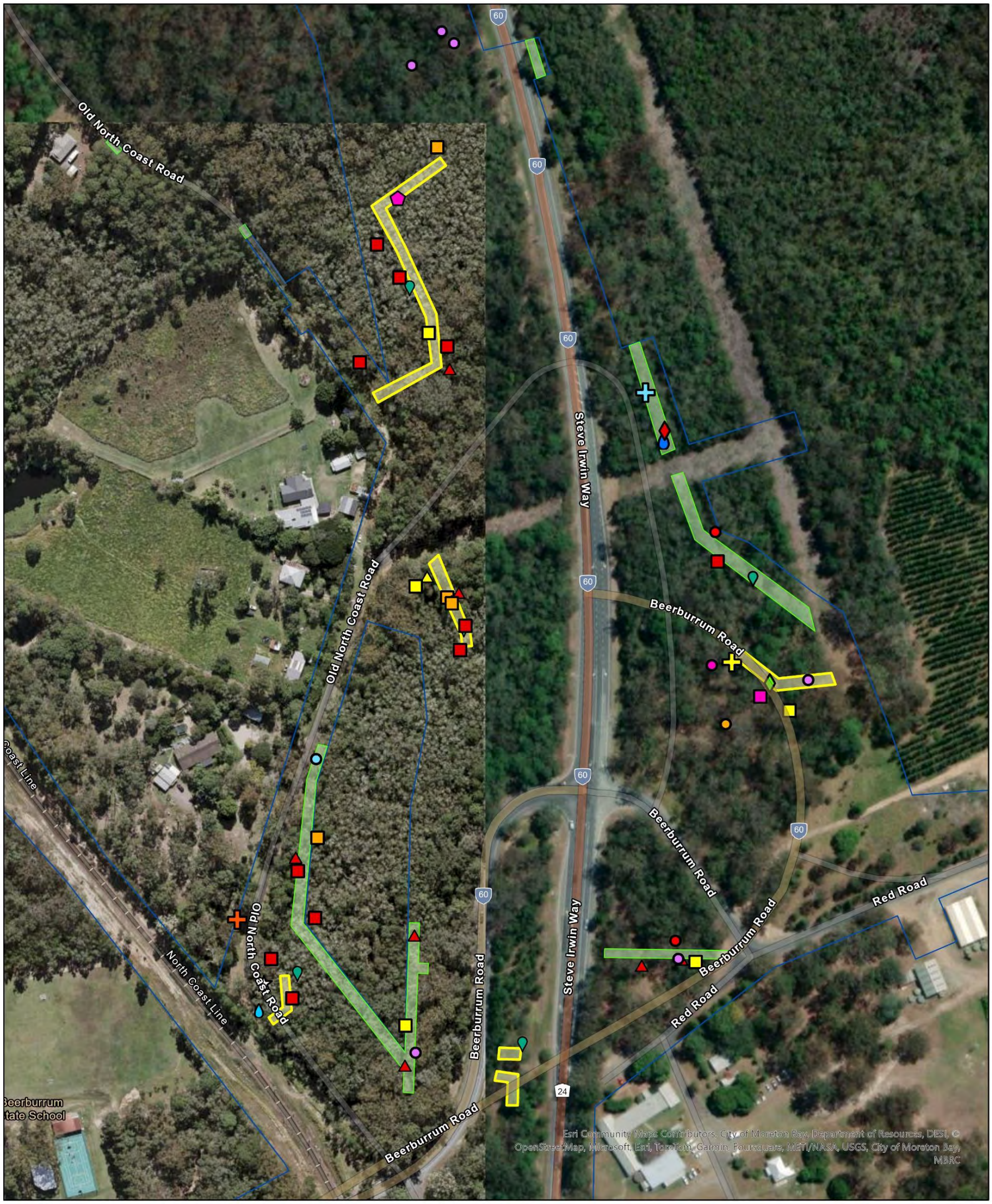


Figure 13. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

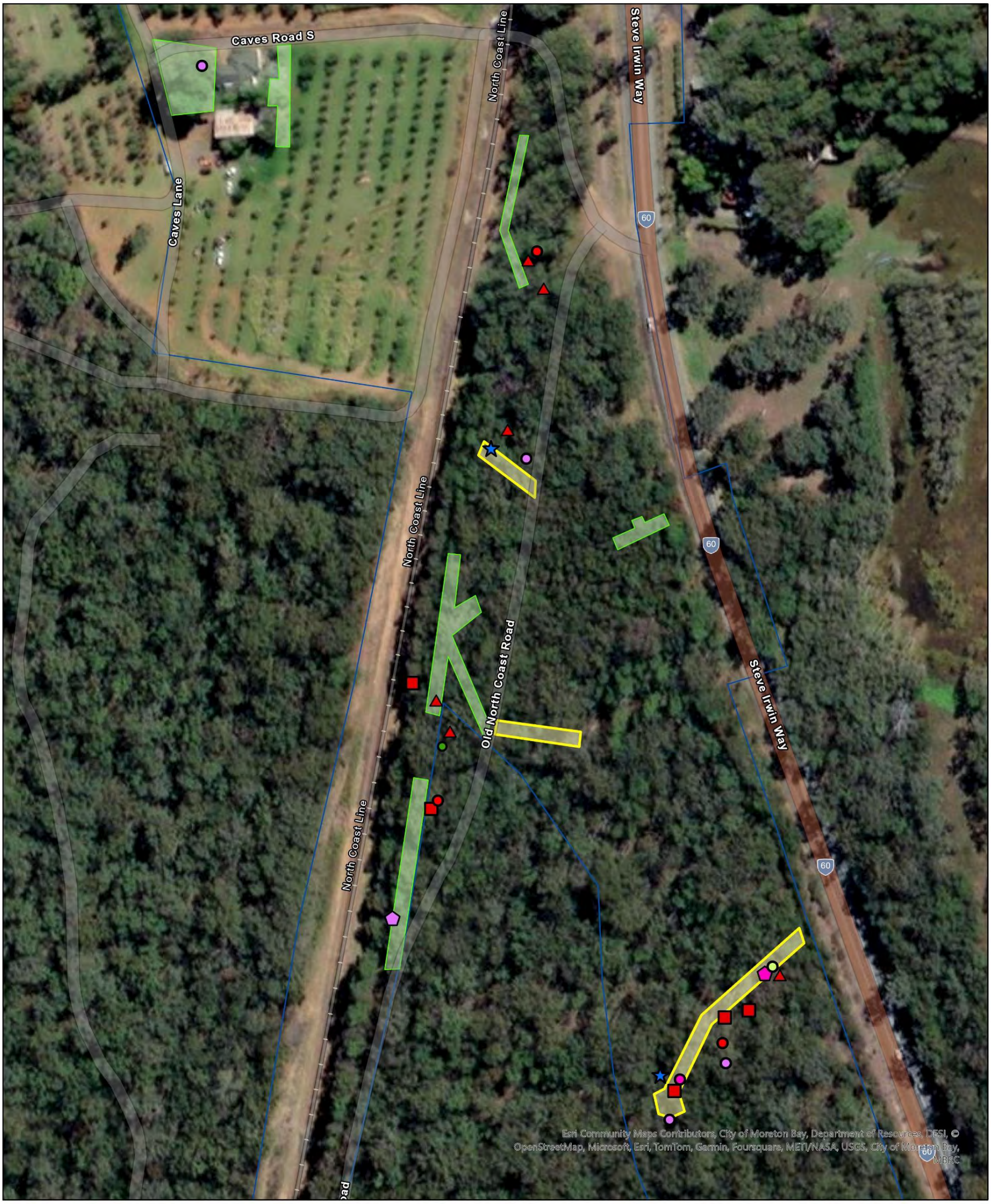


Figure 14. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 15. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 16. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

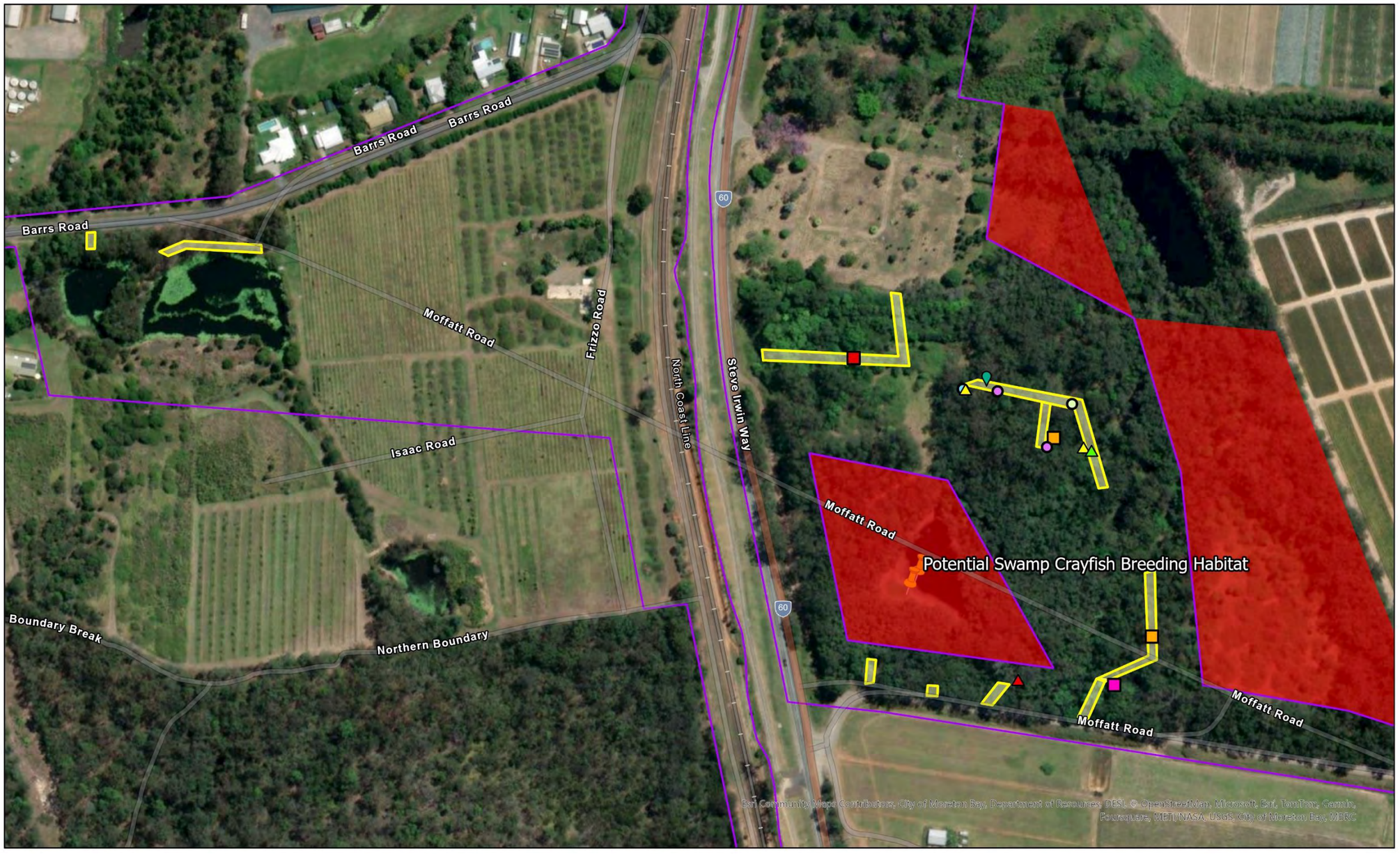


Figure 17. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 18. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 19. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

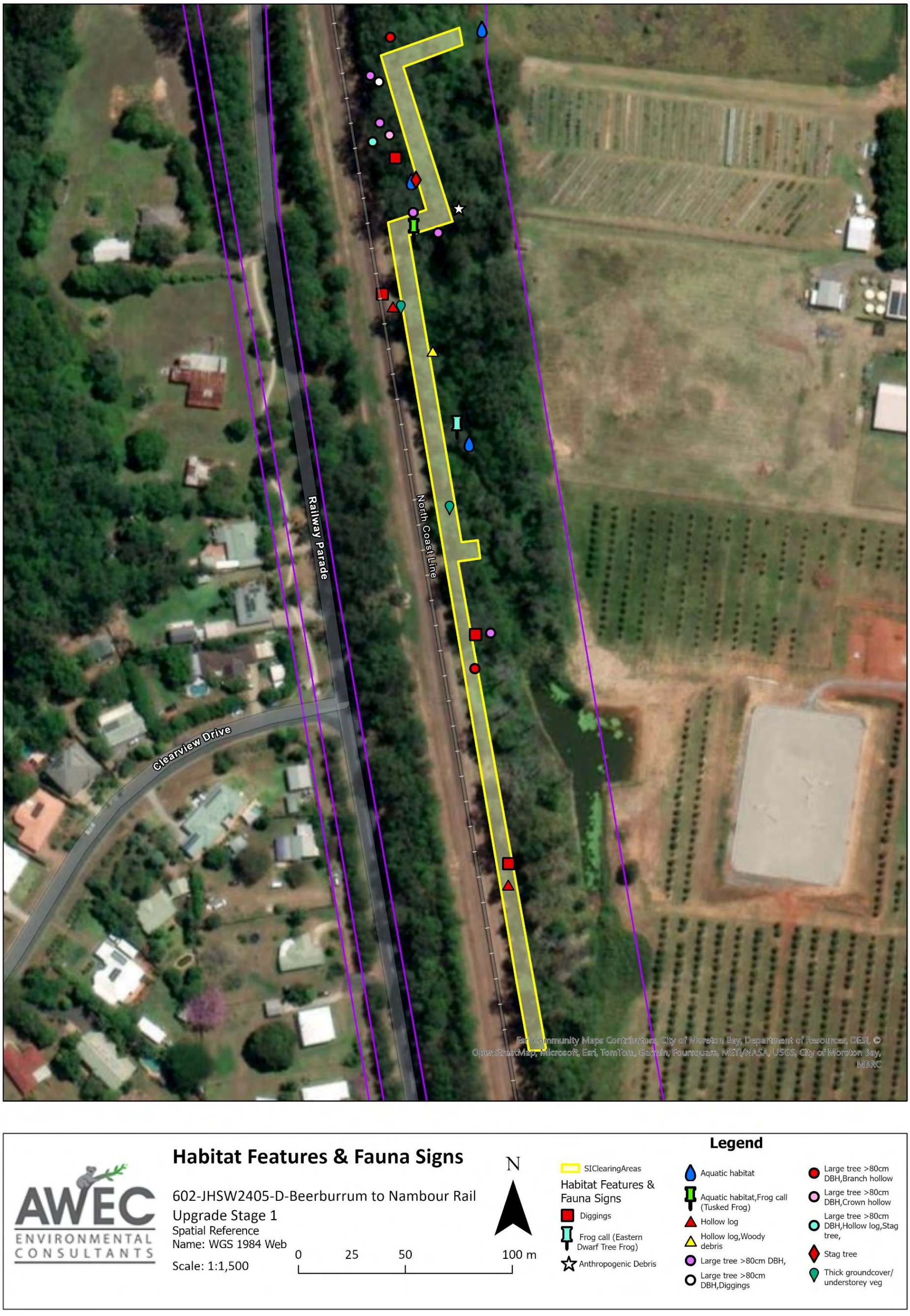


Figure 20. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 21. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

Figure 22. GPS Location of Habitat Features and Fauna Signs Recorded During the Field Survey.

5 Fauna Management Strategies

Threatening processes as defined under the EPBC Act 1999 are those processes that threaten or may threaten the survival, abundance or evolutionary development of a native species or ecological community.

In accordance with the NC Act 1992 and the Animal Care and Protection Act 2001, threatening processes are also those that have a negative impact on the welfare of individual animals. For fauna within the proposed development area, vegetation clearing has the potential to result in injury or death.

The pre-construction phase of a Project is generally considered a relatively short period of intensive activity, which can be associated with several threatening processes. Potential impacts and management strategies to avoid and minimise impacts to native fauna outlined in the Fauna & Vegetation Management Measures of Table 5.1 below focus on this phase of the Project, including vegetation clearing and earthworks activities.

The Fauna & Vegetation Management Measures table details management measures in further detail for the following:

- Pre-clearing
- Clearing and Grubbing
- Fauna Capture and Release
- Injuries & Euthanasia
- Reporting
- Koala Management
- Mulching works
- Native Beehive Relocation
- Recommended Management Actions
- Earthworks and Construction Phase
- Dewatering Management Measures
- Nest Box Management Measures

The purpose of the Fauna & Vegetation Management Measures is to advise the on-site crew of the requirements they must adhere to in order to minimise impacts to fauna during this Project.

Table 5.1 FAUNA & VEGETATION MANAGEMENT MEASURES

Beerburrum to Nambour Rail Upgrade Project/B2NJV

5.1 Pre-clearing

Objective: Mitigate the risk to native fauna
Responsibility: Fauna Spotter Catcher (FSC)
Timing: Pre-construction

Prior to Work Commencing ✓
Ground inspection morning prior to clearing
Mark habitat features and trees
Inform clearing crew at pre-start meeting of marked trees, clearing process and approved requirements of FMP
Any fauna sighted prior to clearing should be relocated
Where koalas may be present, specific inspection should be conducted the day before, by foot and/or drone

5.2 Clearing and Grubbing

Objective: Reduce risk to fauna during clearing
Responsibility: FSC & construction/clearing crew
Timing: Earthworks

During Disturbance Works ✓
A Department of Environment and Science licensed and suitably qualified FSC must be present for all clearing and grubbing to supervise and respond to fauna encounters
FSC must hold an appropriate rehabilitation permit
FSC must conduct a visual inspection of the clearing area daily
Clearing sequentially towards vegetation in two stages
First clearing stage: investigation clearing works to be carried out by grooming head for in situ mulch and to minimise ground disturbance.
Second clearing stage: habitat trees (during main works), preferably afternoon, assessed for the best method (camera, climber, EWP, drone).
Habitat trees are to be inspected for animal inhabitants
Occupied trees must be blocked off and fauna relocated
Trees with unconfirmed occupancy must be soft felled to reduce fauna injury and habitat damage
Injured animals should be either humanely euthanised or taken to a local wildlife hospital or carer (**See Section 5.4**).
Works must be conducted in accordance with management actions and recommendations listed, the relevant Species Management Programs, the NC Act 1992, EPBC Act 1999, and the Animal Care and Protection Act 2001.

If, during the pre-clearing activities, a real and proximate risk to animal welfare is discovered that was not previously identified during the initial habitat assessment, an animal welfare direction will be provided to include additional fauna management methodology.

Where the risk is identified during the disturbance/clearing phase of operations, an animal welfare direction will be supplied in written format to the Administrator and will define the timing of, and actions or measures required to protect the welfare of animals likely to be affected by such operational works, activities, or structures.

Clearing must occur towards vegetated areas to allow for wildlife to self-relocate into surrounding vegetation and prevent isolating fauna.

5.3 Fauna Capture and Release

Objective: Mitigate the risk to native fauna
Responsibility: FSC
Timing: All Phases

Where possible, sighted fauna must be captured, responsibly stored, and relocated. However, koalas cannot be captured, handled, stored, or removed from the site and must be managed in accordance with legislation (**Section 5.6**).

Storing Fauna

1. Secure in a:
   - Calico bag, knotted and zip tied; or,
   - Snake bag, knotted and zip tied; or
   - Pet carrier.

Place in a quiet, dark area, at an appropriate temperature for the species until able to be safely released.

If animal is orphaned or injured, store in a secure manner to prevent unnecessary stress or further injury.

Releasing and Relocating

Relocation and release must consider the following:

- Suitable habitat with an adequate food and water supply.
- Appropriate weather, season, and time of day for species.
- Appropriate social group. Some animals fare better if released into social groups.
- Within 1 km of the site, as per DES guidelines, in a protected location.
- If animals can be re-released on the clearing site once clearing is complete the following criteria must be followed:
- Sufficient habitat retained to support animal's niche, considering factors such as vulnerability to predation; availability of nesting sites, hollows or microhabitats and the availability of water and sufficient food sources.
- Sufficient connectivity between habitats allowing for normal ecological processes such as immigration, emigration, recruitment, and dispersal.
- Habitat blocks and corridors are of sufficient size to maintain ecological integrity and effectiveness, considering likely edge effects.
- Long-term risk factors assessed and mitigated (E.g., risk from domestic animals, vehicles, swimming pools).

5.4 Injuries & Euthanasia

Sometimes euthanasia is required to end the suffering of an injured animal. If this is required, it should be done promptly and humanely.

If injured animals have a reasonable chance of recovery, they should be taken to the closest vet for treatment. Any orphaned young or fauna with minor injuries (e.g., concussion) should be taken to the closest carer. Some animals for example koalas will require specialist care and the closest suitable care facility should be contacted.

Local wildlife care groups are listed below and are to be contacted in the event that injured and/or orphaned wildlife species are observed.

Recommended Wildlife Surgery:

- **Australia Zoo Wildlife Hospital, Beerwah - (07) 5436 2097**
- **RSPCA Wildlife Hospital - 1300 ANIMAL**
- **Wildcare Australia Inc - (07) 5527 2444**

5.5 Reporting

Objective: Adhere to DES requirements
Responsibility: FSC
Timing: All Phases

All fauna injuries or deaths will be reported to the Construction Contractor Project Manager.
After the works, a report on fauna injury, death, capture, and relocations and offsets will be provided to the client.

Record these details for each captured animal ✓
Species
Sex (M, F or Unknown)
Approximate Age or Age Class (neonate, juvenile, sub-adult, adult)
Time and date of capture
Method of capture
Exact point of capture (GPS coordinates)
State of health
Incidents associated with capture likely to affect health
Veterinary intervention or treatments
Time held in captivity
Disposal method (euthanasia, translocation, re-release)
Date and time of disposal
Details of disposal (GPS points of release)
For released animals, location relative to the point of capture

5.6 Koala Management

Objective: To protect local koala populations
Responsibility: Koala Spotter, FSC & Clearing Crew
Timing: All Phases

If a Koala is observed within the site, a DES approved Koala spotter must be on site to monitor the animal until it has self-relocated off-site. A DES-approved Koala spotter is a person who holds a relevant tertiary qualification, and/or who is experienced (Endorsed FSC) in the identification and location of koalas in their natural habitat and has authorisation from DES.

DES-approved Koala FSC must ✓
Be present at the site of felling
Identify Koala occupied trees/overlapping trees
Advise crew of the precise locations of these trees

The *Nature Conservation and Other Legislation (Koala protection) Amendment Regulation 2020* outlines that the following measures must be undertaken to minimise, reduce or mitigate impacts to Koala's in potential koala habitat areas:

- Sequential clearing to assist fauna in relocating to nearby habitats on their own accord.
- No tree in which a Koala is present and no tree with a crown overlapping a tree with a koala present will be disturbed.
- 50m buffer created around such tree - where works are seized until the Koala has moved off on its own accord.
- Where practical, a vegetation corridor is to be left, to allow koalas to self-relocate to a suitable area not in a clearing zone.
- In areas containing a dominance of koala food trees and positively identified Koala sightings and/or identified scat or scratch marks, a koala spotter is to be present during clearing activities.
- If a Koala is not injured but refuses to move from the clearance area on its own accord after two days, the Koala spotter will liaise with DES and negotiate appropriate methods for removal and relocation.

5.7 Mulching Works

Objective: To reduce project impact on local fauna
Responsibility: FSC & Clearing Crew
Timing: Clearing works

A grooming head will be used to during the investigation works of this project for in situ mulch to minimise ground disturbance, hence no timber stockpiles will be stored on site to warrant a FSC presence for mulching or shearing works.

During mulching works ✓
Identified hollows should be salvaged from trees and preserved
Stockpiled vegetation should be inspected by FSC for fauna prior to removal.

5.8 Native Beehive Relocation

Objective: To reduce project impact on local fauna
Responsibility: FSC & Clearing Crew
Timing: Clearing works

All native beehives of the genera *Tetragonula* (*syn Trigona*) and/or *Austroplebelia* are to be recovered during vegetation clearing works for relocation into the retained vegetation and/or recovered and "boxed up" (if damaged).

If a native beehive is located on-site, its entrance is to be blocked off before sunrise. The extent of the beehive within the hollow is to be established using a fibre optic camera. The beehive is then to be cut out and both ends of the hive sealed off using treated wood. The beehive is then to be relocated to a suitable location and left overnight. The next morning at sunrise the entrance is to be opened.

Example Of Relocated Native Beehive

5.9 Recommended Management Actions

Objective: To reduce project impact on local fauna
Responsibility: Koala Spotter, FSC & Clearing Crew
Timing: Clearing works

Management strategies of habitat features to be adopted during vegetation-clearing activities are summarised below.

Any hollow-bearing tree, stag, or other trees that may previously have contained wildlife, may be felled if:

- the fauna spotter/catcher has determined definitively that no wild animals are present in the tree at the time of felling; or
- the fauna spotter/catcher has removed all wild animals from the tree immediately prior to felling.

Habitat Feature	Recommended Management Strategy ✓
Koala	Where a Koala is present within a clearing zone, the tree will be marked with distinctive flagging (and other advisory means as required) and machinery operators will be briefed on the location of the area. No clearing activities can occur within 20 m of the tree retaining a Koala until the animal has moved on of its own volition (where the strategy is to allow the Koala to move of its own accord, overnight). On the following day, the tree and retained area, are to be checked again before their removal. If necessary, the procedure is repeated until the Koala has moved. If the Koala is sick or injured and needs medical attention, DES will be contacted, and trapping by the FSC may be required to allow the Koala to receive medical attention. Actions will be guided by DES and the FSC.
Hollow-bearing limbs and Stag trees	Remove understorey vegetation and non-habitat trees before removing habitat trees. Segmental removal of the tree, with hollow-bearing limbs, plugged and lowered to the ground for inspection by the fauna spotter/catcher; use of an excavator with vertical grab to sensitively lower the main trunk in a controlled manner (after removal of lateral limbs); visually inspect any hollow limbs before mulching.
Non-juvenile koala habitat trees (NJKHT)	Clearing of koala habitat trees is carried out under the supervision of the fauna spotter catcher in a way that ensures appropriate habitat links are maintained within the area being cleared and the adjacent area and ensures koalas occupying the area that is being cleared have enough time to move out the area being cleared without human intervention; occupied and surrounding trees are not to be cleared, and if the area being cleared is more than 3 hectares: • The clearing must be carried out in stages; and • If the area being cleared is less than six (6) hectares, no more than 50% of the area being cleared can be cleared in any one stage; and • If the area being cleared is more than 6 hectares, no more than three (3) hectares or 3% of the area being cleared (whichever is the greater) can be cleared in any one stage. • Between each stage and the next, there is at least one 12-hour period (starting at 6 pm on a day and ending at 6 am on the following day) during which no trees are cleared on the Project.
Birds nest/possum dray	Remove understorey vegetation and non-habitat trees before removing habitat trees. Using a fixed harvesting head, sensitively lower the trunk in a controlled manner under the supervision of the FSC. Visually inspect any hollow limbs before mulching.
Arboreal termitaria	Inspect using observational techniques. If determined to be inactive following inspection using drone and/or camera pole, follow relevant felling methodology – i.e., if the tree is hollow-bearing, employ methodology for hollow-bearing trees described in this table.
Rocky outcrops	Undertake slow, destructive search under the supervision of the FSC.
Woody debris	Inspect using a torch. Undertake slow, destructive search under the supervision of FSC.
Dam (aquatic habitat)	Remove aquatic weeds where possible. In locations where conservation frogs have been detected or are expected to occur, a pre-clearance survey will be carried out for a single connected habitat area and will be valid for a period of one week, after which time another pre-clearance survey must be completed before clearing is to be continued. Dewatering activities are to occur under the Fish Salvage Guidelines (DPI, 2004).

5.10 Earthworks and Construction Phase

Objective: To reduce project impact on local fauna
Responsibility: Construction Crew
Timing: Clearing works

Construction Phase Crew Responsibilities ✓
The Contractor shall ensure that, to the extent possible, project infrastructure and auxiliary works (laydown areas, stockpile sites, site office) are constructed in a manner that does not create additional hazards for wildlife.
A FSC is present on site for all clearing works and has informed the crew of marked trees prior to clearing.
The clearing is undertaken sequentially in 2 stages (1st stage is to clear non-habitat trees, 2nd stage, at least 24 hours later, to clear habitat trees) in the clearing direction advised.
Clearing of koala habitat trees follows the Koala Management Section requirements.
To minimise impacts and conflicts between native animals, vehicular movement and access during construction, site access should be controlled via a single entry and exit point.
Inspect open trenches, culverts and other structures prior to works being undertaken within an area to determine whether there are any trapped or injured native fauna species present and act as appropriate.
Trenches, manholes, excavations for footings, etc. while open pose threats to native animal entrapment and should be backfilled as soon as possible. In some locations, barriers may be required overnight to eliminate the accidental capture of animals moving through the site.
Educate staff, including sub-contractors, in relation to the risk of fauna injury and deaths and how to manage animals which are displaced, including threatened species.
All native wildlife is protected (including snakes) and shall not be intentionally harmed as a result of work or workers' actions.
All native animal fatalities must be reported immediately to the Environmental Coordinator.
Where any site staff (contractors or subcontractors) witness or locate distressed, injured, or orphaned animals they should immediately contact the FSC and Environmental Coordinator. Works within the area of the animal must cease until further instruction is provided by one of the above authorities.

5.11 Notification & Corrective Action

Objective: To reduce project impact on local fauna
Responsibility: Contractor and Project Manager
Timing: Clearing works

Contractor and Project Manager Responsibilities ✓
Endorsement of a low-risk Species Management Program for tampering with the breeding place of a least concern species.
The client is required to notify the Administrator in the event that active breeding places (i.e., eggs/young) are identified within the clearing footprint, as well as identification of breeding places for any conservation significant fauna species, special least concern, migratory or colonial species as listed under the NCA 1992 or the EPBC Act. Initial notification of animal breeding places will be transmitted with the relevant data sets (photos and GPS) within the pre-clearance report (where identified) or 24 hours and directly prior to clearing during the pre-clearing checks. Where no breeding places have been tampered with a NIL Animal Breeding Place Register will be provided to the client.
Vegetation clearing and disturbance procedures will be reviewed and improvements to the procedure will be made as required.

5.12 Dewatering Management Measures

Pre-dewatering Phase

1. At a minimum, work will be conducted under the following:
   - Rehabilitation Permit by appropriately qualified ecologists.
2. Where significant waterbodies contain a high density of aquatic fauna, load reduction trapping will be conducted. A two day long trapping program will start once the dam is 40% dewatered. With a focus particularly on crustaceans and turtles, due to their burrowing nature, making them difficult to find. Traps will also be used to reduce the load of small fish and eels from the waterbody.
3. The morning prior to dewatering commencing; fish load will be further reduced using scoop, dip nets and seine nets.
4. Suitable release locations are to be selected due to their:
   - Proximity to site,
   - Access,
   - Similar aquatic values; and
   - Size.
5. It is the responsibility of the site supervisor to ensure the required erosion and sediment control measures are installed prior to dewatering works commencing.

Water Quality during Dewatering

1. Water quality testing will be done twice daily throughout the dewatering process, to monitor the water quality for things such as declines in oxygen saturation levels that may have a detrimental impact on the aquatic occupants of the water body.
2. Acid sulphate soils may be exposed during the dewatering process and could have a significant impact on the water quality of the waterbody.
3. If the water does not meet the required standard to be released, dewatering works should be suspended until the water has been treated and meets the standard for release.
4. Acid Sulphate soils should be managed according to the State Planning Policy 2/02, Planning and Managing Development Involving Acid Sulphate Soils, State Planning Policy 2/02 Guideline, Acid Sulphate Soils and Queensland Acid Sulphate Soil Technical Manual, Soil Management Guidelines.

Water Removal

Responsibility: Site Supervisor

During Water Removal ✓
To remove the last of the water out of the dam a few sumps will be dug out within the waterbody and the pumps (**with fish shields**) will be placed into these sumps. This will reduce the risk of fish being left in isolated ponds that are hard to reach and it will also make it easier to relocate the last few fish when all the water is almost drained.
The water level will then be reduced by increments of 25%, this will allow as many fish as possible to be removed. If the water level drops too fast there will not be enough water or oxygen to support all the fauna within the waterbody.

Aquatic Fauna Management Measures

Responsibility: Environmental Contractor

Aquatic Fauna Guidelines ✓
All fish are to be removed, stored, and released as quickly as possible. Animals will be transported within large, aerated tubs. Storage containers are to be filled with water from the waterbody that the fish were captured out of and are to be sized appropriately to allow for fish to swim comfortably in an upright position. Containers are also to be soft with rounded edges and have a lid to provide a darkened environment for captured fauna. Overcrowding is to be avoided, with approximately 0.2kg of fish per litre of water considered appropriate. Water conditions within the containers are to be monitored continuously and the water should be changed hourly to ensure appropriate levels of oxygen are maintained.
Fish are to be released carefully, with the container placed in the water to allow fish to swim away. All fish are to be handled using wet hands or a wet towel and Shimano enviro nets will be used which minimises the risk of removing any of the fish's protective mucus coating and reduces the possibility of split fins or any damage to their eyes. See for potential release sites of aquatic fauna.
Only native species are to be relocated, any pest or exotic species captured will be humanely euthanased. Where prohibited or restricted invasive animals or noxious fish listed under the Biosecurity Act 2014 are captured, these will be euthanased. Methods used will be in accordance with relevant authority guidelines and the ANZCCART's Euthanasia of Animals Used for Scientific Purposes (2001).
Exotic or pest plant species will be disposed of appropriately to avoid the spread of weeds into waterways.
To further reduce the risk of fatalities in the final dewatering stage due to low levels of dissolved oxygen, there will be several suitably qualified staff on site to ensure that the fish are relocated as fast as practical.
Tadpoles will be collected with soft handheld dip nets. Any handling of amphibians will follow the DES Interim Hygiene Protocol for Handling Amphibians.

5.13 Nest Box Management Measures

Clearing of vegetation during site investigation works will aim to avoid clearing trees with a DBH greater than 800mm and other relevant arboreal habitat features (hollow trees, excavated termite mounds, etc.). Where these features cannot be avoided to carry out works the nest box management measures discussed below will be implemented.

This site is located within the Sunshine Coast Regional Council, where there are no outlined details regarding nest box installation, so the following standard conditions are recommended to be followed:

- When a hollow is removed and it is occupied, a nest box must be installed at a 1:1 ratio, when a hollow is not occupied, nest boxes must be installed at a 3:1 ratio (three unoccupied hollows to one nest box; round up where number is not a factor of 3).

The aim of nest boxes is to compensate for the loss of habitat features through the development of the site.

At least half of the required nest boxes are recommended to be installed either prior to commencement of clearing or within 7 days of the clearing having taken place. Remaining nest-boxes to be installed within 30 days of completing clearing works.

Types and sizes of nest boxes should reflect fauna on site, and/or a nest box management plan if available. The exact location awaits council approval, and a tree climber will select the safest, most appropriate trees on the day of installation. Exact types of next boxes appropriate for each tree will also be confirmed on the day of installation, and GPS coordinates will be updated for monitoring.

Nest boxes will be fixed to the tree using a method designed to ensure no damage is done to the tree as it matures.

Nest boxes to be maintained for a minimum of 12 months post installation. An annual survey is proposed to inspect all installed nest boxes. Any severely damaged boxes found during the annual survey will be replaced.

6 Nest Box Recommendations

The survey area contains fifty (50) trees with a DBH greater than 800 mm. There are thirty-two (32) trees with habitat features that potentially may be removed and/or lie within the 5 – 10 metre buffer zones of the early investigation work.

Therefore, in line with the management measures outlined in **Section 5.13** of the Fauna & Vegetation Management Measures above, a number within the range of zero (0) & one hundred and seven (107) nest boxes may be recommended for this Project.

Where possible, habitat features are to be retained and placed in retained vegetation in place of a nest box.

Table 6.1 displays the calculations made for nest boxes recommended for this Project.

Table 6.1 Nest Box Calculations

Description	Count	Calculations	Recommended Nestboxes
Habitat Trees without hollows	30	30 X 3	90
Hollows within non-Habitat Trees	0	3 X 1	0
Hollows within arboreal termite mounds	0	5 X 1	0
Unoccupied hollows	52	3 : 1	17
Occupied hollows	Unknown		0
Total			107

7 Conclusion

A pre-clearance field survey has been undertaken to determine risk and management strategies for fauna management throughout clearing activities undertaken by Beerburrum to Nambour Rail Upgrade Project/B2NJV.

Sightings of conservation significance fauna species, and breeding places were observed within the survey area during the pre-clearance field survey. All habitat features and fauna signs were identified across the survey area and recorded.

Signs of conservation significant fauna species were identified across the varying SI Clearing zones. Scratch marks resembling those made by Koalas (*Phascolarctos cinereus*) were observed, however, no scat or other signs of koala were detected. Precaution is required during clearing works and Koala Management actions are detailed in **Section 5.6** of the Fauna and Vegetation Management Measures in **Table 5.1** must be followed. Frog calls made by Tusked Frogs (*Adelotus brevis*) were heard with multiple areas of proposed clearing/dewatering. Precaution is required during clearing works and frog management actions are detailed in Section 5.9 of the Fauna and Vegetation Management Measures and the High Risk SMP preconstruction phase management actions.

Various potential breeding places were identified within the survey area and recorded, which will be cover under the Species Management Program (SMP) for tampering within animal breeding place(s) where there is a high risk of impacts, SMP 827 BHP B2N – Stage 1 Species Management Program.

To manage the risk to any native fauna present during the proposed clearing activities, the fauna management measures within this document are to be adhered to for the duration of the Project.

Multiple survey areas is mapped as a 'high-risk area' under the DES Protected Plants for a Survey Trigger mapping, this triggers the requirement for a protected plant flora survey of the clearing impact area prior to any clearing activities.

8 Recommendations

Native street planting is recommended to reduce the amount of lost foraging habitat. Any koala fodder foliage that is cleared should be given to a local wildlife carer or rehabilitation centre.

Habitat trees and arboreal features within the SI Clearing extents will be attempted to retain during clearing works, however where they can't be avoided to carry out works nest boxes are recommended following the relevant management measures. Where possible, habitat features are to be preserved and placed in retained vegetation in place of a nest box. The amount of nest boxes to be used is subject to change according to clearing works and post-clearance survey.

Recommendation has been made to ensure pre-clearing checks undertaken 24 hours prior and directly prior to clearing including canopy searches for fauna. The clearing is to be undertaken sequentially with a minimum of one (1) FSC per clearing front. Clearing activities should maintain appropriate habitat links for self-dispersal by fauna into adjacent areas where possible and allow for safe capture and relocation away from road infrastructure and areas to be disturbed as part of the Project.

Notification procedures for habitat features identified in **Section 5.9** are to be followed where any wildlife interactions are likely to or have occurred during the pre-clearance field survey, 24-hour pre-clearing checks, and approval prior to the commencement of clearing activities.

It is recommended that the findings of this pre-clearance report are considered during vegetation clearing, and construction activities to ensure that potential disturbances to ecological values are minimised and to prevent shifts away from remnant vegetation communities.

A post-clearing report is required at the conclusion of clearing activities.

Appendix C – Minister's letter approving EMP

OFFICIAL

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC ref: 2020/8803

[redacted]
Project Manager (B2N Stage 1)
Department of Transport and Main Roads
[redacted]

Approval of Grey-headed Flying-fox Management Plan for Beerburrum to Nambour Rail Upgrade Project

Dear [redacted]

Thank you for your letter dated 21 July 2023 to the Department of Climate Change, Energy, the Environment and Water, seeking approval of the Grey-headed Flying-fox Management Plan, in accordance with Condition 3 of the above project under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Officers of the department have advised me on the Grey-headed Flying-fox Management Plan and the requirements of the conditions of the approval for this project. On this basis, and as a delegate of the Minister for the Environment and Water (the Minister), I have decided to approve the *Beerburrum to Nambour Rail Upgrade (B2N) Stage 1, Grey-headed Flying-fox Management Plan*, version 5, dated 28 June 2024. This plan must now be implemented.

As you are aware, the department has an active monitoring program which includes monitoring inspections, desk top document reviews and audits. Please ensure that you maintain accurate records of all activities associated with, or relevant to, the conditions of approval so that they can be made available to the department on request.

Should you require any further information please contact [redacted] email to PostApproval@dcceew.gov.au.

Yours sincerely

[redacted]
Branch Head
Environment Assessments (Vic and Tas) and Post Approvals
Nature Positive Regulation Division

27 August 2024

Appendix D - Grey headed flying fox roost survey

TECHNICAL MEMORANDUM:

Grey-Headed Flying Fox Roost Survey

Prepared for:
B2NJV

Delivered:
October 2024

AWEC
ENVIRONMENTAL
CONSULTANTS

Document Prepared by:

Australia Wide Environmental Consultants
ABN 67 618 756 291
307 Bishop Road,
Beachmere
Queensland 4510 Australia
T: 0458 293 759
E: admin@awenv.com.au

Revision History

Rev. #	Issue Date	Revision Details	Prepared By	Reviewed By	Approved By
0	Oct 2024	For Review	Yolande Venter	Justin Steinhardt	Joel Keady
1	Oct 2024	Final Version	Yolande Venter	Justin Steinhardt	Joel Keady

Document Approval

Approved:	Name:	Signature:	Date:
Operational director	Joel Keady		Oct 2024

TABLE OF CONTENTS

1 INTRODUCTION

Australia Wide Environmental Consultants (AWEC) were commissioned by The Beerburrum to Nambour Rail Upgrade Project/B2NJV ('the Client') to conduct surveys of vegetation within 300m of preliminary work areas to determine if Grey-headed Flying-fox Roosts were present, as required by EPBC Approval 2020/8803.

1.1 Ecologist and Qualifications

The AWEC nominated Ecologist is Yolande Venter. Yolande is a degree-qualified ecologist with over fifteen years of professional experience within the ecology and environmental management sectors. Yolande's CV is provided in Appendix 2.

2 Survey Methodology

2.1 Species Description

Grey-headed Flying-fox (Pteropus poliocephalus) is Listed in the EPBC as a Vulnerable species.

The Grey-headed Flying-Fox is one of the largest bats in the world with a weight of 600–1000 g and a head-body length of 230–289 mm (Eby & Lunney 2002). It is the only Australian flying-fox that has a collar of orange/brown fully encircling its neck (Hall 1987). Thick leg fur extends to the ankle, in contrast to other Pteropus species in which it only reaches the knee (Hall 1987). As its name implies, the head is covered by light grey fur (Hall 1987). The belly fur is grey, often with flecks of white and ginger. The fur on the back shows two morphs which could be related to age, moult or sub-population (Hall & Richards 2000). One morph has dark grey fur and the other has a pronounced silver or frosted appearance (Hall 1987). Winter fur is darker than summer fur with a pronounced moult occurring in June (Hall 1987).

2.2 Species Habitat

The Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas, it also utilises a wide range of rainforest fruits (Eby 1998). As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources (Duncan et al. 1999; Eby 1996).

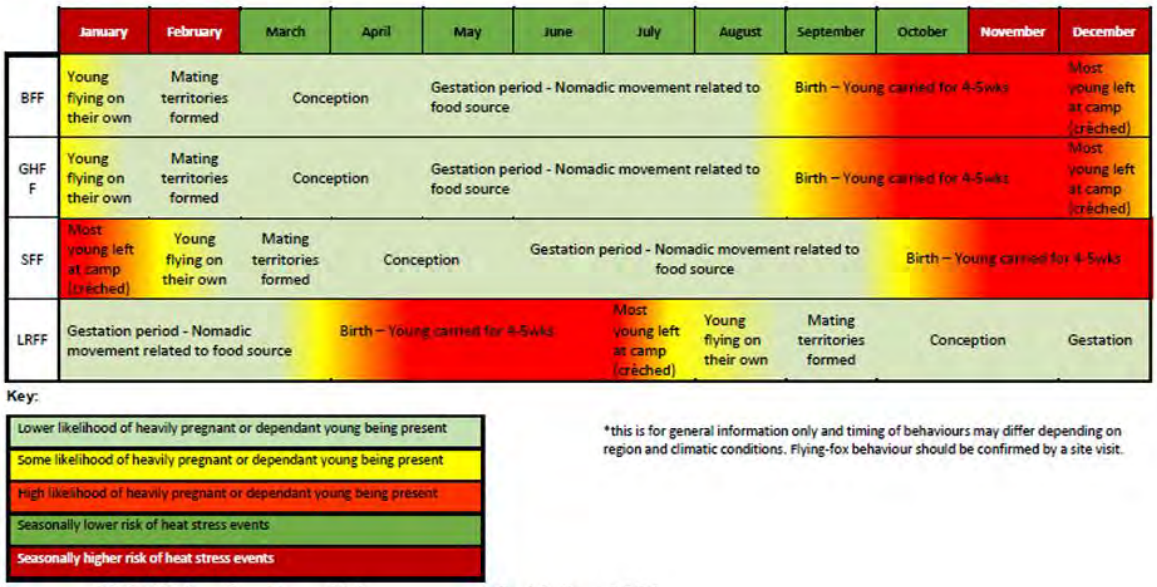
The Grey-headed Flying-fox roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast (van der Ree et al. 2005). Roost vegetation includes rainforest patches, stands of Melaleuca, mangroves and riparian vegetation (Nelson 1965), but colonies also use highly modified vegetation in urban

and suburban areas (van der Ree et al. 2005). The species can maintain fidelity to roost sites for extended periods (Lunney & Moon 1997), although new sites have been colonised (Tidemann & Vardon 1997).

2.3 Local Migration Pattern

Four species of flying-fox are native to mainland Australia and occur primarily in northern and eastern temperate and sub-tropical coastal areas. Three of those four species, the Little red flying-fox (LRFF), the Black flying-fox (BFF) and the Grey-headed flying-fox (GHFF), occur in southeast Queensland. The Grey-headed flying-fox is Australia's only endemic flying-fox and is listed as Vulnerable under the EPBC Act.

For individuals of each species the breeding cycle within a colony is synchronous. The lifecycle calendar is almost identical for the GHFF and BFF, but it may vary slightly under certain environmental conditions (See Figure 1). The LRFF lifecycle calendar is the reverse of the former two.



Source: *DES Flying-fox Roost Management Guideline 2020*

Figure 1- Summary of lifecycle stages for local flying-fox species

Forty-one roosts are currently recognised in the local government area (LGA) on a variety of land tenures (See Figure 3).

2.4 Desktop Review

The Queensland DNRME Vegetation Management Regional Ecosystem (RE) Map was viewed to determine the extent, type, and status of REs mapped within the survey area.

The existing vegetation across the project is extensive, with a variety of different regional ecosystems within the site.

The following prescribed environmental matters are identified as occurring within the survey area of the Project:

- MSES regulated vegetation [essential habitat]
- MSES regulated vegetation (defined watercourse)
- MSES wildlife habitat [SEQ koala habitat - core]
- Vegetation management watercourse/drainage - 1:25,000

2.5 Survey Guidelines

The Grey-headed Flying-fox occupies most areas in their distribution in highly irregular patterns, and, therefore, surveys based on animal sightings are unlikely to be reliable. A more effective survey method is to search appropriate databases and other sources for the locations of camps, and to conduct vegetation surveys to identify feeding habitat (DEWHA 2010m).

Flying-foxes are recognised easily from a distance while they roost or are in flight, and have distinctive audible calls that are heard most frequently in the early morning or under sunny conditions. Other signs include their distinctive odour and droppings. Both the ground and foliage should be examined for flying-fox scats. Note that this species rarely vocalises during rain and some periods of the day. Roosts can also be located by surveying for animals exiting at dusk.

During the initial phases of our project, we conducted thorough research on previously identified flying fox roosting areas. We utilized extensive data collected from a comprehensive survey was conducted throughout the project boundary, which allowed us to pinpoint regions featuring tree species known to be favoured by flying foxes, including:

1. Eucalyptus species
2. Melaleuca (Paperbark) trees
3. Ficus species
4. Acacia species
5. Corymbia (formerly known as Eucalyptus) species

Flying foxes typically select trees located near water sources and flowering plants, as these provide both sustenance and suitable roosting conditions. They tend to prefer tall trees with dense canopies, which offer protection from predators and adverse weather.

All the potential mapped roost sites, vegetation communities and food plants were surveyed by suitably qualified ecologists during fauna pre-clearance (6-13th August 2024) and weed surveys (3rd- 25th July 2024) within the project boundary.

A 300m buffer around the project boundary was surveyed (16th August- 11th September 2024), focusing on the mapped urban Flying-fox Management Area and suitable habitat for these species. These areas were surveyed by a thermal drone during early sunrise. Low value areas were also surveyed but less time was allocated to these areas.

Surveys were conducted at the start of the breeding season for this species, species become less nomadic during the survey months and occupy camps.

3 RESULTS

Site extent and 300m buffer were surveyed by suitably qualified ecologist over a three-month period. No grey-headed flying fox roosts were identified within the project area or within 300m of preliminary work areas during the pre-clearing surveys and thermal drone surveys (**See Figure 2 for the extent of surveys)**.

4 REFERENCES

Eby, P. & D. Lunney (2002). Managing the Grey-headed Flying-fox as a threatened species in NSW. In: Proceedings of the Royal Zoological Society of New South Wales. Mosman, Sydney: Royal Zoological Society of New South Wales.

Hall, L. (1987). Identification, distribution and taxonomy of Australian flying-foxes (Chiroptera: Pteropodidae). Australian Mammalogy. 10 (2):75-81

Hall, L. & G. Richards (2000). Flying Foxes: Fruit and Blossom of Australia. Sydney: University of New South Wales Press.

Eby, P. (1998). An analysis of diet specialization in frugivore Pteropus poliocephalus in Australian subtropical rainforest. Australian Journal of Ecology. 23:443-456.

Duncan, A., G.B. Baker & N. Montgomery (1999). The Action Plan for Australian Bats. Canberra: Environment Australia. Available from: https://webarchive.nla.gov.au/awa/20170226172357/http://www.environment.gov.au/resource/action-plan-australian-bats.

van der Ree, R., J. McDonnell, I. Temby, J. Nelson & E. Whittingham (2005). The establishment and dynamics of a recently established urban camp of flying foxes (Pteropus poliocephalus) outside their geographic range. Journal of Zoology. 268:177-185. The Zoological Society of London.

Nelson, J.E. (1965a). Movements of Australian flying foxes (Pteropodidae: Megachiroptera). Australian Journal of Zoology. 13:53-73.

Lunney, D. & C. Moon (1997). Flying-foxes and their camps in the rainforest remnants of north-east NSW. In: Dargavel, J., ed. Australia's Ever-Changing Forests III. Canberra: Centre for Resource and Environmental Studies, Australian National University.

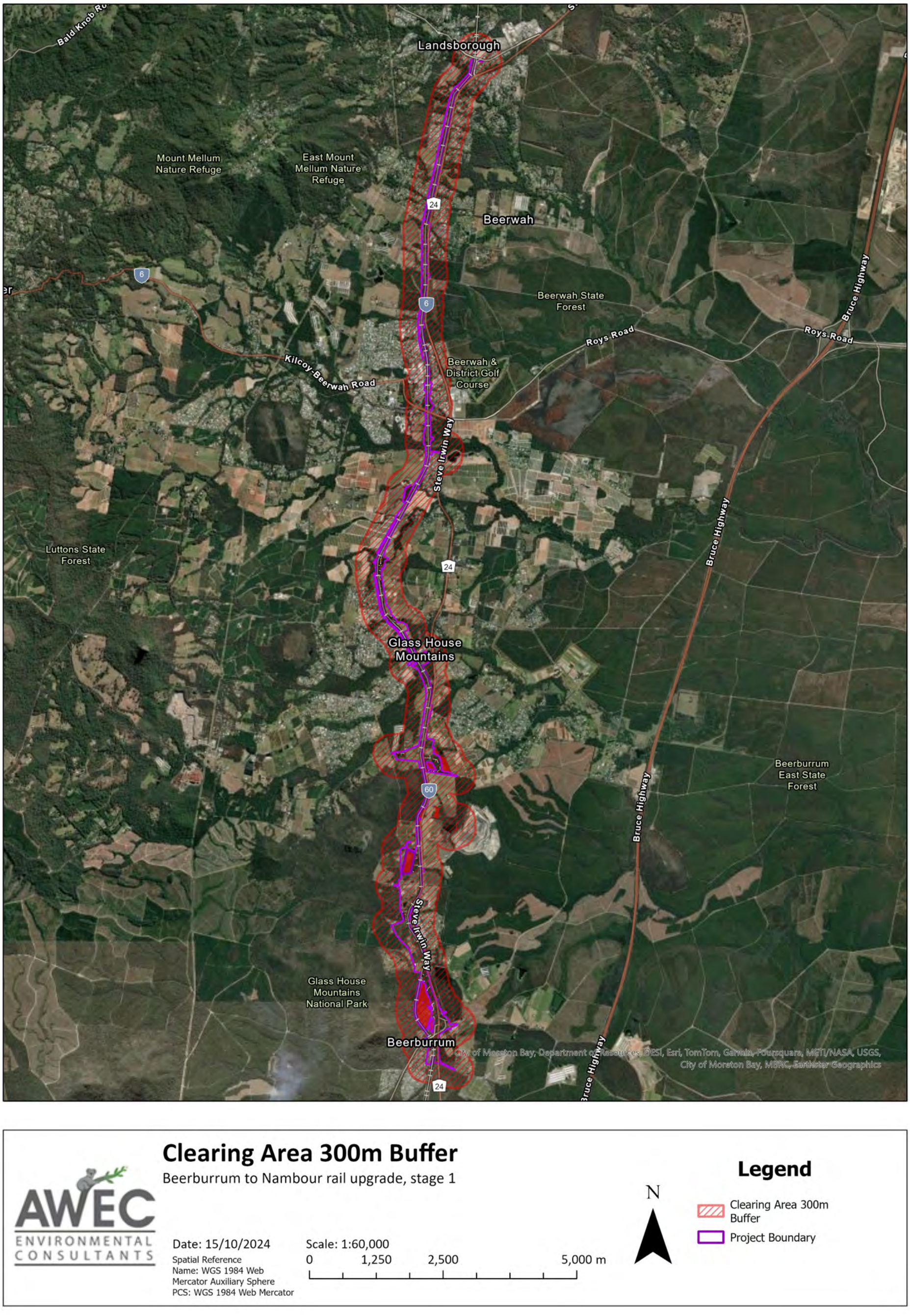


Figure 2 Extent of area surveyed

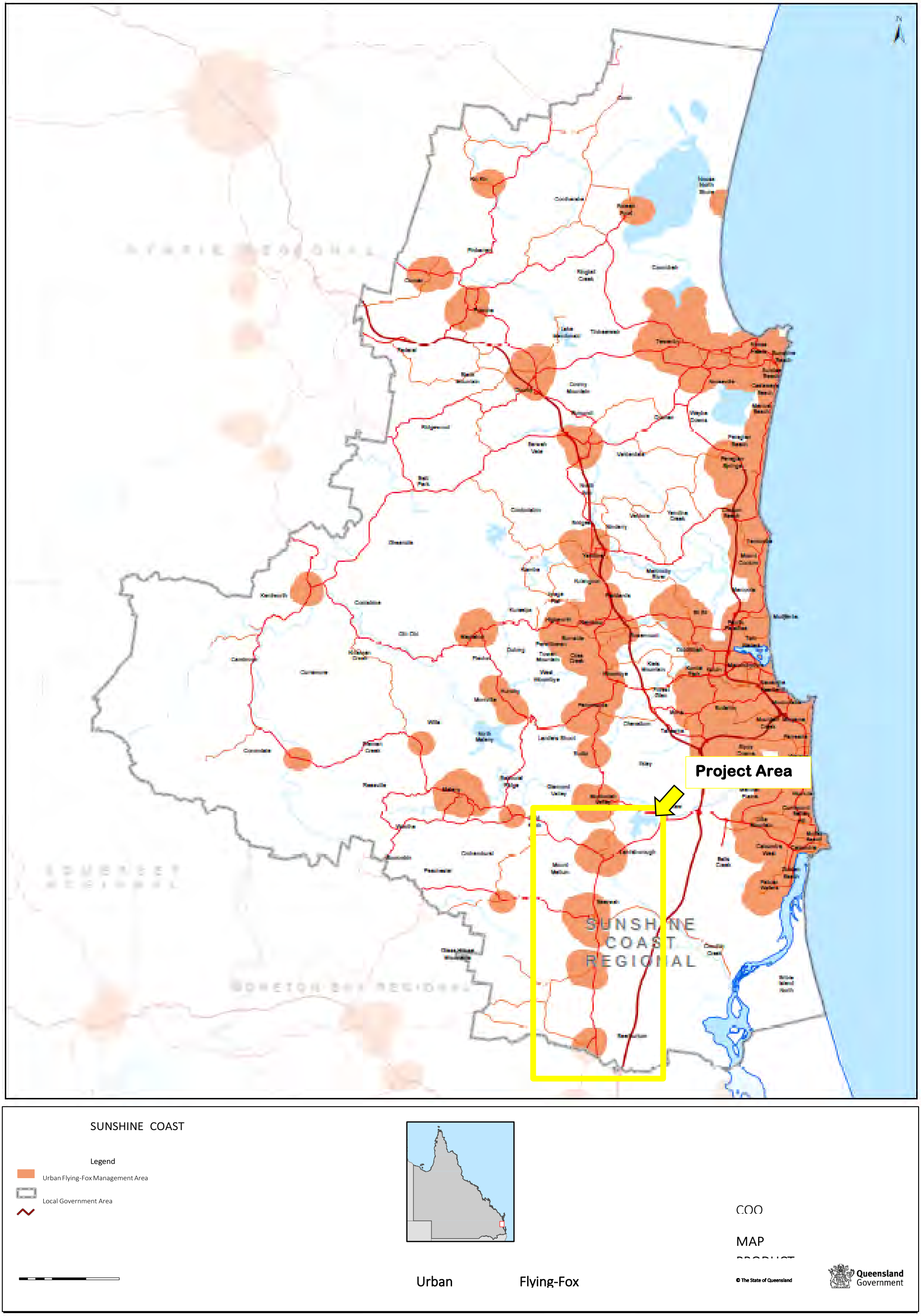
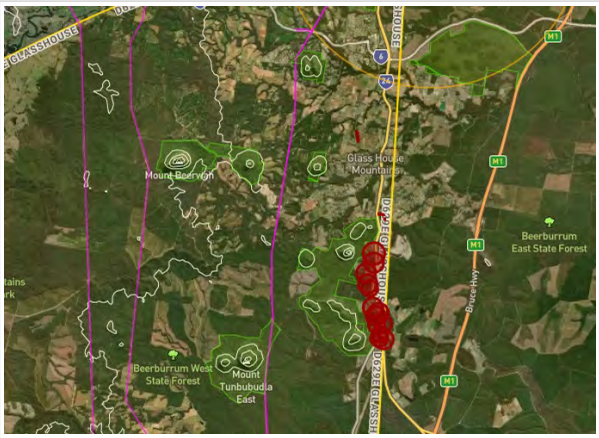


Figure 3 Urban Flying Fox Management Areas

UAV Survey

Project details

Date	16/08/2024
Start time	06:04 AM (10 GMT)
Project	602-JHSW2405-T:JOhn Holland Seymour Whyte JV:Beerburrum to Nambour Rail Upgrade Stage 1:
Client	JOhn Holland Seymour Whyte JV
Site address	Beerburrum to Nambour Rail Upgrade Stage 1
Project code	602-JHSW2405-T
Photo of flight plan	

Weather conditions

Bureau of Meteorology website (scroll to location)	http://www.bom.gov.au/qld/observations/qldall.shtml
Weather condition	Partly cloudy
Wind speed	light air (1-5km/h, 1-3 knots)
Wind direction	NW

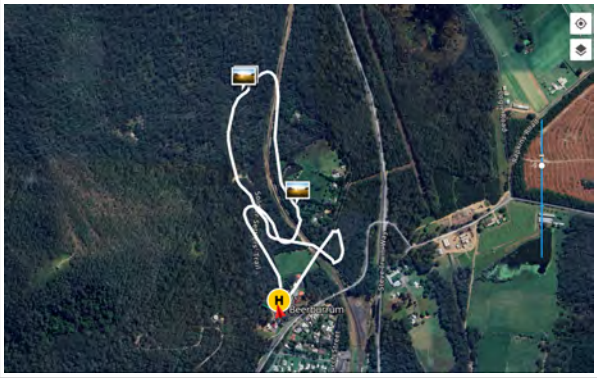
Flight Details

Operator	Russell Nevin
CASA - ARN	1103004
Drone	Mavic 2 Enterprise Dual

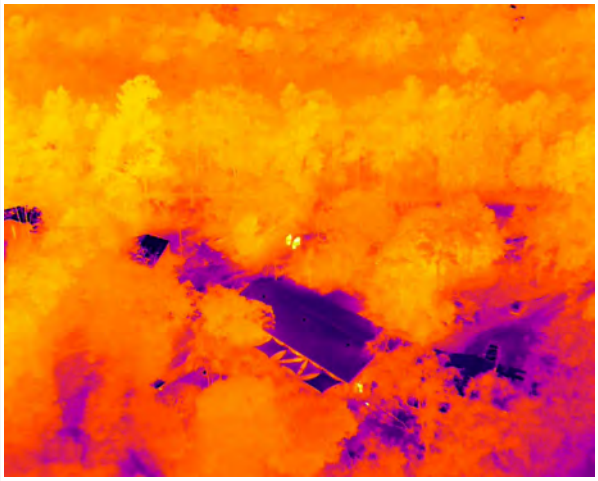
Flight Media - # 1

Section 1

UAV Survey

Flight Path:	
Wide angle photo:	
Zoom Photo:	

UAV Survey

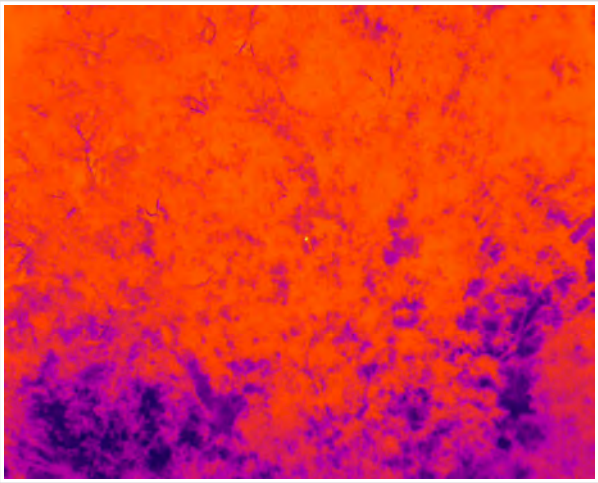
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	Other
List other Fauna identified:	Horses

Flight Media - # 2

Section 1

Flight Path:	
Wide angle photo:	

UAV Survey

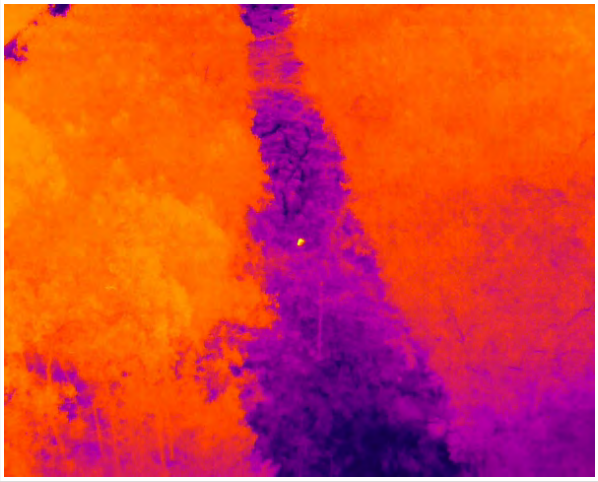
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 3

Section 1

Flight Path:	

UAV Survey

Wide angle photo:	
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo
Comments	We will come back and resurvey the area's with a DJI Matrice M30T once we have our Reoc.

UAV Survey

Project details

Date	22/08/2024
Start time	05:48 AM (10 GMT)
Project	602-JHSW2405-T:JOhn Holland Seymour Whyte JV:Beerburrum to Nambour Rail Upgrade Stage 1:
Client	JOhn Holland Seymour Whyte JV
Site address	Beerburrum to Nambour Rail Upgrade Stage 1
Project code	602-JHSW2405-T
Photo of flight plan	

Weather conditions

Bureau of Meteorology website (scroll to location)	http://www.bom.gov.au/qld/observations/qldall.shtml
Weather condition	Sunny
Wind speed	light air (1-5km/h, 1-3 knots)
Wind direction	N

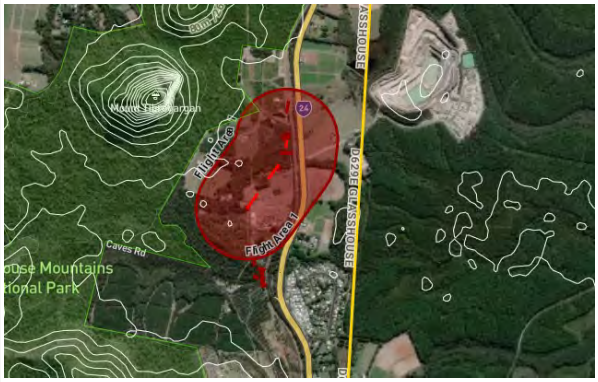
Flight Details

Operator	Russell Nevin
CASA - ARN	1103004
Drone	Matrice 30T

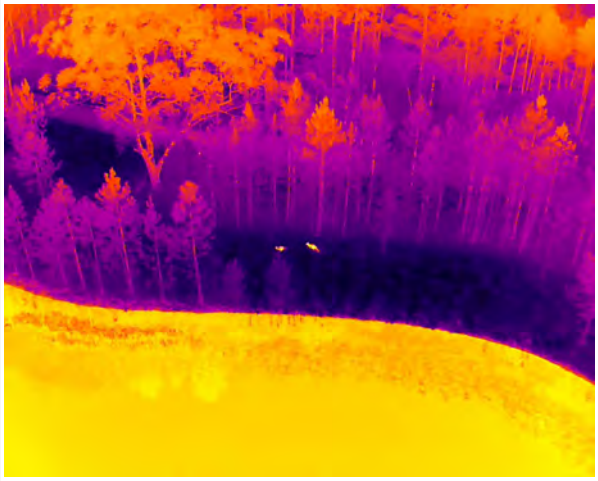
Flight Media - # 1

Section 1

UAV Survey

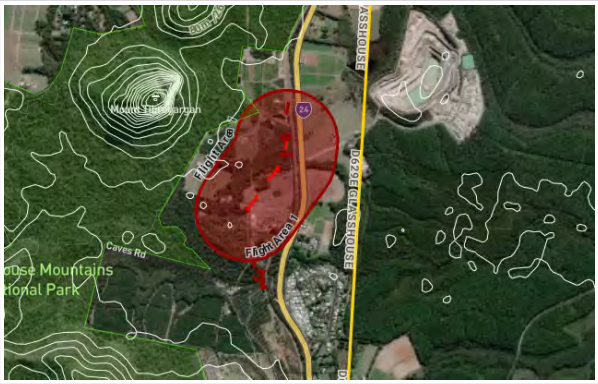
Flight Path:	
Wide angle photo:	
Zoom Photo:	

UAV Survey

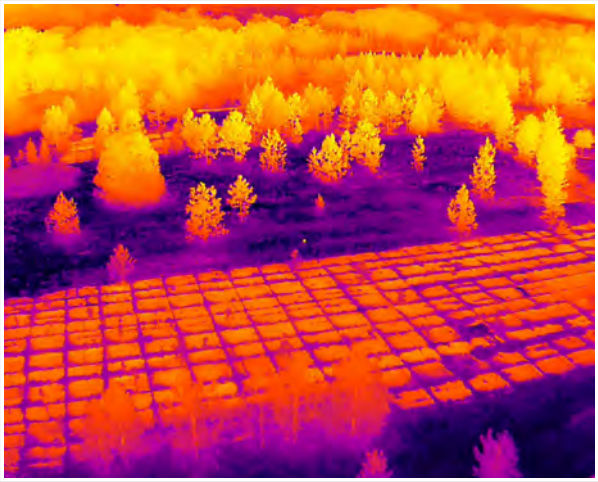
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 2

Section 1

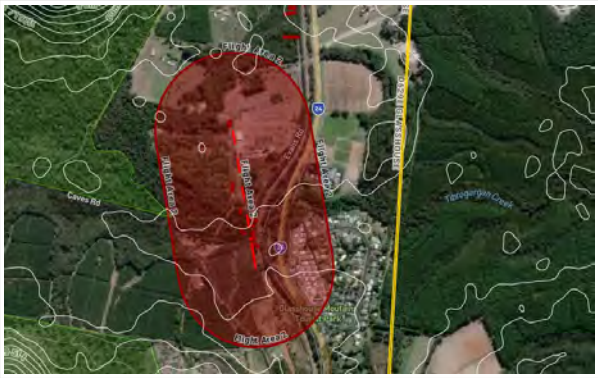
Flight Path:	
Wide angle photo:	

UAV Survey

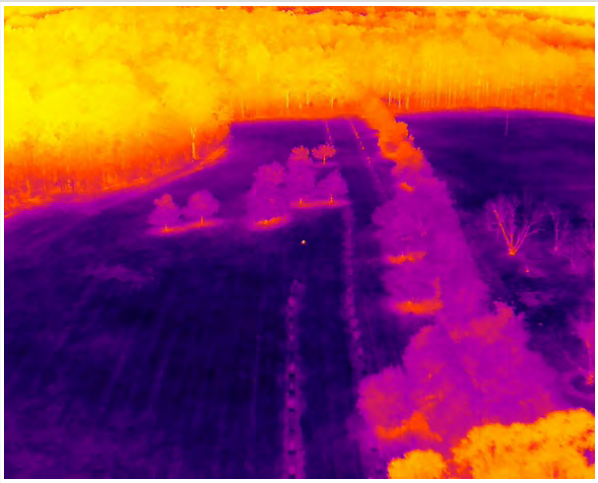
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 3

Section 1

Flight Path:	

UAV Survey

Wide angle photo:	
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 4

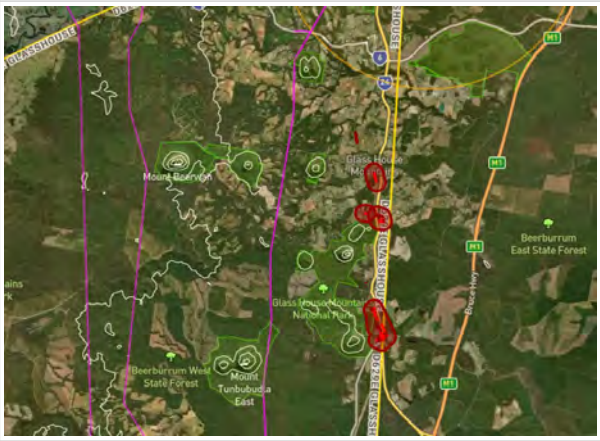
Section 1

UAV Survey

Flight Path:	
Wide angle photo:	
Zoom Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	Other
List other Fauna identified:	Birds - To be identified.

UAV Survey

Project details

Date	28/08/2024
Start time	05:43 AM (10 GMT)
Project	602-JHSW2405-T:JOhn Holland Seymour Whyte JV:Beerburrum to Nambour Rail Upgrade Stage 1:
Client	JOhn Holland Seymour Whyte JV
Site address	Beerburrum to Nambour Rail Upgrade Stage 1
Project code	602-JHSW2405-T
Photo of flight plan	

Weather conditions

Bureau of Meteorology website (scroll to location)	http://www.bom.gov.au/qld/observations/qldall.shtml
Weather condition	Sunny
Wind speed	Light breeze (6-11km/h, 4-6 knots)
Wind direction	N

Flight Details

Operator	Russell Nevin
CASA - ARN	1103004
Drone	Matrice 30T

Flight Media - # 1

Section 1

UAV Survey

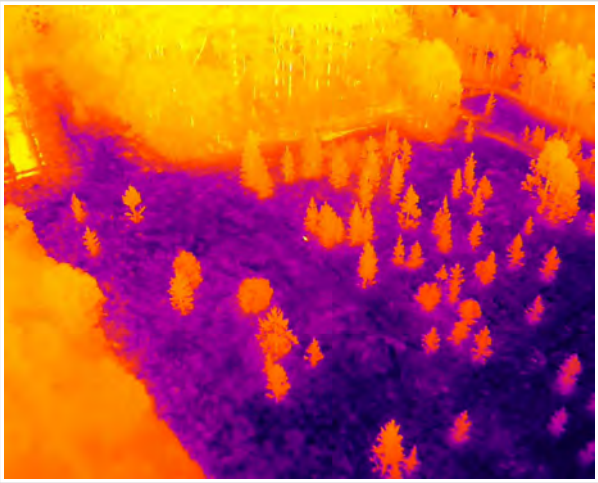
Flight Path:	
Was Fauna identified in the photo's?	No
Comments:	Thermal flight was completed, There was no fauna identified and no photo's captured

Flight Media - # 2

Section 1

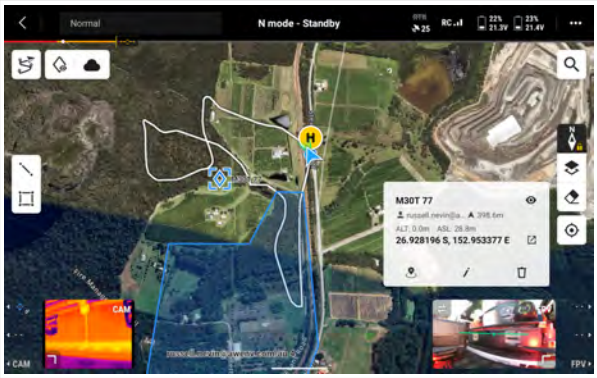
Flight Path:	
Wide angle photo:	

UAV Survey

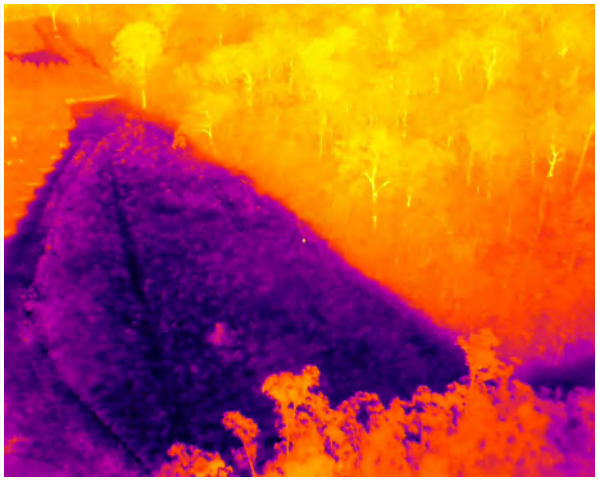
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 3

Section 1

Flight Path:	

UAV Survey

Wide angle photo:	
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	eastern grey kangaroo

Flight Media - # 4

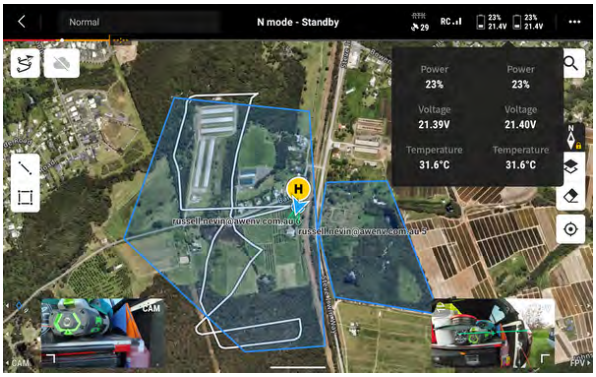
Section 1

UAV Survey

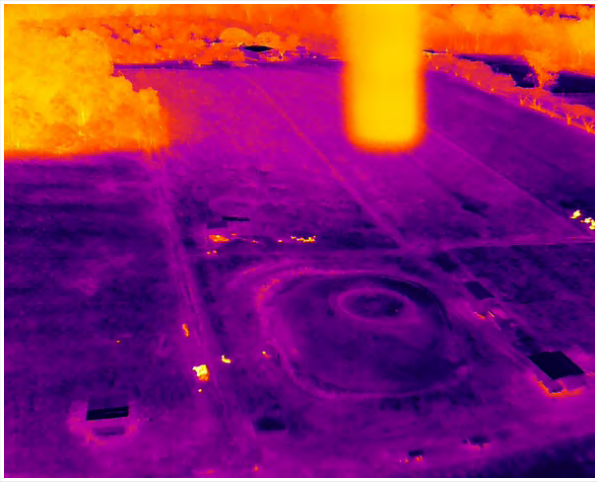
Flight Path:	
Was Fauna identified in the photo's?	No
Comments:	No Fauna was identified during this flight

Flight Media - # 5

Section 1

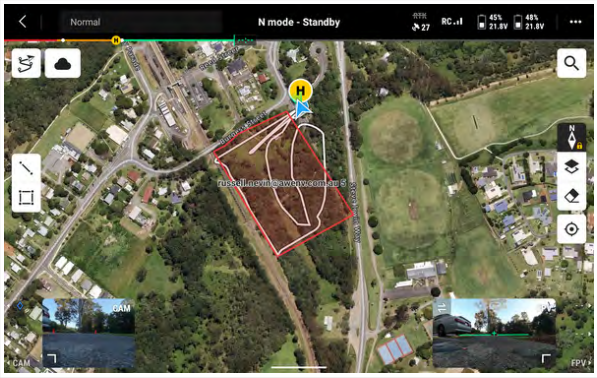
Flight Path:	
Wide angle photo:	

UAV Survey

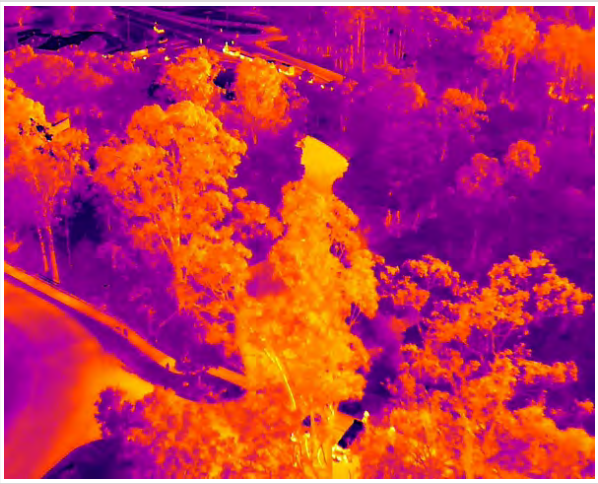
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	Other
List other Fauna identified:	Sheep

Flight Media - # 6

Section 1

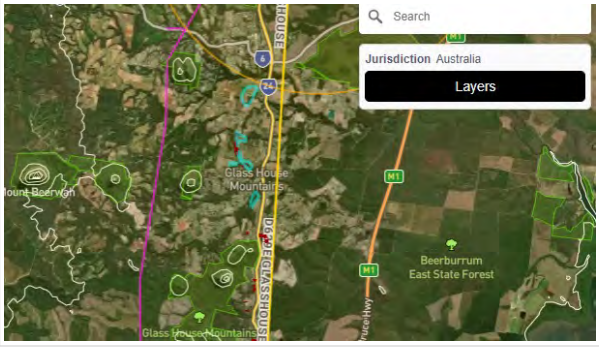
Flight Path:	

UAV Survey

Wide angle photo:	
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	pied currawong
Comments	During our Thermal survey we did not encounter any Flying foxes or flying fox roosts.

UAV Survey

Project details

Date	11/09/2024
Start time	05:27 AM (10 GMT)
Project	602-JHSW2405-T:JOhn Holland Seymour Whyte JV:Beerburrum to Nambour Rail Upgrade Stage 1:
Client	JOhn Holland Seymour Whyte JV
Site address	Beerburrum to Nambour Rail Upgrade Stage 1
Project code	602-JHSW2405-T
Photo of flight plan	

Weather conditions

Bureau of Meteorology website (scroll to location)	http://www.bom.gov.au/qld/observations/qldall.shtml
Weather condition	Showers
Wind speed	Light breeze (6-11km/h, 4-6 knots)
Wind direction	N

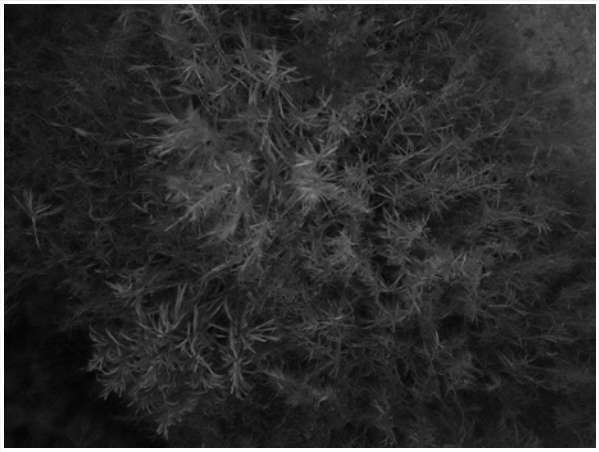
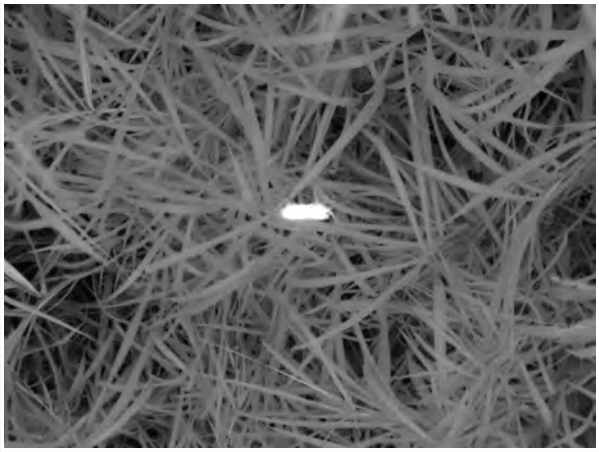
Flight Details

Operator	Russell Nevin
CASA - ARN	1103004
Drone	Matrice 30T

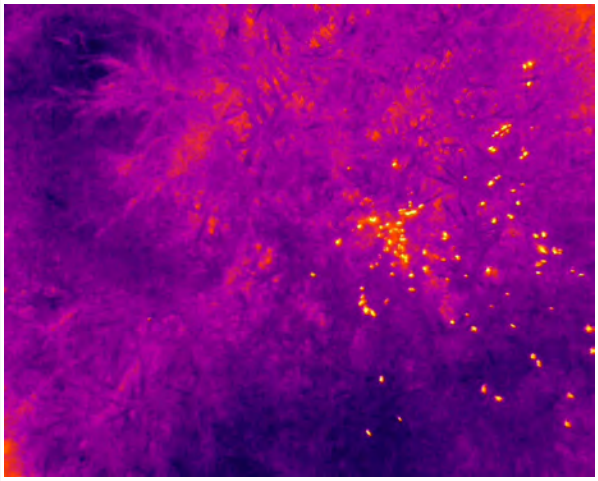
Flight Media - # 1

Section 1

UAV Survey

Flight Path:	
Wide angle photo:	
Zoom Photo:	

UAV Survey

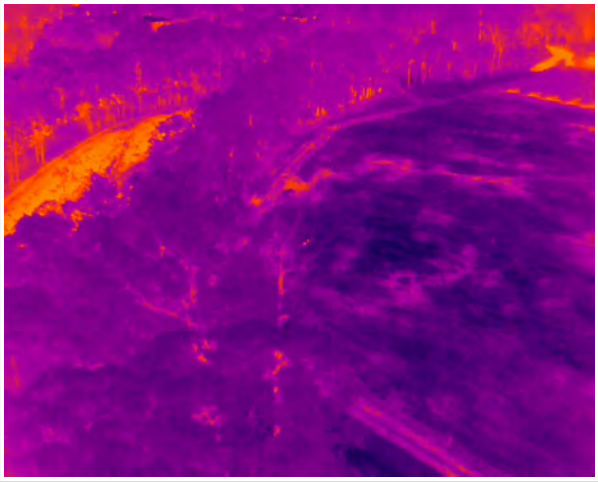
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	red-browed finch
Comments:	Found a large amount of small birds, Suspected to be charm of red-browned finches.

Flight Media - # 2

Section 1

Flight Path:	

UAV Survey

Wide angle photo:	
Zoom Photo:	
Thermal Photo:	
Was Fauna identified in the photo's?	Yes
What fauna was identified?	rainbow lorikeet
Comments:	Lorikeet spotter in hollow
Comments	We anticipated the possibility of rain and decided to proceed with the survey, as conditions remained safe. We completed all survey areas prior to the onset of rain. However, as soon as light rain began, we paused the drone survey.

Clearing program

Appendix E - Stage 1 Baseline Weed survey

602-JHSW2405-D

Baseline Weed Survey

Beerburrum to Nambour Rail Upgrade Stage 1

Prepared for:
B2NJV
Delivered:
August 2024

AWEC ENVIRONMENTAL CONSULTANTS

Document Prepared by:

Australia Wide Environmental Consultants
ABN 67 618 756 291
307 Bishop Rd, Beachmere
Queensland 4510 Australia
T: 0458 293 759
E: admin@awenv.com.au

Document Control Information

Report Title:	Baseline Weed Survey
Prepared For:	B2NJV
Report Reference:	602-JHSW2405-D
Project Address:	Beerburrum to Nambour Rail Upgrade Stage 1

Document Review and Distribution

Document Version	Issued to	Author	Reviewed/Approved	Date
Rev 1	B2NJV	AK	YV	28/08/24

Document Approval

Approvals	Title	Signature
Yolande Venter	Company Director/Senior Ecologist	

Authority

This report has been prepared for use to manage staff and subcontractors relevant to the management and protection of the environment during the Project works. Its application is authorised as part of the client undertaking works. The issue and revision of this report is made under the authority of the Project Manager.

Reports and/or Plans

Assessment reports and drawings provided by the client have been used for the development of this report to support the document.

Table of Contents

Tables

Figures

1 Introduction

1.1 Background

Australia Wide Environmental Consultants (AWEC) were commissioned by B2NJV ('the Client') to prepare a Baseline Weed Survey for the Beerburrum to Nambour Rail Upgrade Stage 1, hereafter referred to as the Project.

This report provides a summary of the biosecurity matters results based on a field survey conducted on July 3rd – 4th, 16th – 18th and 23rd – 25th 2024. The survey was conducted within areas of the Project including Beerburrum, Glass House Mountains, Beerwah and Landsborough along the Steve Irwin way, referred to as the 'survey area' located within the Project.

This report is derived from the findings of the Biosecurity Matters Report (see 602-JHSW2405-D_Biosecurity_Matter_BeerburrumtoNambourRailUpgradeStage1_Rev0) prepared by AWEC, as well as management actions for implementation before and during vegetation clearing activities.

1.2 Purpose

Certain weeds pose significant challenges to fauna, such as koalas (*Phascolarctos cinereus*) and the Grey-Headed Flying-fox (*Pteropus poliocephalus*) by limiting their resources and or ability to move between areas and trees, hindering the establishment of new food and shelter sources.

Lantana (*lantana camara*), for instance, exemplifies this issue as it can form dense, impassable thickets that obstruct koalas' movements as they seek new habitats or forage for food. These weeds not only impede the natural behaviour and habitat expansion of koalas but also contribute to habitat fragmentation, which can have long-term consequences for their population and conservation efforts. Another known species, Camphor Laurel (*Cinnamomum camphora*) creates dense canopies and has allelopathic properties that inhibit the growth of other plant species, which can reduce the diversity of food sources for flying foxes (Australian Government 2024).

Implementing targeted weed control for environmental weed species known to restrict the movement of koalas and degrade the quality of their habitat, as well as the foraging habitat for grey-headed flying foxes such as lantana (*lantana camara*), Camphor Laurel (*Cinnamomum camphora*), Brazilian Pepper Tree (*Schinus terebinthifolius*), Cat's claw creeper (*Dolichandra unguis-cati*), Rubber vine (*Cryptostegia grandiflora*), asparagus climbing fern (*Asparagus africanus*), Creeping lantana (*Lantana montevidensis*), and Blackberry (*Rubus fruticosus* species aggregate) will aid in restoring their habitats and enhance the movement of koalas throughout the landscape and across the project area.

This report details the extent of weed cover (expressed as a percentage) of the total land area with the Beerburrum to Nambour Stage 1 footprint. The report is a baseline quantification of any square metre containing weed species known to restrict the movement of Koala and/or degrade the quality of Koala habitat and/or Grey-headed Flying fox foraging habitat, or its ability to regenerate. This baseline will be used to assess annual compliance of weed cover as required under EPBC Approval 2020/8803."

1.3 Ecologists and Qualifications

The AWEC Suitably Qualified Field Ecologists were Joel Keady, Yolande Venter, April Knauer and Ayden Ellis who have over 20 years of cumulative experience within the ecology and environmental management sectors. See Appendix – A for the Curriculum Vitae.

1.4 Scope of Survey

The field survey was conducted on foot and vehicle to achieve the following objectives:

1. Quantify (as a percentage of the total project area) weed cover known to restrict the movement of Koala and/or degrade the quality of Koala habitat and/or Grey-headed Flying fox foraging habitat, or its ability to regenerate.

AWEC implemented a process methodology for the management of biosecurity matters in accordance with the following legislation and guidelines (as outlined in **Table 1**).

Table 1 Legislations, Guidelines, and Project-Specific Documents

Document Title	Purpose of Legislation
Animal Care and Protection Act 2001	The Queensland Animal Care and Protection Act 2001 (the Act) promotes the responsible care and use of animals.
Biosecurity Act (2014)	The Biosecurity Act 2014 provides a framework for an effective biosecurity system for Queensland, to ensure the safety and quality of agricultural inputs, and to align responses to biosecurity risks in the state with national and international obligations.
Department of Agriculture and Fisheries, State of Queensland, 2020	Restricted invasive plants of Queensland. Brisbane, QLD.
Environmental Protection Act (1994)	The Environmental Protection Act 1994 (EP Act) lists obligations and duties to prevent environmental harm, nuisances, and contamination.
Environment Protection and Biodiversity Conservation Act (1999)	The EPBC Act 1999 focuses on the Australian Government's interests in the protection of matters of national environmental significance, with the states and territories having responsibility for matters of state and local significance.
Nature Conservation Act 1992 (NC Act)	The Nature Conservation Act 1992 (the Act) provides the legislative basis for the conservation of nature through the dedication, declaration and management of protected areas and the protection of native wildlife and its habitat.
Nature Conservation (Animals) Regulation (2020)	The Nature Conservation (Animals) Regulation 2020 (Animals Regulation) introduces a new wildlife licensing framework but incorporates and streamlines existing provisions from the regulations that it replaces.
Nature Conservation (Koala) Conservation Plan (2017)	The main purposes of this plan are— (a) to promote the continued existence of viable koala populations in the wild, and (b) to prevent the decline of koala habitats.
Nature Conservation (Plants) Regulation 2020	The regulatory framework captures clearing and harvesting activities that pose a significant risk to plant biodiversity.
Vegetation Management Act 1999 (VMA)	The Vegetation Management Act 1999 regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions, and allows for sustainable land use.
EPBC 2020-8803-Approval-Decision. B2N SMP High Risk.	Project documents to abide by.

2 Field Survey

2.1 Survey Methodology

The field survey was carried out by four (4) Suitably Qualified and Experienced Persons (weeds) on July 3rd – 4th, 16th – 18th and 23rd – 25th 2024.

The following survey methodologies were employed to identify all species classified as restricted invasive plants under the Biosecurity Act 2014 requiring further management action (**Table 2**).

Table 2 Survey Methodologies

Survey Type	Survey Methodology
Visual searches	A systematic visual inspection was conducted to assess the presence of biosecurity concerns, specifically focusing on weed species within surveyed areas.
Meander searches	Methodical exploration was conducted to inspect various sections of the landscape, aiming to identify and document occurrences of biosecurity matters, including weed species.

All environmental weed species were located using a GPS Kit and the location coordinates were recorded and marked on-site. A description and size of the infestation patch for the environmental weed species were recorded and entered into an electronic database. Representative photographs were taken and stored for reference purposes.

2.2 Survey Area

The surveyed area spans approximately 19km, stretching across a broad geographical region that includes Beerburrum, Glass House Mountains, Beerwah and Landsborough along Steve Irwin Way, Queensland (**Figure 1**).

The survey started at Beerburrum and concluded at Beerwah, with the assessment from Beerwah to Landsborough still yet to be completed.

The survey area spanning from Beerburrum to Beerwah, covers roughly 2,185,056.35 m². Of this, the designated Koala and Grey-Headed Flying habitat mapping layer covers approximately 499,174 m².

Each segment of the new rail alignment and its adjacent areas underwent an assessment to identify and address the presence of environmental weed species, ensuring effective ecological management within the project's scope.

Additionally, the rail alignment runs directly through sections of Koala Habitat, which will face additional clearing in various parts of the project area. The rail alignment intersects several creeks, including Bluegum Creek, Coochin Creek, Back Creek, Tibrogargan Creek, and Coonawrin Creek.

At present, the landscape and riparian habitats throughout much of the project area are in a state of significant degradation and are difficult to access. This is primarily due to the proliferation of dense and impenetrable weed growth, which has severely compromised the quality of these environments.

The invasive weeds displayed in **Figures 2 - 5**, particularly lantana (*lantana camara*) and Camphor Laurel (*Cinnamomum camphora*) have overrun these areas, obstructing natural processes and making it challenging to navigate or manage the land effectively.

As a result, the ecological health of these habitats is greatly diminished, impacting their ability to support local wildlife such as koalas and flying foxes and perform essential ecological functions.

Figure 1 Survey area displaying Project Area (EPBC Stage 01) with surrounding Koala Habitat Areas (Indicative Only).

Figure 2 Rail corridor vehicle searches

Figure 3 Thick patches of Lantana infestations

Figure 4 Asparagus patches

Figure 5 Scattered patches of Camphor Laurel

2.3 Survey Results

The survey results reveal that Lantana (*Lantana camara*), and Camphor Laurel (*Cinnamomum camphora*) were the most prevalent and extensively distributed species throughout the surveyed areas. Both species are present in varying densities across different area categories, with a higher concentration of Lantana in larger areas.

Additionally, there were smaller patches of Brazilian Pepper Tree (*Schinus terebinthifolius*) and Climbing Asparagus Fern (*Asparagus africanus*) present.

Although creeping lantana (*Lantana montevidensis*) and blackberry (*Rubus anglocandicans, R. fruticosus agg.*) were detected throughout the Project area, neither of these species was recorded within the designated Koala and flying fox habitat.

In addition, Cat's claw creeper (*Dolichandra unguis-cati*) and Rubber Vine (*Cryptostegia grandiflora*) were not detected during the survey efforts.

The results indicate that invasive species occupy a relatively small proportion of the total area surveyed, however, despite this, certain species like Lantana (*Lantana camara*) and Camphor Laurel (*Cinnamomum camphora*) cover more significant portions, suggesting that they may have a substantial impact on the ecosystem within their respective areas.

The results also reveal that approximately 7955 m² of weed coverage extends beyond the mapped habitats for koalas and flying foxes. This additional area of invasive weeds has the potential to obstruct the movement of koalas and negatively impact the quality of their habitat. It could also affect the foraging areas of Grey-headed Flying Foxes, possibly impairing their ability to find food and diminishing the habitat's capacity to regenerate.

The presence of such extensive weed coverage outside the protected areas may therefore pose a significant threat to the health and sustainability of these wildlife populations by disrupting their essential habitats and reducing their access to necessary resources.

Overall, while these invasive species are present, their cover is limited to a small fraction of the total area, suggesting that their impact is currently relatively minor but will increase if left unmanaged. Management strategies should be focused more intensively on the species and areas with higher coverage, particularly Lantana and Camphor Laurel.

The following tables present plant species classified as restricted matter under the Queensland Biosecurity Act 2014 including Weeds of National Significance (WoNS) and the area covered by each species in square meters and as a percentage of the total area covered, along with the extent and distribution of their infestation across the site displayed in **Figures 6 – 14** below.

Table 3 presents the total area covered by all four (4) species detected is approximately 7,840 m², which constitutes roughly 1.57% of the 499,174 m² of habitat available for koalas and flying foxes.

Table 3 Restricted Species and Extent Within the Designated Koala/Grey-Headed Flying Fox Habitat				
Lantana (*Lantana camara*)	1-5 individuals	>5-20 individuals	>20 individuals	Total
<5m² Area	73	7	0	**80**
5-20m² Area	2	68	8	**78**
>20m² Area	1	5	122	**128**
Camphor Laurel (*Cinnamomum camphora*)				
<5m² Area	108	4	0	**112**
5-20m² Area	9	60	2	**71**
>20m² Area	0	20	46	**66**
Climbing asparagus fern (*Asparagus africanus*)				
<5m² Area	2	0	0	**2**
5-20m² Area	0	0	0	**0**
>20m² Area	0	0	0	**0**
Brazilian Pepper Tree (*Schinus terebinthifolius*)				
<5m² Area	2	0	0	**2**
5-20m² Area	0	0	0	**0**
>20m² Area	0	0	0	**0**

Species	Total Area Covered (m²)	Percentage of Cover
Lantana (*Lantana camara*)	4,520	**0.91%**
Camphor Laurel (*Cinnamomum camphora*)	3,300	**0.66%**
Climbing asparagus fern (*Asparagus africanus*)	10	**0.002%**
Brazilian Pepper Tree (*Schinus terebinthifolius*)	10	**0.002%**
	7,840 (m²)	**1.57%**

Table 4 presents the total area covered by all six (6) species combined is approximately 15,795 m². This represents about 0.722% of the total project area of 2,185,056.35 m².

Table 4 Restricted Species and Extent Within the Surveyed Project Area				
Lantana (*Lantana camara*)	1-5 individuals	>5-20 individuals	>20 individuals	Total
<5m² Area	242	6	1	**249**
5-20m² Area	18	174	17	**209**
>20m² Area	2	17	305	**324**
Camphor Laurel (*Cinnamomum camphora*)				
<5m² Area	194	7	0	**201**
5-20m² Area	10	88	3	**101**
>20m² Area	0	26	66	**92**
Climbing asparagus fern (*Asparagus africanus*)				
<5m² Area	6	2	0	**8**
5-20m² Area	0	0	0	**0**
>20m² Area	0	1	0	**1**
Brazilian Pepper Tree (*Schinus terebinthifolius*)				
<5m² Area	9	0	0	**9**
5-20m² Area	0	3	0	**3**
>20m² Area	0	0	3	**3**
Creeping lantana (*Lantana montevidensis*)				
<5m² Area	1	0	0	**1**
5-20m² Area	0	0	0	**0**
>20m² Area	0	0	0	**0**
Blackberry (*Rubus anglocandicans, R. fruticosus agg.*)				
<5m² Area	1	0	0	**1**
5-20m² Area	0	1	0	**1**
>20m² Area	0	0	1	**1**

Species	Total Area Covered (m²)	Percentage of Cover
Lantana (*Lantana camara*)	11,957.5	0.548%
Camphor Laurel (*Cinnamomum camphora*)	3,567.5	0.163%
Climbing asparagus fern (*Asparagus africanus*)	65	0.003%
Brazilian Pepper Tree (*Schinus terebinthifolius*)	157.5	0.007%
Creeping lantana (*Lantana montevidensis*)	5	0.0002%
Blackberry (*Rubus anglocandicans, R. fruticosus agg.*)	42.5	0.002%
	15,795 (m²)	**0.722%**

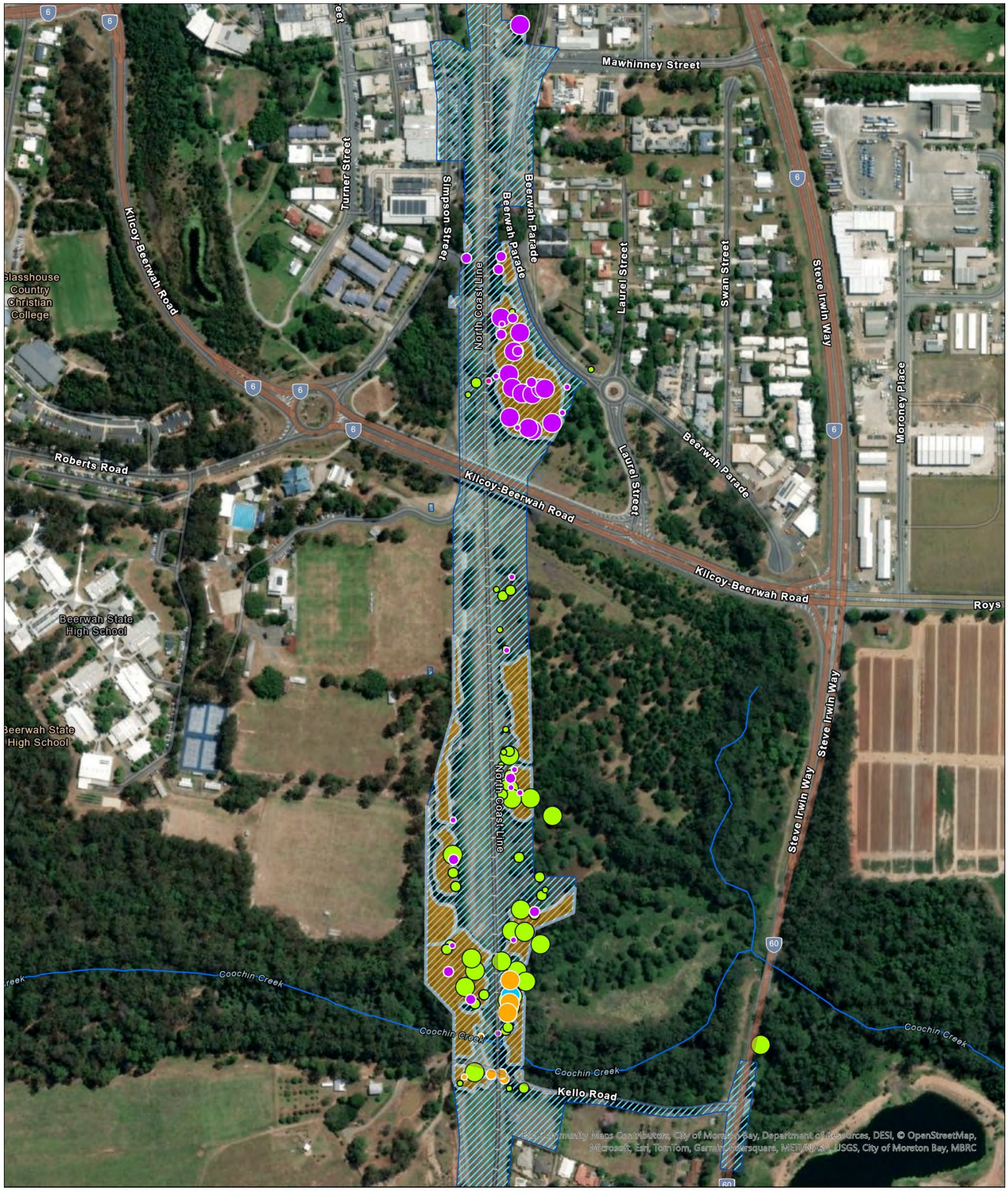
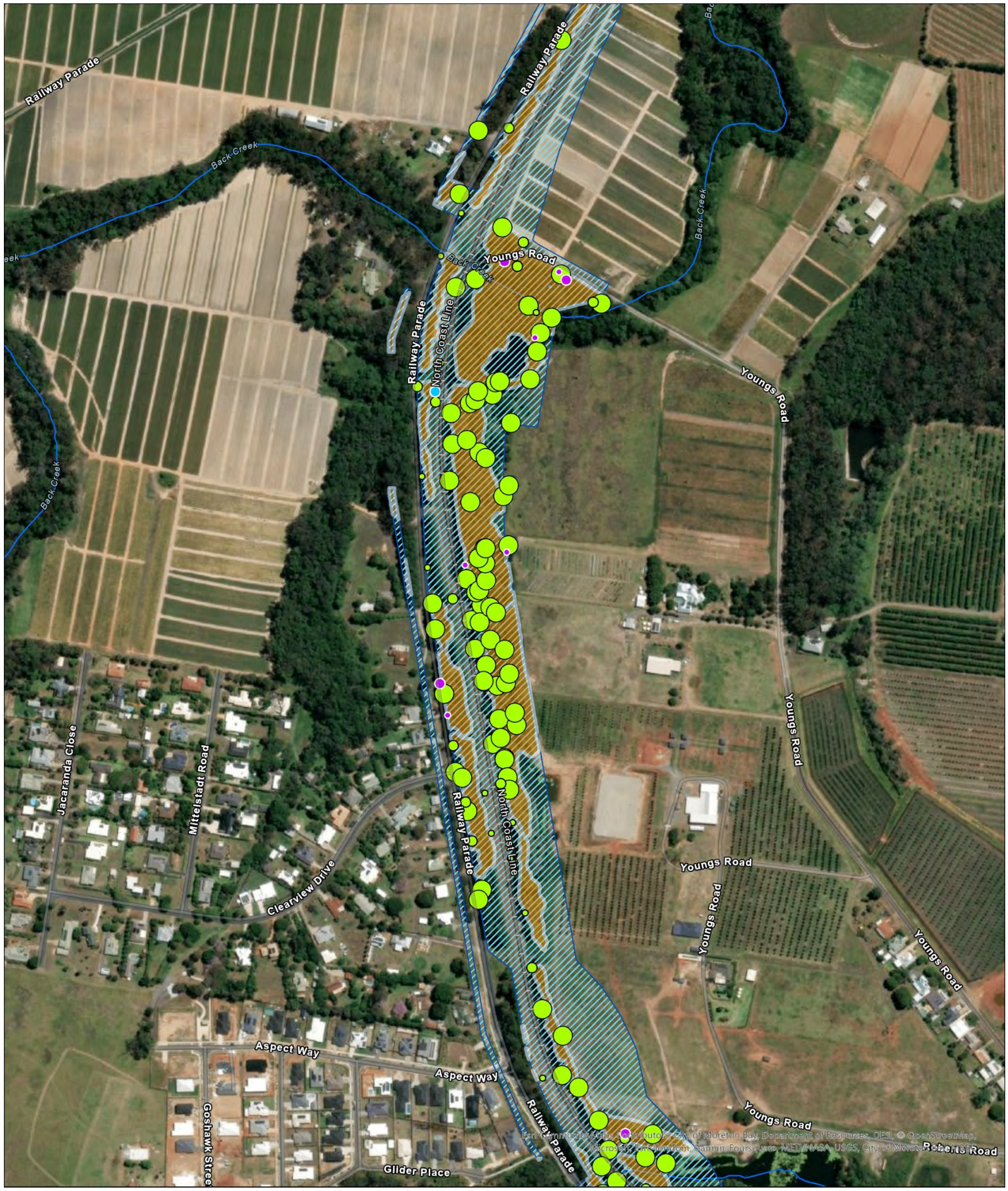


Figure 6 (Map 1 of 9) The survey area displays Baseline Weed Coverage in Project Area.

Figure 7 (Map 2 of 9) The survey area displays Baseline Weed Coverage in Project Area.



Baseline Weed Coverage

602-JHSW2405-D-Beerburrum to Nambour Rail Upgrade Stage 1

Spatial Reference
Name: WGS 1984 Web

Scale: 1:4,300

N

0 85 170 m

Legend

Lantana montevidensis
1

Asparagus africanus
1
2

Schinus terebinthifolius
1
2
3

Rubus anglocandicans
1
2
3

Cinnamomum camphora
1-5
>5-20
>20

Lantana camara
1-5
>5-20
>20

B2N Koala & Grey Headed Flying Fox ERM Mapping

EPBC Stage 01

Watercourses

Figure 8 (Map 3 of 9) The survey area displays Baseline Weed Coverage in Project Area.

Baseline Weed Coverage

602-JHSW2405-D-Beerburrum to Nambour Rail Upgrade Stage 1

Spatial Reference
Name: WGS 1984 Web

Scale: 1:4,300

N

0 85 170 m

Legend

Lantana montevidensis
1

Asparagus africanus
1
2

Schinus terebinthifolius
1
2
3

Rubus anglocandicans
1
2
3

Cinnamomum camphora
1-5
>5-20
>20

Lantana camara
1-5
>5-20
>20

B2N Koala & Grey Headed Flying Fox ERM Mapping

EPBC Stage 01

Watercourses

Figure 9 (Map 4 of 9) The survey area displays Baseline Weed Coverage in Project Area.

Figure 10 (Map 5 of 9) The survey area displays Baseline Weed Coverage in Project Area.

Figure 11 (Map 6 of 9) The survey area displays Baseline Weed Coverage in Project Area.

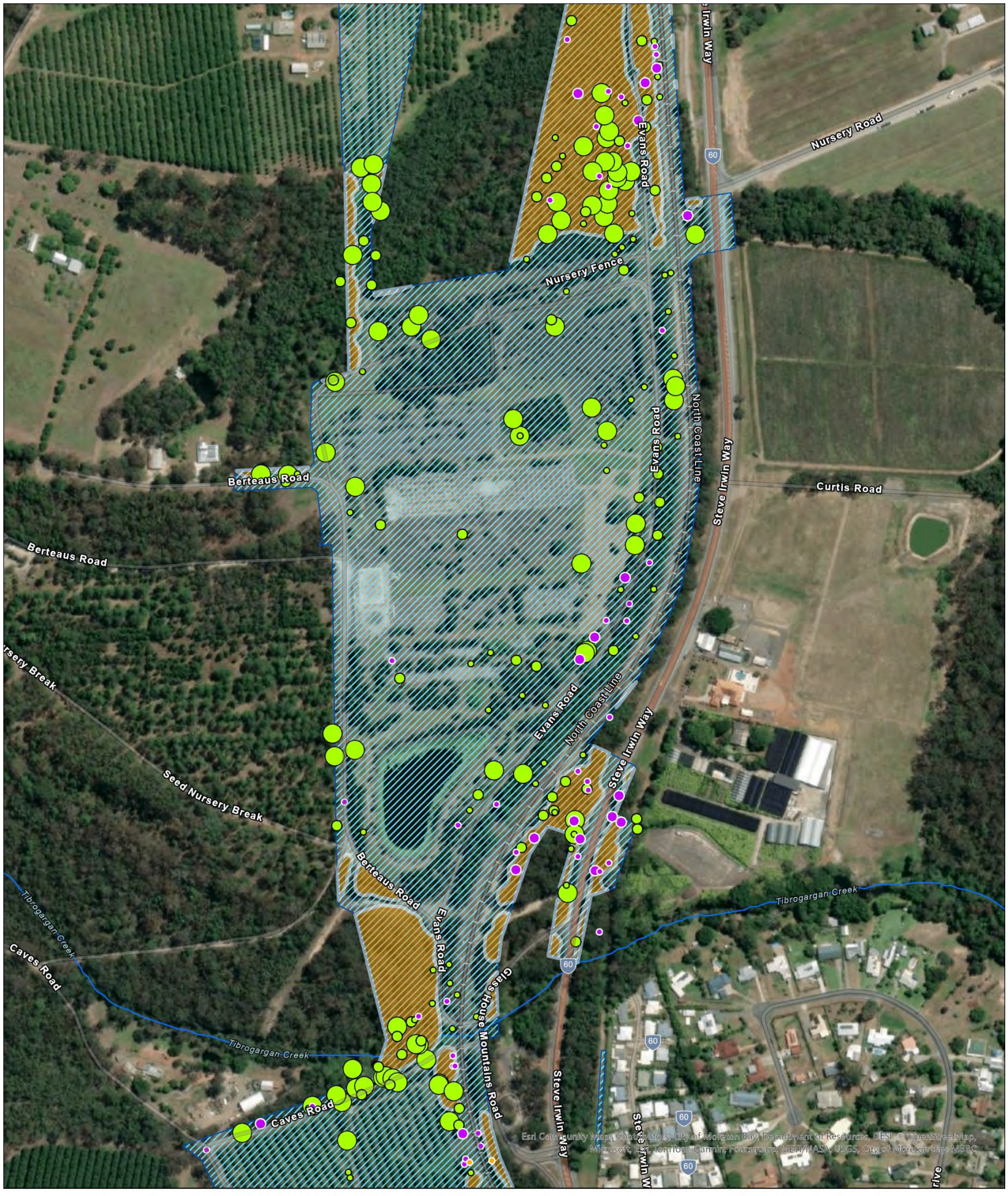


Figure 12 (Map 7 of 9) The survey area displays Baseline Weed Coverage in Project Area.

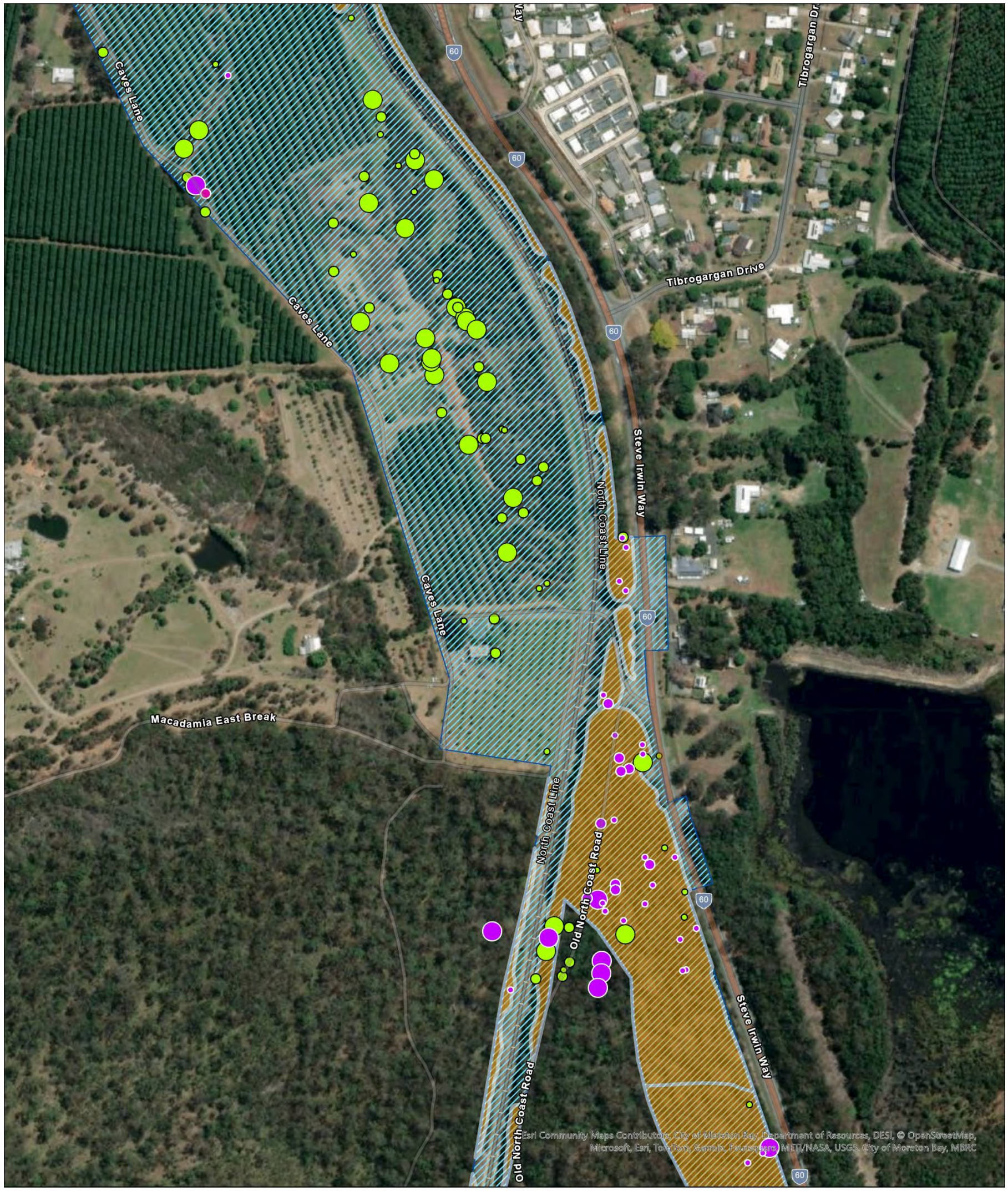


Figure 13 (Map 8 of 9) The survey area displays Baseline Weed Coverage in Project Area.

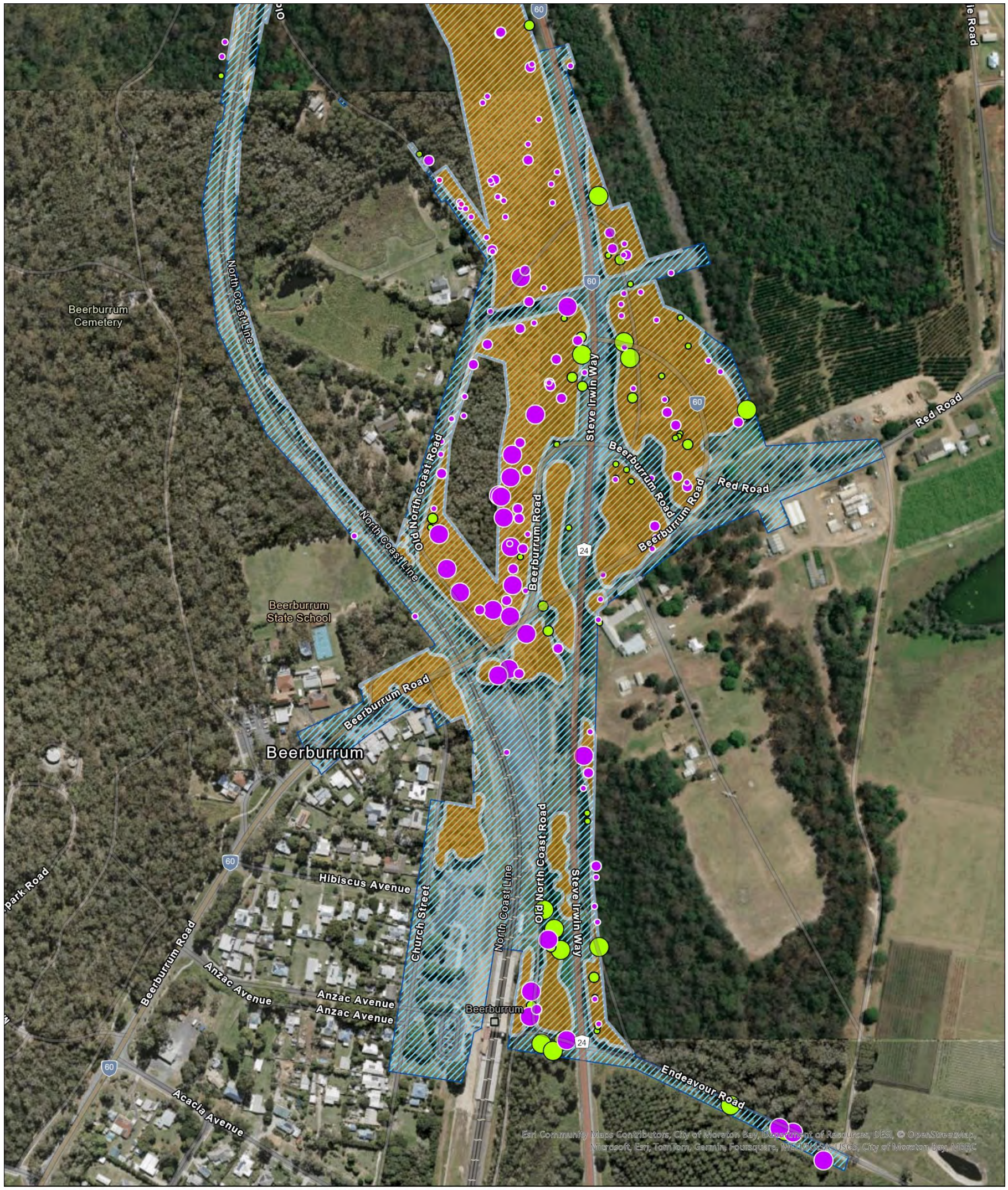


Figure 14 (Map 9 of 9) The survey area displays Baseline Weed Coverage in Project Area.

3 Impacts of Weeds on Koalas and Grey-headed Flying Fox

Numerous scientific studies and reports discuss the impacts of invasive weeds on koalas and other wildlife. These studies provide detailed insights into how specific weed species affect movement patterns, habitat quality, and overall population dynamics.

Weed species can have significant impacts in various ways:

1. Physical Barriers: Some weeds, like Lantana, form dense thickets that create physical barriers, hindering koalas from moving between trees and accessing different areas of their habitat.
2. Fire Hazard: Weeds such as Lantana and Guinea Grass can fuel intense fires that burn at high temperatures. These fires can destroy vegetation that koalas depend on for food and shelter, and they can also trap koalas in burning areas.
3. Habitat Fragmentation: Invasive weeds contribute to habitat fragmentation by creating barriers that isolate populations of koalas. Fragmented habitats make it harder for koalas to find suitable mates and can limit their access to essential resources.
4. Competition for Resources: Some weeds compete with native vegetation for resources like sunlight, water, and nutrients. This competition can reduce the availability of preferred food trees and degrade the overall quality of koala and flying fox habitat.
5. Altered Habitat Structure: Weeds can alter the structure and composition of habitat, creating less suitable conditions for koalas to move, feed, and shelter effectively.

Control and management of these invasive weeds are crucial for maintaining the health of Grey-headed Flying-fox foraging habitats and ensuring the continued availability of essential food sources and restoring healthy koala habitats, promoting their movement, and supporting their long-term conservation.

4 Environmental Weed Management Measures

Declared plants are those identified by the Queensland Government as undesirable species and are listed in the Biosecurity Act 2014. They are species considered serious enough to warrant their control being enforced under legislation. They have, or could have a serious environmental, economic, or social impact on the State. The Queensland Government has three categories of declared plants and these are regulated closely by Biosecurity Australia. Restricted weed eradication strategies to avoid and minimise weed dispersal is outlined below, with focus on this phase of the Project including vegetation clearing and earthworks activities.

For Category 3 biosecurity matters, if topsoil from this area is to be transported off-site, it must be done so in accordance with Part 3, Division 1 of the Biosecurity Regulation 2016. In the case topsoil is to be reused on-site, testing should be undertaken, ensuring that weed seed testing is completed. Alternatively, topsoil from areas nominated with weeds is to be separately scalped and stockpiled for treatment to prevent germination of weed seed content by covering it with plastic sheeting. Stripped topsoil containing declared weeds must not be transported off-site without appropriate identification and containment.

Table 5 outlines the significance and key factors to consider, along with the specific control methods for managing Restricted Species in the project.

Table 5 Restricted Species Management		
Species	Significance and Considerations	Method of Control
Lantana (*Lantana camara*)	Naturalised environmental weed; propagates from stem cuttings; treated plants need to be kept off the ground; there are optimum and non-effective times to apply foliar herbicide sprays as per manufacturers recommendations; grows in a wide variety of habitats; can be utilized for its edge closing abilities to stop invasive grasses and habitat value; seed bank remains viable for 4 years.	Mechanical Control Remove newly established or isolated seedlings by grubbing. Bulldoze young trees that can be completely removed. Failure to remove roots or crowns of mature trees will result in regrowth. Stick raking or ploughing can be effective in removing standing plants. Grubbing of small infestations (for example, along fence lines).
Climbing asparagus fern (*Asparagus africanus*)	Climbing asparagus fern is a garden plant that causes serious environmental problems when it escapes into bushland. Climbing asparagus fern easily scrambles over other vegetation up to 12m into the canopy. Smothers trees and damages rainforests, vine scrubs and riparian vegetation.	Herbicide control Herbicide control is effective. Use spot spray and cut-stump methods.
Camphor Laurel (*Cinnamomum camphora*)	Camphor laurel is an attractive shade tree but can be very invasive, replacing pasture and native vegetation. Replaces native trees (e.g. blue gums, koalas' preferred food). Invades disturbed riparian systems. Trees can sucker when under stress.	Mechanical Control Remove newly established or isolated seedlings by grubbing. Bulldoze young trees that can be completely removed. Failure to remove roots or crowns of mature trees will result in regrowth.
Brazilian Pepper Tree (*Schinus terebinthifolius*)	A broad-leaved pepper tree is a large, spreading tree. In Australia, it has escaped gardens and invaded coastal dune lands, wetlands and streambanks. It also out-competes and replaces native grasses used in grazing and can harbour mango black spot disease and witches' broom diseases that affect citrus. Contains toxic resins that can affect human and animal health.	Physical control Hand-pull or chip out young plants. Remove trees in winter. Felled trees may regrow from suckers for up to 18 months. If chopping, mulch branches, especially if trees have seeds. Alternatively, cut trees 5cm below the soil, chip away bark and nail a tin plate over the stump. Herbicide control Herbicides are available using foliar application, basal bark and cut-stump methods. Winter application or while the tree is in fruit, providing that no replanting of desirable broad-leaf plants is intended for six months

4.1 Vehicle and Equipment Weed Hygiene Procedures

- All machinery brought onto the Project must be cleaned (i.e., vehicle wash-down off-site), to remove all soil that may contain weed propagules.
- The cleaning and inspection of off-road vehicles and machinery on-site after visiting weed-infested areas will be the responsibility of all inducted staff and contractors.
- Implementation of erosion and sediment control measures to minimise the risk of weed seed washing into local watercourses.

4.2 Weed Control Methods and Requirements

- Clearing activities should commence from areas of lighter infestations towards heavier infestations (this is the most effective way to limit further weed colonisation).
- Suitable weed disposal methods may include but are not limited to chipping (for woody weeds), disposal at a local municipal landfill, or the general waste receptacle, or via burial (at a depth > 0.5m) at a location on-site where it is not at risk of spreading the seed bank.
- Woody weeds subject to chipping may be used as mulch elsewhere on-site (where retained). Weeds with fertile material should be excluded from mulched material and disposed of as above.
- Further information regarding species-specific weed management measures can be obtained from the Queensland Department of Agriculture and Fisheries factsheets (www.daf.qld.gov.au).
- All employees and contractors are to be made aware of their general biosecurity obligations related to weed management through the site induction program and toolbox meeting.

Additional requirements are as follows:

- Lantana should be subject to mechanical removal. Cleared along with the rest of the vegetation and the mulch and topsoil should either be stockpiled separately or transported off-site.
- Previous studies have indicated that only surface-sown seeds of lantana germinated. There was no germination from seed buried at a relatively shallow depth of 1–2 cm (Chris O'Donnell, 2011). Stockpiling contaminated soil separately (stockpiles should be turned regularly) will be a more effective, more economically viable and lower-risk methodology for managing the widespread lantana infestation within the site.
- Contaminated mulch should be stockpiled according to the Australian Standard- Composts, soil conditioners and mulches (AS4454-2012). Weed seeds can survive mulching, to kill weed seeds the internal temperature of your mulch must reach 55°. This was achieved by following the guidelines and turning the stockpile a minimum of three times.

5 Conclusion

Australia Wide Environmental Consultants (AWEC) were commissioned by B2NJV ('the Client') to prepare a koala movement report in association with the Beerburrum to Nambour Rail Upgrade Stage 1.

The field survey identified six (6) species classified as restricted matter under the Biosecurity Act 2014, which are known to restrict the movement of koalas and degrade the quality of their habitat, as well as the foraging habitat for grey-headed flying foxes.

Overall, while these invasive species are present, their cover is limited to a small fraction of the total area, suggesting that their impact is currently relatively minor but will increase if left unmanaged. Management strategies should be focused more intensively on the species and areas with higher coverage, particularly Lantana and Camphor Laurel.

However, this indicates that the species have established populations, making it crucial to implement control measures to manage their spread and avoid further expansion. Their occurrence in larger areas and their potential to expand further highlight the necessity for ongoing monitoring and management efforts.

Climbing Asparagus Fern and Brazilian Pepper Tree, Creeping Lantana and Blackberry have a negligible presence, suggesting they are less of a concern currently but should still be monitored.

Proactive management can help mitigate the risk of these species becoming more invasive and affecting a larger proportion of the area in the future.

In addition, although Cat's claw creeper (*Dolichandra unguis-cati*), Rubber Vine (*Cryptostegia grandiflora*) and other species were not detected during the survey efforts if these species are detected at various stages of the rail corridor upgrade, it is advisable to implement management strategies to control their populations.

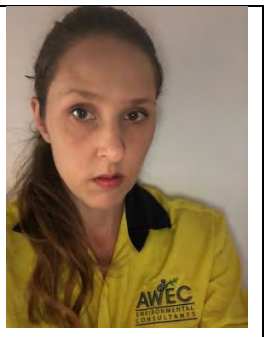
This proactive approach will help prevent any potential infestations and minimise the risk of these species becoming problematic during the construction and maintenance phases. Proper monitoring and timely intervention will be crucial to ensuring that their presence does not lead to larger ecological or operational issues.

All restricted matter infestations are required to be treated as per the Department of Agriculture and Fisheries Restricted Invasive Plants factsheet. For areas with restricted matter near waterways, manual removal will be necessary or the use of herbicide containing (Glyphosate) which is suitable for waterways. Environmental Weed Management Measures are detailed in Section 4.

6 Appendix A - Curriculum Vitae

1. Curriculum Vitae for Yolande Venter

Current Position	Principal Environmental Scientist/ Senior Ecologist
Company Name	AWEC
Address	307 Bishop Road, Beachmere
Phone	0419 881 205
Email	Yoland.Venter@awenv.com.au
Availability - timeframe (eg: commencing from mm/yy & percentage)	03/2024- 40%
No. of years' experience relevant to this role	20 years



2. Academic Qualifications & other Trainings

Degree or Certificate	Institution	Year of Graduation
Native Birds- Diseases, Injuries, Anatomy and Physiology	Wildcare Australia	2004
Management and care of small mammals, bandicoots and echidnas	Wildcare Australia	2005
Care and Management of Macropods	Wildcare Australia	2005
Caring for Orphaned Mammals	Wildcare Australia	2005
Husbandry and Rehabilitation of Injured Native Wildlife	Anne Fowler- BSc (Vet) (Hons) BVSc	2006
Bachelor of Science (Ecology and Conservation Biology)	Griffith University	2010
Fundamentals of Erosion and Sediment Control Course	SEEC	2013
Erosion and Sediment Control- Water Management on Construction Sites Course	SEEC	2013
Preparing and Reviewing Erosion and Sediment Control Plans Course	SEEC	2013

3. Professional Qualifications & Membership

Qualification	Certificate Number	Current (Yes/No)	Expiry Date
Agricultural Chemical Distributions Control Training	S19684	Yes	NA
Occupational Health and Safety Construction Induction	1307950	Yes	NA

4. Position History -

Period			Company	Project Description including major component of the project	Position
October 2013	to	Present	AWEC	Large to small scale mining, civil (road, bridge and train line), residential and commercial development projects across Australia.	Principal Environmental Scientist/ Senior Ecologist
October 2011	to	October 2013	Fluor Australia	GLNG Upstream project- Lead environmental coordinator for linear infrastructure (520 km of gas and water pipelines, 250km of overhead powerlines and 16km of sealed Class A roads) at Fairview Hub 04.	Senior Fauna Advisor/ Environmental Coordinator
November 2010	to	October 2011	Nature Call	Environmental inspection, ecology surveys and Fauna Spotter/Catcher.	Environmental Advisor
August 2004	to	December 2008	WildCare Australia	Inspecting, capturing and caring for injured or sick wildlife.	Wildlife Carer

5. Career Summary & Key Attributes applicable to prequalification/tender

I'm currently the Principal Environmental Scientist/ Senior Ecologist at AWEC and I have 20 years' experience in my field. I have worked on a large range of different mining, civil and residential and commercial developments across Australia. I have worked on numerous different scale projects for DTMR and QR.

6. Project Experience –Provide a description of your key relevant civil (transport infrastructure) projects you have worked on in the past to demonstrate your experience in relation to this tender/ prequalification application.

Project Details	Response	Description of responsibilities
Employer	Nature Call	• Complete weekly environmental inspection checklists. • Prepare pre-clearing surveys and reports and post clearing reports in accordance with the current legislation also include all relevant methodology used in capturing and relocating fauna. • Work alongside various types of clearing and mulching machinery whilst conducting spotter/catcher activities safely. • Ecology surveys.
Project Duration (mm/yy – mm/yy)	Aug 2011 to Sep 2011	
Time Spent on the project (mm/yy – mm/yy)	2 months	
Scope of works in the project & contract value /subcontract value	Qld Bridge and Civil (Bruce Highway Safety Upgrade, Gladstone Qld- Pre-clearing and during clearing works	
Client and Principal Contractor	DTMR	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Environmental Advisor	

Project Details	Response	Description of responsibilities
Employer	Fluor	• This position was pivotal to providing an efficient Environmental Management Process for stakeholders & Contractors in the delivery of the GLNG project. The incumbent is responsible for liaison with Contractors and providing a formal Environmental Management process. This position formally managers and monitors this process and provides a paper trail as to who did what and when and where on the GLNG project. It is also expected that this position will provide direction, guidelines and mentor Contractors in the execution of their work packages.
Project Duration (mm/yy – mm/yy)	October 2011- October 2013	
Time Spent on the project (mm/yy – mm/yy)	2 years	
Scope of works in the project & contract value /subcontract value	Lead environmental coordinator for linear infrastructure (520 km of gas and water pipelines, 250km of overhead powerlines and 16km of sealed Class A roads) at Fairview Hub 04.	
Client and Principal Contractor	Santos was the client and the Principal Contractor was Fluor.	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Senior Fauna Advisor/ Environmental Coordinator	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ecological Survey, Clearing Procedure, Fauna Management Procedure, Weed Management Procedure. During Construction- Stockpile management, weed management, fauna management (including Marine Megafauna), Cultural Heritage Artefact Monitoring, Photo Point Monitoring Reports, Fire Ant Monitoring and Management and Water Quality Monitoring and Management (PFC Management). Post Construction- Post-clearing/construction reports and routine weed maintenance.
Project Duration (mm/yy – mm/yy)	08/2016-05/2017	
Time Spent on the project (mm/yy – mm/yy)	10 months	
Scope of works in the project & contract value /subcontract value	Brisbane Airport- Seawall and Access Road Works- Contracted Environmental Advisors	
Client and Principal Contractor	Brisbane Airport Corporation was the Client and Hall Contracting was the Principal Contractor	
DTMR's Contract No. or Project Number (if applicable)		
Contract Administrator /Superintendent (if applicable)		
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ecological Survey • Habitat and Vegetation Structure Report • Weed Survey • Weed Management • Significant Species Management • Erosion Sediment Control Plans • Independent Environmental Audits • Environmental Incident Reporting • Final Road and Bridge Sign off
Project Duration (mm/yy – mm/yy)	01/2016-02/2017	
Time Spent on the project (mm/yy – mm/yy)	13 months	
Scope of works in the project & contract value /subcontract value	Construction of Stage 1 of Bells Creek Arterial Road	
Client and Principal Contractor	Client- DTMR Principal Contractor- Shadforths Civil Contractors	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing surveys • Fauna Management • Significant Species and Fauna Breeding Site Management • Weed Survey and Management • ESC Compliance Audits • Waterway Barrier Works- Notifications • Independent Environmental Compliance Audits
Project Duration (mm/yy – mm/yy)	02/2016- 2018	
Time Spent on the project (mm/yy – mm/yy)	18 months	
Scope of works in the project & contract value /subcontract value	Behm Creek Bridge Replacement	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	
DTMR's Contract No. or Project Number (if applicable)	**SCHD-2490**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing Ecological Surveys • Fauna Management • Post-clearing reporting
Project Duration (mm/yy – mm/yy)	05/2017-2019	
Time Spent on the project (mm/yy – mm/yy)	2 years	
Scope of works in the project & contract value /subcontract value	Coomera to Helensvale (QR Corridor) Duplication Project	
Client and Principal Contractor	Client- QR Principal Contractor- Eastern Tree Services	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing surveys • Fauna Management • Significant Species and Fauna Breeding Site Management • Aquatic Surveys • Weed Survey and Management • ESC Compliance Audits • Waterway Barrier Works- Notifications • Independent Environmental Compliance Audits
Project Duration (mm/yy – mm/yy)	02/2019- 10/2019	
Time Spent on the project (mm/yy – mm/yy)	8 months	
Scope of works in the project & contract value /subcontract value	Kilcoy Bridge Replacement	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11249**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearance surveys • Significant Species and Fauna Breeding Site Management • Weed Survey and Management • Energex vegetation management- design and reporting
Project Duration (mm/yy – mm/yy)	Sept – Dec 2019	
Time Spent on the project (mm/yy – mm/yy)	4 months	
Scope of works in the project & contract value /subcontract value	Bruce Highway Interchange Upgrades- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- Shadforth	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11262**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing Ecological Surveys • Weed Management • Fauna Management- Clearing and Dewatering • Significant species management • Habitat Replacement Works • Post-clearing reporting
Project Duration (mm/yy – mm/yy)	10/2019-Current	
Time Spent on the project (mm/yy – mm/yy)	3 years	
Scope of works in the project & contract value /subcontract value	Cooroy to Curra- Section D- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- Eastern Tree Services	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	GHD	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Fauna Pre-clearance surveys • Vegetation Protection Plan- Report and implementation • Significant Species and Fauna Breeding Site Management • Aquatic Surveys and Aquatic Fauna Salvaging Works • Weed Survey and Management • Fauna Management- Clearing and Earthworks • Independent Environmental Compliance Audits • Independent Erosion Sediment Control Audits and Reports
Project Duration (mm/yy – mm/yy)	April- August 2020	
Time Spent on the project (mm/yy – mm/yy)	4 months	
Scope of works in the project & contract value /subcontract value	Bruce Highway Upgrade- Bribie Island Road to Steve Irwin Way- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-12823**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ecological Pre-clearance surveys • Significant Species and Fauna Breeding Site Management • Weed Survey's and Management • Aquatic Fauna Salvaging Works • Fauna Management Works • Sustainability and Offset Works
Project Duration (mm/yy – mm/yy)	May 2020- Current	
Time Spent on the project (mm/yy – mm/yy)	3 Years	
Scope of works in the project & contract value /subcontract value	Bruce Highway Interchange Upgrade Project	
Client and Principal Contractor	Client- DTMR Principal Contractor- John Holland	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11292**	
Contract Administrator /Superintendent (if applicable)	**GHD**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ecological Pre-clearance surveys • Significant Species and Fauna Breeding Site Management • Weed Survey's and Management • Aquatic Fauna Salvaging Works • Fauna Management Works • Post reporting
Project Duration (mm/yy – mm/yy)	March 2022- Current	
Time Spent on the project (mm/yy – mm/yy)	1 year	
Scope of works in the project & contract value /subcontract value	Bruce Highway- Smart Motorway Project	
Client and Principal Contractor	Client- DTMR Principal Contractor- Seymour Whyte	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-16183**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ecological Pre-clearance surveys • Significant Species and Fauna Breeding Site Management • Weed Survey's and Management • Aquatic Fauna Salvaging Works • Fauna Management Works • Post reporting
Project Duration (mm/yy – mm/yy)	January 2023- Current	
Time Spent on the project (mm/yy – mm/yy)	3 months	
Scope of works in the project & contract value /subcontract value	Beerburrum to Nambour Rail Upgrade – Stage 1	
Client and Principal Contractor	Client- DTMR Principal Contractor- John Holland Queensland Pty Ltd & Seymour Whyte Constructions Pty Ltd	
DTMR's Contract No. or Project Number (if applicable)	**T Subcontract No. SC/7224/SFS/EN026**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

7. Referees (Provide at least 3 contactable referees. Two referees must be external to your current or previous employer.) If you have worked on a DTMR project at least one referee must be a DTMR referee (or from another road authority, if applicant hasn't previously undertaken any DTMR works).

Name	Position	Phone/Mobile	Email	Company and Project
Paul Biggs	Civil Operations Manager	0418584391	Paul.Biggs@sgq.net.au	SGQ- Behm Creek Bridge Replacement
Martin Ross	Project Environmental Manager	0497 702 966	martin.ross@mcdgroup.com	McConnell Dowell Constructors- NPR Brisbane Airport, Dryandra Road
Brendan Robinson	Environmental and Sustainability Manager	0419720571	brendan.robinson@jhswjv.com.au	John Hollande- BHMIP

CURRICULUM VITAE

April Knauer

Australia Wide Environmental Consultants

Ecologist/ Terrestrial Fauna Specialist

April.knauer@awenv.com.au

0422 666 326

4 years of field experience

Career Summary

I am currently employed as an Ecologist at AWEC and have accrued four years of practical expertise in environmental management and ecological consulting since entering the industry in 2019. Throughout my tenure, I have honed my skills in conducting surveys for both flora and fauna, as well as proficiently handling data analysis and report writing. My capabilities extend to employing ArcGIS/QGIS for spatial analysis, and I am adept at crafting and reviewing various ecological documents such as assessment reports, management plans, and compliance reports. Notably, I have contributed to numerous fauna management plans spanning multiple local government jurisdictions.

Academic Qualification	Institution	Graduation Year
Bachelor of Animal Ecology	University of the Sunshine Coast	2020
Master of Environment - Specialising in Sustainable Business	Griffith University	Incomplete
Professional Qualification / Training	**Institution**	**Year / Current (Yes/No)**
Rehabilitation Permit, Spotter catcher activity	Queensland Department of Environment & Science	2023 - Yes
Introduction to Regional Ecosystems	02 Ecology	2022 - Yes
Bio Condition Training – Application Assessment and Scoring	02 Ecology	2022 - Yes
Venomous Snake Handling & Awareness	Australian Wildlife Encounters	2021 - Yes
Work Safely at Heights	RIIWHS204D	2022 - Yes
OH&S Construction White Card	Blue Dog Training	2020 - Yes
CPR & First AID Certificate	First Aid Pro	2022 - Yes
Blue Card	Griffith University	2021 - Yes
4WD Driver Training		2019 - Yes

Permits / Licensing

Damage Mitigation Permit (Department of Environment & Science) Permit No. WA0026230

Rehabilitation Permit (Fauna Spotter Catcher) Permit No. WA0021453

Department of Agriculture and Fisheries Animal Ethics Approval CA 2019/11/1331

Current Vaccinations

Lyssavirus Vaccinated

Diphtheria Tetanus Pertussis

Academic History		
Date	**Title**	**Learning curriculum**
2021 - incomplete	Master of Environment, Griffith University	Environmental Management Systems • AS/NZS ISO 14001:2016: Environmental management systems - Requirements with guidance for use • AS ISO 14040:2019: Environmental management - Life cycle assessment - Principles and framework • Understanding and applying the ISO14000 series (an international framework for environmental management) to move an organisation's performance beyond compliance. • Analysis of the root cause of existing or potential environmental hazards. • Design preventative and remedial solutions to manage environmental aspects and impacts. Sustainability and Systems Thinking • Detailed understanding of SDGs, sustainable thinking, and development. • Developed basic tools and strategies that can be applied to organisational sustainability governance, innovative thinking, adaptiveness, resilience, and ethics. • Accomplished briefing paper providing an overview of the implications of the understanding of sustainable development and First Peoples perspective on Glencore Australia, one of the world's largest diversified natural resource organisations. In addition, explored sustain-centric assumptions impacting on the organisation. • Economics For a Sustainable Future • Developed a ten-year demand and supply market forecast for the Australian Plastic Industry, included potential risks and opportunities across the circular economy system. • Employed economic principles, frameworks, and research to justify and support a position on contemporary economic issues in the context of sustainable development goals.
2016 - 2020	Bachelor of Animal Ecologist, University of the Sunshine Coast	Applied fundamental principles, knowledge and skills to design and deliver field projects that address defined issues regarding conservation and environmental management. Research Projects include: • Heron Island - Coral and fish research - Gathering and compiling data and displaying trends. • Stradbroke Island - Video trapping and Elliot trapping of small mammals. Fauna count via use of BRUV deployments, use of quadrants and transect tapes. Demonstrated knowledge of the factors that threaten wildlife populations, the ecological processes and mitigation measures that underpin the conservation of populations. • Fraser K'gari' Island - Animal & environmental research and surveys, vegetation succession (mining), fire management, and examined soils, plant, water, and hydrology. Landscape Function Analysis was undertaken as part of ongoing rehabilitation monitoring. Analysis of bird populations and habitat preferences in relation to human disturbances. • Development of Caloundra Aura - Environmental, land and animal management strategies. • University of the Sunshine Coast - Kangaroo research assistant & Koala research with detection dogs (Scat surveys). • Distribution modelling on koala populations affected by climate change within Southeast Queensland using R studio. • Identification of a suitable path to implement a wildlife corridor for vulnerable Koala populations within the Sunshine Coast using Graphic information systems (GIS) via the Cost path analysis. • Demonstrated environmental and natural resource management within integrated adaptive management frameworks, and environmental management strategies - Climate change mitigation, fire, floods, offsets, urbanisation etc.

- Biodiversity offsets, translocations, native, invasive, and threatened species management
- Indigenous management, cultural and environmental assets across multiple scales and jurisdictions
- Knowledge and implementation demonstration of ecological restoration projects
- Flora and fauna field trip identification, research, monitoring, surveying, and handling of wildlife
- Competency with the use of dichotomous keys and the identification of fauna and flora to the species level
- Animal behaviour - Ethogram analysis & Presence Absence surveys
- Elliot & Camera trap placement and analysis
- Scientific writing, calculations, drawings & laboratory skills (microbiology, botany, zoology, dissection)

Work History

Dates	Role	Responsibilities	Company
2024 - Current	**Ecologist**	• All survey and reporting requirements	Australia Wide Environmental Consultants
2023-2024	**Project Officer**	• Development application review and submission (Twin Waters West, Maroochydore City Centre) • Develop mapping & data text into a narrative to produce advocacy materials (digital and print) • Assisting with the review of the ecological elements and priorities e.g., koalas, habitat protection & conservation of the SEQRP23 update • Source locally refined koala mapping to augment the state koala mapping as part of the koala regulations to be integrated into the SEQRP document. • Contribute to SCEC's SEQRP workshop content, submissions and comms materials (social, website content, template submissions) • Progress the Habitat 2022-2032 report & the Floodplains to Forests project • General administration & systems development • Design and content creator of SCEC's new website • Programs – NationBuilder, Supporter hub, Kook	Sunshine Coast Environment Council
2021 - 2023	**Ecologist & Fauna Spotter Catcher**	• Understanding of fauna habitat and likelihood of occurrence for potential high-risk and EVNT species. • Ensuring effective wildlife management prior to, during and post construction works/vegetation clearing activities and maintaining communication with all construction personnel where a risk to wildlife exists. • Targeted night monitoring of EVNT species (Greater glider, platypus, tusked frog, and other opportunistic species). • Dewatering of creeks – species relocation, water pumps, nets, • Drone (thermal) and binoculars • Surveys, data analysis and reporting requirements. • Surveys for habitat probability, and construction impacts. • QGIS application - mapping of the site	Red Sand Ecology

		• Water Quality Monitoring and Management • Fire management and Ecosystem Function • Night works along the highway (High Risk) • Pre-Clearing Habitat Assessments, Load Reduction Trapping and Management prior to clearing activities. • Tree clearing supervision, fauna capture and relocation, identification of relocation sites and first aid management of fauna showing signs of injury and distress. • Positive communications with site operators. • DES returns and fauna data entry.	
2021 - 2022	Research Scientist	• "Valuing the Sunshine Coast's Natural Assets". • The project aims to better understand the value of natural assets and ecosystem services and their contribution to the regional economy. The project aligns with Action 12 under Strategic Pathway 3 in the Environment and Liveability Strategy Implementation Plan. Focusing on the following themes: • The importance of natural assets and ecosystem services in relation to physical and mental health, recreation, culture (including First Peoples), and social resilience. Aligning to the SC Community Strategy. • The role of the environment in relation to neighbourhoods, housing, and sustainability. Including green design, lower operating • costs, climate change adaptation and mitigation at the neighbourhood level, biophilic design etc. Aligning to the SC Environment and Liveability Strategy.	University of the Sunshine Coast / Sunshine Coast Council
2019 - 2019	Animal behavioural research and assistant field guide	• Day & night monitoring expeditions • Navigation techniques & Tracking wildlife on foot and by vehicle • Camera trap placement with data entry and photo analysis • Radio telemetry and drone technology • Identification of flora and fauna • Tracking and anti-poaching techniques e.g., experience with camera tracking, and experience with tracks and signs. • Park maintenance - Invasive flora removal, tree wrapping and making bolsters.	Big 5 Research Safari, South Africa, Limpopo Eco Operations Africa
2019 - 2019	Scientific Field Research Assistant and Survey Hub Research Assistant	• Working within the survey sites in the Mary Cairncross Scenic Reserve rainforest • Aiding assistance for researchers and supervision on the Survey Hub • Species counts and identification. • Assistance with camera trapping deployment • Data collection and Excel data entry with scientists • Information to visitors passing on the track. • Daily 'survey findings' hub where specimens are sorted and identified.	Sunshine Coast Council - Bioblitz

Most Recent Projects	Responsibilities
Aura/Harmony water pipeline	• Desktop Survey for matters of state and national significance • Species management plan
Allroads AR3296 - Beaudesert-Nerang Rd & Maudsland Rd	• Desktop Survey for matters of state and national significance • Pre-Clearing Ecological Services and Fauna Spotter Catching • Reporting and documentation of fauna interactions (if required) • Reporting
MBRC Curran Street Park Ecological Survey	• Desktop Survey for matters of state and national significance • Pre-Clearing Ecological Services and Fauna Spotter Catching • Protected plant surveys in accordance with the DES Protected Plant Guidelines • Reporting
CPB Cooroy to Curra Section D-2 Environmental Services	• Desktop Survey for matters of state and national significance • Pre-Clearing Ecological Services and Fauna Spotter Catching • Protected plant surveys in accordance with the DES Protected Plant Guidelines • Reporting

References	
Ben Child & Narelle McCarthy - Sunshine Coast Environment Council Operations and Finance Manager & Advocacy and Engagement Manager	M: +61 410 400 000 | P: 07 5441 5747
Sarah Hobson - Red Sand Ecology Director / Senior Environmental Consultant	M: +61 402 369 057 Email: sarah@redsandecology.com.au
Dr Graham Ashford - University of the Sunshine Coast Senior Lecturer, Environmental and Resource Economics Deputy Head of School, School of Science and Engineering	Ph: +61 7 5430 1141 M: +61 400 406 963 Email: GAshford@usc.edu.au

CURRICULUM VITAE

Ayden Ellis

Australia Wide Environmental Consultants

Junior Ecologist/ Terrestrial Fauna Specialist

Ayden.ellis@awenv.com.au

0447 497 417

1 year of field experience

Career Summary

I am presently employed as a Junior Ecologist and Fauna Spotter Catcher at AWEC and have accrued one year of practical expertise in environmental management and ecological consulting since entering the industry in 2023. Throughout my time in this role, I have honed my skills in conducting surveys for both flora and fauna, as well as proficiently handling data analysis and report writing. My capabilities extend to employing ArcGIS/QGIS for spatial analysis, and I am adept at crafting and reviewing Pre and Post Vegetation Clearing Reports and other ecological documents.

Academic Qualification	Institution	Graduation Year
Bachelor of Science Technology	University of Waikato	2022
Professional Qualification / Training	**Institution**	**Year / Current (Yes/No)**
Rehabilitation Permit, Spotter catcher activity	Queensland Department of Environment & Science	2023 - Yes
Venomous Snake Handling & Awareness	Australian Wildlife Encounters	2023 - Yes
Work Safely at Heights	Pinnacle	2024 - Yes
OH&S Construction White Card	Blue Dog Training	2023 - Yes
CPR & First AID Certificate	Allens Training	2022 - Yes
Rail Industry Worker Accreditation	GoTrain	2024 - 2027

Permits / Licensing

Damage Mitigation Permit (Department of Environment & Science) Permit No. WA0026230

Rehabilitation Permit (Fauna Spotter Catcher) Permit No. WA0021453

Department of Agriculture and Fisheries Animal Ethics Approval CA 2019/11/1331

Current Vaccinations

Tetanus Vaccinations

Academic History		
Date	**Title**	**Learning curriculum**
2019 - 2022	Bachelor of Science Technology, University of Waikato NZ	Majoring in Ecology and Biodiversity, I gained knowledge of ecological and biological theory, and the practical skills for field identification, surveying, and experimentation with plants, animals and microbes across a broad range of ecosystems, as well as expanding understanding of the principles of biological classification and be able to name and classify common organisms found in New Zealand ecosystems. Minoring in Animal Behaviour provided me with an understanding of how developmental processes can influence animals' behaviour, mechanisms that trigger or control behaviours, what functions certain behaviours might serve for an animal, and how behaviours might have evolved over time. Learned to use both biological and psychological approaches to address issues in the fields of animal conservation, wildlife management, animal welfare and the fundamental study of behaviour. 2021 - 2022 Papers Include: • Terrestrial Ecology • Freshwater Ecology • Marine Ecology • Advanced Animal Behaviour • Science & Mātauranga Māori • Preparatory Mathematics • Statistics for Science • Brain, Behaviour & Cognition • Behavioural Psychology & Perception • Environmental Ethics 2020 Papers Include: • Principles of Evolution • Animal Structure and Function • Concepts of Biology • Introduction to New Zealand Law and Society • Principles of Ecology • Plant Structure and Function • Behavioural Ecology and Conservation • Preparation for the Professional Workplace • Science Work Placement 2019 Papers Include: • Introduction to Ecology and Biodiversity • Environmental Science • Introduction to Logic • Communication in the Sciences • Biology of Animals

Work History			
Dates	**Role**	**Responsibilities**	**Company**
2024 - Current	Junior Ecologist & Senior Fauna Spotter Catcher	• All survey and reporting requirements	Australia Wide Environmental Consultants
2023-2024	Fauna Spotter Catcher & Report Writer	This role involves: • Pre-Clearance Surveys of proposed habitat clearing activities and projects • Conducting effective fauna management prior, during and post-civil construction and vegetation clearing • Wildlife handling, identification and relocation • Vegetation clearing overseeing, identification of suitable relocation sites and first aid management of injured or distressed fauna • Communication and built relations with civil site staff (Foreman's, Machine Operators, arborists, etc.) and government/regional council staff • Understanding of SEQ Fauna habitat and occurrence likelihood of high-risk conservation species • Dewatering of waterbodies and subsequent capture and relocation • Pre-Clearance and Post-Clearance report writing • Use of QGIS for analysis and map mark ups of relevant habitat features and regional ecosystems Relevant Licenses held: • Snake Handling Certificate • Construction Induction (White Card)	Biodiversity Australia
2021 - 2023	Field Technician & Herd Test Assist	As a field tech, I travel to various farms within the Waikato setting up dairy sheds with collection meters to undergo herd testing, in which milk samples are collected from cattle. After tests are finished, I collect the used collection meters, pipes and trays of samples and deliver them to the depot. I clean the meters and pipes, then prepare the truck for the next day's shed deliveries. As an assist, when needed I interact with and aid farmers with their herd tests. This may involve replacing milk flasks for new cows or using a EZI Link device (records an animal's identification number) and scanning this number to the bar code on the corresponding flask.	LIC (Livestock Improvement Corporation)

2020 - 2021	**Research Scientist Intern**	I worked as part of the animal welfare team on a study looking at the behavioural responses of NZ dairy cattle to different pasture systems and experiences. I assisted with the set-up of the study on-farm, learned about and deployed various technologies used to monitor animal behaviour (such as go-pro and drone use), data collection and data organisation and cleaning using systems such as Microsoft Excel and VGG annotator.	Research

Most Recent Projects	Responsibilities
Multiple Residential Development Projects across SEQ	• General fauna & flora pre-clearance surveys & FSC • NJKHT tree surveys • Desktop Survey for matters of state and national significance • Pre & Post Clearance reporting • Restricted matter weed surveys
Coomera Connector South Pre-Construction Works Project	• Desktop Survey for matters of state and national significance • Pre-Clearing Ecological Services and Fauna Spotter Catching • Reporting and documentation of fauna interactions (if required) • Targeted surveys for conservation significant frog species • Reporting
Aura/Harmony Water Pipeline	• Pre-Clearing Ecological Services and Fauna Spotter Catching • Wallum froglet, rocket frog & sedge frog targeted surveys • Greater Glider targeted surveys • Powerful Owl and Glossy Black Cockatoo targeted surveys

References	
Alison Barry – LIC (Livestock Improvement Corporation) Operations Manager of Te Awamutu Depot	M: +64 27 681 1954 Alison.barry@lic.co.nz
Toby Gowland – Previously Biodiversity Australia Previously Fauna Unit Co-Ordinator	M: +61 411 878 711

1. Curriculum Vitae for Joel Keady

Current Position	Operations Manager
Company Name	AWEC
Address	33 Ballantyne Court, Glenview
Phone	0458 293 759
Email	Joel.Keady@awenv.com.au
Availability - timeframe (e.g.: commencing from mm/yy & percentage)	08/2023- 40%
No. of years' experience relevant to this role	25 years

2. Academic Qualifications & other Trainings

Degree or Certificate	Institution	Year of Graduation
Rehabilitation Permit	**DES**	**2005**
Damage Mitigation Permit	**DES**	**2003**
Commercial Operators licence	**DAF**	**2015**

3. Professional Qualifications & Membership

Qualification	Certificate Number	Current (Yes/No)	Expiry Date
Fall Trees Manually	**S19683**	**Yes**	**NA**
Undertake Brush cutting Operations	**S19683**	**Yes**	**NA**
Agricultural Chemical Distributions Control Training	**S19683**	**Yes**	**NA**
Occupational Health and Safety Construction Induction	**1204562**	**Yes**	**NA**
Operate Light Vehicles in the field	**43952**	**Yes**	**NA**
Fire Ant Training		**Yes**	**NA**

4. Position History -

Period			Company	Project Description including major component of the project	Position
2005	to	Present	AWEC	Large to small scale mining, Gas, civil transport (road, bridge and train line), remediation projects, residential and commercial development projects across Australia.	Operations Manager

5. Career Summary & Key Attributes applicable to prequalification/tender

I am currently the Operations Manager at AWEC, and I have over 25 years' experience in the Environmental Sector, I have experience with fauna management on Remote Mining, Power Infrastructure, Transport infrastructure, Gas, Civil and remediation projects across Australia. I have extensive experience with significant species and management indigenous to the Sunshine Coast region including Koala Management on transport infrastructure. In May 2020 I have managed civil projects with active Koala populations successfully incorporating detection dogs from USC and thermal imaging drones to ensure industry best practice is followed. I also have experience within the project area being involved in the early works contract and the civil works on the Energex transmission line project. I have relevant work experience on large aquatic fauna salvaging projects (Ewen Maddock Dam Upgrade Project Stage 2).

Significant species management on large civil projects such as AURA (2015-present) designing 53 frog habitat ponds, supervising their construction, frog pond monitoring program, mapping suitable slabbing material across the site, and assisting in relocating this slabbing material, managing the significant wallum frog species present within the site during clearing and earthworks stages of this project.

Another large projects that contained a large population of Wallum Frog Species was the Pelican Waters Project (2015-present). This project included large scale dewatering, offset and rehabilitation of 2.55 hectares which included 8 wallum wetland cells to be constructed from slabbing material, water quality and dust monitoring, invasive flora and fauna management, high risk species management plan and approvals, daily thermal drone flights to manage active aquatic bird breeding sites and managing a number of significant species during clearing and earthworks.

6. Project Experience –Provide a description of your key relevant civil (transport infrastructure) projects you have worked on in the past to demonstrate your experience in relation to this tender/ prequalification application

Project Details	Response	Description of responsibilities
Employer	AWEC	• Fauna Management Procedure, Weed Management Procedure. During Construction- Stockpile management, weed management, fauna management (including Marine Megafauna), Cultural Heritage Artefact Monitoring, Photo Point Monitoring Reports, Fire Ant Monitoring and Management and Water Quality Monitoring and Management (PFC Management). Post Construction- Post-clearing/construction reports and routine weed maintenance.
Project Duration (mm/yy – mm/yy)	08/2016-05/2017	
Time Spent on the project (mm/yy – mm/yy)	10 months	
Scope of works in the project & contract value /subcontract value	Brisbane Airport- Seawall and Access Road Works- Contracted Environmental Advisors	
Client and Principal Contractor	Brisbane Airport Corporation was the Client and Hall Contracting was the Principal Contractor	
DTMR's Contract No. or Project Number (if applicable)		
Contract Administrator /Superintendent (if applicable)		
Your Role in the Project	Fauna Spotter Catcher, Environmental Advisor	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Koala/Fauna Spotter catcher • Weed Survey • Weed Management • Significant Species Management
Project Duration (mm/yy – mm/yy)	01/2016-02/2017	
Time Spent on the project (mm/yy – mm/yy)	13 months	
Scope of works in the project & contract value /subcontract value	Construction of Stage 1 of Bells Creek Arterial Road	
Client and Principal Contractor	Client- DTMR Principal Contractor- Shadforths Civil Contractors	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	

Your Role in the Project	Environmental Advisor/ Fauna Spotter Catcher	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing surveys • Fauna Management • Significant Species and Fauna Breeding Site Management • Weed Survey and Management
Project Duration (mm/yy – mm/yy)	02/2016- 2018	
Time Spent on the project (mm/yy – mm/yy)	18 months	
Scope of works in the project & contract value /subcontract value	Behm Creek Bridge Replacement	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	
DTMR's Contract No. or Project Number (if applicable)	**SCHD-2490**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-Clearing Fauna Surveys including specific Koala Surveys. • Fauna Management • Post-clearing reporting
Project Duration (mm/yy – mm/yy)	05/2017-2019	
Time Spent on the project (mm/yy – mm/yy)	2 years	
Scope of works in the project & contract value /subcontract value	Coomera to Helensvale (QR Corridor) Duplication Project	
Client and Principal Contractor	Client- QR Principal Contractor- Eastern Tree Services	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Environmental Advisor/ Senior Ecologist	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing surveys • Fauna Management (Koala/Platypus) Significant Species and Fauna Breeding Site Management • Aquatic Surveys • Weed Survey and Management
Project Duration (mm/yy – mm/yy)	02/2019- 10/2019	
Time Spent on the project (mm/yy – mm/yy)	8 months	
Scope of works in the project & contract value /subcontract value	Kilcoy Bridge Replacement	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11249**	

Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Fauna Spotter Catcher	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearance surveys • Koala/Fauna Spotter • Significant Species and Fauna Breeding Site Management • Weed Survey and Management • Energex vegetation management- design and reporting
Project Duration (mm/yy – mm/yy)	Sept – Dec 2019	
Time Spent on the project (mm/yy – mm/yy)	4 months	
Scope of works in the project & contract value /subcontract value	Bruce Highway Interchange Upgrades- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- Shadforth	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11262**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Fauna Spotter Catcher	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Pre-clearing Ecological Surveys • Pre-clearance Trapping • Weed surveys and weed management works • Environmental Inspections and Environmental Incident management • Dewatering Works • Fauna Management • Post-clearing reporting
Project Duration (mm/yy – mm/yy)	10/2019-03/2023	
Time Spent on the project (mm/yy – mm/yy)	5 years	
Scope of works in the project & contract value /subcontract value	Cooroy to Curra- Section D- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- Eastern Tree Services	
DTMR's Contract No. or Project Number (if applicable)	NA	
Contract Administrator /Superintendent (if applicable)	NA	
Your Role in the Project	Environmental Advisor/ Fauna Spotter Catcher	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Fauna Pre-clearance surveys • Vegetation Protection Plan- Report and implementation • Significant Species and Fauna Breeding Site Management • Aquatic Surveys and Aquatic Fauna Salvaging Works • Weed Survey and Management • Fauna Management- Clearing and Earthworks • Independent Environmental Compliance Audits
Project Duration (mm/yy – mm/yy)	04/2020- 09/2020	
Time Spent on the project (mm/yy – mm/yy)	5 month	
Scope of works in the project & contract value /subcontract value	Bruce Highway Upgrade- Bribie Island Road to Steve Irwin Way- Early Works	
Client and Principal Contractor	Client- DTMR Principal Contractor- SGQ	

DTMR's Contract No. or Project Number (if applicable)	**TMR CN-12823**	• Independent Erosion Sediment Control Audits and Reports
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Fauna Spotter Catcher	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ensure plant and safety and insurance documentation is in line with site requirements • Manage a team of ecologists to conduct all the flora and fauna surveys ahead of the clearing schedule. • Manage a vegetation crew to conduct all the weed management works. • Manage a large fauna crew to conduct day and night fauna management works. • Liaise with client and contractors to ensure all relevant conditions and requirements are upheld during the project.
Project Duration (mm/yy – mm/yy)	May 2020- Current	
Time Spent on the project (mm/yy – mm/yy)	3 Years	
Scope of works in the project & contract value /subcontract value	Bruce Highway Interchange Upgrade Project	
Client and Principal Contractor	Client- DTMR Principal Contractor- John Holland Seymour Whyte Joint Venture	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-11292**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Operational Manager	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ensure plant and safety and insurance documentation is in line with site requirements • Manage a team of ecologists to conduct all the flora and fauna surveys ahead of the clearing schedule. • Manage a vegetation crew to conduct all the weed management works. • Manage a large fauna crew to conduct day and night fauna management works. • Liaise with client and contractors to ensure all relevant conditions and requirements are upheld during the project.
Project Duration (mm/yy – mm/yy)	March 2022- Current	
Time Spent on the project (mm/yy – mm/yy)	1 year	
Scope of works in the project & contract value /subcontract value	Smart Motorways Project	
Client and Principal Contractor	Client- DTMR Principal Contractor- Seymour Whyte	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-16183**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Operations Manager	

Project Details	Response	Description of responsibilities
Employer	AWEC	• Ensure plant and safety and insurance documentation is in line with site requirements • Manage a team of ecologists to conduct all the flora and fauna surveys ahead of the clearing schedule.
Project Duration (mm/yy – mm/yy)	November 2022- Current	
Time Spent on the project (mm/yy – mm/yy)	5 months	

Scope of works in the project & contract value /subcontract value	Six Mile Creek Bridge Replacement Project	• Manage a vegetation crew to conduct all the weed management works. • Manage an environmental team to ensure that weekly water quality and environmental inspections are completed. • Manage a fauna crew to conduct day and night fauna management works. • Liaise with client and contractors to ensure all relevant conditions and requirements are upheld during the project.
Client and Principal Contractor	Client- DTMR Principal Contractor- Civil Mining and Construction	
DTMR's Contract No. or Project Number (if applicable)	**TMR CN-19358**	
Contract Administrator /Superintendent (if applicable)	**NA**	
Your Role in the Project	Environmental Advisor/ Operations Manager	

7. Referees (Provide at least 3 contactable referees. Two referees must be external to your current or previous employer.) If you have worked on a DTMR project at least one referee must be a DTMR referee (or from another road authority, if applicant has not previously undertaken any DTMR works).

Name	Position	Phone/Mobile	Email	Company and Project
Paul Biggs	Civil Operations Manager	0418584391	Paul.Biggs@sgq.net.au	SGQ- Behm Creek Bridge Replacement Kilcoy Bridge Replacement Bribie Island to Steve Irwin Way Early Works
Martin Ross	Project Environmental Manager	0497 702 966	martin.ross@mcdgroup.com	McConnell Dowell Constructors- NPR Brisbane Airport, Dryandra Road
James Harris	Project Manager Maroochydore Rd Early Works Package	0417 736 105	James.Harris@shadcivil.com.au	Shadforth

Appendix F - Offset Area Baseline Weed Report

MEMO

TO	Department of Transport and Main Roads
FROM	Environmental Resources Management Australia Pty Ltd
DATE	08/05/2025
REFERENCE	0766842
SUBJECT	B2N Rail Upgrade Project – Offset Area Baseline Surveys – Summary Report

1. INTRODUCTION

The Beerburrum to Nambour Rail Upgrade (B2N) project involves upgrades of the rail line between Beerburrum and Nambour. The B2N project area will comprise areas of disturbance within the rail corridor and associated works outside the rail corridor required for access, laydown areas and related construction activities.

The B2N project was approved under the EPBC Act on 25 February 2022 (Reference: EPBC 2020-8803) with requirements to offset the removal of habitat for both the koala and grey-headed flying-fox. A condition of approval was to compensate for the significant impacts on the koala (*Phascolarctos cinereus*) and grey-headed flying-fox (*Pteropus poliocephalus*) through delivery of a land-based offset. Offset delivery will be undertaken by the Department of Transport and Main Roads (DTMR) in collaboration with Sunshine Coast Council (SCC), under guidance of the *Beerburrum to Nambour Rail Upgrade Project Offset Area Management Plan* (OAMP) (ERM, 2024). The OAMP received formal approval in December 2024.

The B2N project Offset Area is situated across sections of three freehold lots and directly adjoins both the Maleny National Park and Kondalilla National Park. This area was identified in the Offset Strategy and is able to provide a consolidated, strategic Offset Area. The registered landholder for the three freehold lots is the Sunshine Coast Council (SCC).

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by DTMR to conduct baseline surveys associated as required by the OAMP (ERM, 2024). Specifically, the initial surveys necessary to comply with the commitments as outlined in the OAMP and appended plans regarding:

- baseline weed mapping;
- pest animal occurrence;
- fuel load; and
- erosion risk.

The purpose of this Survey Summary Report is to document the methodologies and results including field data analysis and mapping, derived from the baseline field survey.

1.1 RATIONALE

1.1.1 BASELINE WEED MAPPING

The baseline weed mapping assessment was carried out in accordance with the Monitoring Program, Performance Criteria and Corrective Actions for the Offset Area outlined in Table 5.3 of the B2N project Offset Area Regeneration Works Plan (the RWP). The RWP outlines specific management zones based on RE boundaries, topographical features, water courses, and site access (RWP Management Zones). The Performance Criteria relevant to the first year of monitoring surveys include:

- Mapping for Weeds of National Significance (WoNS) and locally significant weeds that are most relevant to the threatened species (in particular *Lantana camara*) within the Offset Area. Mapping will also include identification of site-specific areas that require revegetation aimed at improving habitat quality. This will be undertaken within the first six months of commencement of offset management.
- GPS coordinated mapping to determine the location of weed presence or infestation and the location of any regenerative planting effort within the Offset Area.
- Records including date, time, observed weed species, photo location, direction, and any other notes about the weed coverage.

According to the OAMP Section 7.1, thirteen field-based ecological condition indicators used in the Modified Habitat Quality Assessment (MHQA) will be monitored annually (using permanent MHQA transects and photo monitoring locations) to track the effectiveness and success of the OAMP. One indicator is non-native plant cover, which can compete with native plants for light, moisture and nutrients, especially with recruiting koala food and shelter tree canopy species. Invasive plants can also increase fuel load and change fire regimes and susceptibility to unplanned fires.

OAMP Performance Criteria for Regeneration Monitoring (to be carried out in line with the RWP) includes:

- Weed extent reduces to <5% (current maximum baseline weed extent is 40%) cover at all monitoring locations within 10 years of offset commencement.

1.1.2 BASELINE PEST ANIMAL OCCURRENCE

The baseline pest animal occurrence assessment was carried out in accordance with the Pest Animal Management Actions outlined in the B2N project Offset Area Pest Animal Management Plan (the PAMP). The Pest Animal Management Actions relevant to the first year of baseline surveys include:

- A detailed pest animal assessment undertaken within six months of OAMP approval by a suitably qualified expert.
- Monitoring of presence using a minimum of three cameras to be checked monthly.
- Quarterly pest assessment surveys.

Surveys to date, along with advice from current land managers SCC, have assessed the presence of pest animal species in the Offset Area. The following species have been confirmed or are considered likely to occur:

- Dog (domestic or wild) (Likely)
- Red fox (Known)
- Feral cat (Known)
- Feral pig (Likely)
- Rusa deer (Likely)
- Red deer (Likely)

1.1.3 BASELINE FUEL LOAD ASSESSMENT

The baseline fuel load assessment was carried out in accordance with the Fire Management Actions outlined in the B2N project Offset Area Fire Management Plan (the FMP). The FMP outlines specific management areas (Fire Management Units or FMUs) specific to the Offset Area. There are four FMUs mapped within the Offset Area. The Fire Management Actions relevant to the first year of monitoring surveys include:

- An initial fuel load assessment to occur within 3 months of OAMP approval.
- Quarterly inspection of fire breaks.
- Quarterly assessments of total fuel load at fire breaks, trails and access tracks.

In line with the FMP, the initial baseline fuel load assessment should incorporate broader areas of vegetation within the Offset Area.

Fuel load thresholds for each FMU are outlined in the FMP and have been derived from Table B3 VEGETATION CLASSIFICATION AND FUEL LOAD in AS3959-2018 (Committee FP-020, 2018). 83% of the Offset Area is consistent with 'forest' in accordance with vegetation classification outlined within AS3959-2018 (Committee FP-020, 2018). For areas consistent with open forest, fuel load will not exceed 25 t/ha in understory fuel load. Fuel reduction will not occur within vine forest (RE 12.12.16) and rainforest vegetation communities. The FMP (Table 4-5) also states that an increase in fallen timber beyond relevant Regional Ecosystem (RE) benchmarks, or occurrence of deliberately lit fires, shall serve as a trigger for corrective actions. These parameters were also be measured as part of the baseline assessment.

The FMP states that monitoring of fire breaks will be undertaken by a suitably qualified fire ecologist and a report will be prepared outlining required maintenance. Where maintenance requirements are identified, repairs to firebreaks will occur within 3 months, to ensure adequate access for QFES and fire resistance during the event of an uncontrolled fire. Triggers for corrective actions are occurrence of regrowth vegetation within fire breaks which obstruct access or aids in fire mobility, specifically:

- No trees or shrubs greater than 1 m in height and no ground cover (grasses, forbs, sedges etc.) greater than 20 cm in height.

1.1.4 BASELINE EROSION RISK ASSESSMENT

The baseline erosion assessment was carried out in accordance with the OAMP Management Actions (OAMP, Section 6). The OAMP outlines how risks associated with erosion will be actively managed by identifying areas of current erosion (if present) and areas susceptible to erosion, which can be remediated or monitored accordingly. The Erosion Management Actions relevant to the first year of monitoring surveys include:

- A baseline survey and mapping of existing areas of erosion and erosion risk areas will be undertaken within six months of OAMP approval.

ERM has utilised a Land Insight and Resources Pty Ltd (Land Insight) comprehensive desktop Enviro-Screen Report to identify any existing erosion risks associated with the Offset Area. Following review of the Enviro-Screen Report and all available records from previous field surveys, ERM ecologists visited and assessed any identified high-risk erosion areas within the Offset Area.

2. BASELINE SURVEY METHODOLOGY AND EFFORT

This section outlines the general approach used to re-establish baseline conditions within the B2N project Offset Area in quarter one 2025. The baseline monitoring event was undertaken by four (4) ecologists between the 17th and 21st of March 2025. Baseline conditions for weeds, pest animals, fuel load and erosion risk were assessed.

2.1 BASELINE WEED MAPPING METHODOLOGY

To determine the number of sampling sites appropriate across the 13 RWP Management Zones, general guidance was taken from the *Guide to determining terrestrial habitat quality – Methods for assessing habitat quality under the Queensland Environmental Offsets Policy* (DoES, 2020). According to Table 1.2, assessment units that are 0-50 ha should have at least two sampling sites. Assessment units that are 50-100 ha should have three sampling sites. Twenty-three Baseline Survey Points were surveyed (including the five existing permanent MHQA transects used for the calculation of the start habitat quality scores used in the assessment of the Offset Area suitability, to be revisited during the annual and five-yearly habitat monitoring events), distributed between each of the 13 RWP Management Zones and ground-truthed RE's present within the Offset Area. Baseline Survey Points are presented in Figure 2-1.

2.1.1 WEED PRESENCE AND COVERAGE

To identify areas with weed infestations and assess percentage weed extent within each vegetation strata, assessment methodology generally followed the MHQA BioCondition assessment framework (Eyre et al, 2015), focusing only on parameters concerned with non-native plant cover. Data collected at Baseline Survey Points included the following attributes derived from the BioCondition assessment framework:

- **5.1.4 and 5.4.1 (adapted) – Non-native tree and plant species richness:** Non-native species richness will be estimated for four life-forms: trees, shrubs, grasses and forbs/other. Table 2.1 provides a description of these life-forms, based on guidance in Appendix 7 and 8 of the BioCondition assessment framework (Eyre et al, 2015). For non-native tree and plant species richness, assessment will be based on the number of non-native species observed in a 100 x 50 m plot.
- **5.4.2 – 50 x 10 m plot non-native plant cover**: Non-native plant cover is the percentage of the total vegetation cover within each strata that is comprised of exotic and non-indigenous species, assessed within a 50 x 10 m sub-plot.
- **Habitat / general description**: Any notes regarding particularly heavy weed infestations, pest animal species presence or other stressors (e.g., BMAD).

TABLE 2.1 PLANT LIFE-FORM IDENTIFICATION

Life form	Description
Trees	Trees include all single stemmed woody plants (with the exception of mallee species, which are multi-stemmed) greater than 2 m tall.
Shrubs	Includes woody plants with multiple stems (excluding mallees.). Includes Cycads and *Xanthorrhoeas*. Shrubs are usually less than 2 m tall.

Life form	Description
Grasses	Includes all perennial and annual grasses (annual grasses are characterised by short growth, and don't form large tussocks or root mass like perennial grasses, no evidence of previous seasons growth (i.e. remains of last year's tiller bases, and absence of stolons or rhizomes, tussock, hummock and other grass species belonging to the family Poaceae).
Forbes	Herbaceous or slightly woody, annual or sometimes perennial plants other than grasses.
Other species	Slightly woody plants (subshrubs) or ferns, vines, sedges or rushes. Less than 1 m. Sedges and rushes such as *Lomandra* and *Dianella* can often be mistaken for grass. Distinction is based on the flowers. In the case of *Lomandra* the leaves are often flat with some parallel venation and are often quite tough. Although some species have cylindrical leaves and can be difficult to distinguish unless there are flowers, which are typically yellow. *Dianella* are similar often with broad flat leaves, usually arising from a flat base, flowers tend to be rich blue.

2.2 BASELINE PEST ANIMAL OCCURRENCE METHODOLOGY

Introduced predators (such as wild dogs, foxes and feral cats) often use roads and tracks to traverse landscapes, and often deploying camera traps in these corridors will increase the chance of detecting target animals. Therefore, when conducting introduced predator detection and monitoring programs, camera traps should be placed along roadsides or tracks. Cameras should be deployed for a minimum period of four weeks (Meek, 2018).

Passive (non-baited) camera trap deployment is preferred (Meek, 2018). Passive surveys do not use bait or attractants to attract target animals into the camera trap's detection zone so that animal behavior is not influenced, which can be critical to the survey. In Australia, passive surveys are often used to study predators and to determine activity or abundance metrics (Meek, Ballard & Fleming, 2012). Camera traps are also effective in recording evidence of non-predator invasive species, such as feral pigs and deer (Forsyth et al, 2023).

Signs of feral pigs and deer (e.g., dung/scat) are often easier to find than the animals themselves, and therefore provide a good method of detecting the animals' presence or absence. Scat and track counts can also be used to monitor feral pig populations (Mitchell & Balogh, 2007). Signs such as diggings, wallows and tracks are also a good indicator of species presence.

2.2.1 PEST ANIMAL OCCURRENCE

To determine pest animal occurrence within the Offset Area, the following techniques were utilised:

- Four camera traps were deployed on Monday the 17th of March 2025, on or adjacent roads and tracks within the Offset Area (see Figure 2-1 for locations) and retrieved after four weeks. Camera trap data was analysed and a summary of observations included in Section 3.2.
- Whilst deploying camera traps and conducting other baseline survey works within the Offset Area, any signs of pest animal presence (e.g., tracks or scats) were recorded, including:

- GPS coordinated mapping to determine the location of any signs of pest animal presence within the Offset Area.
- Photographs of the signs of pest animal presence.
- Records including date, time, signs/species observed, photo location, direction, and any other notes about the species activity/presence.

2.3 BASELINE FUEL LOAD ASSESSMENT METHODOLOGY

To assess baseline fuel loads within the Offset Area, methodology from the Queensland *Planned Burn Guideline - How to Assess if Your Burn is Ready to Go* (DNPRSR, 2012) was adopted, which provides guidance on estimating fine fuels and elevated fuels for a combined total fuel load. According to the guidance:

> *Fuel load is the combined total of surface fine fuels (dead fuels less than 6 mm in diameter, or the thickness of a pencil) and elevated fuels (elevated fine fuels and near-surface fine fuels) and is represented in tonnes per hectare (t/ha)* (DNPRSR, 2012).

2.3.1 BASELINE FUEL LOAD

The following sections outline the guidance from the Queensland *Planned Burn Guideline - How to Assess if Your Burn is Ready to Go* adopted for the Offset Area baseline survey.

Stage 1 - Choose representative locations

Each FMU contains natural variations in topography, understory or vegetation types. The guidance (DNPRSR, 2012) recommends selecting at least three locations that are representative of the broader area.

Stage 2 - Estimate surface fine fuels (exclude fuels greater than 6 mm diameter)

- Estimate the percentage of surface fine fuel cover. Walk in a 10 m radius around the centre point of the baseline survey plot and estimate the % cover of leaves, twigs and bark (i.e., litter) on the ground.
- Estimate litter-bed depth in centimeters. As you walk around, use a ruler and take numerous litter depth measurements to support your estimate (litter depth is measured under slight pressure).
- Apply the following formula (formula assumes 100 per cent cover and 1 cm depth is 5 t/ha):

$$\% \text{ cover} / 100 \times \text{depth (cm)} \times 5 \text{ (t/ha)} = \text{fuel load (t/ha)}$$

Stage 3 - Estimate elevated fuels

- Vertically divide the area into three layers of approximately 0.5 m each:
  - Shoulder (1.5 m)—includes shrubs and suspended material (e.g. leaves, bark, or twigs) less than 6 mm diameter.
  - Waist (1.0 m)—includes grasses, shrubs and suspended material less than 6 mm diameter.
  - Knee (up to 0.5 m)—includes grasses, forbs, herbs, small shrubs etc.

- Estimate percentage cover for each of these layers. Walk in a 10 m radius around the center point of the baseline survey plot and estimate the cover of grasses or shrubs, this can be done at the same time as taking litter cover estimates.
- Apply the following formula (formula assumes that for each layer—100 per cent cover is 5 t/ha):

(% cover of knee layer + % cover of waist layer + % cover of shoulder layer) / 100 x 5 (t/ha) = fuel load (t/ha)

Stage 4 - Estimate total fuel load

Apply the following formula:

Total fuel load = surface fuels + elevated fuels + *bark (as required)

*If flammable bark fuel is present on boles or suspended in forks, and it is sufficient to carry fire into the branches of many trees, add one tonne per hectare. If most trees present will carry fire up into the branches, add 2 t/ha.

Example: For 6 t/ha surface fine fuels, 8 t/ha elevated fuels and a moderate amount of bark fuel present, therefore total fuel load is 15 t/ha, or 6 + 8 + 1 = 15 t/ha.

2.3.2 FALLEN TIMBER / WOODY DEBRIS

To provide baseline estimates of fallen timber (woody debris) with each FMU, assessment methodology generally followed the MHQA BioCondition assessment framework (Eyre et al, 2015), focusing on parameters concerned with coarse woody debris (CWD). Data collected at the Baseline Survey Points will include the following attributes from the BioCondition assessment framework:

- **5.3.1 Coarse woody debris**: In BioCondition assessments, coarse woody debris refers to logs or dead timber on the ground that is >10 cm diameter and >0.5 m in length (and more than 80% in contact with the ground). Assessment is conducted by measuring the length of all fallen woody logs and other coarse woody debris (>10 cm diameter and >0.5 m in length) to the boundary of the 50 x 20 m plot (i.e. 0.1 ha). The total measured value is multiplied by 10 for comparison with the benchmark which is a meter per hectare value).

2.3.3 OCCURRENCE OF DELIBERATELY LIT FIRES

Whilst conducting baseline survey works within the Offset Area, any signs of deliberately lit fires were recorded, including:

- GPS coordinated mapping to determine the location of any evidence of a fire within the Offset Area.
- Photographs of the evidence observed.
- Records including date, time, evidence observed, photo location, and any other notes about the evidence of a deliberately lit fire.

2.3.4 FIRE BREAK INSPECTIONS

To identify sections of fire breaks that require maintenance, survey teams traversed existing fire breaks inside the Offset Area during the baseline survey event, and collected the following parameters:

- GPS coordinated mapping to determine the location of any occurrence of potentially obstructing regrowth vegetation within fire breaks.
- GPS tracks to demonstrate the sections of fire breaks inspected during the monitoring event.
- Description of regrowth (i.e., trees or shrubs greater than 1 m in height and ground cover (grasses, forbs, sedges etc.) greater than 20 cm in height inside the section of fire break).
- Photographs of the regrowth vegetation.
- Records including date, time, type of vegetation observed, photo location, direction, and any other notes about the regrowth vegetation within fire breaks.

2.4 BASELINE EROSION RISK METHODOLOGY

The purpose of this assessment was to identify areas with active erosion or areas that were at risk of erosion over the course of the offset delivery.

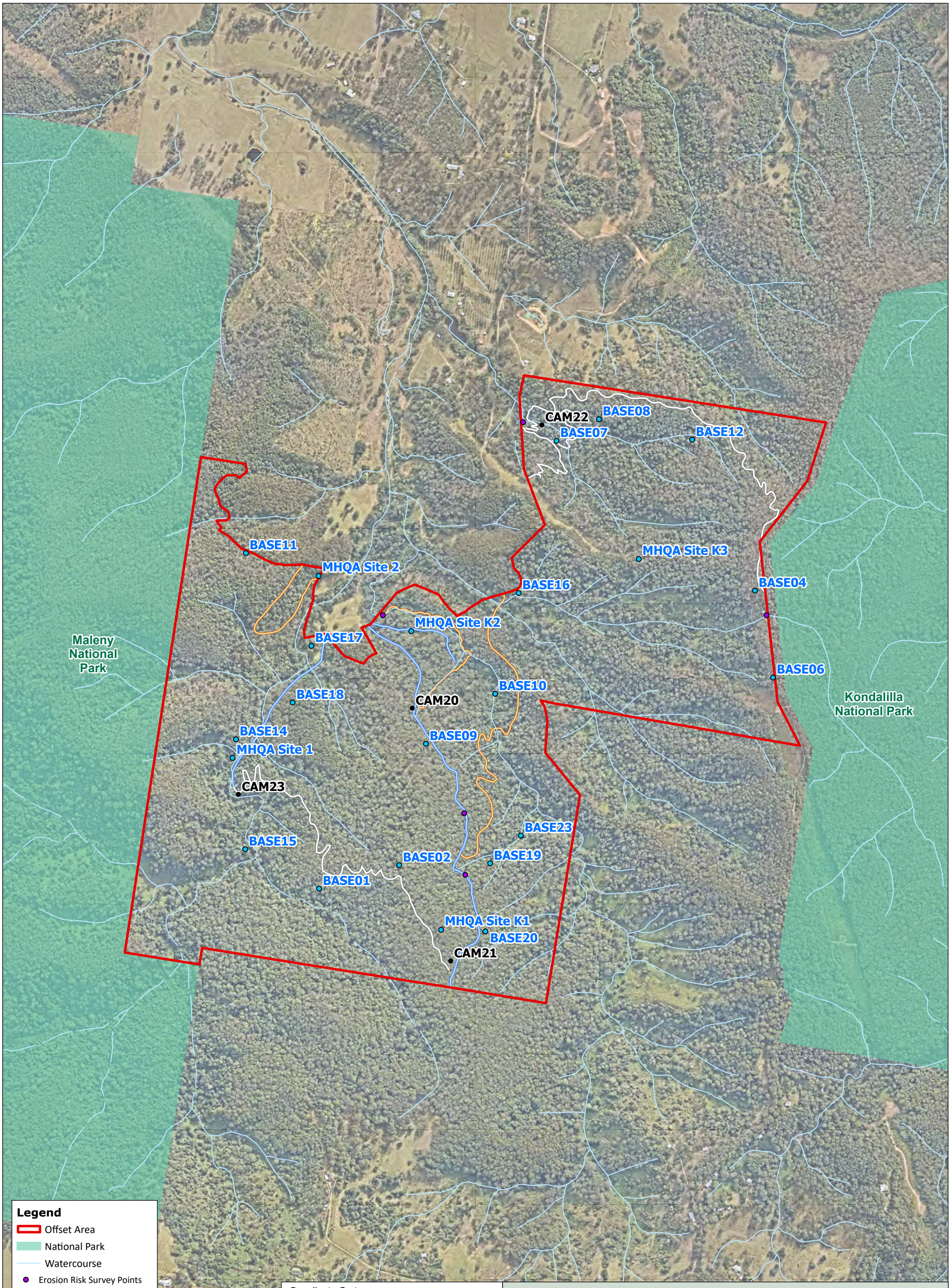
2.4.1 BASELINE EROSION RISK

The baseline erosion assessment aimed to identify areas with potential erosion risk and establish a record of areas to be monitored and remediated over the life of the offset agreement. Any erosion risk areas identified in the review of Land Insight's Enviro-Screen Report or previous survey work, including points identified during the Offset Area habitat quality assessments from 2021-2022 (see Figure 2-1) were visited during the baseline field surveys. The following data was to be collected:

- GPS coordinated mapping to determine the location of the erosion risk area.
- Photographs of the area orientated such that photos can be replicated in repeat surveys to identify any change in conditions.
- Records to identify:
  - The year, date, and time observed.
  - An estimation of the size of the erosion risk area (using measuring equipment where practicable).
  - Topography (slope %).
  - Soil characteristics (in general alignment with the *Australian Soil Classification - Key to Soil Orders*).
  - Percentage of vegetation/ground cover.
  - Any other notes/comments about the erosion risk area.

2.5 ASSUMPTIONS AND LIMITATIONS

Steep terrain, limited access tracks and heavy weed infestations (e.g., *Lantana camara*) were encountered in areas of the reserve, which hindered survey effort and resulted in some areas being inaccessible. Consequently, a total of 23 Baseline Survey Points were able to be assessed. Adequate coverage across the Offset Area was still achieved, with baseline surveys undertaken in vegetation communities spread between most RWP Management Zones and FMP Fire Management Units, within/adjacent access tracks and waterways and between mapped RE's. The data obtained is considered to be representative of baseline conditions across the Offset Area.



0589458_B2N_OAMP_R3.aprx/F2-1 Field Survey Locations

3. FIELD SURVEY RESULTS

3.1 BASELINE WEED MAPPING

Baseline weed coverage was assessed at 23 Baseline Survey Points (including the five existing permanent MHQA points). Weeds were observed in each vegetation strata, with percentage coverage ranging from 0% to 100%. Weed species observed at each of the Baseline Survey Points are listed in Table 3.1 below.

Weed percentage cover was assessed across four life-forms/vegetation strata: trees, shrubs, grasses and forbs/other (see Section 2.1). During this baseline assessment, weed percentage cover in each individual strata was found to be regularly in excess of 50%, leading to an overall weed percentage cover exceeding 100%. Therefore, to appropriately describe weed cover within each Baseline Survey Point and align with the obligations and actions outlined in the OAMP, weed percentage cover within each stratum has been allocated weighting using the following formula:

(trees % x 0.25) + (shrubs % x 0.25) + (grasses % x 0.25) + (forbs/other % x 0.25) = **total weighted % weed cover**

Weighted percentage weed cover ranged from 0.75% (MHQA Site K1, RWP Zone A) and 60.50 (BASE17, RWP Zone I). The average weighted percentage weed cover across all 23 Baseline Survey Points was 20.40%. Weed percentage cover per vegetation strata and total weighted percentage weed cover for each Baseline Survey Point is summarised in Table 3.1 below, and presented spatially in Figure 3-1.

Heavy infestations of *Lantana camara* (Lantana) were observed at several Baseline Survey Points, as well as incidentally while traversing the Offset Area (see Figure 3-1). Where Lantana was prevalent, it regularly comprised up to 90% of the ground and shrub layer. Lantana infestations were regularly observed within or adjacent access tracks, as well as on slopes adjacent waterways.

TABLE 3.1 BASELINE WEED MAPPING RESULTS

Plot Information			Weed Cover					
Plot ID	**RE**	**RWP Zone**	**Weed Species Observed**	**Tree %**	**Shrub %**	**Grass %**	**Forb/Other %**	**Weighted %**
MHQA Site K1	12.12.15	A	*Senna pendula* (Easter cassia)	0	3	0	0	0.75
MHQA Site K2	12.12.15 A/B	K	*Solanum mauritianum* (Wild tobacco), *Solanum chrysotrichum* (Giant devil's fig), *Megathyrsus maximus* (Guinea grass), *Bidens pilosa* (Cobblers pegs), *Ageratum houstonianum* (Blue billygoat weed), *Passiflora subpeltata* (White passionflower), *Macrotyloma axillare* (Perennial horse gram)	0	3	7	85	23.75
MHQA Site K3	12.12.15	F	*Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Bidens pilosa* (Cobblers pegs), *Ageratum houstonianum* (Blue billygoat weed), *Passiflora subpeltata* (White passionflower), *Gomphocarpus physocarpus* (Balloon cotton bush), *Solanum seaforthianum* (Brazilian nightshade)	0	15	90	40	36.25
MHQA Site 1	12.12.15 A/B	G	*Archontophoenix alexandrae* (Alexandra palm), *Cinnamomum camphora* (Camphor laurel), *Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Gomphocarpus physocarpus* (Balloon cotton bush)	2	60	20	2	21.00

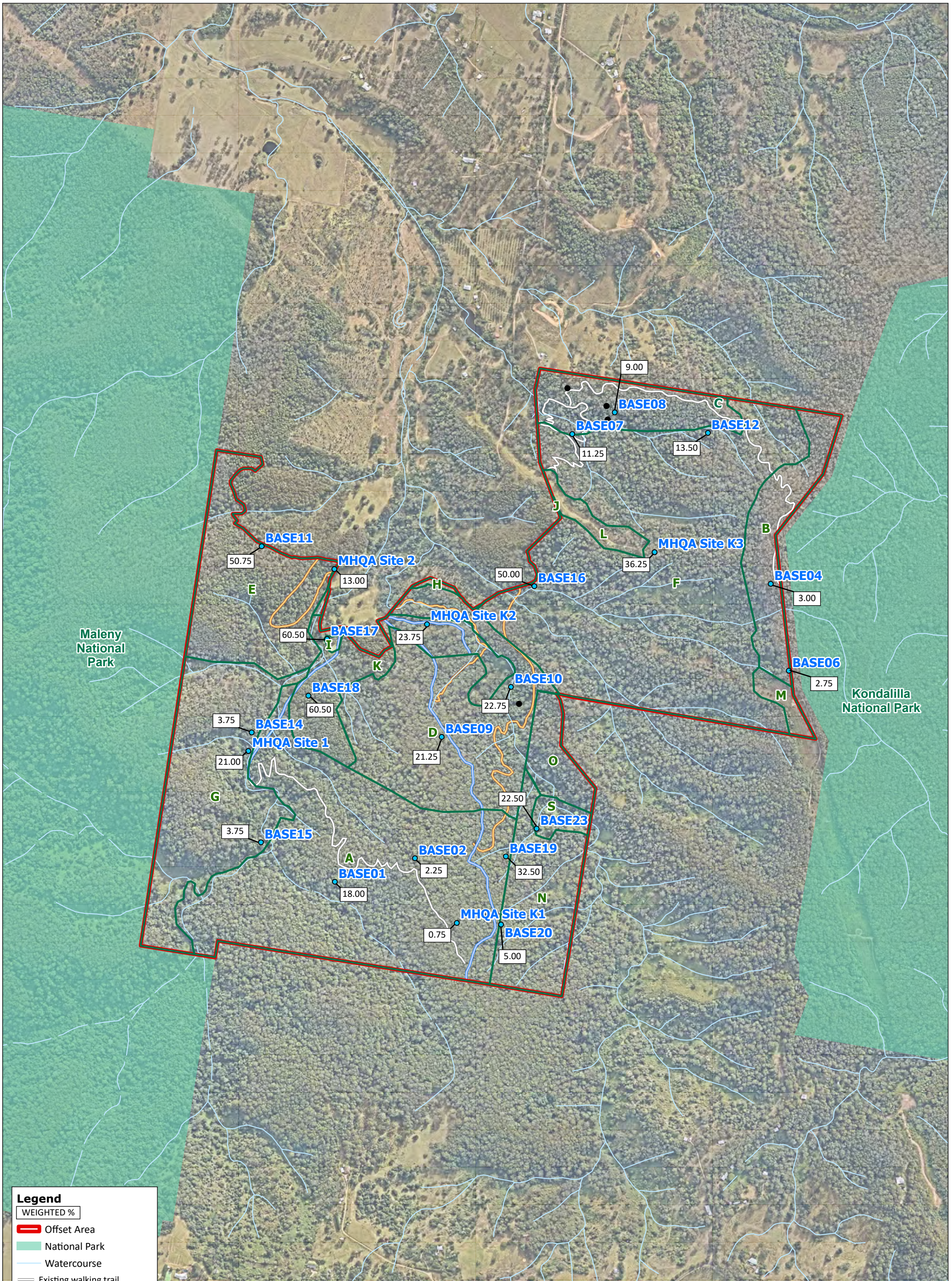
Plot Information			Weed Cover					
Plot ID	**RE**	**RWP Zone**	**Weed Species Observed**	**Tree %**	**Shrub %**	**Grass %**	**Forb/Other %**	**Weighted %**
MHQA Site 2	12.12.15	E	*Archontophoenix alexandrae* (Alexandra palm), *Cinnamomum camphora* (Camphor laurel), *Lantana camara*[1] (Lantana), *Solanum mauritianum* (Wild tobacco), *Solanum chrysotrichum* (Giant devil's fig), *Passiflora suberosa* (Corky passion vine), *Passiflora subpeltata* (White passionflower), *Crassocephalum crepidioides* (Thickhead), *Solanum seaforthianum* (Brazilian nightshade)	2	20	0	30	13.00
BASE01	12.12.15 A/B	A	*Crassocephalum crepidioides* (Thickhead), *Macrotyloma axillare* (Perennial horse gram)	0	0	0	72	18.00
BASE02	12.12.15	A	*Solanum mauritianum* (Wild tobacco), *Solanum chrysotrichum* (Giant devil's fig), *Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Bidens pilosa* (Cobblers pegs), *Neonotonia wightii* (Glycine)	0	2	5	2	2.25
BASE04	12.12.14	B	*Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass)	0	2	10	0	3.00
BASE06	12.12.14	B	*Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass)	0	1	10	0	2.75
BASE07	12.12.15	C	*Lantana camara*[1] (Lantana), *Solanum chrysotrichum* (Giant devil's fig), *Urochloa decumbens* (Signal grass), *Megathyrsus maximus* (Guinea grass), *Bidens pilosa* (Cobblers pegs), *Ageratum houstonianum* (Blue	0	25	15	5	11.25

Plot Information			Weed Cover					
Plot ID	**RE**	**RWP Zone**	**Weed Species Observed**	**Tree %**	**Shrub %**	**Grass %**	**Forb/Other %**	**Weighted %**
			billygoat weed), *Gomphocarpus physocarpus* (Balloon cotton bush), *Passiflora suberosa* (Corky passion vine)					
BASE08	12.12.15	C	*Ligustrum lucidum* (Broad-leaf privet), *Lantana camara*[1] (Lantana), *Urochloa decumbens* (Signal grass), *Passiflora suberosa* (Corky passion vine), *Bidens pilosa* (Cobblers pegs), *Gomphocarpus physocarpus* (Balloon cotton bush)	1	30	1	4	9.00
BASE09	12.12.15	D	*Paspalum mandiocanum (*Broad-leaf paspalum), *Nephrolepis cordifolia* (Fishbone fern), *Neonotonia wightii* (Glycine), *Crassocephalum crepidioides* (Thickhead), *Macrotyloma axillare* (Perennial horse gram)	0	0	5	80	21.25
BASE10	12.12.16	D	*Archontophoenix alexandrae* (Alexandra palm), *Solanum mauritianum* (Wild tobacco), *Lantana camara*[1] (Lantana), *Solanum chrysotrichum* (Giant devil's fig), *Megathyrsus maximus* (Guinea grass), *Ageratum houstonianum* (Blue billygoat weed)	2	80	7	2	22.75
BASE11	12.12.15	E	*Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Sporobolus natalensis/Sporobolus pyramidalis*	0	10	98	95	50.75

Plot Information			Weed Cover					
Plot ID	**RE**	**RWP Zone**	**Weed Species Observed**	**Tree %**	**Shrub %**	**Grass %**	**Forb/Other %**	**Weighted %**
			(Giant rats tail grass), *Bidens pilosa* (Cobblers pegs), *Ageratum houstonianum* (Blue billygoat weed), *Neonotonia wightii* (Glycine), *Passiflora subpeltata* (White passionflower)					
BASE12	12.12.15 A/B	F	*Ligustrum lucidum* (Broad-leaf privet), *Lantana camara*[1] (Lantana), *Passiflora subpeltata* (White passionflower), *Rivina humilis* (Coral berry), *Solanum seaforthianum* (Brazilian nightshade)	1	50	0	3	13.50
BASE14	12.12.15	G	*Lantana camara*[1] (Lantana)	0	15	0	0	3.75
BASE15	12.12.16	G	*Archontophoenix alexandrae* (Alexandra palm), *Lantana camara*[1] (Lantana), *Paspalum mandiocanum (*Broad-leaf paspalum)	5	90	3	0	24.50
BASE16	12.12.15 A/B	H	*Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Ageratum houstonianum* (Blue billygoat weed), *Passiflora suberosa* (Corky passion vine)	0	90	100	10	50.00
BASE17	12.12.15 A/B	I	*Archontophoenix alexandrae* (Alexandra palm), *Cinnamomum camphora* (Camphor laurel), *Solanum mauritianum* (Wild tobacco), *Solanum chrysotrichum* (Giant devil's fig), *Lantana camara*[1] (Lantana),	2	75	85	80	60.50

Plot Information			Weed Cover					
Plot ID	**RE**	**RWP Zone**	**Weed Species Observed**	**Tree %**	**Shrub %**	**Grass %**	**Forb/Other %**	**Weighted %**
			Megathyrsus maximus (Guinea grass), *Passiflora subpeltata* (White passionflower), *Macrotyloma axillare* (Perennial horse gram), *Desmodium uncinatum* (Silverleaf desmodium)					
BASE18	NON-REM	K	*Lantana camara*[1] (Lantana), *Megathyrsus maximus* (Guinea grass), *Paspalum mandiocanum (*Broad-leaf paspalum), *Ageratum houstonianum* (Blue billygoat weed), *Macrotyloma axillare* (Perennial horse gram), *Passiflora subpeltata* (White passionflower), *Crassocephalum crepidioides* (Thickhead)	0	5	30	50	21.25
BASE19	12.12.15	N	*Lantana camara*[1] (Lantana), *Paspalum mandiocanum (*Broad-leaf paspalum), *Passiflora subpeltata* (White passionflower)	0	10	80	40	32.50
BASE20	12.12.15	N	*Macrotyloma axillare* (Perennial horse gram)	0	0	0	20	5.00
BASE23	12.12.15	S	*Lantana camara*[1] (Lantana)	0	90	0	0	22.50
Average weighted weed cover (%)								**20.40**

1 Weeds of National Significance (WoNS)



0589458_B2N_OAMP_R3.aprx/F3-1 Weed Percentage Cover and Infestations of Lantana

3.2 BASELINE PEST ANIMAL OCCURRENCE

Feral pigs were directly observed close to Baseline Survey Point BASE23 while conducting surveys (see Figure 3-2). Signs of feral pig activity were also observed, such as tracks (Plate 3-1) and shelters underneath vegetation (Plate 3-2) near MHQA Site 1. Other potential signs of pest animal occurrence included potential dog tracks within a creek bed close to BASE10 (see Plate 3-3) and potential signs of browsing by feral deer close to BASE02 (see Plate 3-4). Locations of signs of pest animal occurrence are presented in Figure 3-2.

Camera traps deployed within the Offset Area for the baseline survey event captured evidence of several target pest animals, including dogs, red fox and feral cat. All images of target pest animal species were captured on CAM20, located adjacent a multi-purpose access trail in the center of the Offset Area (see Figure 3-2).

Distinct body morphology evident using the daytime images of dogs captured on CAM20 indicates the presence of at least three individual animals (see Plate 3-5 to Plate 3-10 below). Distinct fur patterning on feral cats captured on CAM20 indicates the presence of at least two individual animals (see Plate 3-11 and Plate 3-12). Though adequate for species identification, differentiation of individual animals was not possible using the captured images of red fox (see Plate 3-13 and Plate 3-14).

PLATE 3-1 FERAL PIG TRACKS NEAR MHQA SITE 1

PLATE 3-2 FERAL PIG SHELTER NEAR MHQA SITE 1

PLATE 3-3 POTENTIAL DOG TRACKS NEAR BASE10

PLATE 3-4 POTENTIAL DEER BROWSE NEAR BASE02

PLATE 3-5 DOG CAPTURED ON CAM20

PLATE 3-6 DOG CAPTURED ON CAM20

PLATE 3-7 DOG CAPTURED ON CAM20

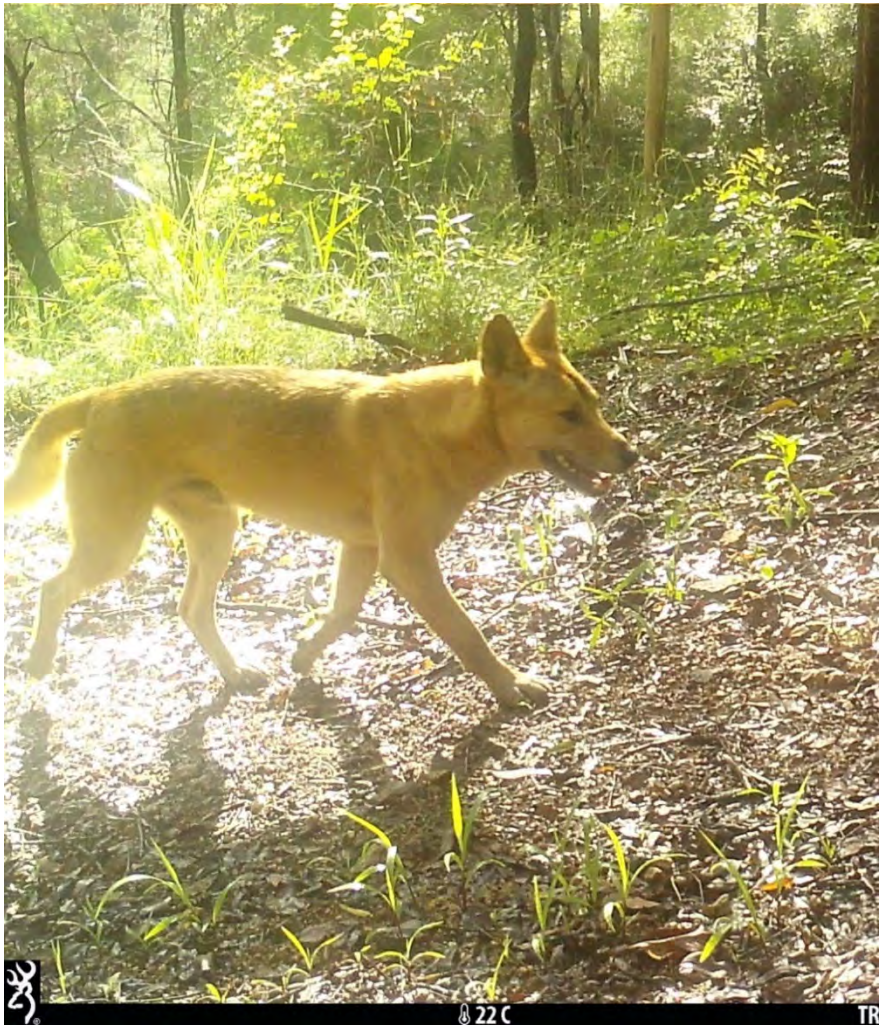


PLATE 3-8 DOG CAPTURED ON CAM20

PLATE 3-9 DOG CAPTURED ON CAM20

PLATE 3-10 DOG CAPTURED ON CAM20

PLATE 3-11 FERAL CAT CAPTURED ON CAM20

PLATE 3-12 FERAL CAT CAPTURED ON CAM20

PLATE 3-13 RED FOX CAPTURED ON CAM20

PLATE 3-14 RED FOX CAPTURED ON CAM20

CAM22

Maleny National Park

Potential dog tracks

CAM20

Kondalilla National Park

Feral pig shelter

Feral pig tracks

CAM23

Potential feral deer browse

CAM21

Legend

- Offset Area
- National Park
- Watercourse
- Existing walking/vehicle trail
- Existing walking trail
- Proposed walking trail
- Pest Animal Observations
- Camera Trap

Coordinate System:
GDA2020 MGA Zone 56
Date: 22/04/2025
Created By: NB
Drawing Size: A3
0 100 200 300m

1:10,000

F3-2 Pest Animal Observations and Camera Trap Locations

B2N Rail Upgrade Project – Offset Area
Baseline Surveys – Summary Report
Client: Theodore Energy Development Pty Ltd

ERM

3.3 BASELINE FUEL LOAD

Baseline fuel load was assessed at 23 Baseline Survey Points (including the five existing permanent MHQA points). Total fuel load ranged from 1.6 t/ha (BASE10, FMU 3) and 30.75 t/ha (BASE23, FMU 1). The average total fuel load across all 23 Baseline Survey Points was 8.61 t/ha. One Baseline Survey Point, BASE23 (FMU 1) which is within ground-truthed RE 12.12.15 and consistent with open forest habitat, recorded a total fuel load of 30.75 t/ha, exceeding the 25 t/ha threshold outlined in the FMP.

Coarse woody debris (CWD) was also assessed at each Baseline Survey Point. Table 3.2 outlines the relevant BioCondition benchmarks for each ground-truthed RE mapped within the Offset Area. Surface fuel load (SFL), elevated fuel load (EFL), total fuel load and total CWD for each Baseline Survey Point is summarised in Table 3.3 below, and presented spatially in Figure 3-3.

TABLE 3.2 COURSE WOODY DEBRIS BIOCONDITION BENCHMARKS FOR OFFSET AREA RES

Ground-truthed RE	BioCondition CWD Benchmarks (m/ha)
12.12.14	552
12.12.15	613
12.12.15 A/B	1236/859
12.12.16	461

Total CWD was recorded in excess of the relevant BioCondition benchmark for RE 12.12.15 at one Baseline Survey Point, MHQA Site K1 (FMU 2) which recorded 700 m/ha total CWD.

Evidence of a historic fire event was observed, particularly in the southern section of the site. No evidence of deliberately lit fires was observed.

The majority of the multi-use access tracks within the reserve contain some vegetation regrowth. Regrowth mostly consists of grasses and ground cover vegetation, regularly in excess of 20 cm and in some cases over 1 m (see Plate 3-15 to Plate 3-19 below). Observations of regrowth vegetation within sections of the multi-use access tracks traversed by the baseline survey team and are presented in Figure 3-3. Fire-break observation points have been labeled FB01 - FB05.

PLATE 3-15 VEGETATION REGROWTH AT FB01

PLATE 3-16 VEGETATION REGROWTH AT FB02

PLATE 3-17 VEGETATION REGROWTH AT FB03

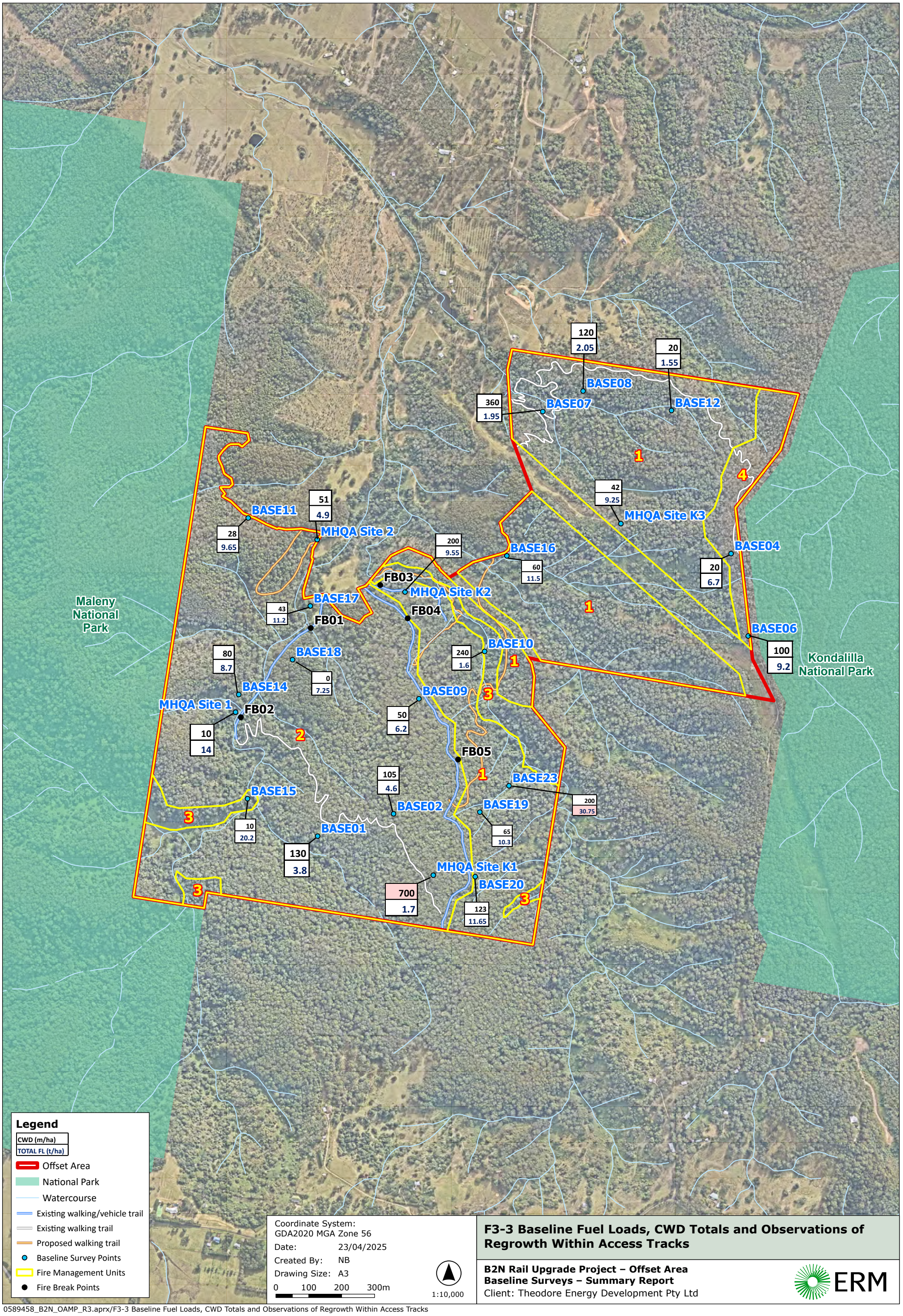
PLATE 3-18 VEGETATION REGROWTH AT FB04

PLATE 3-19 VEGETATION REGROWTH AT FB05

TABLE 3.3 BASELINE FUEL LOAD ASSESSMENT RESULTS

Plot Information			CWD	Surface Fuel Load			Elevated Fuel Load				Total Fuel Load
Plot ID	RE	FMU	Total (m/ha)	Litter (%)	Litter (cm)	Total SFL (t/ha)	Shoulder (%)	Waist (%)	Knee (%)	Total EFL (t/ha)	Total (t/ha)
MHQA Site K1	12.12.15	2	700	5	2	0.5	1	3	20	1.2	1.7
MHQA Site K2	12.12.15 A/B	1	200	7	15	5.25	1	5	80	4.3	9.55
MHQA Site K3	12.12.15	1	42	20	0.5	0.5	30	50	95	8.75	9.25
MHQA Site 1	12.12.15 A/B	2	10	10	0.7	0.35	90	90	90	13.5	13.85
MHQA Site 2	12.12.15	2	51	40	1.2	2.4	15	15	20	2.5	4.9
BASE01	12.12.15 A/B	2	130	20	1.3	1.3	35	10	5	2.5	3.8
BASE02	12.12.15	2	105	5	1	0.25	2	20	65	4.35	4.6
BASE04	12.12.14	4	20	60	1	3	2	2	70	3.7	6.7
BASE06	12.12.14	4	100	60	1.5	4.5	5	7	82	4.7	9.2
BASE07	12.12.15	1	360	5	1.2	0.3	8	10	15	1.65	1.95
BASE08	12.12.15	1	120	7	2	0.7	2	5	20	1.35	2.05
BASE09	12.12.15	2	50	20	1.3	1.3	8	30	60	4.9	6.2
BASE10	12.12.16	3	240	10	1	0.5	15	5	2	1.1	1.6

Plot Information			CWD	Surface Fuel Load			Elevated Fuel Load				Total Fuel Load
Plot ID	**RE**	**FMU**	**Total (m/ha)**	**Litter (%)**	**Litter (cm)**	**Total SFL (t/ha)**	**Shoulder (%)**	**Waist (%)**	**Knee (%)**	**Total EFL (t/ha)**	**Total (t/ha)**
BASE11	12.12.15	2	28	10	0.3	0.15	25	70	95	9.5	9.65
BASE12	12.12.15 A/B	1	20	2	1	0.1	20	6	3	1.45	1.55
BASE14	12.12.15	2	80	70	2.2	7.7	0	12	8	1	8.7
BASE15	12.12.16	3	10	80	1.8	7.2	90	80	90	13	20.2
BASE16	12.12.15 A/B	1	60	10	1	0.5	50	70	100	11	11.5
BASE17	12.12.15 A/B	2	43	5	0.8	0.2	50	70	100	11	11.2
BASE18	NON-REM	2	0	20	1	1	15	30	80	6.25	7.25
BASE19	12.12.15	1	65	10	2	1	35	60	90	9.25	10.25
BASE20	12.12.15	1	123	65	2	6.5	8	15	80	5.15	11.65
BASE23	12.12.15	1	200	75	5	18.75	80	80	80	12	30.75
Average total fuel load (t/ha)											**8.61**



0589458_B2N_OAMP_R3.aprx/F3-3 Baseline Fuel Loads, CWD Totals and Observations of Regrowth Within Access Tracks

3.4 BASELINE EROSION RISK

No areas of erosion risk were identified in Land Insight's Enviro-Screen Report. The Erosion Hazard map obtained from the Enviro-Screen Report is attached as Appendix A.

No areas with erosion risk were identified during the baseline field surveys. Areas previously identified as potential erosion hazards (see Figure 2-1) were not considered to currently present significant risk of habitat damage due to erosion. Most of the slopes adjacent waterways and access tracks, while sometimes weed affected, were heavily vegetated with no obvious damage to the soil profile or with evidence of increased runoff.

4. CONCLUSION

Findings from the baseline weed mapping assessment were generally consistent with the vegetation conditions previously described within each RWP Management Zone. Baseline Survey Points within Management Zones A and B, previously assigned Very Good to Excellent condition classes (following the Bushland Operational Assessment (BOA) Tool, see RWP Section 4), indicating low weed loads, were found to have the lowest weighted percentage weed cover during the baseline assessment (between 0.75% and 2.75%). Further, the Baseline Survey Point within Zone I, previously assigned a Very Poor condition class rating, indicating a very high weed load, was found to have the highest weighted percentage weed cover (60.5%). Weed monitoring and management should continue to be undertaken in accordance with the Management Actions outlined for each Management Zone in Table 5.2 of the B2N project Offset Area RWP.

Infestations of Lantana were prevalent throughout the Offset Area. As outlined in the OAMP Section 5, high densities of Lantana can restrict movement between koala habitat trees and restrict recruitment of foraging resources. Also, due to the plant's combustible nature, it can contribute to hotter than average bushfires which in turn alter native vegetation communities. These processes are likely to reduce habitat quality over time. Lantana should be actively managed within the Offset Area, in accordance with the methodologies outlined in the RWP.

Evidence of pest animal occurrence was observed during the baseline survey event, including direct observations and signs of feral pigs, and potential signs of dogs and feral deer. Camera traps captured evidence of several target pest animal species. Analysis of camera trap images indicates the presence of at least three individual dogs, two individual feral cats and confirms the presence of red fox within the Offset Area. All captured images of pest species were of animals traversing a multi-purpose access trail in the center of the Offset Area.

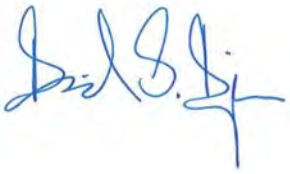
Baseline fuel loads across the Offset Area were predominantly below relevant t/ha trigger values for adapting management and corrective actions outlined in the FMP, with the exception of BASE23 (FMU 1). Course woody debris was found to be within relevant BioCondition benchmarks at the majority of Baseline Survey Points, with the exception of MHQA Site K1 (FMU 2). No evidence of deliberately lit fires was observed. The majority of the multi-use access tracks within the reserve contain some vegetation regrowth, with grass and ground cover regularly in excess of 20 cm. To ensure adequate access for QFES and fire resistance during the event of an uncontrolled fire, maintenance to firebreaks is recommended. In accordance with the FMP, where maintenance requirements are identified, repairs to firebreaks will occur within three months.

No areas with erosion risk were identified during the baseline field surveys. In accordance with the OAMP, risks associated with erosion must continue to be actively managed by identifying areas of current erosion (if present) and areas susceptible to erosion, which can be remediated or monitored accordingly. Annual monitoring for habitat, fire, weeds and quarterly monitoring for pest animals within the Offset Area should aim to identify any areas impacted by erosion. All ground disturbance works associated with the construction or maintenance of trails or weed management must operate under erosion and sediment control practices. Areas of erosion must be remediated to assist with natural regeneration of the Offset Area.

Environmental Resources Management Australia Pty Ltd

Jethro Ottley
Ecologist

Adam Pavitt
Principal Consultant



Dr David Dique
Lead Partner

5. REFERENCES

Committee FP-020. 2018. *AS 3959:2018 Construction of buildings in bushfire-prone areas.* Council of Standards Australia.

Department of National Parks, Recreation, Sport and Racing (DNPRSR). 2012. *Planned Burn Guideline - How to Assess if Your Burn is Ready to Go*. First edition. Brisbane, QLD.

DNPRSR. 2012. *Queensland Planned Burn Guideline - How to Assess if Your Burn is Ready to Go.* Department of National Parks, Recreation, Sport and Racing. State of Queensland

DoES. 2020. *Guide to determining terrestrial habitat quality – Methods for assessing habitat quality under the Queensland Environmental Offsets Policy.* Department of Environment and Science. State of Queensland

ERM. 2024. *Beerburrum to Nambour Rail Upgrade Project - Offset Area Management Plan*. Report Prepared for Department of Transport Main Roads, V.10, dated 11 November 2024.

Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2015). *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland*. Assessment Manual. Version 2.2. Queensland Herbarium, Department of Science, Information Technology, Innovation and Arts, Brisbane.

Forsyth D, Comte S, Bengsen A, Hampton J and Pople T. 2023. Glovebox Guide to Managing Feral Deer, a PestSmart publication, Centre for Invasive Species Solutions, Canberra.

Koichi, K., and Halliday, D. 2015. *Glovebox Guide for Managing Feral Pigs*. PestSmart Toolkit publication. The Centre for Invasive Species Solutions, Canberra, ACT

Meek, P. 2018. *Guide for camera trapping wild dogs, foxes and feral cats*. NSW Department of Primary Industries. July, Primefact 1651, First edition.

Meek, P., Ballard, G., & Fleming, P. 2012. *An introduction to camera trapping for wildlife surveys in Australia*. NSW Department of Primary Industries. Forest Road, Orange NSW.

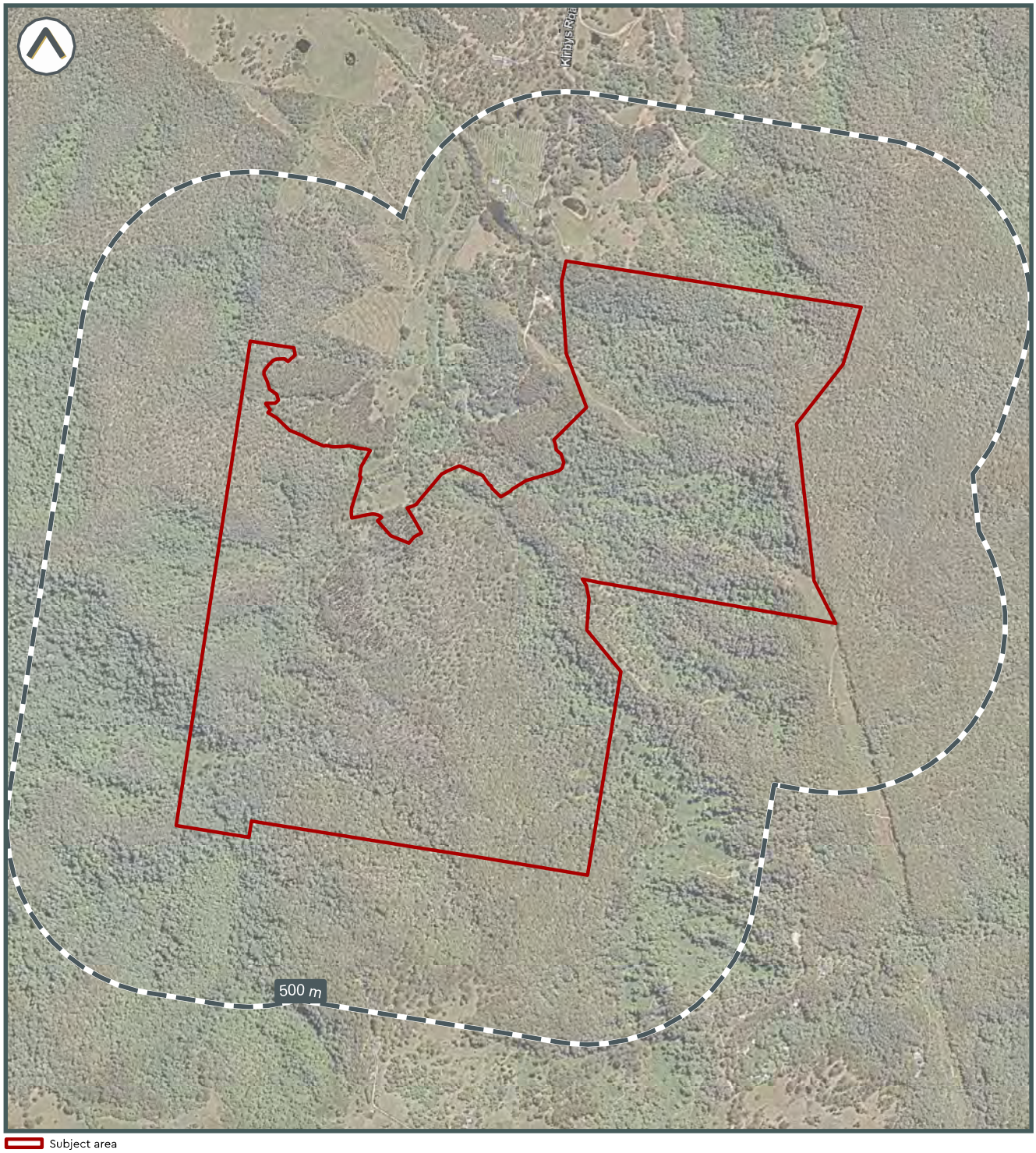
Mitchell, B. and Balogh, S. 2007. *Monitoring techniques for vertebrate pests feraL pigs.* NSW dpi orange iSBn 978 0 7347 1848 8.

APPENDIX A ENVIRO-SCREEN REPORT – EROSION HAZARD MAP

NATURAL HAZARDS

Erosion Hazard

MAP 5.3



Subject area

0 150 300 450 600 750m

Land Insight

Appendix G - Notification to DCCEEW of publishing second annual compliance report

From: [redacted]
Sent: Monday, 24 June 2024 11:16 AM
To: EPBC Monitoring
Cc: B2N-Admin ; [redacted]
Subject: Compliance Report - Beerburrum to Nambour Rail Upgrade (B2N) Stage 1 EPBC 2020/8803 – June 2024

To whom it may concern,

With reference to EPBC Approval 2020/8803 and Condition 14 (b):

14. The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the Action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister. The approval holder must:
b. notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within 5 business days of the date of publication

Please be advised that the project's second annual compliance report (June 2023 – June 2024) has been published to TMR's website on 24 June 2024. The compliance report is available via weblink: https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1

This email satisfies the requirement of Condition 14(b) EPBC 2020/8803 to notify the Department that the compliance report has been published within 5 business days of publication.

Regards

[redacted]
Senior Environmental Officer (Environment and Cultural Heritage – Delivery) | North Coast Region
Program Delivery and Operations Branch | Infrastructure management and Delivery Division
Department of Transport and Main Roads

P: [redacted]
W: www.tmr.qld.gov.au

Appendix H - TMR email notification to DCCEEW for independent audit

[redacted]

From: [redacted]
Sent: Wednesday, 25 June 2025 12:52 PM
To: [redacted]audit@dcceew.gov.au'
Cc: [redacted]erts; B2N-Admin
Subject: EPBC 2020/8803 Independent Audit
Attachments: 12610205-RPT-B2N Stage 1 - EPBC Independent Audit Report_FINAL.pdf

Good afternoon [redacted]

EPBC 2020/8803 Part B – Standard administrative conditions

Condition 17 and 18 of EPBC 2020/8803 of the approval:

The approval holder must ensure that independent audits of compliance with the conditions are conducted for the 36 month period from the date of commencement of the Action and for every subsequent 36 month period until the completion of the Action, or as otherwise requested in writing by the Minister.

GHD proposed audit criteria was approved by DCCEEW on 21 March 2025, due for submission no later than 25 June 2025.

Please find attached to this email the completed Independent Audit for the project.

Thank you

[redacted]
Principal Environmental Officer (Beerburrum to Nambour Rail Upgrade Project)
Rail Infrastructure Delivery Office | Rail Division
Department of Transport and Main Roads

Phone [redacted]
Email:
Website: translink.com.au | www.tmr.qld.gov.au
Address: Ground Floor | 50 Wises Rd | Buderim Qld 4556

This page is intentionally blank.