

Compliance Report 01 – Beerburrum to Nambour Rail Upgrade Project, Queensland

EPBC 2020 / 8803

June 2022 – June 2023



Australian Government

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Document control options

Departmental approvals

Refer to the appropriate Risk Assessment Tool for relevant reviewer and approver

Date	Name	Position	Action required (Review/endorse/approve)
18/05/2023	[redacted]	Senior Environmental Officer	Initial draft
24/07/2023	[redacted]	Senior Environmental Officer	Final issue

Risk level

GACC major GACC minor High risk (but not GACC) Medium risk

Prepared by	[redacted]
Title	Senior Environmental Officer
District & Region	North Coast Region
Branch & Division	Rail Infrastructure Delivery Office, Translink
Project/program	Beerburrum to Nambour Rail Upgrade
Project number	TMR: 858087 Commonwealth Approval Number: 097044-17QLD-NRP
Project location	Beerburrum
Status	
DMS ref. no.	450/01766

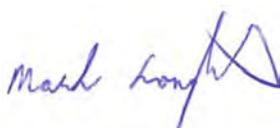
Proponent and Approval Action

Detail	Applicable Details
EPBC Reference Number:	2020/8803
Project Name:	Beerburrum to Nambour Rail Upgrade Project, Queensland
Proponent:	Department of Transport and Main Roads
ABN:	390 407 690 291
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 2022 - June 2023
Date Prepared:	May 2023

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

[redacted]

Position

Project Manager

Organisation

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

Date

28/07/2023

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1. Introduction

1.1 Purpose of this report

The Department of Transport and Main Roads (TMR) is completing a rail and infrastructure upgrade to the existing rail line between Beerburrum and Nambour, termed the Beerburrum to Nambour Rail Upgrade (hereafter referred to as “the Project”).

The Project was referred to the Department of Environment in October 2020 for determination of whether the Project was 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 (reference number 2020/8803).

Condition 14 of the approval for EPBC 2020/8803 requires the approval holder (TMR) to prepare a compliance report for each 12-month period following the date of commencement of the Action. This report is the first annual compliance report for the Project for the period 06 June 2022 to 06 June 2023.

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

2. Description of Activity

2.1 Project Location

The B2N Project is located within the Sunshine Coast Council (SCC) Local Government Area. The Project area is between Beerburrum and Nambour on the North Coast Rail 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 253 ha.

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, being an early works package, Stage 1 and Stage 2. A summary of each stage is provided below.

2.2.1 Early Works

The early works package includes:

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

2.2.2 Stage 1

Stage 1 has been funded with detailed design commencing May 2023. Construction is scheduled to commence 2024. Stage 1 includes:

- Road works to accommodate the new rail corridor and track infrastructure;
- Public utility plant (such as Energex, Unity Water, 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 2 km north of 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 Burgess street road-over-rail bridge with a new road overpass;
- Expansion of the park 'n' ride facility on the northern side of Beerburrum station (partial);
- Construction of a new bus interchange at Landsborough;
- 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.

2.2.3 Stage 2

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

- 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, Unity Water, Telstra and other service) relocations and enabling works.

Figure 1 provides an overview of the Project area.

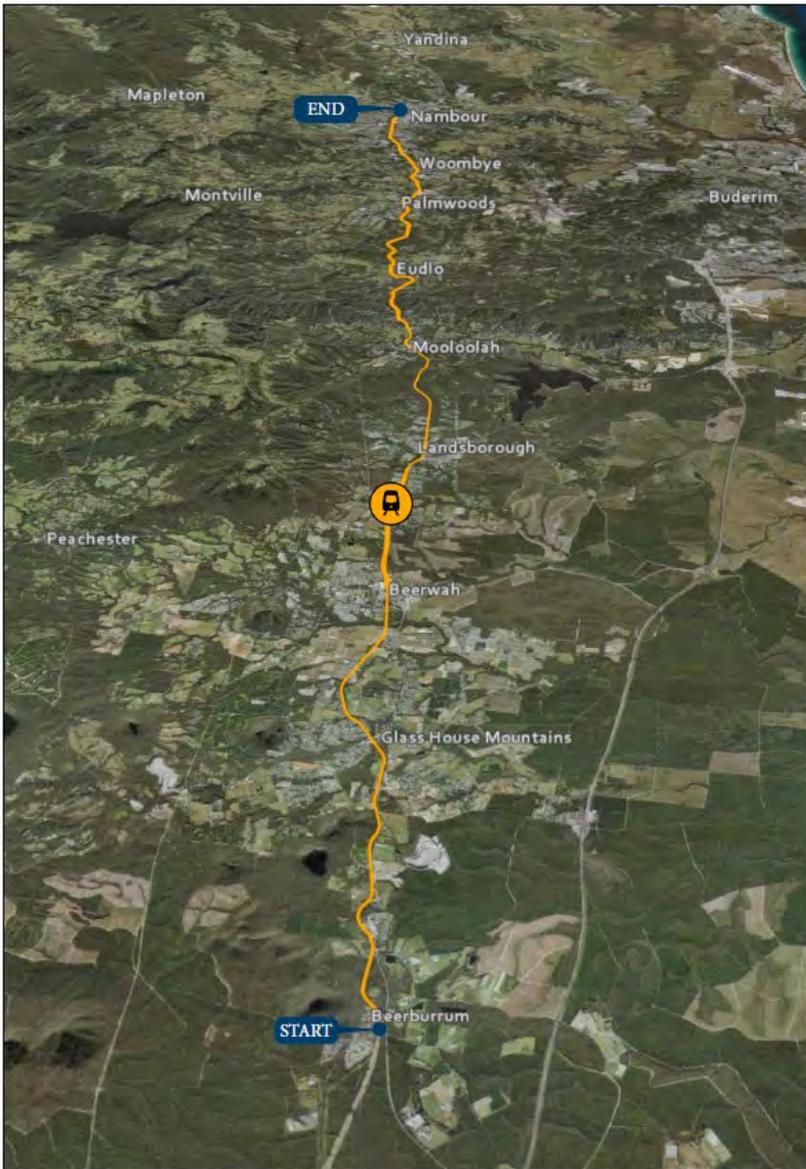


Figure 1 Beerburrum to Nambour Rail Upgrade Project

2.3 Project Status

The Project will be delivered in three separate stages; early works, Stage 1 and Stage 2. The project is currently in the **Early Works** construction stage. The status of the future Project stages is outlined in **Table 1** below.

Table 1 Project Status

Construction Stage	Construction Start Date	Estimated Completion Date	Comments
Early Works	06 June 2022	30 August 2023	Vegetation clearing and earthworks is largely completed. Finishing works, including landscaping, pavements and structures are ongoing.
Stage 1	2024	2027	Detailed design for Stage 1 commenced April 2023. Construction is scheduled to commence 2024.
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 EPBC Approval Dates

Approval Document	Comment	Date of Decision	Expiry Date
EPBC 2020/8803		25 February 2022	27 February 2052
OAMP	In development		
Grey Headed Flying Fox EMP	In development		

Table 3 Chronology of Compliance Reports

Reporting Dates	Report No.	Status
June 2022 – June 2023	01	Completed (this report)

3. Condition Compliance

Table 4 provides an overview of the approval conditions and Project compliance status. Where additional information is required, reference has been made to relevant sections of this report for further evidence of compliance.

NOTE: As the project is currently in the **Early Works** construction stage, **Table 4** provides a summary of compliance specific to **Early Works** activities only.

Table 4 Summary of Compliance with EPBC Act Approval Conditions

No.	Condition	Status	Is the project compliant with this condition? Compliant/ Non-Compliant/ Not applicable	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	A post clearing construction audit on 28 March 2023 confirmed a total of 2.27Ha of mapped Koala and Grey-headed Flying Fox habitat was cleared as part of Early Works. Clearing outside the approved EPBC boundary has not occurred as demonstrated by the as constructed clearing survey attached as 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	This requirement was included within contract documentation and within the Construction Contractor's Environmental Management Plan (Construction). No koalas or grey-headed flying foxes were identified during clearing works. Post clearing fauna reports are included as Appendix B, demonstrating engagement and authority of suitably qualified fauna spotters during clearing works.
	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	This requirement was included within the contract documentation and within the Construction Contractor's Environmental Management Plan (Construction). Post clearing fauna reports are included as Appendix B demonstrating clearing works were completed in accordance with the Nature Conservation (Koala) Conservation Plan 2017.
	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 meters. 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.	Ongoing	Compliant	Approximately 380m of temporary koala exclusion fencing was installed immediately after clearing adjacent to a section of mapped koala habitat along a portion of the Steve Irwin Way realignment. Temporary fencing remained in place until the completion of permanent koala fencing either side of the fauna underpass underneath Steve Irwin Way. Aerial photographs depicting the temporary koala exclusion fencing have been provided in Appendix C.

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;	Yet to submit		
b) Prepare the EMP in accordance with the Environmental Management Plan Guidelines;	Under development		Preparation of the EMP is under development and will be submitted to the Minister for approval prior to clearing commencing within EPBC Stage 1 or Stage 2 Main Works Boundary.
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	Clearing and construction works within EPBC Stage 1 Main Works Boundary and EPBC Stage 2 Boundary have not commenced. Refer to Appendix A, identifying areas of construction have been limited to the Early Works Boundary within the approved development area only.
d) implement the approved EMP until the completion of the Action.	Yet to commence		
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	Safe movement solutions including a fauna underpass and koala proof fencing have been installed as part of Early Works. Aerial and field photographs attached as Appendix D demonstrate the safe movement solutions were installed prior to opening the section of Steve Irwin Way Road realignment to public motorists (which was not opened during this reporting period). At the completion of Early Works, the safe movement solutions will be uploaded into TMR's Environmental Asset Register and will be incorporated into TMR's inspection and maintenance program.

	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	Safe movement solutions including a fauna underpass and koala proof fencing have been installed as part of Early Works. Aerial and field photographs attached as Appendix D demonstrate that the safe movement solutions were installed prior to opening the section of Steve Irwin Way Road realignment to public motorists (which was not opened during this reporting period).
	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	2 x Koala awareness signs are included as part of the safe movement solutions for the Early Works, however they were not installed during this reporting period. The section of Steve Irwin Way Road realignment was not opened to public motorists during this reporting period.
	d) complete baseline weed surveys in each stage prior to the commencement of construction or clearing in each stage, and within 1 month of the completion of baseline weed surveys submit the baseline weed survey results to the department;	Ongoing	Compliant	A baseline weed survey was completed for the Early Works construction area on 22 – 23 March 2022. The baseline weed survey is provided in Appendix E. The baseline weed survey was provided to the department within 1 month of the survey report on 19 April 2022, as per email attached as Appendix F.
	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	A 12 month weed survey was completed for the early works construction area on 13 and 17 February 2023. The report noted a reduction in weed quantity when compared to the 2022 baseline weed survey. The 12 month weed survey is provided in Appendix G.
	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	Results of the 12 month annual weed survey for the Early Works construction area is provided in Appendix G.
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;	Under development		TMR is currently drafting an Offset Area Management Plan to submit to DCCEEW for Minister approval.

	b) a table of commitments to achieve the environmental objectives, and a reference to where the commitments are detailed in the OAMP;			
	c) reporting and review mechanisms, and documentation standards to demonstrate compliance with the OAMP;			
	d) details of the nature and timing of the mechanism to legally secure the offset site/s;			
	e) an assessment of risks to achieving environmental objectives and risk management strategies that will be applied, including contingency measures and their timing; and			
	f) a monitoring program to be undertaken by a suitably qualified field ecologist, which must include: <ul style="list-style-type: none"> 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. 			
6.	The approval holder must implement the approved OAMP for the life of the approval.	Yet to commence		
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.	Ongoing	Compliant	Clearing under this reporting period has been restricted to the approved EPBC boundary for the Early Works only, as demonstrated by the as-constructed clearing survey attached as Appendix A.
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: <ul style="list-style-type: none"> 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 email correspondence provided as Appendix F.

	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 email correspondence provided as Appendix F. Stage 1 – Yet to commence Stage 2 – Yet to commence
10.	The approval holder must maintain accurate and complete compliance records.	Ongoing		
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	Yet to commence		The development of the OAMP and Grey-headed Flying-fox EMP is currently in progress.
	b. publish each plan on the website within 20 business days of the date the plan is approved by the Minister or of the date a revised Action management plan is submitted to the Minister or the Department, unless otherwise agreed to in writing by the Minister			
	c. exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public			
	d. keep plans published on the website until the end date of this approval.			
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.			
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:	Ongoing	Compliant	The Minister was advised that Early works commenced on 06 June 2022. This is the first annual compliance report and will cover the period of 6 June 2022 to 6 June 2023.
	a. publish each compliance report on the website within 60 business days following the relevant 12 month period	Ongoing	N/A	This is the first annual compliance report and is scheduled to be published within 60 business days of 6 June 2023. Evidence of compliance will be provided within the second annual compliance report.

	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	N/A	This is the first annual compliance report. Notification will be provided once the annual compliance report has been published to the website. Evidence of compliance will be provided within the second annual compliance report.
	c. keep all compliance reports publicly available on the website until this approval expires	Ongoing	N/A	This compliance report, along with future compliance reports will be published and available on TMR's Project webpage (https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1) Evidence of compliance will be provided within the second annual compliance report.
	d. exclude or redact sensitive ecological data from compliance reports published on the website	Ongoing	N/A	Sensitive ecological data (as defined in the Australian Government Department of the Environment (2016) <i>Sensitive Ecological Data – Access and Management Policy</i>) 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)
	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 the first 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 2 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 conditions of the EPBC approval 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.	Yet to commence	
18.	For each independent audit, the approval holder must:	Yet to commence	
	a. provide the name and qualifications of the independent auditor and the draft audit criteria to the Department		
	b. only commence the independent audit once the audit criteria have been approved in writing by the Department		
	c. submit an audit report to the Department within the timeframe specified in the approved audit criteria.		
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	
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	

4. Conclusion

This report has been prepared to fulfil condition 14 of Approval 2020/8803 and demonstrates the Departments compliance from June 2022 to June 2023.

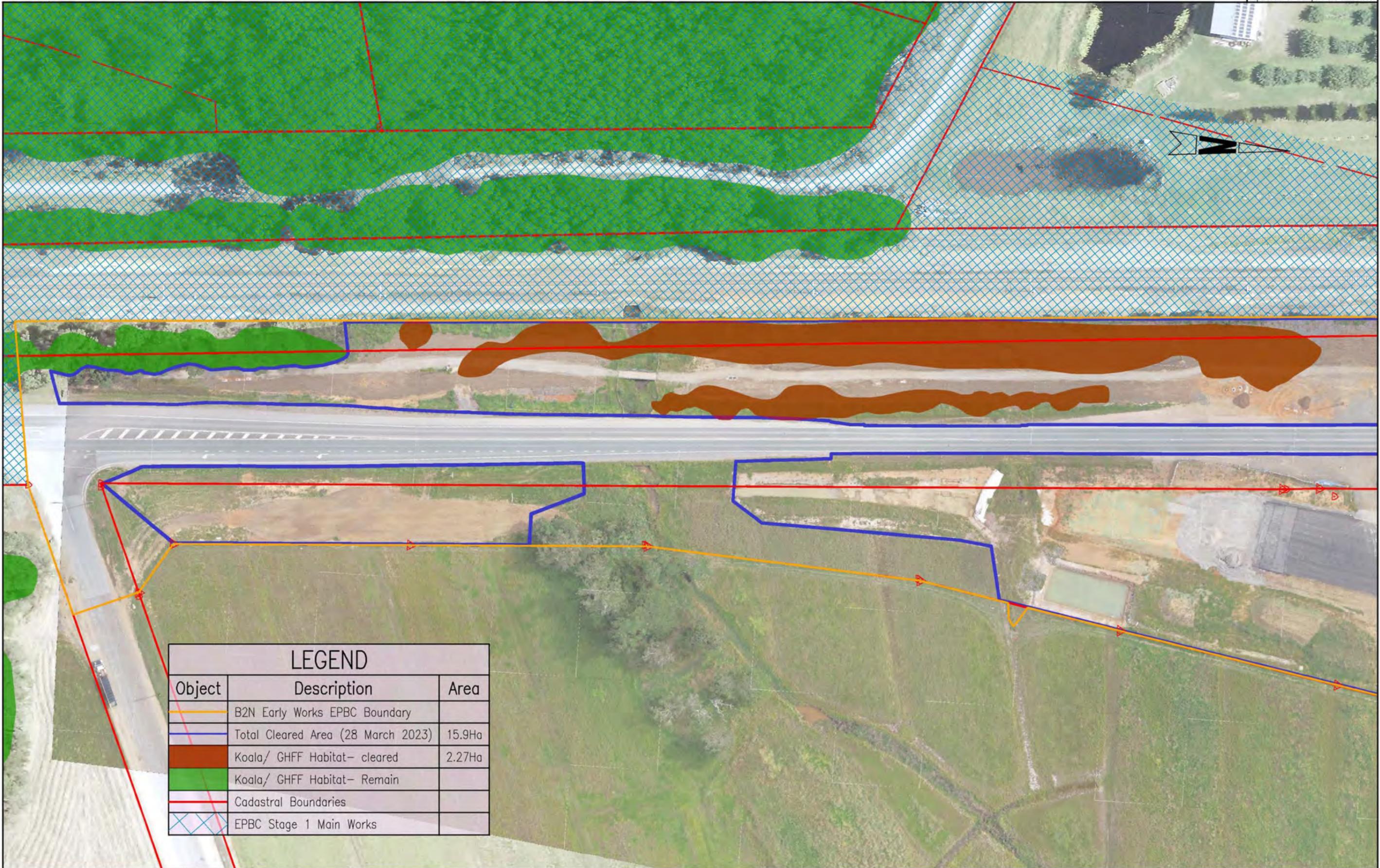
Since the commencement of the action there have been no incidents or non-compliance.

5. List of Appendices

- a) Post clearing construction survey
- b) Post clearing fauna reports
- c) Aerial photographs – temporary koala exclusion fencing
- d) Safe movement solutions
- e) Early works – Baseline weed survey
- f) Department Correspondence
- g) Early works – Annual weed survey

Appendix A

Early Works - Post clearing construction survey

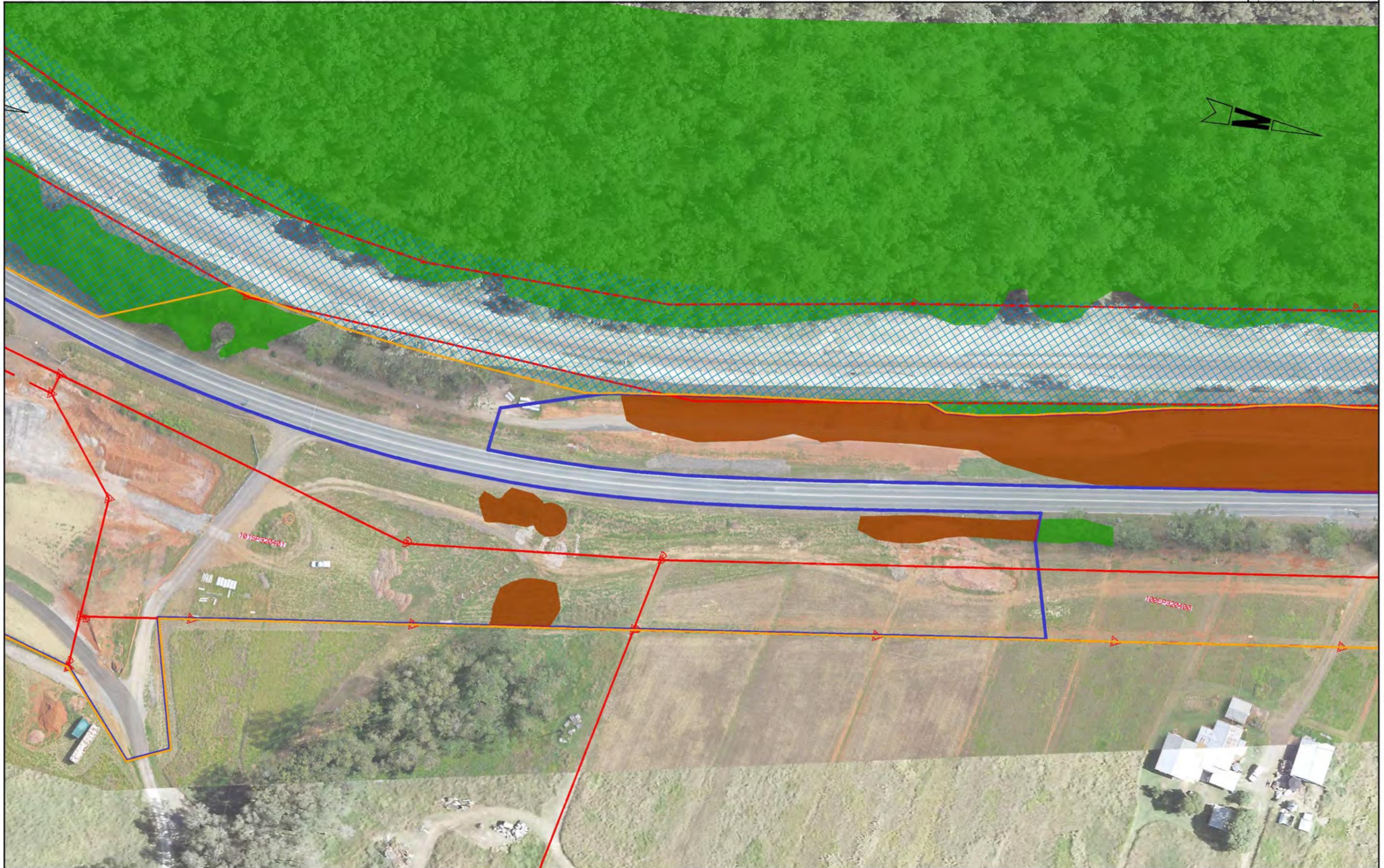


LEGEND		
Object	Description	Area
	B2N Early Works EPBC Boundary	
	Total Cleared Area (28 March 2023)	15.9Ha
	Koala/ GHFF Habitat- cleared	2.27Ha
	Koala/ GHFF Habitat- Remain	
	Cadastral Boundaries	
	EPBC Stage 1 Main Works	

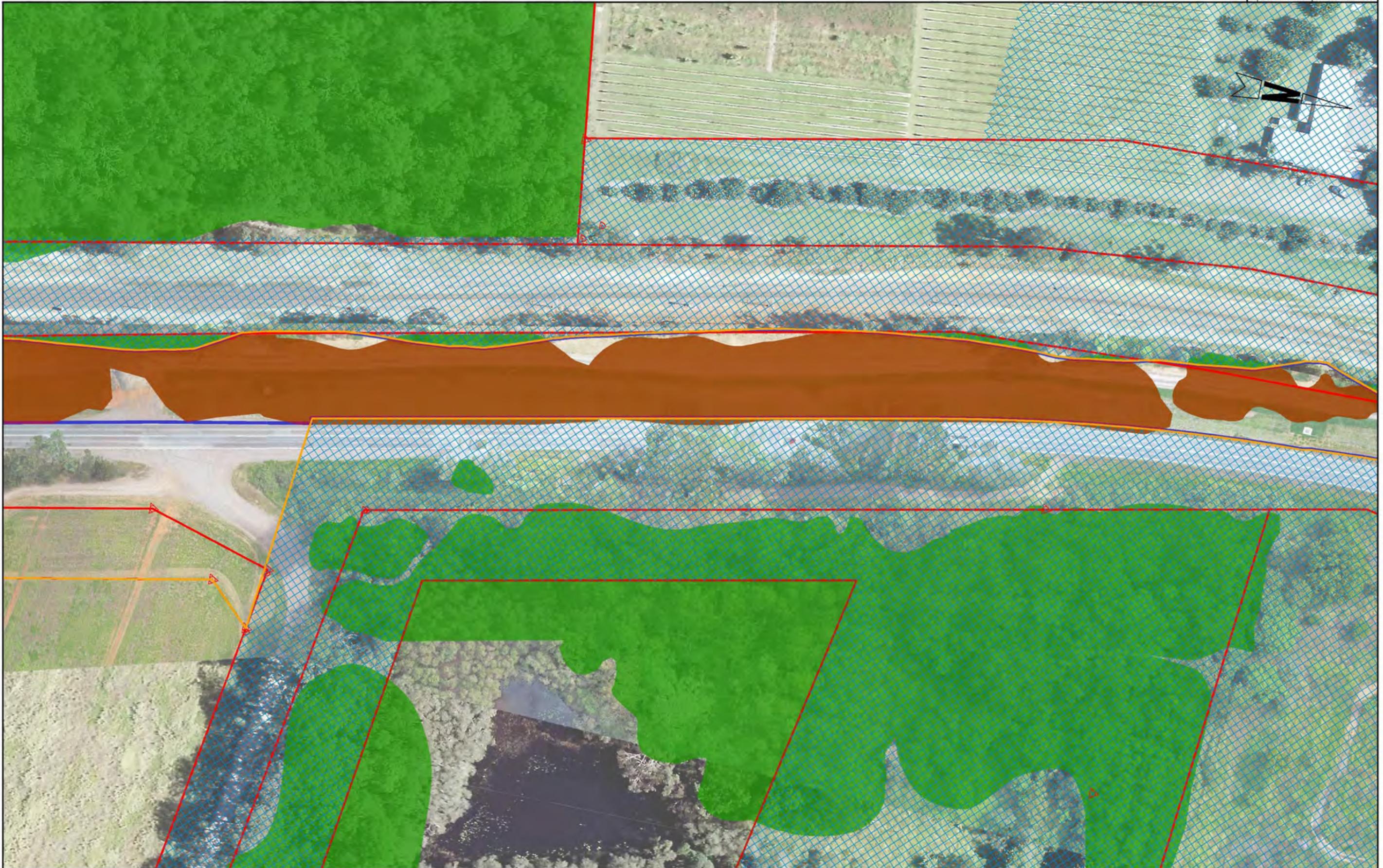
Revisions		Certified	Date	Microfiled	Associated Job Nos	Survey Data		Scales		As-Constructed Clearing				SURVEY PLAN		
						Horiz. Datum	GDA2020		Horizontal	Orthophoto Plot			B2N Early Works - Steve Irwin Way		Job No.	
					Auxiliary Drg Nos	Horiz. Grid			Vertical	Imagery date 23/04/2023			Captured By	Surveyor Responsible	Contract No.	
						Height Datum	AHDD		Reference Points				Processed By		Drawing No.	
A Original Issue A3						Survey Books			Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP		Series Number	
File Names					SRV Project	SIW Construction			Gazettal Chainage from to						SV 1 of 6	
															MPS_GDA2020_A3 (07/2021)	



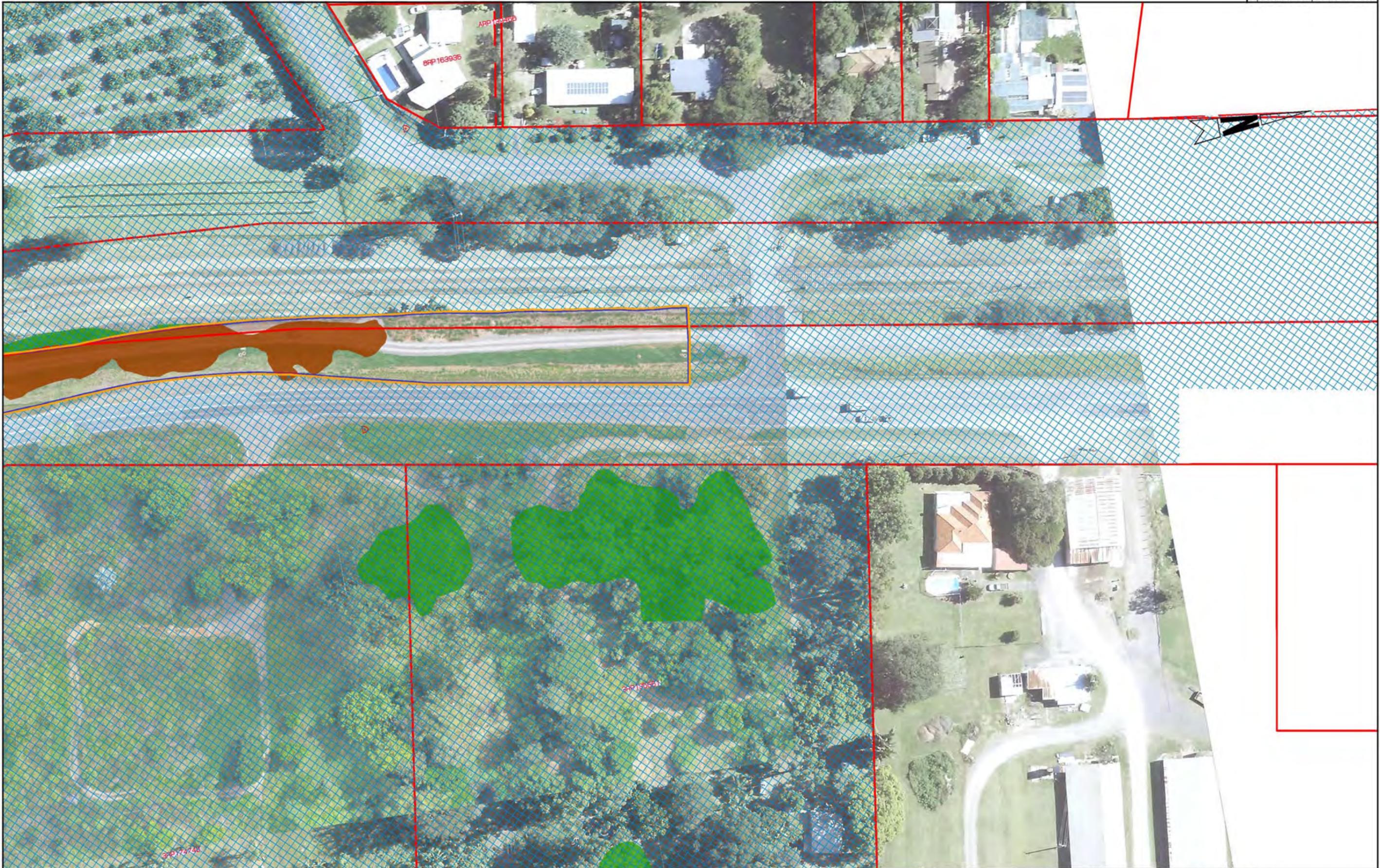
Revisions		Certified	Date	Microfilmed	Associated Job Nos	Survey Data		Scales		As-Constructed Clearing				SURVEY PLAN		
						Horiz. Datum	GDA2020		Horizontal	Orthophoto Plot				B2N Early Works - Steve Irwin Way		
					Auxiliary Drg Nos	Horiz. Grid			Vertical	Imagery date 23/04/2023				Captured By	Surveyor Responsible	Contract No.
						Height Datum	AHDD		Reference Points				Processed By		Drawing No.	
A		Original Issue A3				Survey Books			Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP		Series Number	
File Names		SRV Project	SIW Construction					Dimensions in Metres except where shown otherwise	Gazettal Chainage from to						SV 3 of 6	
															MRS_GDA2020_A3 (07/2021)	



Revisions		Certified	Date	Microfilmed	Associated Job Nos	Survey Data		Scales		As-Constructed Clearing				SURVEY PLAN		
						Horiz. Datum	GDA2020		Horizontal	Orthophoto Plot				B2N Early Works - Steve Irwin Way		
					Auxiliary Drg Nos	Horiz. Grid			Vertical	Imagery date 23/04/2023				Captured By	/ /	Surveyor Responsible
						Height Datum	AHDD		Reference Points				Processed By	/ /		Drawing No.
A						Survey Books			Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP			Series Number
File Names					SRV Project	SIW Construction		Dimensions in Metres except where shown otherwise								SV 4 of 6
									Gazettal Chainage from		to					MPS_GDA2020_A3 (07/2021)



Revisions		Certified	Date	Microfiled	Associated Job Nos	Survey Data		Scales		As-Constructed Clearing				SURVEY PLAN			
						Horiz. Datum	GDA2020		Horizontal	Orthophoto Plot				B2N Early Works - Steve Irwin Way			Job No.
					Auxiliary Drg Nos	Horiz. Grid			Vertical	Imagery date 23/04/2023				Contract No.			
A						Height Datum	AHDD		Reference Points				Captured By	Surveyor Responsible	Drawing No.		
Original Issue A3						Survey Books			Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP	Processed By		Series Number	
File Names		SRV Project		SIW Construction		Dimensions in Metres except where shown otherwise		Gazettal Chainage from		to						SV 5 of 6	
															MPS_GDA2020_A3 (07/2021)		



Revisions		Certified	Date	Microfilmed	Associated Job Nos	Survey Data		Scales		As-Constructed Clearing				SURVEY PLAN		
						Horiz. Datum	GDA2020		Horizontal	Orthophoto Plot				B2N Early Works - Steve Irwin Way		
					Auxiliary Drg Nos	Horiz. Grid			Vertical	Imagery date 23/04/2023				Captured By		Contract No.
						Height Datum	AHDD		Reference Points				Surveyor Responsible		Drawing No.	
A		Original Issue A3				Survey Books			Preceding RP	Dist. to start of job (km)	From start to end of job	From end to Following RP	Following RP	Processed By		Series Number
File Names					SRV Project	SIW Construction		Dimensions in Metres except where shown otherwise	Gazetted Chainage from						SV 6 of 6	
									to						MRS_GDA2020_A3 (07/2021)	

Appendix B

Early Works - Post clearing fauna spotter catcher reports



POST-CLEARANCE REPORT

Fauna Spotter Catcher Services

**B2N- Beerburrum to Nambour Rail Upgrade
Dyer Street, Caloundra Street and Gantry Lane -
Landsborough**

19 September – 30 November 2021



Report Prepared for Hall Contracting



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LEGISLATION

Under the *Nature Conservation Act 1992* (NCA), Queensland's native wildlife is protected. A person who intends to move, take, use or keep native fauna requires an appropriate permit to do so. Where approved land clearing activities may result in displacement of native wildlife, Biodiverse is permitted to observe or relocate animals under Rehabilitation Permit Number WA0015490.

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Biodiverse Environmental is a certified Fauna Spotter Catcher service provider under the NCA and an independent environmental consultancy with appropriate experience to undertake fauna handling and management, environmental and ecological surveying and reporting, and land management activities.

Biodiverse Environmental holds a current Rehabilitation Permit and Damage Mitigation Permit under the Nature Conservation (Administration) Regulation 2017 and Scientific Purposes Permit under the relevant Nature Conservation (Animals) Regulation 2020.

Biodiverse Environmental and their endorsed employees can carry out:

- Spotter catcher activity under Rehabilitation Permit WA0015490 valid to 09 May 2022
- Removal and relocation of protected animals under Damage Mitigation Permit WA0015031 valid to 14 April 2022
- Taking a protected animal for scientific purposes under Scientific Purposes Permit WA0026563 valid to 07 September 2025.



Document Title	Version	Prepared by	Reviewed by	Approved by	Date
PR0220.RE-Hall Contracting-B2N-LandsboroughPost-Clearance Report-20211130	001	[redacted] Ecologist	[redacted] Environmental Manager	[redacted] Director	30/11/2021

ACKNOWLEDGEMENTS

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1. PURPOSE

This report is provided to give details of the post-clearance fauna results managed by Biodiverse Environmental for Hall Contracting between 16 September and 30 November 2021, for the Beerburrum to Nambour Rail Upgrade at Dyer Street, Caloundra Street and Gantry Lane, Landsborough throughout demolition and vegetation clearing.

BACKGROUND

Hall Contracting was awarded the primary contract for the B2N Stage 1 – Early Works. Allcoast Group Demolition Contractors and Mulching Services PTY LTD carried out the site clearing works for operational works on-site.

A Biodiverse Environmental Fauna Spotter Catcher conducted a pre-clearance survey and live trapping program at the properties on Dyer, Caloundra Street and Gantry Lane, in Landsborough for four days between 16 and 19 September 2021. The live trapping program was conducted prior to demolition of structures or vegetation being cleared and was to reduce fauna loads present prior to disturbance. Fauna trapped was captured and relocated in accordance with legislative and environmental management requirements.

The purpose of a fauna pre-clearance survey is to locate fauna, their breeding places and habitat, and to relocate any fauna that may be impacted by works. Please refer to document (*PR0220.RE.Hall.Contracting-DyerStreet_CaloundraStreet-Pre-clearanceReport.17092021*) for results of fauna captured during this time period. Additionally refer to Biodiverse Environmental (*PR0220.RE.Hall.B2N.Early_Works- Ecological_Survey_-Report-16092021*) for further information.

Works commenced at the project site on the 19 September 2021. Suitably qualified fauna spotter catchers were present during all clearing works which was completed in accordance with the Nature Conservation (Koala) Conservation Plan 2017 under the Nature Conservation Act 1992 (Qld). Fauna spotters were given full authority to stop clearing works were koalas and grey-headed flying foxes were encountered to ensure they were able to safely move out of the works area on their own volition. It should be noted no koalas or grey-headed flying foxes were encountered during the clearing works.

2. SITE LOCATION

Location of the project site at Dyer Street and Caloundra Street in Landsborough, Queensland (adjacent to the Landsborough Railway Station). Refer to Figure 1 below.



Figure 1 Site location

2. FAUNA MANAGEMENT DURING WORKS

A Fauna Spotter Catcher was present for demolition, vegetation clearing and earthworks and inspected habitat features as they were being cleared or disturbed for any fauna present. Uninjured fauna identified were captured and relocated to suitable habitat out of the clearing limits.

3.1 FAUNA TRAPPING

As well as the fauna trapping conducted in the pre clearance phase, the Elliot and cage trapping program was continued over an additional 11 days between the 19th - 30th of September 2021, during demolition works. A minimum of four (4) and a maximum of ten (10) baited Elliot traps of two sizes and larger cage traps were strategically placed within the vacant buildings nightly, amongst surrounding low vegetation and undergrowth. All fauna captured throughout the trapping program were uninjured and relocated to suitable off-site habitat (Fauna results below in section 4).



Figure 2 – Targeted Elliot trap at Gantry Lane property

3.2 INVASIVE SPECIES MANAGEMENT

One European beehive was identified within the wall cavity of 5 Dyer Street during the pre-clearance inspection. The hive was destroyed with non-toxic pesticide in accordance with the *Animal Care and Protection Act 2001* to ensure the safety of contractors.



Figure 3 European bee nest in wall cavity

3.3 SPECIES MANAGEMENT PROGRAM

Due to the removal and relocation of animal breeding places during works a state wide low-risk species management program (SMP) for activities tampering with the breeding place of a least concern fauna species -Species was enacted (*SMP642_TMR_State-wide_Low-Risk_SMP*). Seventeen (17) Eastern Sedgefrogs *Litoria fallax* and Striped Marshfrog *Limnodynastes peronii* and two (2) unidentified frogs egg masses were relocated to a local water body during works. Nine (9) rodent nests and one (1) Common Ringtail Possum *Pseudocheirus peregrinus* drey was also tampered with during the works. Refer to *B2N Low-risk breeding place register – 02112021* for animal breeding place register.

3.4 ENVIRONMENTAL DRAINAGE MITIGATION WORKS

To prevent amphibious breeding places from becoming established in temporary ponded areas after rain, control measures were implemented using a compact excavator to form a drainage line to prevent standing water from pooling during and after rain.

3. FAUNA RESULTS

4.1 TRAPPING RESULTS

A total of twenty-nine (29) endemic animals were caught in the Elliot traps during the trapping cycle including - one (1) Buff-Banded Rail *Gallirallus philippensis*, one (1) Fawn-footed Melomys *Melomys cervinipes*, three (3) Northern Brown Bandicoots *Isodon macrourus*, nine (9) Swamp Rats *Rattus lutreolus*, and seventeen (17) Australian Bush Rats *Rattus fuscipes*. All fauna above was healthy, uninjured and relocated into nearby similar habitat.

4.2 FAUNA RESULTS

Throughout the works eight (8) reptile species were captured onsite, including one (1) Eastern Water Skink *Eulamprus quoyii*, one (1) Green Tree Snake *Dendrelaphis punctulatus*, one (1) Blue Tongue Skink *Tiliqua scincoides*, seven (7) Carpet Pythons *Morelia spilota*, and four (4) Grass Skinks *Lamproholis guichenoti*.

Four (4) Amphibious species were captured and relocated included one (1) Graceful Treefrog *Litoria gracilentia*, two (2) Eastern Dwarf Sedge frogs *Litoria fallax*, and fifteen (15) Striped Marshfrogs *Limnodynastes peronii*. Two (2) clusters of unidentified frog eggs were also safely relocated outside of the works area.

Three (3) Orange-fingered Yabbies *Cherax depressus*, one Fawn Footed Melomys *Melomys cervinipes*, and one (1) male Common Ringtail possum *Pseudocheirus peregrinus* were also captured and relocated during clearing works.

Fauna that self-relocated outside the clearing extent included three (3) Eastern water dragons *Intellagama lesueurii lesueurii*, two (2) swamp rats *Rattus lutreolus* and one (1) Green Tree Snake *Dendrelaphis punctulatus*.

The primary relocation site for all fauna was Dularcha National Park via entry off Beech Road. The secondary relocation site was a permanent creek off Myla Road, near Dularcha National Park.

A list of the fauna species identified during works is detailed below in Table 2 and photographs of fauna are included in Appendix 1. Avian species observed onsite throughout the duration of works are listed below.

Table 1 – Avian species observed onsite during works

Common Name	Scientific Name
Masked Lapwings	<i>Vanellus miles</i>
Swamp Hens and Chicks	<i>Porphyrio porphyrio melanotus</i>
Blue-faced Honeyeaters	<i>Entomyzon cyanotis</i>
Rainbow Lorikeets	<i>Trichoglossus moluccanus</i>
Australian Magpies	<i>Gymnorhina tibicen</i>
Magpie Larks	<i>Grallina cyanoleuca)</i>
Australasian Figbirds	<i>Sphecotheres vieilloti</i>
Buff -banded Rails	<i>Gallirallus philippensis</i>
Pale Headed Rosellas	<i>Platycercus adscitus</i>
White-face Honeyeaters	<i>Meliphaga lewinii)</i>
Noisy Friarbirds	<i>Philemon corniculatus</i>
Crested Pigeons	<i>Ocyphaps lophotes</i>
Australian White Ibis	<i>Threskiornis moluccus</i>
Indian Mynas (feral invasive species)	<i>Acridotheres tristis</i>
Pacific Black Ducks	<i>Anas superciliosa</i>

Table 2- Fauna managed during post-clearance at Dyer/Caloundra Streets Landsborough (up to 30 November 2021) for Hall Contracting by Biodiverse Environmental

DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
18/09/2021	-26.8085	152.967438	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
18/09/2021	-26.808313	152.967316	Alive	Least Concern	Northern Brown Bandicoot (<i>Isodon macrourus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
19/09/2021	-26.809044	152.967422	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
19/09/2021	-26.809067	152.967422	Alive	Least Concern	Northern Brown Bandicoot (<i>Isodon macrourus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
19/09/2021	-26.808886	152.967392	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
19/09/2021	-26.808241	152.967392	Alive	Least Concern	Northern Brown Bandicoot (<i>Isodon macrourus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
20/09/2021	-26.808683	152.967773	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	2	26.48155	152.583421	Released along the Dularcha NP Trail
20/09/2021	-26.80851	152.967331	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
20/09/2021	-26.808685	152.967621	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
21/09/2021	-26.809139	152.967194	Alive	Least Concern	Grass Skink (<i>Lampropholis guichenoti</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
21/09/2021	-26.808308	152.96817	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail

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DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
22/09/2021	-26.808786	152.967468	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
22/09/2021	-26.808134	152.967834	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
23/09/2021	-26.809221	152.967255	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
23/09/2021	-26.809286	152.967377	Deceased	Least Concern	Brown Tree Snake (<i>Boiga irregularis</i>)	1			Deceased as a result of demolition
23/09/2021	-26.808897	152.967407	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
23/09/2021	-26.808687	152.966949	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
24/09/2021	-26.808187	152.96788	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
24/09/2021	-26.808729	152.967621	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
24/09/2021	-26.809004	152.967407	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
25/09/2021	-26.808304	152.967926	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
27/09/2021	-26.808945	152.967773	Deceased	Least Concern	Verreaux's skink (<i>Anomalopus verreauxii</i>)	1	-	-	Undetermined cause of death
27/09/2021	-26.808834	152.967453	Alive	Least Concern	Fawn Footed Melomys (<i>Melomys cervinipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail

Table 2- Fauna managed during post-clearance at Dyer/Caloundra Streets Landsborough (up to 30 November 2021) for Hall Contracting by Biodiverse Environmental



DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
28/09/2021	-26.808319	152.967941	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
28/09/2021	-26.809404	152.967148	Alive	Least Concern	Grass Skink (<i>Lamproholis guichenoti</i>)	3	26.48155	152.583421	Released along the Dularcha NP Trail
28/09/2021	-26.808371	152.967285	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
29/09/2021	-26.808613	152.96814	Alive	Least Concern	Blue-tongue skink (<i>Tiliqua scincoides</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
29/09/2021	-26.808575	152.968155	Injured	Least Concern	Green Tree Snake (<i>Dendrelaphis punctulatus</i>)	1	-	-	Euthanized as a result of demolition
29/09/2021	-26.808493	152.967331	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
30/09/2021	-26.808273	152.967117	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
30/09/2021	-26.808298	152.967163	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
30/09/2021	-26.808775	152.96698	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
1/10/2021	-26.80822	152.967361	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
5/10/2021	-26.808859	152.966858	Alive	Least Concern	Green Tree Snake (<i>Dendrelaphis punctulatus</i>)	1	-	-	Self-relocated
5/10/2021	-26.808434	152.967377	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail

Table 2- Fauna managed during post-clearance at Dyer/Caloundra Streets Landsborough (up to 30 November 2021) for Hall Contracting by Biodiverse Environmental



DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
6/10/2021	-26.808107	152.967422	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	2	26.48155	152.583421	Released along the Dularcha NP Trail
6/10/2021	-26.808729	152.966904	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	2	26.48155	152.583421	Released along the Dularcha NP Trail
7/10/2021	-26.808193	152.96701	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
7/10/2021	-26.808929	152.967285	Alive	Least Concern	Bush Rat (<i>Rattus fuscipes</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
7/10/2021	-26.808924	152.967239	Alive	Least Concern	Buff-banded Rail (<i>Gallirallus philippensis</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
7/10/2021	-26.808434	152.967377	Alive	Least Concern	Carpet Python (<i>Morelia spilota</i>)	1	26.48155	152.583421	Released along the Dularcha NP Trail
28/10/2021	-26.808525	152.96759	alive	Least Concern	Eastern sedgefrog (<i>Litoria fallax</i>)	2	-26.8027	152.96407	Creek beside Landsborough primary school
28/10/2021	-26.808552	152.967575	Alive	Least Concern	Striped Marshfrog (<i>Limnodynastes peronii</i>)	15	-26.8027	152.96407	Creek beside Landsborough primary school
28/10/2021	-26.80854	152.96759	Alive	Least Concern	Orange-fingered Yabbie (<i>Cherax depressus</i>)	3	-26.8027	152.96407	Creek beside Landsborough primary school
29/10/2021	-26.80879	152.967682	Alive	Least Concern	Fawn Footed Melomys (<i>Melomys cervinipes</i>)	1	26.48155	152.583421	Dularcha NP
29/10/2021	-26.808554	152.96759	Alive	Least Concern	Unidentified frog spawn clumps x2	2	-26.8027	152.96407	Creek beside Landsborough primary school

Table 2- Fauna managed during post-clearance at Dyer/Caloundra Streets Landsborough (up to 30 November 2021) for Hall Contracting by Biodiverse Environmental



DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
29/10/2021	-26.808548	152.96756	Alive	Least Concern	Graceful Treefrog (<i>Litoria gracilentia</i>)	1	26.48155	152.583421	Dularcha NP
29/10/2021	-26.808104	152.968048	Alive	Least Concern	Eastern Water Skink (<i>Eulamprus quoyii</i>)	1	26.48155	152.583421	Dularcha NP
29/10/2021	-26.808043	152.968323	Injured	Least Concern	Australian Water Dragon (<i>Intellagama lesueurii</i>)	3	-	-	Self Relocated
2/11/2021	-26.808029	152.967636	Alive	Least Concern	Native Bee Hive	1	-	-	To Carer to salvage
2/11/2021	-26.808029	152.967636	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	2	-26.808029	152.967636	Self Relocated
2/11/2021	-26.808582	152.967606	Alive	Least Concern	Common ringtail possum (<i>Pseudocheirus peregrinus</i>)	1	26.48155	152.583421	Creek beside Landsborough primary school
3/11/2021	-26.809141	152.967178	Alive	Least Concern	Swamp Rat (<i>Rattus lutreolus</i>)	1	26.48155	152.583421	Creek beside Landsborough primary school

*Species status as listed under *Nature Conservation Act 1992*. LC = Least Concern, E = Endangered, V = Vulnerable, NT = Near Threatened

APPENDIX 2 FAUNA PHOTOGRAPHS



Figure 4 Male Ringtail Possum *Pseudocheirus peregrinus* captured during works



Figure 5 Graceful Tree Frog *Litoria gracilenta* Found during pre-clearance



Figure 6 Eastern Water Skink *Eulamprus quoyii* disturbed during works



Figure 7 Striped Marsh Frogs *Limnodynastes peronii* captured during pre-clearance



Figure 8 Carpet Python *Morelia spilota* captured during pre-clear



Figure 9 Grass Skink *Lamproholis guichenoti* found during works



Figure 10 Two Carpet Pythons *Morelia spilota* captured during pre-clearance



Figure 11 Northern Brown Bandicoot *Isodon macrourus* captured during trapping



Figure 12 Juvenile pair of Bush Rats *Rattus fuscipes* captured during pre-clear

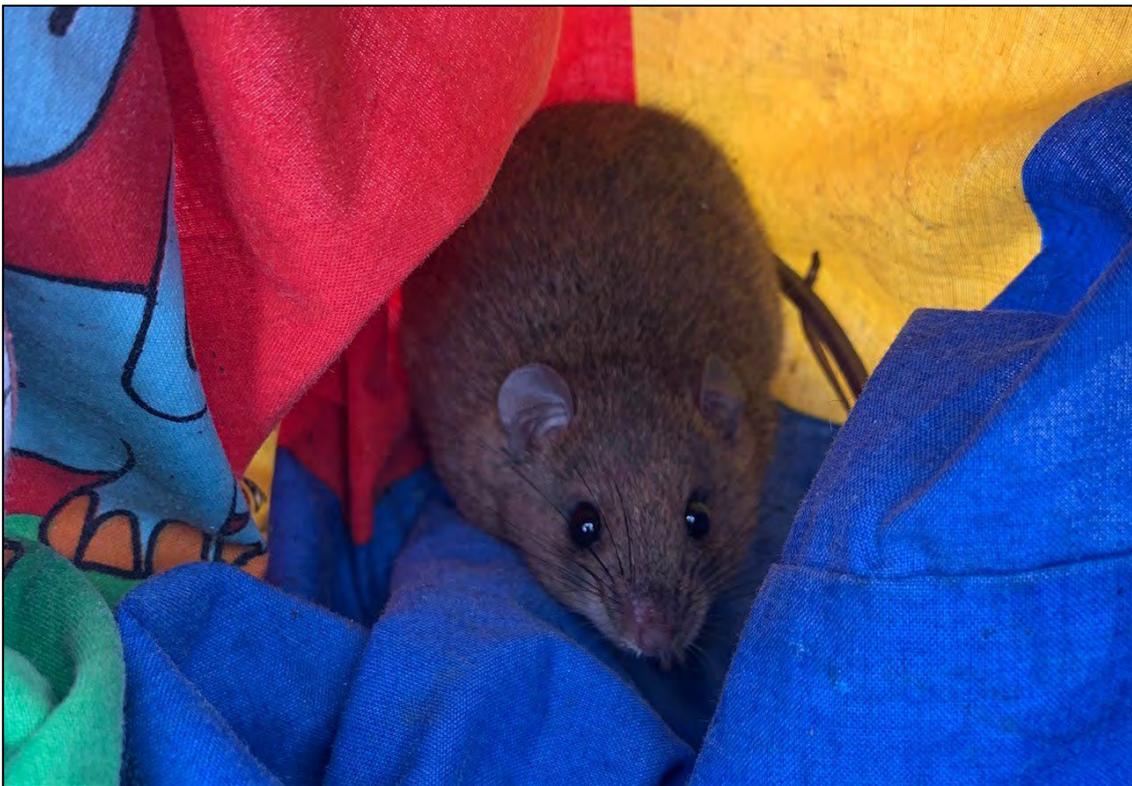


Figure 13 Fawn-footed Melomys *Melomys cervinipes* captured during trapping



Figure 14 Swamp Rat *Rattus lutreolus* captured during trapping



Figure 15 Carpet python *Morelia spilota* being released



Figure 16 Blue Tongue Skink *Tiliqua scincoides* captured during works



Figure 17 Green Tree Snake *Dendrelaphis punctulatus* captured during works



FAUNA MANAGEMENT REPORT

Fauna Spotter Catcher Services

B2N Steve Irwin Way

06 – 10 June 2022



Report Prepared for Hall Contracting Pty Ltd



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- Spotter catcher activity under Rehabilitation Permit WA0043580 valid to 12 May 2025
- Removal and relocation of protected animals under Damage Mitigation Permit WA0015031 valid to 12 April 2025
- Taking a protected animal for scientific purposes under Scientific Purposes Permit WA0026563 valid to 07 September 2025.



Document Title	Version	Prepared by	Reviewed by	Approved by	Date
PR0402.RE - Hall Contracting - B2N Post Clearance Report - 220613	001	[redacted] Ecologist	[redacted] Director	[redacted] Director	17/06/2022

ACKNOWLEDGEMENTS

All Photos taken subject to Copyright

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1. PURPOSE

This report is provided to give details of the fauna management services carried out by Biodiverse Environmental for Hall Contracting Pty Ltd between 06 – 10 June 2022 at Steve Irwin Way, Glasshouse Mountains Queensland, within the EPBC Early Works footprint.

2. BACKGROUND

The Beerburrum to Nambour Rail Upgrade (B2N) project, involves upgrades of the rail line between Beerburrum and Nambour. The scope of this report encompasses the site at Steve Irwin Way which is known as the EPBC Early Works footprint (project site).

A pre-clearance survey was conducted by a Biodiverse Environmental Fauna Spotter Catcher on 09 May 2022, prior to the commencement of works. The purpose of a fauna pre-clearance survey is to locate fauna, their breeding places and habitat, and to relocate any fauna that may be impacted by works.

Clearing Works commenced at the project site on 06 June 2022. Suitably qualified fauna spotter catchers were present during all clearing works which was completed in accordance with the Nature Conservation (Koala) Conservation Plan 2017 under the Nature Conservation Act 1992 (Qld). Fauna spotters were given full authority to stop clearing works were koalas and grey-headed flying foxes were encountered to ensure they were able to safely move out of the works area on their own volition. It should be noted no koalas or grey-headed flying foxes were encountered during the clearing works.

SITE LOCATION

The project is located at Steve Irwin Way, Glasshouse Mountains Queensland (figure 1).

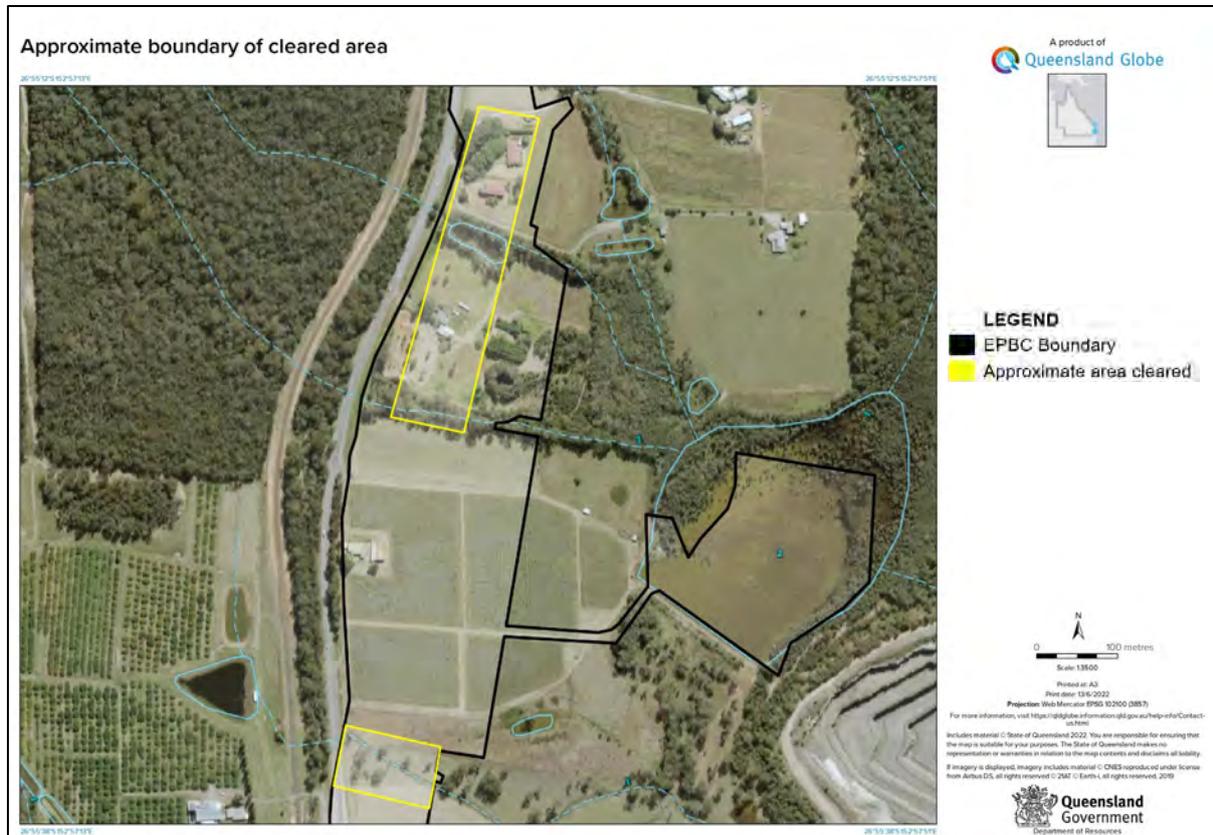


Figure 1 Site location

3. FAUNA MANAGEMENT DURING WORKS

Biodiverse Environmental's Fauna Spotter Catcher attended the pre-start meeting at the start of each day. Hazards, risks, communication methods and controls were discussed with all staff and contractors involved in works.

A second, smaller pre-start meeting was also conducted between the Fauna Spotter Catcher, clearing contractor and other crew present. Safety procedures and task risk assessments were conducted and signed onto. Clearing procedures, fauna management and communication methods were also discussed during this pre-start meeting.

The Fauna Spotter Catcher was present for vegetation clearing and earthworks and inspected habitat features as they were being cleared for any fauna present. Uninjured fauna identified were captured and relocated to suitable habitat out of the clearing limits. Fauna with non-viable injuries were euthanised (blunt force trauma) following the ethical euthanasia code in *Euthanasia of animals used for scientific purposes* (2001).

When these species were identified, fauna were also euthanised.



4. FAUNA RESULTS

38 animals across 16 species were identified during clearing works, this included four (4) mammals, nine (9) reptiles, two (2) amphibians and one (1) bird species.

A list of the fauna species identified during works is detailed below in Table 2 and photographs of fauna are included in Appendix 2.

Table 1 Fauna identified during works

DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
06/06/2022	-26.92650	152.95751	Alive	LC	Yellow-footed antechinus (<i>Antechinus flavipes</i>)	1	N/A	N/A	Self-relocated
06/06/2022	152.95788	152.95788	Deceased	LC	Pacific Black Duck <i>Anas superciliosa</i> (egg)	1	N/A	N/A	Single egg in tree hollow. Egg was not fertile and cracked when tree fell.
06/06/2022	-26.92167	152.95876	Alive	LC	Eastern water dragon (<i>Intellagama lesueurii</i>)	1	-26.92643	152.95808	
06/06/2022	-26.92636	152.95749	Deceased	LC	Red bellied black snake (<i>Pseudechis porphyriacus</i>)	1	N/A	N/A	Snake was in trunk and sustained non-viable injuries when tree was moved
07/06/2022	-26.92244	152.95903	Alive	LC	Elegant snake-eyed skink (<i>Cryptoblepharus pulcher</i>)	2	-26.92250	152.95934	
07/06/2022	-26.92250	152.95934	Alive	Introduced	House mouse (<i>Mus musculus</i>)	2	N/A	N/A	Self-relocated. Flushed into long grass, unable to locate
07/06/2022	-26.92250	152.95934	Alive	LC	Delicate Skink (<i>Lampropholis delicata</i>)	2	-26.92245	152.95910	
07/06/2022	-26.92245	152.95910	Alive	LC	Long-nosed bandicoot (<i>Perameles nasuta</i>)	1	N/A	N/A	Self-relocated. Flushed into long grass, unable to locate
07/06/2022	-26.92265	152.95887	Alive	LC	Pale-flecked Garden Sunskink (<i>Lampropholis guichenoti</i>)	10	-26.92262	152.95894	
07/06/2022	-26.92328	152.95896	Alive	LC	Blind snake	1	-26.92321	152.95917	
07/06/2022	-26.92327	152.95910	Alive	LC	Dwarf crowned snake (<i>Cacophis krefftii</i>)	1	-26.92309	152.95913	Interestingly, this individual displayed Leucism (i.e., partially lacking pigmentation in the skin)
07/06/2022	-26.92324	152.95859	Alive	LC	Yellow-footed Antechinus (<i>Antechinus flavipes</i>)	2	N/A	N/A	Self-relocated
07/06/2022	-26.92323	152.95863	Deceased	LC	Dwarf crowned snake (<i>Cacophis krefftii</i>)	1	N/A	N/A	Injured during earthworks. Ethically euthanised

DATE	LOCATION FOUND		COUNT TYPE	PROTECTED STATUS*	SPECIES	COUNT	LOCATION RELEASED		COMMENTS
	LATITUDE	LONGITUDE					LATITUDE	LONGITUDE	
07/06/2022	-26.92344	152.95890	Alive	LC	Blind snake	1	-26.92346	152.95930	
07/06/2022	-26.92346	152.95881	Alive	LC	Eastern water dragon (<i>Intellagama lesueurii</i>)	1	-26.92352	152.95969	
07/06/2022	-26.92353	152.95887	Deceased	RI	Cane toad (<i>Rhinella marina</i>)	2	N/A	N/A	Ethically euthanised
07/06/2022	-26.92339	152.95862	Alive	LC	Striped Marsh Frog (<i>Limnodynastes peronii</i>)	1	-26.92297	152.95925	
07/06/2022	-26.92342	152.95844	Deceased	LC	Yellow-footed Antechinus (<i>Antechinus flavipes</i>)	1	N/A	N/A	Injured during clearing works
07/06/2022	-26.92324	152.95823	Deceased	RI	Cane toad (<i>Rhinella marina</i>)	1	N/A	N/A	Ethically euthanised
08/09/2022	-26.92170	152.95884	Alive	LC	Elf Skink (<i>Erotoscincus graciloides</i>)	1	-26.92163, 152.95844	-26.92163, 152.95844	
08/06/2022	-26.92167	152.95876	Alive	LC	Eastern Water Dragon (<i>Intellagama lesueurii</i>)	1	-26.92168, 152.95941	-26.92168, 152.95941	Placed under a hollow log
09/06/2022	-26.92148	152.95862	Alive	LC	Dwarf crowned snake (<i>Cacophis krefftii</i>)	1	-26.92254	152.95919	
09/06/2022	-26.92138	152.95853	Deceased	LC	Freshwater snake (Keelback) (<i>Tropidonophis mairii</i>)	1	N/A	N/A	Injured during earthworks. Ethically euthanised
09/06/2022	-26.92149	152.95898	Alive	LC	Black Rat (<i>Rattus rattus</i>)	1	N/A	N/A	Flushed out of grass
10/06/2022	-26.92038	152.95924	Alive	LC	Pale-flecked Garden Sunskink (<i>Lampropholis guichenoti</i>)	1	N/A	N/A	Self-relocated

*Species status as listed under *Nature Conservation Act 1992*. LC = Least Concern, E = Endangered, V = Vulnerable, NT = Near Threatened

HABITAT FEATURES AND ANIMAL BREEDING PLACES IDENTIFIED			
HABITAT FEATURE / BREEDING PLACE	LOCATION		DATE
	LATITUDE	LONGITUDE	
2 x grassy rat nests in tree cavity	-26.92662	152.95756	06/06/2022
3 x grassy rat nests in tree cavity	-26.92650	152.95751	06/06/2022
Duck Nest with 1 x unfertilised egg	-26.92650	152.95751	06/06/2022
Tree cavity, inactive	-26.92308	152.9585	06/06/2022
Loose, exfoliating bark on Melaleuca	-26.92170	152.95884	07/06/2022
Loose, exfoliating bark on Melaleuca	-26.92177	152.95878	07/06/2022
Antechinus nests x 2 with fresh scat	-26.92181	152.95896	07/06/2022
Inactive Blue faced Honeyeater Nest. Natural material and synthetic wool woven together	-26.92119	152.95896	07/06/2022
Small twig nest in mandarin tree	-26.92114	152.95868	08/06/2022
Stick nest of yellow throated scrub Wren	-26.92148,	152.95844	08/06/2022
Crayfish (<i>Cherax dispar</i>) burrow	-26.92144	152.95851	08/06/2022
Stick/Twig Nest	-26.92127	152.95883	08/06/2022
Stick/Twig Nest	-26.92106	152.95880	08/06/2022
Dead tree. Lots of small spaces and crevices	-26.92156	152.95899	08/06/2022
Basal hollows x 2 leading under tree	-26.91945	152.95914	10/06/2022



5. RECOMMENDATIONS

Several natural tree hollows were removed as part of clearing works. Tree hollows are valuable and essential for obligate hollow using fauna species. They provide shelter from the elements and predators and are utilised for roosting and breeding. Suitable hollows can take hundreds of years to form. It is recommended that nest boxes be installed within remaining suitable trees to supplement the removal of the hollows utilised by mammal and avian species. This will provide shelter and refuge and encourage future breeding of fauna. Biodiverse Environmental can supply and install required nest boxes. Installation will be conducted by a qualified and experienced Biodiverse Environmental tree climber.

A large amount of coarse woody debris was removed as part of clearing works. Skinks, such as those captured and relocated during clearing works rely heavily upon these habitat features for shelter, breeding, and food resources. Consider piling up logs and felled trees in small clusters to replicate what was lost during clearing works.

Invasive fauna management

Both Cane Toads and Mosquitofish predate upon and adversely impact native frog fauna. Consideration should be given to the management of both these species within the site, especially whilst undertaking dewatering activities. By law, everyone has a general biosecurity obligation (GBO) to take reasonable and practical steps to minimise the risks associated with invasive animals under their control.

APPENDIX 1 – FAUNA PHOTOGRAPHS



Figure 2. Duck Egg



Figure 3. Elegant Snake Eyed Skink



Figure 4. Delicate Skink



Figure 5. Pale-flecked Garden Sunskink



Figure 6. Blind Snake



Figure 7. Leucistic Dwarf Crowned Snake



Figure 8. Eastern Water Dragon



Figure 9. Dwarf Crowned Snake



Figure 10. Yellow-footed Antechinus (deceased)



Figure 11. Striped Marsh Frog



Figure 12. Elf Skink



Figure 13. Eastern Water Dragon



Figure 14. Freshwater Snake (Keelback)

APPENDIX 2 – HABITAT & BREEDING PLACE PHOTOGRAPHS



Figure 15. Inactive Rat nest lined with rubbish & grass



Figure 16. Inactive Rat nest lined with grass



Figure 17. Antechinus scat at base of tree



Figure 18. Hollow in which single duck egg was found



Figure 19. Inactive Stick/Twig nest



Figure 20. Inactive and decaying Stick/Twig nest



Figure 21. Inactive Stick/Twig nest



Figure 22. Crayfish Burrow



Figure 23 Hollow in tree. Was mostly dead wood that had been weakened by termite infestation



Figure 24. Remains of an antechinus nest in old bucket, with scat on left hand side



Figure 25. Examples of various fissures, crevices and hollows in cleared trees



Figure 26. Exfoliating bark on Swamp Paperbark



Figure 27. Small twig/stick nest found in Mandarin tree



Figure 28 Inactive, Blue-faced Honeyeater nest

APPENDIX 3 – PHOTOGRAPHS OF CLEARING WORKS









Appendix C

Aerial photographs – Temporary koala exclusion fencing for Early Works

Appendix C

Aerial photographs – Temporary koala exclusion fencing for Early Works







Appendix D

Early works safe movement solutions

- Permanent koala proof fencing
- Fauna underpass and furniture

Appendix D

Early works safe movement solutions

- Permanent koala proof fencing
- Fauna underpass and furniture





Appendix E

Early Works – Baseline weed survey



BASELINE WEED SURVEY REPORT

**Beerburrum to Nambour (B2N) Railway Upgrade Project
Steve Irwin Way – Early Works Package**

22 - 23 March 2022



Report Prepared for Hall Contracting

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STATEMENT OF QUALIFICATION

Biodiverse Environmental is an independent environmental consultancy with appropriate experience to undertake fauna spotter catching and fauna management, environmental and ecological surveying and reporting, and land and fire management activities in accordance with federal, state and local laws and regulations.

Document Title	Version	Prepared by	Reviewed by	Approved by	Date
PR0220.RE-Hall Contracting-B2N-Weed Survey Report-220323	001	[redacted] Ecologist/ Manager	[redacted] Principle Ecologist / Director	[redacted] Principle Ecologist / Director	23/03/2022
PR0220.RE-Hall Contracting-B2N-Weed Survey Report-220408	002	[redacted] Ecologist/ Manager	[redacted] Principle Ecologist / Director	Principle Ecologist / Director	8/04/2022

ACKNOWLEDGEMENTS

All Photos taken subject to Copyright

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1. PURPOSE

This report is provided to give details of the weed survey carried out by Biodiverse Environmental for Hall Contracting on 23 – 24 March 2022 at Steve Irwin Way for the Beerburrum to Nambour Rail Upgrade (B2N) project. The purpose of this report is to demonstrate compliance with condition 4d) of EPBC Act approval (ref: EPBC2020/8803), where it requires:

"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:

d) complete **baseline weed surveys** in each **stage** prior to the commencement of **construction** or **clearing** in each **stage**, and within 1 month of the completion of **baseline weed surveys** submit the **baseline weed survey** results to the **department**;"

2. BACKGROUND

The Beerburrum to Nambour Rail Upgrade (B2N) project, involves upgrades of the rail line between Beerburrum and Nambour. The scope of the B2N project includes rail duplication between Beerburrum and Landsborough and other infrastructure improvements. The scope of this report encompasses the site at Steve Irwin Way which is known as the EPBC Early Works footprint.

Hall Contracting engaged Biodiverse Environmental to conduct a base line weed survey within the planned development corridor to determine the contemporary presence of weeds and restricted invasive plants. The information obtained through ground surveys will be used to gauge weed control measures implemented throughout the construction and monitoring phases and as a comparison of weed presence over time.

3. SITE LOCATION/DESCRIPTION

The weed survey was undertaken along Steve Irwin Way, Glasshouse Mountains Queensland, within the EPBC Early Works footprint, approved under the EPBC Act, reference: EPBC 2020/8803 (figure 1).

The site consists of highly modified environments, heavily impacted by weeds due to the past land uses and associated disturbances. The site was extensively cleared throughout the 1960s for agriculture, viticulture and transportation (road & rail) corridors, and is largely mapped as non-remnant vegetation. Historic Ecological Vegetation Classes (EVCs) present included 12.3.4 (*Melaleuca quinquenervia*, *Eucalyptus robusta* woodland on coastal alluvium) and 12.3.5 (*Melaleuca quinquenervia* open forest on coastal alluvium).

4. METHODOLOGY

An Invasive plant (weed) survey was conducted within the project site on 22 and 23 March 2022. The survey was undertaken by suitably qualified botanist and ecologist as per the Nature Conservation Act 1992 – Flora Survey Guidelines.

Meander survey was considered the most appropriate field assessment method for the baseline weed survey. Two Ecologists traversed the proposed development area on foot to maximise the observations of different species (see Figure 2 & 3 for survey tracks). Weed species encountered were recorded and photographs taken if further identification was required (Table 1 & 2). Photographs were taken of vegetation characteristic of each area surveyed (Appendix 1).

Weed hygiene protocols were followed prior to arriving and after leaving site to reduce the risk of weed seed spread. The vehicle was thoroughly washed down at a public wash bay prior to arriving and after leaving site. All equipment, clothes and boots were brushed down prior to leaving site.

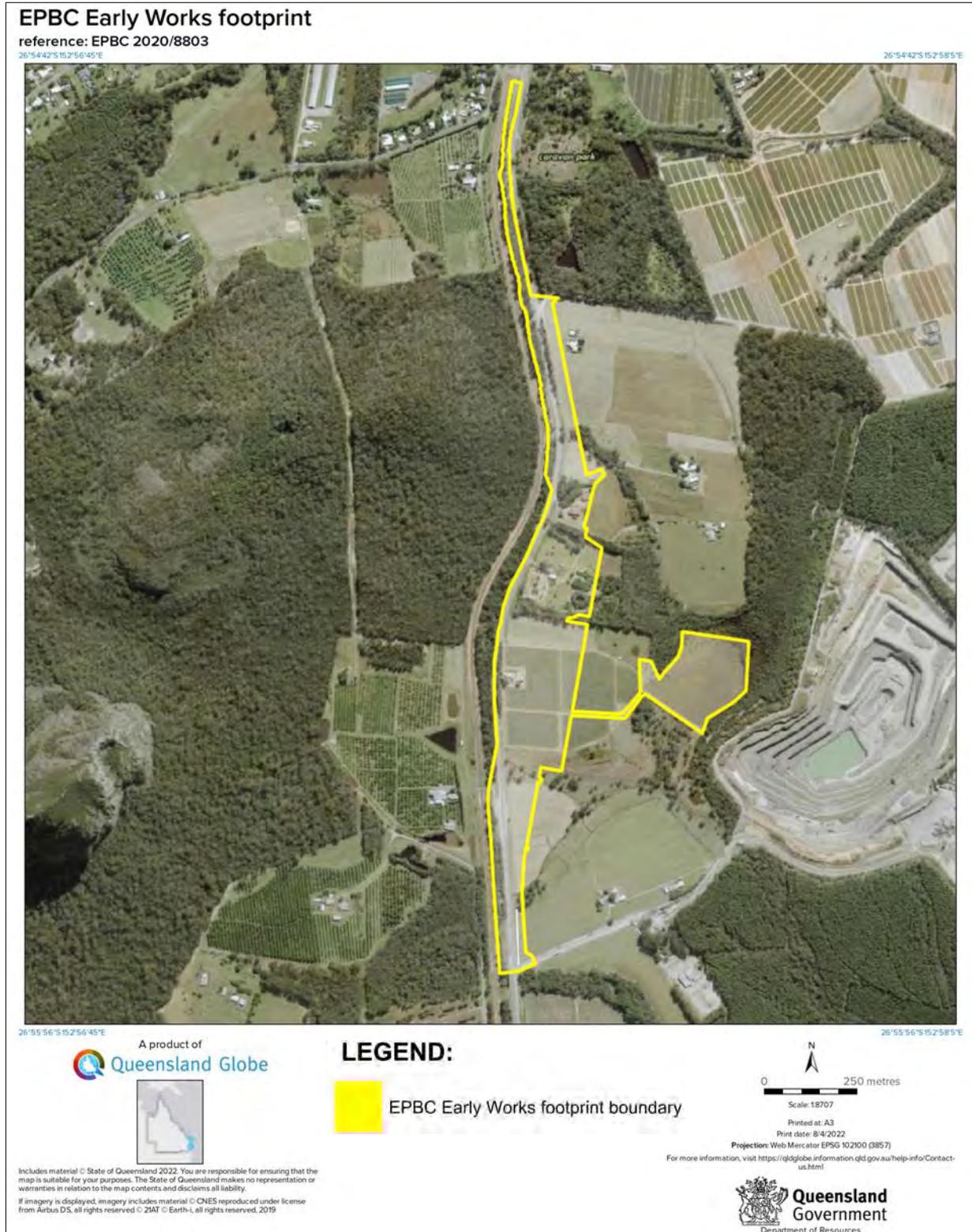


Figure 1. Map of Site Location along Steve Irwin Way (EPBC Early Works Footprint)

5. RESULTS

82 weed species were observed within the planned development corridor. This included two (2) aquatic, nine (9) creepers/climbers, one (1) fern, twelve (12) grasses, eighteen (18) herbs, four (4) palms, two (2) sedges, twenty-two (22) shrubs, three (3) succulents and nine (9) trees.

The entire site was dominated by weeds and generally across all strata. The site was divided into different areas, based on vegetation structural complexity and diversity. The dominant weed species were also found to differ across each area in accordance with historic land use.

Area A – (100% weed cover):

Area A included land predominantly consisting of weedy groundcover, with no midstory or canopy. This included a large expansive area historically used for horticulture (Choko) on Lot 49 CG2193, as well as part of the road verge along the eastern side of Steve Irwin way. The dominant weed species in this area included pasture grasses (Paspalum, Rhodes grass, Guinea grass), agricultural weeds (cobblers pegs, billy goat weed etc) and scattered Solanum spp.

Area B (75% weed cover):

Area C included the dam on lot 49 CG2193 and surrounding vegetation. A stand of Melaleuca with dense *Solanum capsicoides* (Devil's Apple) on the south-western Edge of the dam. The dam was heavily infested with Salvinia & Windmill sedge, with fringe species consisting of Singapore Daisy, Rattlepod, Slash Pine, Lantana & Solanum.

Area C (50% weed cover):

The water drainage lines between Lot 49 CG2193 and Lot 1 RP167515 consisted of a largely native open woodland canopy layer (with canopy species including Bluegum, Casuarina, Wattle & Melaleuca). In this area, Singapore Daisy was present as a monoculture groundcover in conjunction with Lantana (*Lantana camara*).

Area D (80% weed cover):

The structural complexity of this area was low, with agricultural grasses up to 2 m high and no mid storey / canopy layer. Isolated stands of native, weedy, and ornamental citrus trees were found throughout the site. *Pinus elliottii* (Slash pine) surrounded a dam on the property, which contained an introduced Waterlily spp.

An area in the north-eastern corner of the property was found to contain several Groundsel plants, marked on the map (figure 3) in dark purple.

Area E (50 – 80% weed cover):

Bluegum and sheoak canopy generally in moderate health (low weed infestation), interspersed by patches of dense lantana (to 4m tall), paspalum (to 3m tall) and morning glory vines reaching to canopy. These heavily infested weedy areas occurred at edges where sunlight could penetrate due to reduced canopy cover and increased edge effects.

Area F (80 – 100% weed cover)

Roadside easement vegetation heavily infested with pastoral grasses and agriculture weeds, leading into area of overrun ornamental vegetation. High diversity of weed trees.

Baseline Weed Survey within EPBC Early Works footprint (1/2)



26°55'23\"/>

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LEGEND:

■ AREA A	 EPBC EARLY WORKS BOUNDARY
■ AREA B	 GROUNDSEL PATCH
■ AREA C	 SURVEY TRACKS
■ AREA D	
■ AREA E	

Scale: 15000
Printed at: A3
Print date: 8/4/2022
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Figure 2. Baseline Weed Survey transects within EPBC Early Works Footprint (Page 1 of 2)

Baseline Weed Survey within EPBC Early Works footprint (2/2)



26°55'15\"/>

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LEGEND:

- AREA A
- AREA B
- AREA C
- AREA D
- AREA E
- EPBC EARLY WORKS BOUNDARY
- GROUNDSEL PATCH
- SURVEY TRACKS

0 100 metres
Scale: 1:5000
Printed at: A3
Print date: 8/4/2022
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Figure 3. Baseline Weed Survey transects within EPBC Early Works Footprint (Page 2 of 2)

Table 1. List of weed species identified during surveys

Growth Form	Family	Botanical Name	Common Name	Area A	Area B	Area C	Area D	Area E	Area F
Aquatic	<i>Nymphaeaceae</i>	<i>Nymphaea</i> spp.	Waterlily spp.				x		
Aquatic	<i>Salviniaceae</i>	<i>Salvinia molesta</i>	Salvinia		x				
Climber/Creeper	<i>Fabaceae</i>	<i>Neonotonia wightii</i>	Glycine	x	x		x		
Climber/Creeper	<i>Nyctaginaceae</i>	<i>Bougainvillea</i> spp.	Bougainvillea						x
Climber/Creeper	<i>Passifloraceae</i>	<i>Passiflora foetida</i>	Stinking Passionflower			x		x	
Climber/Creeper	<i>Passifloraceae</i>	<i>Passiflora suberosa</i>	Corky Passionflower	x				x	x
Creeper/Climber	<i>Apocynaceae</i>	<i>Araujia sericifera</i>	Moth Vine					x	
Creeper/Climber	<i>Bignoniaceae</i>	<i>Pyrostegia venusta</i>	Orange Trumpet Vine						x
Creeper/Climber	<i>Convolvulaceae</i>	<i>Ipomoea cairica</i>	Coastal Morning Glory	x					
Creeper/Climber	<i>Convolvulaceae</i>	<i>Ipomoea tricolor</i>	Blue Morning Glory					x	x
Creeper/Climber	<i>Cucurbitaceae</i>	<i>Sechium edule</i>	Choko	x					
Fern	<i>Nephrolepidaceae</i>	<i>Nephrolepis exaltata</i>	Fishbone Fern						x
Grass	<i>Poaceae</i>	<i>Cenchrus purpureus</i>	Elephant Grass						x
Grass	<i>Poaceae</i>	<i>Chloris gayana</i>	Rhodes Grass	x				x	x
Grass	<i>Poaceae</i>	<i>Elymus repens</i>	Couch Grass						
Grass	<i>Poaceae</i>	<i>Megathyrsus maximus var. maximus</i>	Brown Top Buffel Grass					x	
Grass	<i>Poaceae</i>	<i>Megathyrsus maximus var. publiglumis</i>	Guinea Grass	x	x			x	x
Grass	<i>Poaceae</i>	<i>Melinis minutiflora</i>	Molasses Grass					x	
Grass	<i>Poaceae</i>	<i>Melinis repens</i>	Red Natal Grass	x				x	
Grass	<i>Poaceae</i>	<i>Paspalum</i> spp.	Paspalum spp.	x				x	
Grass	<i>Poaceae</i>	<i>Paspalum urvillei</i>	Tall Paspalum	x		x		x	x
Grass	<i>Poaceae</i>	<i>Setaria spachelata</i>	South African Pigeon Grass	x			x	x	
Grass	<i>Poaceae</i>	<i>Sporobolus pyramidalis</i>	Giant Rat's tail Grass	x				x	
Grass	<i>Poaceae</i>	<i>Sporobolus africanus</i>	Paramatta Grass	x			x		
Herb	<i>Amaryllidaceae</i>	<i>Agapanthus africanus</i>	Agapanthus					x	
Herb	<i>Asteraceae</i>	<i>Ageratina riparia</i>	White Mist Flower					x	
Herb	<i>Asteraceae</i>	<i>Ageratum conyzoides ssp. conyzoides</i>	Billy Goat Weed	x	x	x		x	x

Growth Form	Family	Botanical Name	Common Name	Area A	Area B	Area C	Area D	Area E	Area F
Herb	<i>Asteraceae</i>	<i>Bidens pilosa</i>	Cobblers Peg	x	x		x	x	x
Herb	<i>Asteraceae</i>	<i>Cirsium vulgare</i>	Scotch Thistle	x					
Herb	<i>Asteraceae</i>	<i>Emilia sonchifolia</i>	Lilac Tasselflower					x	x
Herb	<i>Asteraceae</i>	<i>Hypochaeris radicata</i>	Cat's Ear	x				x	x
Herb	<i>Asteraceae</i>	<i>Sphagneticola trilobata</i>	Singapore Daisy	x	x	x	x		
Herb	<i>Commelinaceae</i>	<i>Commelina communis</i>	Asiatic Dayflower					x	
Herb	<i>Euphorbiaceae</i>	<i>Euphorbia cyathophora</i>	Fire on the mountain	x				x	
Herb	<i>Euphorbiaceae</i>	<i>Euphorbia hirta</i>	Athsma Weed						
Herb	<i>Fabaceae</i>	<i>Desmodium peniculatum</i>	Desmodium						x
Herb	<i>Fabaceae</i>	<i>Desmodium uncinatum</i>	Velcro Weed	x		x			
Herb	<i>Fabaceae</i>	<i>Macrotyloma axillare var. axillare</i>	Perennial Horsegram					x	
Herb	<i>Fabaceae</i>	<i>Melilotus albus</i>	White Sweet Clover					x	
Herb	<i>Rubiaceae</i>	<i>Spermacoce remota</i>	Woodland false buttonweed					x	
Herb	<i>Verbenaceae</i>	<i>Verbena bonariensis</i>	Tall Verbena	x					
Herb	<i>Verbenaceae</i>	<i>Verbena officinalis</i>	Common Verbena					x	
Palm	<i>Arecaceae</i>	<i>Dypsis decaryi</i>	Triangle Palm	x				x	
Palm	<i>Arecaceae</i>	<i>Dypsis leptocheilos</i>	Red Neck Palm					x	
Palm	<i>Arecaceae</i>	<i>Dypsis lutescens</i>	Golden Cane					x	
Palm	<i>Arecaceae</i>	<i>Syagrus romanzoffiana</i>	Cocos Palm					x	
Sedge	<i>Cyperaceae</i>	<i>Cyperus rotundus</i>	Nut Grass	x					
Sedge	<i>Cyperaceae</i>	<i>Cypwerus eragrostis</i>	Umbrella Sedge	x	x		x		x
Shrub	<i>Asteraceae</i>	<i>Baccharis halimifolia</i>	Groundsel Bush				x		
Shrub	<i>Fabaceae</i>	<i>Crotalaria lanceolata ssp. lanceolata</i>	Lance-leaved Rattlepod		x				
Shrub	<i>Fabaceae</i>	<i>Crotalaria pallida ssp. Obovate</i>	Streaked Rattlepod		x				x
Shrub	<i>Fabaceae</i>	<i>Macroptilium atropurpureum</i>	Sirato	x				x	x
Shrub	<i>Fabaceae</i>	<i>Senna pendula var. glabrata</i>	Easter Cassia						x
Shrub	<i>Fabaceae</i>	<i>Stylosanthes guianensis</i>	Common Stylo						x
Shrub	<i>Lythraceae</i>	<i>Cuphea carthagenensis</i>	Columbian Waxweed		x				
Shrub	<i>Melastomataceae</i>	<i>Tibouchina urvilleana</i>	Princess Flower	x					

Growth Form	Family	Botanical Name	Common Name	Area A	Area B	Area C	Area D	Area E	Area F
Shrub	<i>Ochnaceae</i>	<i>Ochna serrulata</i>	Ochna	x	x	x		x	
Shrub	<i>Rosaceae</i>	<i>Eriobotrya japonica</i>	Loquat					x	
Shrub	<i>Rosaceae</i>	<i>Rubus</i> spp.	Raspberry	x					x
Shrub	<i>Rubiaceae</i>	<i>Breynia oblongifolia</i>	Coffee Bush						x
Shrub	<i>Rutaceae</i>	<i>Murraya paniculata</i>	Mock Orange					x	
Shrub	<i>Solanaceae</i>	<i>Solanum capsicoides</i>	Devil's Apple	x	x			x	
Shrub	<i>Solanaceae</i>	<i>Solanum elaeagnifolium</i>	Silver Leaf Nightshade	x					
Shrub	<i>Solanaceae</i>	<i>Solanum mauritianum</i>	Wild Tobacco Tree	x					
Shrub	<i>Solanaceae</i>	<i>Solanum ptychanthum</i>	West Indian Nightshade					x	
Shrub	<i>Solanaceae</i>	<i>Solanum seafortianum</i>	Brazilian Nightshade			x		x	
Shrub	<i>Solanaceae</i>	<i>Solanum torvum</i>	Devil's Fig	x	x	x			x
Shrub	<i>Verbenaceae</i>	<i>Duranta erecta</i>	Duranta	x					
Shrub	<i>Verbenaceae</i>	<i>Lantana camara</i>	Lantana	x	x	x	x	x	x
Shrub	<i>Verbenaceae</i>	<i>Stachytarpheta cayennensis</i>	Dark Blue Snakeweed						x
Succulent	<i>Asparagaceae</i>	<i>Agave tequilana</i>	Blue Agave					x	
Succulent	<i>Asparagaceae</i>	<i>Fucrea foetida</i>	Mauritian hemp						x
Succulent	<i>Asphodelaceae</i>	<i>Aloe vera</i>	Aloe Vera	x					
Tree	<i>Araliaceae</i>	<i>Schefflera actinophylla</i>	Umbrella Tree	x				x	x
Tree	<i>Bignoniaceae</i>	<i>Jacaranda</i> spp.	Jacaranda						x
Tree	<i>Bignoniaceae</i>	<i>Spathodea campanulata</i>	African Tulip tree					x	x
Tree	<i>Bignoniaceae</i>	<i>Tecoma stans</i>	Yellow Bells						x
Tree	<i>Lauraceae</i>	<i>Cinnamomum camphora</i>	Camphor Laurel					x	
Tree	<i>Myrtaceae</i>	<i>Corymbia torelliana</i>	Cadaghi	x					
Tree	<i>Pinaceae</i>	<i>Pinus elliotii</i>	Slash Pine	x	x		x	x	x
Tree	<i>Rubiaceae</i>	<i>Citrus</i> spp.	Ornamental Citrus				x		
Tree	<i>Sapindaceae</i>	<i>Koelreuteria paniculata</i>	Golden Rain Tree						x

5.1 WoNS and Restricted Invasive Plants

10 species regarded as WoNS, Restrictive Invasive plants were detected. Of these, six (6) were also weeds of significance listed in the SCC Local Gov Area Biosecurity Plan 2017.

Table 2 SCC Priority Invasive Species, WoNS and Restricted Invasive Plants

Common Name	Botanical Name	WoNS	Restricted Invasive Plant	SCC Local Gov Area Biosecurity Plan 2017
Lantana	<i>Lantana camara</i>	x	x	
Salvinia	<i>Salvinia molesta</i>	x	x	x
Singapore Daisy	<i>Sphagneticola trilobata</i>		x	x
Paramatta Grass	<i>Sporobolus africanus</i>		x	x
Giant Rat's tail grass	<i>Sporobolus pyramidalis</i>		x	x
Groundsel Bush	<i>Baccharis halimifolia</i>		x	x
Silverleaf Nightshade	<i>Solanum elaeagnifolium</i>	x	x	
African Tulip Tree	<i>Spathodea campanulata</i>		x	
Camphor Laurel	<i>Cinnamomum camphora</i>		x	x
Yellow Bells	<i>Tecoma stans</i>		x	

6. DISCUSSION

All heavily degraded areas with high weed diversity and abundance. Further surveys should be undertaken throughout the construction and maintenance period of works to monitor weed infestation.

10 species regarded as WoNS or Restrictive Invasive plants were detected. Landowners and land managers at all levels are responsible for managing WoNS. A strategic plan for each WoNS has been developed to define responsibilities and identify strategies and actions to control the weed species.

Under the *Biosecurity Act 2014*, Category 3 Restricted Invasive Plants must not be given away, sold, or released into the environment. The Act requires everyone to take all reasonable and practical steps to minimise the risks associated with invasive plants under their control. This is called a general biosecurity obligation (GBO).

6.1. Potential impacts on Koalas & Flying Foxes

The impacts of weeds on Koalas for this section of works is likely to be limited insofar that their presence is unexpected throughout much of the site, due to a lack of suitable habitat and many barriers obstructing movement such as fences, rail corridors, cleared land and roads.

Nevertheless, weeds are dominating all areas and have potential to impact on current flying fox populations and future recruitment of Koalas in the area. Koalas moving through the landscape are likely to be inhibited by dense stands of lantana and *Paspalum* spp. which were observed to reach heights of 3-4 m in places and occlude access to suitable feed trees (Blue Gum). This was especially pronounced along the vegetated easement between the existing rail corridor and Steve Irwin Way. Weedy creepers such as *Ipomoea* (Morning Glory) species were also present in these areas and may impact upon Flying Foxes by reducing access to foraging resources. There is emerging evidence that fruit of the Cocos Palm may be toxic to Flying Foxes when eaten in excess. Additionally, their wings can get caught in the flower sheaths or leaves.



REFERENCES

<https://www.tmr.qld.gov.au/projects/beerburrum-to-nambour-rail-upgrade-stage-1>

https://hdp-au-prod-app-qldtmr-yoursay-files.s3.ap-southeast-2.amazonaws.com/3316/3961/7678/EPBC_PD_Response_Report.pdf

<https://weeds.dpi.nsw.gov.au/Weeds/CocosPalm>

Weeds of the Sunshine Coast (2nd Edition) by Joan Heavy & Sonia MacDonald

Grasses Native and Introduced (2nd Edition) by Sonia MacDonald & Stephanie Haslam

APPENDIX 1 - PHOTOGRAPHS



Figure 5. Area A - weedy pasture grasses & choko crop



Figure 6. Area A - slashed weedy pasture



Figure 7. View of Area A looking south across extensive cleared area to roadside easement vegetation

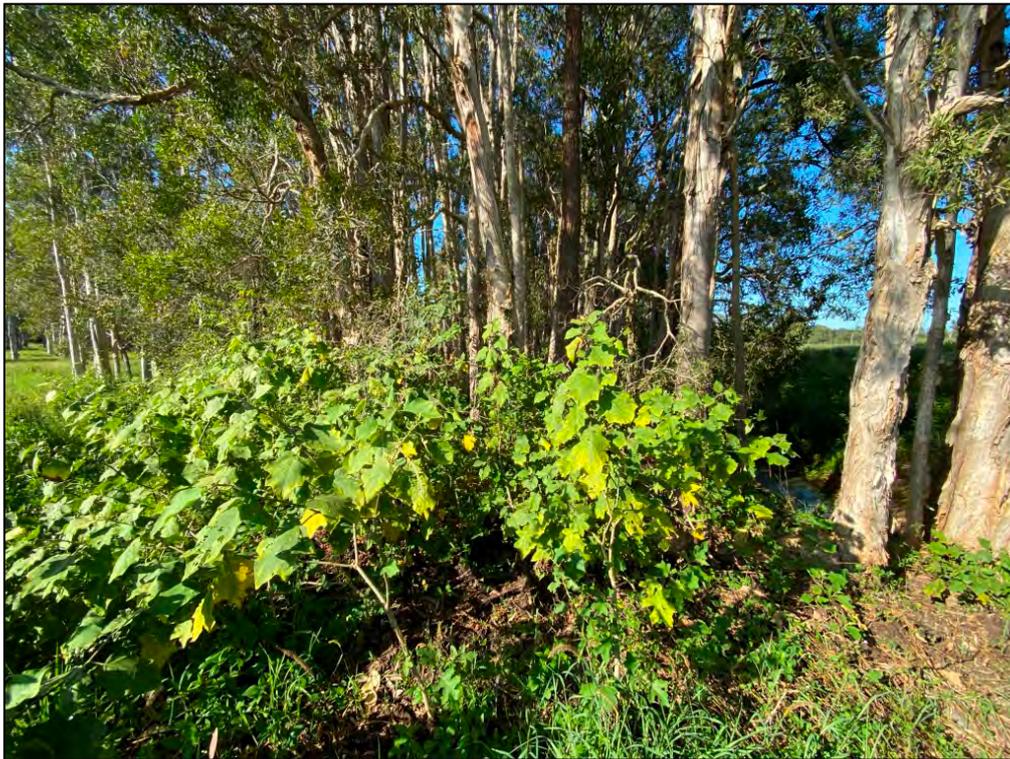


Figure 8. Area B – *Solanum capsicoides* (Devil's Apple) underneath melaleuca stand, at south-western edge of dam



Figure 9. Area B – view looking east across dam covered in Salvinia



Figure 10. Area B – Dense monoculture of Singapore Daisy along western edge of Dam



Figure 11. Area C - Singapore Daisy and Lantana in water drainage line



Figure 12. Area D - Ornamental palms near the footprint of previously existing house



Figure 13. Dense Singapore Daisy cover along southern boundary of Area D



Figure 14. Groundsel bushes present within Area D



Figure 15. Slash Pine and weedy grasses within Area D



Figure 16. Native vegetation surrounding the dam in Area D



Figure 17. Dam in Area D



Figure 19. Lantana to 4m high with potential to inhibit Koala movement (Area E)



Figure 18. Lantana dispersed amongst native tree species (Area E)



Figure 20. High Weed cover – exotic grasses, Blue Morning Glory, and African Tulip Tree (Area F)



Figure 21. Blue Morning Glory in canopy (Area F)

Appendix F

Department correspondence

- Notification of commencement of the action for Early Works
- Submission of baseline weed audit (Early Works)

From: [\[redacted\]](#)
To: [\[redacted\]](#)
Subject: RE: EPBC 2020-8803 - Compliance documentation condition 4(d) [SEC=OFFICIAL]
Date: Tuesday, 19 April 2022 12:31:28 PM
Attachments: [image002.png](#)
[image003.png](#)

Good afternoon [redacted],

Thank you for your email, I can confirm that I was able to download the baseline weed survey associated with the early works footprint for EPBC 2020/8803. This report has been added to our records and will be reviewed accordingly. We will contact you if we have any questions.

If you have any questions or concerns, please do not hesitate to contact me at the EPBC Monitoring Inbox.

Kind regards,

[redacted]

Compliance Monitoring Team

Environment Compliance Branch
Compliance & Enforcement Division
Department of Agriculture, Water and the Environment
GPO Box 858, CANBERRA ACT 2601

From: [redacted]
Sent: Tuesday, 19 April 2022 9:11 AM
To: EPBCMonitoring@awe.gov.au
Cc: [redacted]
Subject: EPBC 2020-8803 - Compliance documentation condition 4(d)

Dear EPBC Compliance monitoring team,

On 22nd and 23rd March 2022, the Department of Transport and Main Roads has completed a baseline weed survey of the Early Works footprint as required by condition 4(d) of EPBC 2020-8803. This condition states:

"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:

*d) complete baseline weed surveys in each stage prior to the commencement of construction or clearing in each stage, and **within 1 month** of the completion of baseline weed surveys submit the baseline weed survey results to the department"*

The Early Works footprint baseline weed survey report is approximately 63Mb in size and hence, it cannot be transferred via email.

The report is enclosed in this [link](#) .

Please note the link will expire after few days.

Can you please confirm you have successfully downloaded the report or otherwise, provide an alternative pathway for sharing this file?

I look forward to hearing from you.

Kind regards,

[redacted]

Senior Environmental Officer (Beerburrum to Nambour Rail Upgrade) | North Coast Region
Program Delivery and Operations Branch | Infrastructure Management Division | Department of Transport
and Main Roads

Works: Mondays -Thursdays

Floor 2 | 12 First Ave| Maroochydore Qld
PO Box 1600 | Maroochydore Qld 4558

[redacted]

www.tmr.qld.gov.au

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Opinions contained in this email do not necessarily reflect the opinions of the Department of Transport and Main Roads, or endorsed organisations utilising the same infrastructure.

From: [redacted]
To: [EPBC Monitoring](#); [EPBC Monitoring](#)
Subject: EPBC 2020/8803 Notification of commencement of the Action
Date: Tuesday, 7 June 2022 1:19:00 PM
Attachments: [image001.png](#)

Dear EPBC compliance monitoring team,

EPBC 2020/8803 Part B - Standard administrative conditions

Condition 9 states:

“ 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

b) the commencement of works in each stage, within 10 business days after the date of the commencement of works in the particular stage.”

This is to notify that we have commenced vegetation clearing and therefore, commenced the Action/construction works within the approved **EPBC Early Works Boundary** on **6th June 2022**.

Please contact the undersigned should you have any questions about the works.

Kind regards,

[redacted]

Senior Environmental Officer (Beerburrum to Nambour Rail Upgrade) | North Coast Region
Program Delivery and Operations Branch | Infrastructure Management Division | Department of Transport and Main Roads

Works: Mondays -Thursdays

Floor 2 | 12 First Ave| Maroochydore Qld

PO Box 1600 | Maroochydore Qld 4558

[redacted]

www.tmr.qld.gov.au

Appendix G

Early works - Annual weed survey



Follow-up Weed Survey Report

Beerburrum to Nambour (B2N) Railway Upgrade Project

Steve Irwin Way

Report Prepared for Hall Contracting

13 & 17 February 2023





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LEGISLATION

Under the **Biosecurity Act 2014** are biosecurity measures to safeguard our economy, agricultural and tourism industries, environment and way of life, from:

- pests (e.g. wild dogs and weeds)
- diseases (e.g. foot-and-mouth disease)
- contaminants (e.g. lead on grazing land).

Under the Act, the **Biosecurity Regulation 2016** sets out how the Act is implemented and applied. Biosecurity is everyone's responsibility, and we must all play a role to ensure we minimise biosecurity risks to protect Queensland's lifestyle, industries and environment from pests and diseases. All Queenslanders have a general biosecurity obligation (GBO) under Queensland's **Biosecurity Act 2014** to ensure you do not spread a pest, disease or a contaminant.

STATEMENT OF QUALIFICATION

Biodiverse Environmental is an independent environmental consultancy with appropriate experience to undertake fauna spotter catching and fauna management, environmental and ecological surveying and reporting, along with land, conservation, ecosystem and fire management activities in accordance with federal, state and local laws and regulations.

The staff at Biodiverse Environmental are passionate about environmental management and are respected leaders in their field. Our project managers and ecologists are experienced practitioners in flora, fauna and environmental management projects and hold degrees in Science, Environmental Science, Wildlife Biology, Animal Management, Horticulture whilst also possessing numerous industry qualifications.

Biodiverse Environmental field staff possess the relevant qualifications and certifications to ensure exceptional project delivery and adherence to safety on site to themselves and others including Construction White Cards, 4x4 Driving, ACDC Licences, First Aid Certificates, current vaccination status for Lyssa Virus, Venomous Snake Handling Certificates, Chainsaw Certificates, Working at Heights and Confined Spaces Qualifications and various government, infrastructure certifications and inductions.

LICENCES AND ACCREDITATIONS

Biodiverse Environmental holds a Ground Distribution Contractor Licence (Licence Number GDC228935) granted to the company by the Department of Agriculture and Fisheries under the *Agricultural Chemicals Distribution Act 1966*. This licence authorises Biodiverse Environmental to carry out the business of ground distribution of herbicides.



DOCUMENT CONTROL

Our Reference:	PR0594		
Document Title	PR0594-Hall Contracting-B2N-Weed Survey Report-20230213-V002		
Version	002		
Prepared by	[redacted] Environmental Officer		April 21, 2023
Reviewed by	[redacted] Director		April 21, 2023
Approved by	[redacted] Director		April 21, 2023

ACKNOWLEDGEMENTS

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1. PURPOSE

This report gives details of the follow-up weed survey carried out by Biodiverse Environmental for Hall Contracting on 13 and 17 February 2023. Works involved surveying the site located at Steve Irwin Way for the Beerburrum to Nambour (B2N) Rail Upgrade project. The baseline weed survey was conducted by Biodiverse Environmental on 23-24 March 2022.

The purpose of this report is to demonstrate compliance with Section 10.1 MRTS51.1 Principal identified Biosecurity Matters within the Site and/or specific management requirements (Clause 8.12.2) of (ref: EPBC2020/8803) where it requires:

“Ensure that within 12 months of construction or clearing commencing and until final construction completion, weed cover within the approved EPBC Early Works footprint remains less or no worse than that of the baseline weed surveys and must not restrict the movement of the Koala; and

Complete annual monitoring of weed cover consistent with the baseline weed surveys, with the results to be included in the Monthly Environmental Report at the completion of the 12-month period, or otherwise requested in writing by the principal.”

Baseline weed survey/s are defined as “surveys conducted by a suitably qualified field ecologist for weeds in accordance with a scientifically valid, robust, and repeatable methodology to determine the extent of weed cover (expressed as a percentage) of the total land area in which 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.”

As per the EPBC Approval, weeds mentioned in this report are species identified within the Weeds of National Significance (WoNS) and species listed under the Biosecurity Act 2014.

2. BACKGROUND

The Beerburrum to Nambour Rail Upgrade (B2N) project involves upgrades of the rail line between Beerburrum and Nambour. The scope of the B2N project includes rail duplication between Beerburrum and Landsborough and other infrastructure improvements. The scope of this report encompasses the site at Steve Irwin Way which is known as the EPBC Early Works footprint.

Hall Contracting engaged Biodiverse Environmental to conduct a follow-up weed survey within the planned development corridor to determine the contemporary presence of weeds in comparison to the baseline weed survey.

3. SITE LOCATION

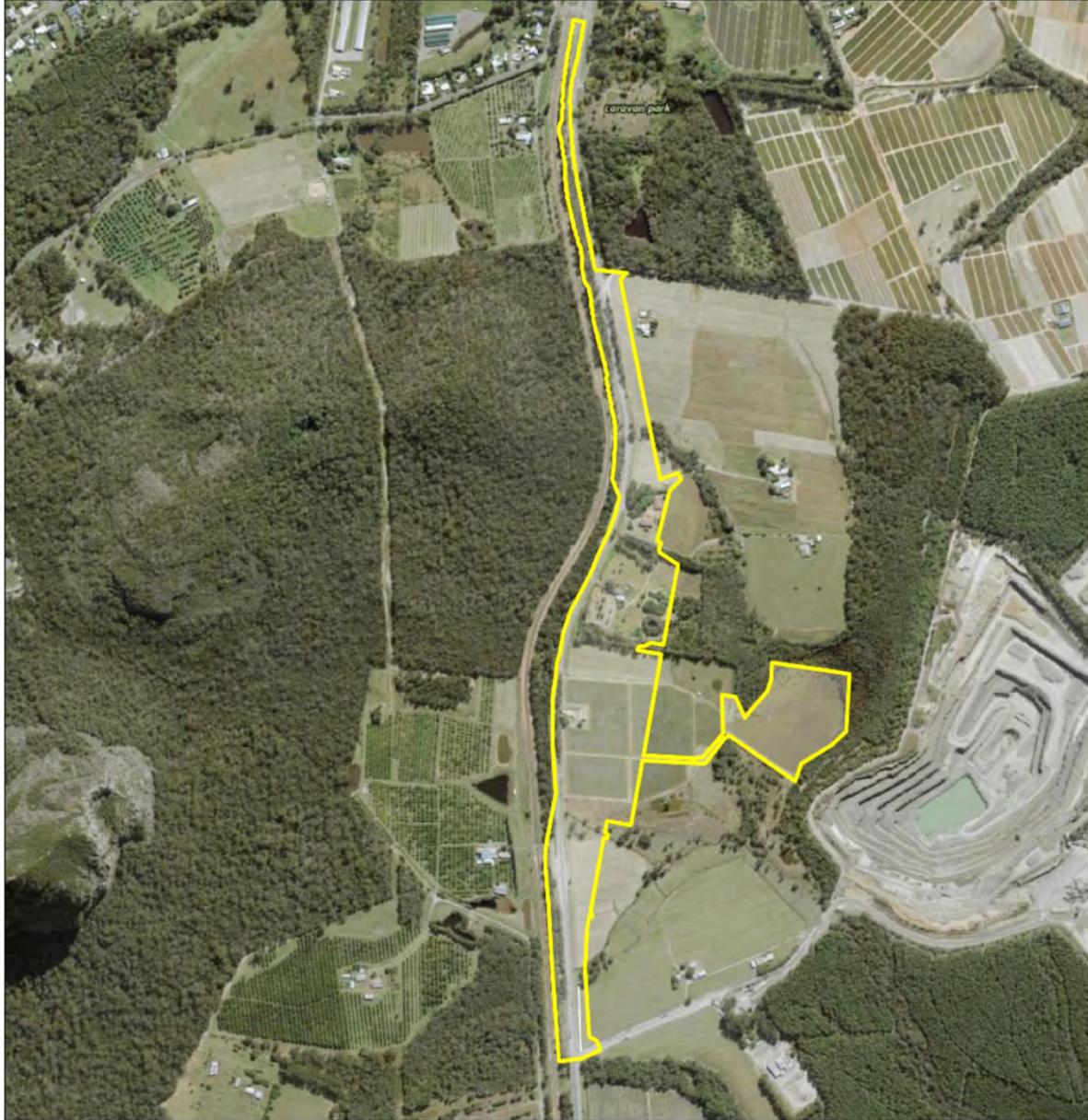
The weed survey was undertaken along Steve Irwin Way, Glasshouse Mountains Queensland, within the EPBC Early Works footprint, approved under the EPBC Act, reference: EPBC 2020/8803 (Figure 1). The site consists of highly modified environments, heavily impacted by weeds due to the past land uses and associated disturbances. The site was extensively cleared throughout the 1960s for agriculture, viticulture, and transportation (road & rail) corridors, and is largely mapped as non-remnant vegetation. Historic Ecological Vegetation Classes (EVCs) present included RE12.3.4 *Melaleuca quinquenervia*, *Eucalyptus robusta* woodland on coastal alluvium and RE12.3.5 *Melaleuca quinquenervia* open forest on coastal alluvium.

EPBC Early Works footprint

reference: EPBC 2020/8803

26°54'42"S 152°56'45"E

26°54'42"S 152°58'5"E



26°55'56"S 152°56'45"E

26°55'56"S 152°58'5"E

A product of
Queensland Globe



LEGEND:

 EPBC Early Works footprint boundary



Scale: 1:8707
Printed at: A3
Print date: 8/4/2022
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Figure 1. Map of Site Location along Steve Irwin Way (EPBC Early Works footprint boundary)

4. METHODOLOGY

The survey was undertaken by a suitably qualified botanist as per the Nature Conservation Act 1992 – Flora Survey Guidelines.

The meander survey method was considered the most appropriate field assessment method for the follow-up weed survey. Using the site maps, the site was systematically traversed on foot and by vehicle, and invasive weed species were identified and recorded. Photographs were taken of vegetation characteristics of each area surveyed (Appendix 1). The data was then compiled to produce a list of invasive species on site and a map of locations (Table 1 & 2 and Figure 2).

Weed hygiene protocols were followed prior to arriving and after leaving site to reduce the risk of weed seed spread. The vehicle was thoroughly washed down at a public wash bay prior to arriving and after leaving site. All equipment, clothes and boots were brushed down prior to leaving site.

5. RESULTS

Seven (7) species were observed within the development corridor. These include one (1) grass, one (1) herb, two (2) shrubs, and three (3) trees.

Area A (15% weed cover):

Area A includes land predominantly consisting of weedy groundcover, with no midstory or canopy. Scattered patches of Singapore Daisy, Lantana, and Giant Rat's Tail, were observed throughout Area A. These weed species are known to restrict the movement of Koalas. Compared to the baseline survey, the weed cover of Area A has reduced by 85%.

Area B (5% weed cover):

Area B included the dam on lot 49 CG2193 and surrounding vegetation. A stand of Melaleuca is present on the south-western edge of the dam with Singapore Daisy and Lantana observed along the entire edge of the dam. These weed species are known to restrict the movement of Koalas and degrade the quality of Koala habitat and its ability to regenerate.

Area D (10% weed cover):

Area D now consists of a newly formed road, multiple cleared sections, and multiple weed stockpiles. Weed species in this area include Groundsel Bush, Singapore Daisy, and Lantana. These weed species are known to restrict the movement of Koalas. Compared to the baseline survey, the weed cover of Area D has reduced by 70%.

Area F (20% weed cover):

Native trees such as Eucalypts and Melaleucas were present in this area. Weed species Lantana, Groundsel Bush, Camphor Laurel, African Tulip Tree, and Yellow Bells were observed in this area. These weed species are known to restrict the movement of Koalas, degrade the quality of Koala habitat and Grey-headed Flying Fox foraging habitat, and its ability to regenerate. Compared to the baseline survey, the weed cover of Area F has been reduced by 60-80%.

B2N Weed Survey

Survey Transects - Northern Section

26°54'42"S 152°57'9"E

26°54'42"S 152°57'48"E



26°55'16"S 152°57'9"E

26°55'16"S 152°57'48"E

A product of
 Queensland Globe

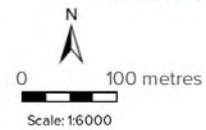


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LEGEND:

-  Area A
-  Area B
-  Area D
-  Area F



Printed at: A4
 Print date: 4/4/2023

Not suitable for accurate measurement.
 Projection: Web Mercator EPSG 102100 (3857)

For more information, visit
<https://qldglobe.information.qld.gov.au/help-info/Contact-us.html>



Figure 2. Follow-up Weed Survey Transects – Northern Section (Page 1 of 2)

B2N Weed Survey

Survey Transects - Southern Section

26°55'17"S 152°57'11"E

26°55'17"S 152°57'50"E



26°55'51"S 152°57'11"E

26°55'51"S 152°57'50"E

A product of
 Queensland Globe



LEGEND:

- Area A
- Area B
- Area D
- Area F

N

 0 100 metres

 Scale: 1:6000

Printed at: A4
 Print date: 4/4/2023
 Not suitable for accurate measurement.
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 **Queensland Government**
 Department of Resources

Figure 3. Follow-up Weed Survey Transects – Southern Section (Page 2 of 2)

Table 1. List of Weed Species Identified During Survey

Growth Form	Family	Botanical Name	Common Name	Area A	Area B	Area D	Area F
Grass	<i>Poaceae</i>	<i>Sporobolus pyramidalis</i>	Giant Rat's Tail Grass	x			
Herb	<i>Asteraceae</i>	<i>Sphagneticola trilobata</i>	Singapore Daisy	x	x	x	
Shrub	<i>Asteraceae</i>	<i>Baccharis halimifolia</i>	Groundsel Bush			x	x
Shrub	<i>Verbenaceae</i>	<i>Lantana camara</i>	Lantana	x	x	x	x
Tree	<i>Bignoniaceae</i>	<i>Spathodea campanulata</i>	African Tulip tree				x
Tree	<i>Bignoniaceae</i>	<i>Tecoma stans</i>	Yellow Bells				x
Tree	<i>Lauraceae</i>	<i>Cinnamomum camphora</i>	Camphor Laurel				x

5.1 WoNS and Restricted Invasive Plants

Seven (7) species listed as restrictive invasive plants under the Biosecurity Act 2014 were observed at the site. One (1) species is also regarded as Weeds of National Significance (WoNS).

Table 2. WoNS and Restricted Invasive Plants

Common Name	Botanical Name	WoNS	Restricted Invasive Plant
Lantana	<i>Lantana camara</i>	x	x
Singapore Daisy	<i>Sphagneticola trilobata</i>		x
Giant Rat's tail grass	<i>Sporobolus pyramidalis</i>		x
Groundsel Bush	<i>Baccharis halimifolia</i>		x
African Tulip Tree	<i>Spathodea campanulata</i>		x
Camphor Laurel	<i>Cinnamomum camphora</i>		x
Yellow Bells	<i>Tecoma stans</i>		x

6. DISCUSSION AND RECOMMENDATIONS

There were seven (7) restricted invasive species identified and recorded within the site as listed by Biosecurity Queensland. Under the *Biosecurity Act 2014*, Category 3 Restricted Invasive Plants must not be given away, sold, or released into the environment. One (1) WoNS was also identified and recorded during the survey.

Two survey areas, Area C and Area E, which were included in the baseline survey have been removed in the follow-up survey. Area C was removed as most of it has been cleared and the remaining vegetation is inaccessible due to the current construction works. Area E was also removed from the follow-up survey as it was outside the project boundary.

The percentage of weed coverage within the approved EPBC Early Works footprint was observed as between 5%-20% during the follow-up weed survey. The percentage of weed coverage has reduced significantly and remains less than that of the baseline weed survey. The reduction in weed coverage percentage is due to the clearing and road surface construction that has occurred since the baseline survey was conducted.

Recommendations:

- Weed treatment of all zones for restricted invasive weeds.
- Ongoing weed control activities during construction.
- Awareness of biosecurity obligations during site inductions.
- Restrict site access until there is evidence of herbicide uptake.
- Restrict movement of machinery to avoid contact with any weed areas or stockpiles.
- Implementation of weed hygiene protocols and washdown procedures.
- Continued monitoring and treating any emergent weeds as they arise as construction works progress.

6.1 Potential Impacts on Koalas and Flying Foxes

The potential for Koalas to move throughout the site is inhibited by dense patches of Lantana, Singapore Daisy, and Giant Rat's Tail which were observed in areas with suitable feed trees. Singapore Daisy, Groundsel Bush, African Tulip Tree, Camphor Laurel, and Yellow Bells have the potential to degrade the quality of Koala habitat and Grey-headed Flying Fox foraging habitat, and its ability to regenerate.

Weedy creeping/climbing vines were also present at the site and have the potential to impact Koala and Grey-Headed Flying Fox foraging as the vines reduce access to these resources. These vines have not been included in this report as they do not meet the EPBC definition of weeds, however, a list of the vines observed at the site is included in Appendix 2.

APPENDIX 1



Figure 4. Area A



Figure 5. Area B



Figure 6. Area D



Figure 7. Area F



Figure 8. Singapore Daisy Patch – Area A

APPENDIX 2

Growth Form	Family	Botanical Name	Common Name	Area A	Area B	Area D	Area F
Climber/Creepers	Fabaceae	<i>Neonotonia wightii</i>	Glycine	x	x		x
Climber/Creepers	Passifloraceae	<i>Passiflora edulis</i>	Passion Fruit				x
Climber/Creepers	Passifloraceae	<i>Passiflora foetida</i>	Stinking Passionflower		x		x
Climber/Creepers	Passifloraceae	<i>Passiflora suberosa</i>	Corky Passionflower	x			x
Climber/Creepers	Passifloraceae	<i>Passiflora subpeltata</i>	White Passionflower				x
Creepers/Climbers	Convolvulaceae	<i>Ipomoea cairica</i>	Coastal Morning Glory				x
Creepers/Climbers	Convolvulaceae	<i>Ipomoea tricolor</i>	Blue Morning Glory				x