

Offset Management Plan (EPBC 2019/8389)

Olson Road, New Beith, Queensland
(Marrambi - Offset Area)

Prepared for Frasers Property New Beith Pty Ltd

March 2026

FRASERS PROPERTY

Saunders Havill
PATHWAYS TO SUCCESS

KOALA FARMLAND FUND

Document Information

This Offset Management Plan (EPBC 2019/8389) has been prepared by Saunders Havill Pty Ltd on behalf of the proponent Frasers Property New Beith Pty Ltd and implemented by KFF1 Pty Ltd ATF KFF1 Sub Trust, dated 03 March 2026.

Issue

Issue	Date	Prepared By	Checked By
Version A	07.11.2025	LF	AD
Version B	18.11.2025	JC	AD
Version C	28.11.2025	TC	AD
Version D	09.12.2025	TC	AD
Version E	27.02.2026	TC	AD
Version F	03.03.2026	TC	AD

Executive Summary

Frasers Property New Beith Pty Ltd, the proponent, has engaged Upscale Capital Pty Ltd ATF Koala Farmland Fund 2 (KFF) as an offset provider to coordinate and deliver a biodiversity offset to compensate for significant impacts to Matters of National Environmental Significance (MNES) as part of the proposed residential development at Olson Road, New Beith, Queensland (described as Lot 4 RP457) (herein referred to as the Project). The Project was referred under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) (refer EPBC 2019/8389). This offset is proposed in addition to separate offsets already under assessment by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for the project.

The purpose of this Offset Management Plan (OMP) is to provide the objectives, key commitments including milestones and measurables (performance targets) and completion criteria to compensate for significant residual impacts on the following MNES:

- *Phascolarctos cinereus* (koala);
- *Pteropus poliocephalus* (grey-headed flying-fox);
- *Petauroides volans* (greater glider);
- *Lathamus discolor* (swift parrot); and
- *Anthochaera phrygia* (regent honeyeater)

Habitat quality of the impact area and offset area were quantified utilising the respective Modified Habitat Quality Assessment (MHQA) methods for koala and greater glider, features-based assessments for swift parrot and regent honeyeater, and the grey-headed flying-fox Foraging Habitat Assessment (FHA) method in addition to other baseline surveys including preliminary motion-triggered camera monitoring, weed mapping and foraging and habitat tree plotting. Baseline habitat quality metrics and scores for the offset area were established and they form the basis for proposed increases to be achieved as part of the offset delivery. These are summarised in **Table ES1** below.

Seven management actions are proposed to deliver the offset and proposed environmental outcomes over a 20-year period which includes proposed actions, completion criteria and monitoring actions. The management actions are:

1. Legally secure offset area
2. Non-Native Vertebrate Pest Management
3. Management of Weeds including Weeds of National Significance
4. Develop and implement Bushfire Management Plan
5. Habitat Creation and Regeneration
6. Fencing and signage
7. Hollow Monitoring and Management

Interim milestone targets have been created for proposed environmental outcomes for each MNES to provide an indication of the relative success of management measures. A monitoring and reporting



schedule has been prepared to assist in achieving these outcomes. Additionally, an adaptive management framework and corrective action triggers are proposed whereby it is demonstrated that management measures are not effective in achieving results.

Overall, the proposed offset is considered suitable for the proposed residual impacts on MNES based on an offset suitability analysis, proposed management framework and scale of offset area. The proposed offset area achieves

- **73.05%** of the required offset for koala
- **85.32%** for grey-headed flying-fox
- **61.62% and 39.63%** for greater glider area and features (hollows), respectively
- **63.70%** for swift parrot features (foraging trees)
- **63.68%** for regent honeyeater features (foraging trees)

Table ES1: Offset area MNES habitat quality baseline and future scores – summary

AU	Area /Features	Koala Habitat Quality Score		GHFF Habitat Quality Score		Greater Glider Habitat Quality Score		Swift Parrot Habitat Quality Score		Regent Honeyeater Habitat Quality Score	
		Baseline	Future	Baseline	Future	Baseline	Future	Baseline	Future	Baseline	Future
1	87.8	6	8	5	7	5	6	NA	NA	NA	NA
	Features	NA	NA	NA	NA	161	161	0	9,162*	0	4,969*
2	50.15	7	8	6	7	6	6	[redacted]			
	Features	NA	NA	NA	NA	132	132				
3	8.91	6	8	4	7	5	6				
	Features	NA	NA	NA	NA	35	35				
4	19.65	6	8	4	7	4	6				
	Features	NA	NA	NA	NA	38	38				
5	3.29	5	8	2	7	4	6				
	Features	NA	NA	NA	NA	8	8				
6	142.49	6	8	4	7	3	6				
	Features	NA	NA	NA	NA	98	214				

AU	Area /Features	Koala Habitat Quality Score		GHFF Habitat Quality Score		Greater Glider Habitat Quality Score		Swift Parrot Habitat Quality Score		Regent Honeyeater Habitat Quality Score	
		Baseline	Future	Baseline	Future	Baseline	Future	Baseline	Future	Baseline	Future
7	13.52	6	8	5	7	5	6	[redacted]			
	Features	NA	NA	NA	NA	2	20				
8	145.58	6	8	5	7	5	6				
	Features	NA	NA	NA	NA	164	218				
9	53.93	6	8	5	7	5	6				
	Features	NA	NA	NA	NA	91	91				
10	12.68	6	8	4	7	6	6				
	Features	NA	NA	NA	NA	34	34				
11	6.61	5	8	4	7	3	6				
	Features	NA	NA	NA	NA	0	10				

*Counts are site-wide based on EMZ outcomes discussed in Sections 6.4 and 7.5

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Acronyms

ACR	Annual Compliance Report
ATF	As Trustee For
AU	Assessment Unit
D	Number of detections
DAWE	Department of Agriculture, Water and Environment (Commonwealth, former)
DBH	Diametre at Breast Height
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEHP	Department of Heritage and Protection (Qld, former)
DOR	Department of Resources (Qld)
DEE	Department of the Environment and Energy (Commonwealth, former)
DNRME	Department of Natural Resources, Mines and Energy (Qld, former)
EDL	Ecologically Dominant Layer
EMZ	Environmental Management Zone
EOP	EPBC Act Environmental Offset Policy (2012)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FMP	Fauna Management Plan
FHA	Foraging Habitat Assessment
FMU	Fire Management Unit
GER	Great Eastern Ranges
GFPDA	Greater Flagstone Priority development Area
GHFF	Grey-headed flying-fox
GHFF-FHA	Grey-headed flying-fox foraging habitat assessment
GPS	Global Positioning System
ha	hectare
HMMP	Hollow Monitoring and Management Plan
HVR	High Value Regrowth
KFF	Koala Farmland Fund
km	kilometres
LGA	Local Government Area
m	metre
MHQA	Modified Habitat Quality Assessment
mm	millimetres
MNES	Matters of National Environmental Significance
NJKHT	Non-juvenile Koala Habitat Tree
NR	Non-remnant
OAAR	Offset Area Annual Report
OAG	Offset Assessment Guide
OFHAG	Overall Fuel Hazard Assessment Guide
OMP	Offset Management Plan
OMU	Operational Management Unit
PD	Preliminary Documentation
PMAV	Property Map of Assessable Vegetation
R	Remnant
RAI	Relative Abundance Index

RE	Regional Ecosystem
SAT	Spot Assessment Technique
SEQ	South East Queensland
SEQERF	Southeast Queensland Ecological Restoration Framework
SRC	Somerset Regional Council
SSR	Species Stocking Rate
TN	Trap Nights
VC&MP	Vegetation Clearing and Management Plan
VDEC	Voluntary Declaration
WONS	Weeds of National Significance

Definitions

Proponent – Frasers Property New Beith Pty Ltd

Offset Provider – Upscale Capital Pty Ltd ATF Koala Farmland Fund 2 (KFF)

Impact area – The area where clearing will occur. This is located at Olson Road, New Beith, Queensland (Lot 4 on RP45728)

Milestone Report – A report prepared by a suitably qualified person before the end of Years 5, 10, 15 and 20 of the offset assessing against the interim milestone achievements and completion criteria.

Offset area – The 544.61 hectares (ha) area within the offset property where the specific offset will be implemented and consists of eleven (11) assessment units.

Offset property – Means 'Marrambi Offset Property, Bryden, QLD, 4312

Year 1 of the offset – The 12-month period following legal securement of the offset area

Years 2 to 20 of the offset – The 12-month period following each anniversary of the legal securement of the offset area.

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. 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	Andrew Davies
Position	Manager Environmental Division / Associate Partner
Organisation	Saunders Havill Pty Ltd
Date	

Offset Provider Consent

The Offset Provider agrees to the offset being undertaken over the land identified in Section 6 of this Offset Management Plan, and in the manner outlined in Section 9.

Signed	
Full name	Rob Martyn
Position	Offset Provider
Organisation	Upscale Capital Pty Ltd ATF Koala Farmland Fund 2 (KFF)
Date	

1. Introduction

1.1. Background

Saunders Havill (SH) have prepared this Offset Management Plan (OMP) on behalf of the proponent, Frasers Property New Beith Pty Ltd, to be implemented by the offset provider, Upscale Capital Pty Ltd ATF Koala Farmland Fund 2 (KFF), in accordance with the Preliminary Documentation (PD) provided for EPBC Application 2019/8389. This OMP has been prepared to acquit significant residual impacts on Matters of National Environmental Significance (MNES) resulting from the project 'Residential Development, Lot 4 RP45728, New Beith, Qld' (EPBC 2019/8389). This offset is proposed in addition to separate offsets already under assessment by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for the project.

On the 4th April 2019 a referral under the EPBC Act was made to the then Commonwealth Department of Agriculture, Water and the Environment (DAWE) for a controlled action assessment. On the 8th of October 2019 this application was deemed a Controlled Action requiring assessment by "Preliminary Documentation".

The Controlled Action decision was based on the determination of potential impacts on the following Matters of National Environmental Significance (MNES):

- Listed threatened species and communities (sections 18 & 18A) protected under Part 3 of the EPBC Act, specifically:
  - Koala (*Phascolarctos cinereus*) combined populations of Qld, NSW and the ACT, listed as Vulnerable, and
  - Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable.

The referral area is considered to provide critical habitat for the survival of the koala and potential foraging habitat for the grey-headed flying-fox.

The referral area also contains critical habitat for the greater glider, swift parrot and regent honeyeater. As such, the significant residual impact expected includes:

- Koala: Loss of 187.09 hectares of habitat critical to the survival of the koala.
- Grey-headed flying-fox: Loss of 187.09 ha of potential foraging habitat.
- Greater glider: Loss of 246.8ha of potential foraging habitat and 360 hollow features.
- Swift parrot: Loss of 2,894 key foraging tree features.
- Regent honeyeater: Loss of 1,570 key foraging tree features.

MHQA score of 6.27 (rounded to 6) for the koala, FHA Score of 6.01 (rounded to 6) for the grey-headed flying-fox (GHFF,) and greater glider MHQA score of 4.06 (rounded to 4). The quantum impact for each species is therefore listed as:

- Koala: 112.25 hectares
- Grey-headed flying-fox: 112.25 hectares
- Greater glider: 98.72 hectares

The offset area has been selected to help acquit the impacts to MNES under EPBC 2019/8389 and provide benefits additional to that required for compensation of significant residual impacts. The suitability of the offset area considers the bioregional context of the site, ecological values, water resources and topography and existing habitat values for koala, grey-headed flying-fox, greater glider, swift parrot and regent honeyeater (refer following Sections and supporting Plans). The proposed offset area is located approximately 66 km north-west of the impact site and provides 544.61 hectares of land to contribute toward offsetting the potential significant impacts attributed to the New Beith Project.

1.2. Purpose of the Management Plan

The purpose of this OMP is to provide the objectives of the plan, key commitments including milestones and measurables (performance targets) and completion criteria to compensate for significant residual impacts on *Phascolarctos cinereus* (koala), *Pteropus poliocephalus* (grey-headed flying-fox), *Petauroides volans* (greater glider), *Lathamus discolor* (swift parrot) and *Anthochaera phrygia* (regent honeyeater). The plan must include (but not limited to):

i. the ecological outcomes of the offset site (including key milestones and baseline survey results);

ii. management measures proposed to achieve the ecological outcomes;

iii. for each management action and monitoring outcome, detail how and when performance will be quantified, measured and monitored;

iv. detail contingency measures to be implemented if some or all of the specified are not achieved.

1.3. Report Structure

This OMP contains the following sections:

- Section 2: Roles and Responsibilities
- Section 3: Overview of Impact area
- Section 4: Overview of Offset Area
- Section 5: Offset Area Suitability
- Section 6: Baseline Surveys
- Section 7: Environmental Outcomes
- Section 8: Monitoring and Reporting Schedule
- Section 9: Management Framework
- Section 10: Adaptive Management
- Section 11: References
- Section 12: Appendices
    - Appendix A – Koala MHQA Tables
    - Appendix B – Field Survey Data
    - Appendix C – GHFF FHA Tables



- Appendix D – Greater Glider MHQA Tables
- Appendix E – Milestone Framework
- Appendix F – Hollow Monioring and Management Plan
- Appendix G – OAG Feature Reference Tables
- Appendix H – OAG Tables
- Appendix I – Risk Assessment

2. Roles and Responsibilities

Excluding the regulatory role completed by the Commonwealth Government for the assessment and approval of the offset and the Queensland Government for registering and declaring the Voluntary Declaration and covenant, the following people and entities retain key responsibilities for the implementation of this OMP.

A list of key contacts for the project is contained in **Table 1.**

Table 1: Key personnel

Role	Nominated Person	Company / Entity	Contact details
Proponent/Approval Holder	Belinda Ryan	Frasers Development New Beith Pty Ltd	belinda.ryan@frasersproperty.com.au
Offset Provider	Rob Martyn	Upscale Capital Pty Ltd ATF Koala Farmland Fund 2 (KFF)	rob.martyn@koalafarmlandfund.com.au
Administering Authority	N/A	DCCEEW Compliance Monitoring Branch	EPBCMonitoring@dcceew.gov.au
Suitably qualified person/contractor	Appointed as required by either the proponent or the Offset Provider	Appointed as required by either the proponent or the Offset Provider	Appointed as required by either the proponent or the Offset Provider

3. Overview of Impact Area

3.1. Project and Site

The referral area is located within Flagstone, Logan, Queensland approximately 40 kilometres south-west of Brisbane's CBD and situated within South East Queensland's (SEQ) south-west growth corridor. SEQs south-west growth corridor is one of the largest job and industry growth areas in Australia and offers opportunities to accommodate significant levels of residential and employment growth. In 2009, Flagstone was identified as a Regional Development Area under the South East Queensland Regional Plan 2009 - 2031 (SEQRP) by the State Government because of its potential to absorb a vast portion of the regional area's population over the subsequent three decades. The SEQRP 2017 (Shaping SEQ) recognises Flagstone as a large residential expansion area with an expected dwelling capacity of 19,000 by 2041 supported by existing and proposed infrastructure, which will strengthen economic and social connections within the sub-region and proximity to employment opportunities.

It is envisaged that the proposed action will provide approximately 2,257 residences for more than 5,400 people, and 1.609 ha of retail and commercial space servicing the growing Greater Flagstone community. The proposed action includes mixed-density residential dwellings, neighbourhood centre, internal road network and open space including a district sports park, local parks and conservation areas.

Vegetation across the site is comprised of a mix of remnant and regrowth Regional Ecosystems. Overall, the referral area vegetative cover was found to be relatively intact, however, disturbed by historical clearing and land uses (logging, 4WD driving and motorbiking). Ecological values have been provided at all key design junctures in the development noting planning Intent is as per the 'Greater Flagstone Priority Development Area Development Scheme' ('Development Scheme').

The proposal includes the development of approximately 147.5 ha, 39.6 ha for open space and parks and retention of 59.7 ha of vegetation for open space and conservation. As the proposed action will result in the clearing of vegetation identified as critical habitat for the koala, foraging habitat for the grey-headed flying-fox, potential habitat for the greater glider and potential foraging habitat for the swift parrot and regent honeyeater, an offset will be delivered in accordance with the EPBC Act Environmental Offsets Policy 2012.

Refer **Table 2** for details of impact area.

Table 2: Details of impact area

Address	**Olson Road, New Beith, Queensland**
Impact area	Refer to **Plan1**

01. IMPACT SITE DEVELOPMENT FOOTPRINT



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.
Layer Sources
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
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Updated data available at
http://qldspatial.information.qld.gov.au/catalogue/
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LEGEND

- Qld DCDB
- Referral Area [246.8 ha]
- Development Zone [147.5 ha]
- Future open space (functionally lost) [39.6 ha]
- Vegetation Retention Zone [59.7 ha]
- Vegetation Retention Zone Widths

Adjoining Development

- Development zone
- Open space & vegetation retention zones



Saunders Havill
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FRASERS PROPERTY
NEW BEITH PTY LTD

MARRAMBI OFFSET
MANAGEMENT PLAN

0 100 200 m
Transverse Mercator
GDA 2020 | Zone 56

N
1:8,250
@ A3

RPD: 83S311739

24/10/2025

9383 E 01 Marrambi OMP3 Impact Site A

3.2. Summary of Matters Requiring Offset

The OMP proposes land-based offsets for the following MNES species that will be subject to significant residual impacts due to the Project:

- Koala: Loss of 187.09 hectares of habitat critical to the survival of the koala.
- Grey-headed flying-fox: Loss of 187.09 ha of potential foraging habitat.
- Greater glider: Loss of 246.80 ha of potential foraging habitat and 360 hollow features.
- Swift parrot: Loss of 2,894 foraging tree features.
- Regent honeyeater: Loss of 1,570 foraging tree features.

Habitat for MNES proposed to be impacted for the project is summarised below.

3.2.1 Vegetation communities impacted

The impact site has been subject to a Property Map of Assessable Vegetation (PMAV) assessment that involved ground-truthing Regional Ecosystems. The PMAV was certified by the then Department of Natural Resources, Mines and Energy (DNRME) (PMAV 2018/001365). The PMAV shows the site is mapped as Category B (remnant) vegetation encompassing the western portion. The remainder of the referral area is comprised of Category X (non-remnant) vegetation. The mapped Category B (remnant) vegetation is described in **Table 3** and consists of 'Of Concern' and 'Least Concern' Regional Ecosystems (RE), with portions of the 'Of Concern' vegetation mapped as 'essential habitat' for the Koala. Essential habitat mapping for the Koala occurs within the 'Of Concern' composite RE's 12.3.11/12.3.7, RE 12.9-10.2/12.9-10.7, and the RE 12.9-10. 3.

Table 3: Mapped pre-clear regional ecosystem present within MNES impact area

Status	Preclear	Description
Of Concern	RE 12.9-10.3	*Eucalyptus moluccana open forest. Other canopy species include Eucalyptus siderophloia or E. crebra, E. tereticornis and Corymbia citriodora subsp. variegata. Understorey generally sparse but can become shrubby in absence of fire. Occurs on Cainozoic and Mesozoic sediments, especially shales. Prefers lower slopes. (BVG1M: 13d)*
Of Concern	RE 12.9-10.7	*Eucalyptus crebra +/- E. tereticornis, Corymbia tessellaris, Angophora leiocarpa, E. melanophloia woodland. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 13c)*

Status	Preclear	Description
Of Concern	RE 12.3.11	*Eucalyptus tereticornis +/- E. siderophloia and Corymbia intermedia open forest to woodland. Corymbia tessellaris, Lophostemon suaveolens and Melaleuca quinquenervia frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include Angophora leiocarpa, E. exserta, E. grandis, C. trachyphloia, C. citriodora subsp. variegata, E. latisinensis, E. tindaliae, E. racemosa and Melaleuca sieberi. E. seeana may be present south of Landsborough and Livistona decora may occur in scattered patches or low densities in the Glenbar SF and Wongi SF areas. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c)*
Least Concern	RE 12.3.7	*Narrow fringing woodland of Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca viminalis. Other species associated with this RE include Melaleuca bracteata, M. trichostachya, M. linariifolia. North of Brisbane Waterhousea floribunda commonly occurs and may at times dominate this RE . Melaleuca fluviatilis occurs in this RE in the north of the bioregion. Lomandra hystrix often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region. (BVG1M: 16a)*
Least Concern	RE 12.9-10.2	*Corymbia citriodora subsp. variegata open forest or woodland usually with Eucalyptus crebra. Other species such as Eucalyptus tereticornis, E. moluccana, E. acmenoides and E. siderophloia may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of Lophostemon confertus (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b)*

3.3. Habitat Quality Scoring Methods

3.3.1 Koala – Modified Habitat Quality Assessment methodology

The quantum and quality of habitat for the koala within the impact area was assessed using a modified version of the Queensland State Governments *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy* Version 1.2 April 2017 (herein referred to as the 'Habitat Quality Guideline'). This assessment approach utilises the site condition assessment method framework established under the *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland* Version 2.2 February 2015 combined with site context and species stocking rate assessments to determine the habitat quality of the impact area. The guideline is a

step-by-step methodology explaining how to measure habitat quality for land-based offsets. This methodology has been adopted and tailored/modified to assess the impacts and offsets relating to MNES.

The traditional terrestrial habitat quality assessment assesses three (3) core indicators:

1. site condition – a general condition assessment of vegetation compared to a benchmark;
2. site context – an analysis of the site in relation to the surrounding environment; and
3. species habitat index – the ability of the site to support a species.

The MHQA for koala combines the three (3) core indicators into two (2) (site condition and site context) with each attributed an equal weighting of 30% of the final score. The balance of the weighting (40%) has been attributed to the third indicator – species stocking rate (SSR) – which is independent of the traditional habitat quality assessment. The species stocking rate has been added to the MHQA to better incorporate MNES, and for the purpose of this project, the vulnerable-listed koala MNES. The following subsections detail the methodology utilised to assess the site condition, site context and species stocking rate under the MHQA. The following section details the methodology utilised to assess the site condition, site context and species stocking rate under the MHQA.

3.3.1.1 Site Condition (30%)

Assessing site condition is an integral step in determining specific quantification of impacts, while also determining whether an offset area is suitable to establish a desired capacity to support the prescribed environmental matters being offset. The on-site condition is a key element of the MHQA method and has a direct influence on the biodiversity it supports. Site condition is assessed using a suite of attributes to describe the structure and function of the vegetation community and is benchmarked against the expected range for a relatively undisturbed community.

The site condition assessment under the MHQA is assessed using fifteen (15) condition characteristics being:

- recruitment of woody perennial species in the Ecologically Dominant Layer (EDL);
- native plant species richness – trees;
- native plant species richness – shrubs;
- native plant species richness – grasses;
- native plant species richness – forbs;
- tree canopy height;
- sub-canopy cover;
- tree canopy cover;
- native grass cover;
- organic litter;
- large trees;
- coarse woody debris;
- non-native plant cover;
- quality and availability of food and foraging habitat; and
- quality and availability of shelters.

Assessment methodology of the above condition characteristics does not differ from the traditional habitat quality assessment. In developing the MHQA to better incorporate MNES, two (2) species habitat index characteristics, being, (1) quality and availability of food and foraging habitat, and (2) quality and availability of shelter have been added to the site condition indicator. The two koala habitat index attributes are based on the balance site condition attributes as listed, being species recruitment through to non-native plant cover, where the scores for each of these attribute are summed to provide a data driven condition attribute score out of 80. Scoring for quality and availability of food and shelter is then attributed as follows; the bottom 33% (or <27/80) scores 1, the middle 33% (or between 27/80 and 54/80) scores 5 and the top 33% (or >54/80) scores 10. Site condition drivers therefore determine the habitat quality indices of food and shelter in a repeatable metric.

Site condition within the impact area was assessed by delineating the impact area into assessment units (AUs) as required by the Queensland environmental offsets framework. The impact area was delineated into one (1) assessment unit based on ground-truthed VMA regional ecosystem mapping. This is summarised in **Table 4** and shown on **Plan 2**. Site condition was measured through the completion of habitat quality transects. Assessment at multiple locations per AU, except where the small size of an AU does not allow for multiple transects, is necessary to measure vegetation condition at representative locations across the spatial extent of the assessment unit. The locations of MHQA transects within the impact area are provided on **Plan 1**. Transect sites and assessment units are detailed in **Table 4.**

Table 4: Summary of assessment units and MHQA transects – impact area

Assessment unit	Vegetation community	Area (ha)	MHQA transect
AU1	Remnant RE12.3.11/12.3.7	14.42 ha	Transects 15 and 16
AU2	Remnant RE12.9-10.2	110.08 ha	Transects 4, 5, 7 and 10
AU3	Remnant RE12.9-10.7	3.37 ha	Transects 8 and 9
AU4	Remnant RE12.9-10.3	3.51 ha	Transects 11 and 14
AU5	Remnant RE12.9-10.2/12.9-10.7	8.06 ha	Transects 2 and 3
AU6	Non-remnant RE12.9-10.2	107.36 ha	Transects 1, 6, 12 and 13

3.3.1.2 Site context (30%)

The site context assessment deals with the site and its adjacent surroundings. Site context is measured using a suite of attributes to describe the location of the habitat within the surrounding landscape and the influence of its associated threats. This assessment also considers the influence of adjacent vegetated areas and ecological corridors. Under the MHQA, site context is measured using the following seven (7) characteristics:

- size of patch;
- connectedness;
- context;
- ecological corridors;
- role of site location to species overall population in the state;

- threats to the species; and
- species mobility capacity.

Unlike the traditional habitat quality assessment methodology where site connectedness is assessed against the surrounding remnant vegetation only, the MHQA site connectedness is assessed against the surrounding MNES habitat, in this instance, koala habitat. Whilst remnant eucalypt forest vegetation is critical habitat for koala, equally koalas can utilise areas of non-remnant vegetation or high value regrowth vegetation that does not yet achieve remnant status. Therefore, site context under the MHQA accounts for surrounding koala habitat rather than remnant vegetation.

Habitat critical to the survival of the koala was determined using the combination of the Unsupervised Classification tool within ESRI's ArcGIS software and the most recently available aerial photograph from Nearmap.com. The Unsupervised Classification tool is able to determine vegetation areas through the near infrared (NIR) composite band of the Landsat 8 imagery available online. The tool is able to create a dataset of vegetation areas without the analyst's intervention providing a rapid method for mapping habitat critical to the survival of the koala over large regions such as Southeast Queensland. Nearmap.com aerial image is used for calibration purposes, particularly when dealing with smaller scale EPBC assessment areas. The dataset created by the Unsupervised Classification tool is revised using the latest aerial imagery available from Nearmap.com at scale of 1:40,000 and provides a more accurate depiction of habitat critical to the survival of the koala at the assessment scale.

Assessment methodology for site context assessment for koala is outlined below:

1. patch size – The calculation of the area of the patch size uses the method outlined in the BioCondition assessment manual v2.2 that considers the patch to be areas connected by corridors greater than 200 m wide within a 1 km radius of the site. This methodology includes use of a "segmentation" process that removes areas connected to the assessment area by narrow corridors.
2. connectedness – Connectivity relates to the capacity that the species have to disperse through the landscape. The attribute is calculated using GIS by measuring the length of koala habitat that is along the boundary of the site.
3. context – The context score is calculated by GIS to quantify the amount of vegetation immediately surrounding the assessment site. The attribute is measure of the percentage of koala habitat within a 1 km buffer of the site.
4. ecological corridors – This attribute is as per the methods of the *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy* (Version 1.2 April 2017) and is used to determine if a site is located within or shares a boundary with an ecological corridor that facilitates long term ecosystem function by connecting large patches of remnant vegetation with sufficient tract size (corridor width in relation to the fragmentation of the landscape) (EHP 2014). These corridors support the habitat of MNES by providing opportunity for long term dispersal of habitat species following landscape level changes in climate. Although the ecological corridors allow for the dispersal of MNES themselves, for example, koala, this is not their primary function when assessing the attribute. The ecological corridors have been mapped by the Queensland State Government under the 'CORR_TYPE' attribute table. The mapping can also be viewed on Queensland Globe in the 'Statewide Biodiversity Corridors' layer.

5. role of site location to species overall population in the state – This attribute is based on the observed role of the site in relation to the overall population of the species. The scoring table considers the effect that of damage to or removal of the site would have to the likelihood of the species' overall population survival.
6. threats to species – Threats to koala are predominantly, habitat loss, car strike, dog attack and disease. The highest threat level is given to a site if it isolated from other koala habitat, or if major roads without exclusion measures, or residential encroachment is within 1500 m of the site boundary.
7. species mobility capacity – This attribute is a measure of the presence and severity of factors that would contribute to a reduction in mobility of koala and is scored on the presence of roads or large cleared areas bordering the site.

In developing the MHQA, three (3) species habitat index characteristics were nominated — role of site location to overall species population in the state, threats to the species and species mobility capacity. Scoring attributes extracted from the Habitat Quality Guideline are provided in **Extract 1**.

Table 3 - Site Context scoring sheet guide

1 Size of Patch*	**Score**	**0**	**2**	**5**	**7**	**10**
	Description	<5ha	5–25ha	26–100ha	101–200ha	>200ha
2 Connectedness*	Score	0	2	4		5
	Description	0–10%	>10%–<50%	50–75%		>75% or >500ha
3 Context*	Score	0	2	4		5
	Description	<10% remnant	>10–30% remnant	>30–75% remnant		>75% remnant
4 Distance to permanent watering point †	Score	0	2	5	10	20
	Description	0-500m	>500m–1km	>1–3km	>3–5km	>5km
5 Ecological corridors	Score	0	4		6	
	Description	Not within	Sharing a common boundary		Within (whole or part)	

*measured for fragmented bioregions only

†measured for intact bioregions only

Table 4 - Species habitat index scoring guide

1 Threats to species	**Score**	**1**		**7**	**15**
	Description	High threat level (i.e. likely to result in death, irreversible damage)		Moderate threat level	Low threat level (i.e. likely to survive)
2 Quality and availability of food and foraging habitat	Score	1		5	10
	Description	Poor		Moderate	High
3 Quality and availability of shelter	Score	1		5	10
	Description	Poor		Moderate	High
4 Species mobility capacity	Score	1	4	7	10
	Description	Severely restricted (76–100% reduction)	Highly restricted (51–75% reduction)	Moderately restricted (26–50% reduction)	Minor restriction (0–25% reduction)
5 Role of site location to species overall population in the state	Score	1		4	5
	Description	Not or unlikely to be critical to species' survival		Likely to be critical to species' survival	Critical to species survival

Extract 1: Tables 3 and 4 scoring sheet guide extracted from *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy* Version 1.2 April 2017.

3.3.1.3 Species stocking rate (40%)

The MHQA incorporates Species Stocking Rate (SSR) as an attribute not discussed under the traditional terrestrial habitat assessment methodology. Species stocking rates are estimates of the Koala carrying capacity of the site at the time survey. Given the discreet nature of the Koala and limited to no published literature on habitat carrying capacity of the species, the SSR scoring methodology has been derived through the collation of site-specific surveys and surrounding contextual habitat analysis. **Table 5** outlines the attributes utilised to assess SSR

Table 5: SSR scoring

Species Stocking Rate Table	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	/10
Species usage of the site (habitat type and evidenced usage)	/15
Approximate density (per ha)	/30
Role/importance of species population on site*	/15
Total Species Stocking Rate Score	**/70**

Species Stocking Rate Table	
Species Stocking Rate Score – out of 4	**/4**

*SSR Supplementary Table – Total supplementary score 0 = 0, 5-15 = 5, 20-35 = 10, 40-45 = 15	
Key source population for breeding	/10
Key source population for dispersal	/5
Necessary for maintaining genetic diversity	/15
Near the limit of the species range	/15

Baseline Koala presence surveys for SSR

Koala presence and activity levels were determined through utilising the Spot Assessment Technique (SAT) (Phillips *et al.* 2011). The SAT method is an industry recognised technique for identifying presence/absence, density and habitat usage of koala at a site and is specified as an appropriate survey method in the former *EPBC Act Referral Guidelines for the Vulnerable Koala*. Results from the SAT surveys are compared against current available published scientific literature to identify an estimated koala carrying capacity (stocking rate) to be determined.

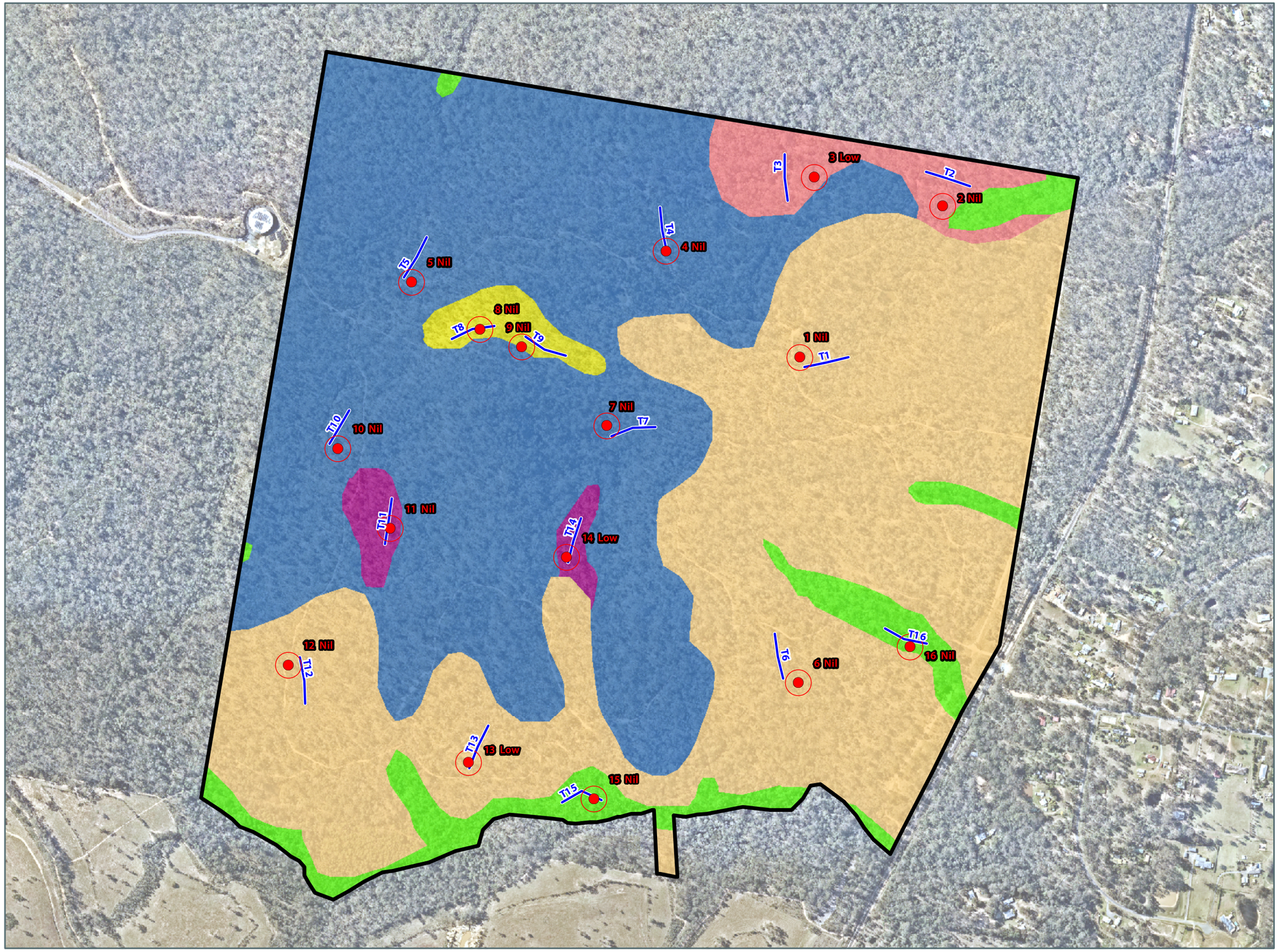
SAT survey results are interpreted using the broad population categories provided in the Australian Koala Foundation Koala activity level classification table. These categories being 'East Coast (low)', 'East Coast (med-high)' and 'Western (med-high)' are shown in **Table 6** and are used to estimate Koala activity within a given area. Depending on the population category applied, Koala activity is described as 'low', 'moderate', or 'high'. Population categories are assigned as follows:

- Sites considered to be suitable or have high suitability for Koalas are assigned the 'East Coast (med-high)' category;
- Sites considered to have low suitability are assigned the 'East Coast (low)' category; and
- The 'Western (med-high)' category does not apply to South East Queensland local government areas.

Table 6: Koala activity level classification (Phillips and Callaghan 2011)

Activity	East Coast (low)	East Coast (med-high)	Western (med-high)
Low	<3.33%	<22.5%	<35.8
Moderate	3.33-12.6%	22.5-32.8%	35.8-46.7
High	>12.6%	>32.8	>46.7

02. IMPACT SITE ASSESSMENT UNITS



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Updated data available at

http://qldspatial.information.qld.gov.au/catalogue/

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LEGEND

- Qld DCDB
- Referral Area [246.8 ha]

Assessment Units

- **AU-1** [14.42 ha]
  RE 12.3.11/12.3.7
- **AU-2** [110.08 ha]
  RE 12.9-10.2
- **AU-3** [3.37 ha]
  RE 12.9-10.7
- **AU-4** [3.51 ha]
  RE 12.9-10.3
- **AU-5** [8.06 ha]
  RE 12.9-10.2/12.9-10.7
- **AU-6** [107.36 ha]
  Non-remnant vegetation
- 2021 Koala Use SAT Surveys
- Modified habitat quality transect



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FRASERS PROPERTY
NEW BEITH PTY LTD

MARRAMBI OFFSET
MANAGEMENT PLAN

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3.3.2 Koala Discussion

The referral area was given an overall weighted habitat quality score of 6.27 out of the total of 10 (rounded to a 6) which is considered a low to moderate koala habitat quality score. This score is calculated based on the combined weighted habitat quality scores for each assessment unit. The impact for koala applies this overall weighted habitat quality score (6/10) to the referral area (excluding the vegetation retention zone).

3.3.2.1 Site Condition (30%)

Remnant habitat (AU1-5) makes up the majority of the referral area, however, non-remnant vegetation (AU6) makes up almost half of the referral area resulting in a weight of 0.49 in the final MHQA assessment. Site condition characteristics were relatively stable across the impact site scoring between 1.68 and 2.28.

As discussed, the Site Condition scores are used to determine the scores for Quality and Availability of Food and Foraging Habitat, and Quality and Availability of Shelter. For all Assessment Units except AU2, each of these values were scored a 5 out of 5, while AU2 achieved a score of 10 out of 10 for each of the values.

Although the proposed action will result in the loss of habitat critical to the survival of the Koala, a significant portion of the referral area and vegetation will be retained for conservation and biodiversity corridors. The existing environmental constraints have been considered throughout the masterplanning and design of the proposed action which has sought to retain areas of greatest environmental value, including Round Mountain, Flagstone Creek and a central corridor connecting these areas. Additionally, although considered potentially functionally lost for the Koala, other open space areas strategically located along existing drainage features will provide stepping-stones and immediate refuge for wildlife within an urban environment.

3.3.2.2 Site Context (30%)

Each assessment unit achieved the same scores for Site Context with a score of 2.04 out of 3. A score of zero (0) was given to the Ecological Corridors component of Site Context, as the referral area is located 1.5 km east of the nearest corridor.

3.3.2.3 Size of patch

This attribute is a measure of the size of the patch of vegetation in which the assessment unit is located. The scoring reflects the importance of large patches in the landscape and is based on the size of the patch of critical Koala habitat connected to the site in this instance. This attribute is scored such that is reflects the fact that larger patches are less susceptible to ecological edge effects and are more likely to sustain viable populations of native flora and fauna than smaller patches. The size of patch attribute was calculated using GIS and determined the referral area to be part of a patch size of >10,000 ha due to the connection to the Flinders-Karawatha Bioregional Corridor to the west. This component was assigned a score of 10 out of 10.

3.3.2.4 Connectedness

As a landscape level attribute, connectedness aims to assess the degree to which the assessment unit is connected to adjacent native vegetation. Connectedness relates to the capacity of the species to disperse through the landscape between sustainable patches of habitat, and therefore has important implications for species persistence. Connectedness was calculated using GIS, with the percentage of referral area

boundary length supporting a Koala critical habitat connection off and on site was calculated at 90%, and consequently this attribute scored a 5 out of 5 as per the Queensland BioCondition Assessment methodology.

3.3.2.5 Context

The context attribute refers to the amount of critical koala habitat that is retained within a 1 km buffer of the site being assessed and is calculated using GIS. Each assessment unit achieved the same scores for Site context.

Retained critical Koala habitat within a 1 km buffer of the site was calculated at 61%, and therefore the context attribute achieved a score of 4 out of 5 as per the Queensland BioCondition Assessment methodology.

3.3.2.6 Ecological Corridors

A score of zero was given to the Ecological Corridors component of Site Context. The State mapping indicates the SEQ Regional Corridor is located approximately 1.5 km west of the site therefore is not considered to function as a biodiversity corridor.

3.3.2.7 Role of site location to species overall population in the State

This attribute aims to quantify the geographical importance of the referral area for Koala populations across the broader State. This attribute achieved a score of 5 out of 5 as the then DAWE determined that the referral area contains habitat critical to the survival of this species and received a score of 8 out of 10 against the KHAT.

3.3.2.8 Threats to the species

The 'threats to the species' attribute quantifies potential risks to the survival of Koala existing within and adjacent to the referral area. Key known threats to the survival of the Koala include proximity to linear infrastructure (road and rail) increasing the risk of mortality and injuries, as well as predation by wild or domestic dogs. The site is within 1,500 m of major roads and rail, so warrants a threat score of 1. Wild dogs were also captured on camera within the referral area on numerous occasions during field surveys. Regardless, this attribute was scored a 7 out of 15 to be conservative.

3.3.2.9 Species mobility capacity

Species mobility capacity is used to quantify the ability of the species to move from the site and through the surrounding landscape to meet survival needs. Species mobility capacity is considered particularly important in response to rapid changes to the surrounding environment, such as the commencement of land clearing. Grey-headed Flying-fox and avi-fauna for example are considered highly mobile species due to their ability to fly quickly and over land barriers such as highly frequented roads or residential developments. Conversely, the Koala is considered a relatively immobile species due to it being a ground-dwelling species, moving relatively slowly and hence its vulnerability to threats on ground as outlined above.

In this instance, the species mobility capacity for the Koala on site was assigned the score of 7 out of 10 due to the presence of the Brisbane-Sydney Interstate Railway line to the east and Flagstone City development to the south. Additionally, currently vegetation properties to the west and north are approved for development and will limit connectivity in the future. Although the connected habitat exceeds 10,000



ha, the site is not considered to be conducive for future Koala movement due to fragmentation by significant barriers within and surrounding the site, including Lantana infestation.

3.3.2.10 Species Stocking Rate (40%)

The final component of the MHQA technique is SSR. Species stocking rates are estimates of the Koala carrying capacity of the site at the time of undertaking the survey. **Table 5** outlines the attributes utilised to assess species stocking rate. Species stocking rate scores were calculated for each assessment unit due to the differing attributes of the vegetation and Koala presence based on detailed surveys.

A species stocking rate score of 40 out of 70 was attributed to all assessment units, which equates to a weighted SSR score of 2.29 out of 4. For each assessment unit, a score of 10 was attributed to 'presence detected on or adjacent to the site' due to the sighting of a Koala on site and the detection of scats. For AU1-AU3, SAT surveys did not detect Koala scats, therefore, these were considered suitable for dispersal only, however, DCCEEW attests that the assessment units are similar in canopy structure therefore the species stocking rate should be the same for all assessment units, despite empirical evidence to the contrary. As such, all assessment units were scored 15 for breeding habitat and a score of 10 for 'approximate density (per ha)' as SAT surveys indicated low presence according to the east coast (med-high) category as per Phillips and Callaghan, 2011. A score of 5 was attributed to the 'role/importance of species population on site' as the south-east Queensland Koala population is considered a key source population.

To summarise, the proposed action is considered to only impact on low to moderate quality Koala habitat and not the species or an important population, having a total weighted impact of 6.27 out of 10 (rounded to a 6). Substantial avoidance, management and mitigation measures are considered to result in a reduced impact on Koala habitat in the context of the Greater Flagstone Priority Development Area (GFPDA).

Table 7: Impact area – Koala MHQA results

MHQA Final Weighting	AU 1	AU 2	AU 3	AU 4	AU 5	AU 6
Site Condition (/3)	1.68	2.28	1.85	1.82	1.89	1.71
Site Context (/3)	2.04	2.04	2.04	2.04	2.04	2.04
Species Stocking Rate (/4)	2.29	2.29	2.29	2.29	2.29	2.29
Assessment Unit Area (Impact) (ha)	7.46	76.82	0.00	2.21	8.06	92.54
Total Impact Area (ha)	187.09	187.09	187.09	187.09	187.09	187.09
Size Weighting	0.04	0.411	0.00	0.01	0.04	0.59
AU Weighted Score	0.24	2.71	0.00	0.07	0.27	2.98
Total Weighted Score	**6.27**					

3.3.3 Grey-headed flying-fox – Foraging Habitat Assessment Tool

The impact area has been assessed using a GHFF Foraging Habitat Assessment (GHFF FHA) tool developed by the Saunders Havill Group (2019) which adopts characteristics of the Habitat Quality Guideline, while also integrating published scientific literature on GHFF foraging habitat.

The traditional terrestrial habitat quality assessment assesses three (3) core indicators—site condition, site context and species habitat index.

The GHFF FHA tool combines the aspects of the three (3) core indicators and published scientific literature into two (2) (site condition and site context) with site condition being weighted with 40% and site context weighted at 30% of the final score. The balance of the weighting (30%) has been attributed to the third indicator which is independent of the traditional habitat quality assessment, being species stocking rate. The species stocking rate assessment incorporated in the GHFF FHA tool is focussed on 'foraging habitat' for GHFF rather than GHFF stocking rates (presence/absence of the species). This assessment of 'foraging habitat' for species stocking rate has been incorporated in the GHFF FHA tool as grey-headed flying-fox roosting camp or species presence was not observed on-site, however, suitable foraging habitat for the species was evident. Therefore, the density of foraging habitat available on-site is considered an appropriate assessment benchmark for species stocking rate.

The following section details the methodology utilised to assess the site condition, site context and species stocking rate under the GHFF FHA.

3.3.3.1 Site Condition (40%)

Assessing site condition is an integral step in determining specific quantification of impacts, while also determining whether an offset property is suitable to establish a desired capacity to support the prescribed environmental matters being offset. The on-site condition is a key element of habitat quality and has a direct influence on the biodiversity it supports. Site condition is assessed using a suite of attributes to describe the structure and function of the vegetation community and is benchmarked against the expected range for a relatively undisturbed community.

The site condition assessment under the GHFF FHA is assessed using six (6) condition characteristics being:

- Vegetation condition;
- Species richness (canopy trees);
- Flower scores (average);
- Timing of biological shortages;
- Quality of foraging habitat (trees >0.65 wt p*r); and
- Non-native plant cover.

Site condition under the GHFF FHA was assessed at the habitat quality transect locations within the impact assessment units summarised in **Table 4**.

Assessment methodology of the above condition characteristics is outlined below:

- Vegetation condition – This condition characteristic is assessed using the Queensland *Vegetation Management Act 1999* vegetation community status definition, being Category B (remnant),

Category C (high-value regrowth) and Category X (non-remnant). This characteristic is scored from a desktop mapping perspective and verified on-ground during assessment. Refer to **Table 8**.

- Species richness (canopy trees) – This condition characteristic is assessed using a 100 m X 20 m plot following the contour of the land when possible. Within the plot, all canopy tree and subcanopy tree specimens are recorded. It should be noted that non-GHFF foraging species are also documented. Refer to **Table 9**.
- Flower scores (average) – This condition characteristic is assessed by analysing and cross-referencing the species recorded in the 'species richness (canopy trees)' characteristic with the published literature, specifically the information within *Ranking the feeding habitat of Grey-headed flying foxes for conservation management* (Eby and Law 2008) and the *National Recovery Plan for the Grey-headed Flying-fox* (DAWE, 2021) and determining the flower score of the recorded canopy species. The individual score for each flowering GHFF foraging tree is then divided by the number of species recorded (GHFF foraging and non-GHFF foraging trees) to produce an average. The benchmark values for this condition characteristic have been derived from the findings published by Eby and Law (2008) (Ranking the feeding habitat of Grey-headed flying foxes for conservation management). Refer to **Table 10**.
- Timing of biological shortages – This condition characteristic is assessed by analysing and cross referencing the species recorded in the 'species richness (canopy trees)' characteristic with the published literature, specifically the information within Ranking the feeding habitat of GHFFs for conservation management (Eby and Law 2008) and the *National Recovery Plan for the Grey-headed flying-fox* (DAWE, 2021) and determining the ability of the canopy species in the vegetation community to produce foraging habitat during biological shortages (food shortages, pregnancy and birthing, lactation, mating and conception, migration paths and fruit industries). It should be noted that this condition characteristic is weighted and 'food shortages' has been weighted heavier than the balance of the characteristics which are equal, as 'food shortages' is recognised as a major issue. Refer to **Table 11.**
- Quality of foraging habitat – This condition characteristic is assessed by analysing and cross-referencing the species recorded in the 'species richness (canopy trees)' characteristic with the published literature, specifically the information within Ranking the feeding habitat of GHFFs for conservation management (Eby and Law 2008) and the *National Recovery Plan for the Grey-headed flying-fox* (DAWE, 2021) and determining which canopy species recorded contain a flower score greater than 0.65 wt p*r and is recognised as a significant food plant by Eby and Law (2008). It should be noted that species recorded that are not prescribed a value by Eby and Law (2008) but are recognised as GHFF foraging trees, have been given an average weighted value of related species or, in the case of *Eucalyptus crebra* (Narrow-leaved Ironbark) been prescribed a value of 0.65 and classified as a significant food plant given its importance as a winter flowering species as acknowledged in the *National Recovery Plan for the Grey-headed Flying-fox* (DAWE, 2021). Refer to **Table 12**.
- Non-native plant cover – This condition characteristic is assessed using a 100 m X 20 m plot following the contour of the land when possible. All non-native plant cover was assessed by estimating the cover of exotic species over the 100 m X 20 m plot. Refer to **Table 13**.

It should be noted that for on-ground assessment purposes, the 100 m X 20 m plot utilised for the GHFF FHA overlaps with the on-ground condition characteristics of the koala MHQA.



3.3.3.2 Site Context (30%)

The site context assessment deals with the site and its adjacent surroundings. Site context is measured using a suite of attributes to describe the location of the habitat within the surrounding landscape and the influence of its associated threats. This assessment also considers the influence of adjacent vegetated areas and ecological corridors. Under the GHFF FHA, site context is measured using the following six (6) characteristics:

- Size of patch;
- Connectedness (active GHFF roost camps in a 20 km radius);
- Context (percentage of GHFF foraging habitat in a 20 km radius);
- Ecological corridors;
- Role of site location to species overall population in the state (active GHFF national flying-fox monitoring viewer 'level 3' roost camps in a 20 km radius); and
- Threats to the species.

The assessment methodology of the above context characteristics is outlined below:

- Size of patch – This context characteristic is assessed using a modified version of the traditional habitat quality assessment with the directly connected patch of GHFF foraging habitat to site measured. This context characteristic is measured using GIS. The benchmark values for this context characteristic are those used in the traditional habitat quality assessment. Refer to **Table 14**.
- Connectedness – This context characteristic is assessed by analysing the number of active GHFF roost camps (over the past year of monitoring (2023-2024)) within a 20 km radius of the site. For consistency purposes this assessment is to utilise the data provided on the national flying-fox monitoring viewer (Australian Government). Refer to **Table 15.**
- Context – This context characteristic is assessed using a modified version of the traditional habitat quality assessment with the percentage of GHFF foraging habitat within a twenty (20) kilometre buffer of the site measured. This context characteristic is measured using GIS. Refer to **Table 16.**
- Ecological corridors – This context characteristic is assessed using the traditional habitat quality assessment methodology which involves determining the proximity of the site to state, bioregional, regional or sub-regional corridors. Refer to **Table 17.**
- Threats to species – This context characteristic is assessed by analysing the published scientific literature regarding threats to GHFF and determining the number and severity of the threatening processes observed at or adjacent to the site. Refer to **Table 18**.
- Role of site location to species overall population in the state (active GHFF national flying-fox monitoring viewer 'level 3' roost camps in a 20 km radius) – This context characteristic is assessed by analysing the number of active GHFF roost camps level 3 or greater (over the past year of monitoring (2023-2024)) within a 20 km radius of the site. For consistency purposes this assessment is to utilise the data provided on the national flying-fox monitoring viewer (Australian Government). Refer to **Table 19.**

3.3.3.3 Species Stocking Rate (30%)

The GHFF FHA incorporates SSR as an attribute not discussed under the traditional terrestrial habitat assessment methodology. As discussed above, SSR for GHFF associated with this proposed action is related to the density of GHFF foraging habitat at the site at the time of undertaking the survey.

Baseline GHFF foraging tree surveys were undertaken by following the stem count methodology provided in the Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland (version 5.0) (Neldner et al. 2019).

This methodology involves assigning the strata for canopy (T1) and subcanopy (T2) and then counting the number of individual tree specimens within the 100 m X 20 m plot. A tree that branches into two or more stems above 30 cm above the ground is counted as one individual. The stem density of canopy species recorded within the 0.2 ha plot is multiplied by five (5) to produce a stem density per ha. This number is then compared to the benchmark stem density per ha based on the sum of the T1 stem density taken from the relevant regional ecosystem technical description as per the Technical Descriptions of Regional Ecosystems of Southeast Queensland (Ryan 2019). Refer to **Table 20** for benchmark scoring values for species stocking rate.

3.3.4 Grey-headed Flying-fox Discussion

Refer to **Table 21** for a summary of the impact site GHFF FHA results.

Table 8: GHFF FHA Vegetation Condition Scoring

Score	Description
5	Category X / non-remnant
10	Category C / regrowth
20	Category B / remnant

Table 9: GHFF FHA Species Richness Scoring

Score	Description
0	0 GHFF foraging species
5	1 – 3 GHFF foraging species
10	4 – 6 GHFF foraging species
20	> 6 GHFF foraging species

Table 10: GHFF FHA Flower Score (average) Scoring

Score	Description
2	0.01 – 0.25
5	0.26 – 0.50
8	0.51 – 0.75
10	0.76 – 1.00

Table 11: GHFF FHA Timing of Biological Shortages Scoring

Score	Description
2.5	Food shortages
1.5	Pregnancy and birthing
1.5	Lactation
1.5	Mating and conception
1.5	Migration paths
1.5	Fruit industries
Total (/10)	Combine total of above

Table 12: GHFF FHA Quality of Foraging Habitat (trees >0.65 wt p*r) Scoring

Score	Description
0	0 significant GHFF foraging tree species
5	1 – 3 significant GHFF foraging tree species
10	4 – 6 significant GHFF foraging tree species
20	> 6 significant GHFF foraging tree species

Table 13: GHFF FHA Non-Native Plant Cover Scoring

Score	Description
1	> 50 % non-native plant cover
5	25 – 50 % non-native plant cover
10	5 – 25 % non-native plant cover
20	< 5 % non-native plant cover

Table 14: GHFF FHA Size of Patch Scoring

Score	Description
0	< 5 hectares
2	5 – 25 hectares
5	26 – 100 hectares
7	101 – 200 hectares



Score	Description
10	> 200 hectares

Table 15: GHFF FHA Connectedness Scoring

Score	Description
0	< 1 active Grey-headed flying-fox camp within a 20 km radius
3	1 – 3 active Grey-headed flying-fox camp within a 20 km radius
6	4 – 6 active Grey-headed flying-fox camp within a 20 km radius
10	> 6 active Grey-headed flying-fox camp within a 20 km radius

Table 16: GHFF FHA Context Scoring

Score	Description
0	< 10 % Grey-headed flying-fox foraging habitat within a 20 km radius
3	10 – 30 % Grey-headed flying-fox foraging habitat within a 20 km radius
6	31 – 75 % Grey-headed flying-fox foraging habitat within a 20 km radius
10	> 75 % Grey-headed flying-fox foraging habitat within a 20 km radius

Table 17: GHFF FHA Ecological Corridors Scoring

Score	Description
0	Not within an ecological corridor
6	Sharing a common boundary with an ecological corridor
10	Within an ecological corridor

Table 18: GHFF FHA Threats to Species Scoring

Score	Description
1	High level threat to the species
5	Moderate level threat to the species
10	Low level threat to the species



Table 19: GHFF FHA Role of Site Location to Species Overall Population Scoring

Score	Description
1	1 – 2 active level 3 Grey-headed flying-fox camp within a 20 km radius
6	2 – 4 active level 3 Grey-headed flying-fox camp within a 20 km radius
10	> 4 active level 3 Grey-headed flying-fox camp within a 20 km radius

Table 20: GHFF Species Stocking Rate Scoring

Score	RE12.3.11	RE12.9-10.2	RE12.9-10.3
2	0-106	0-30	0-35
4	107-458	31-130	36-152
6	459-776	131-220	153-257
8	777-828	221-235	258-274
10	829-864	236-245	275-286
8	865-916	246-260	287-303
6	917-1234	261-350	304-408
4	1235-1586	351-450	409-525
2	>1586	>450	>525

Table 21: Impact area grey-headed flying-fox – FHA assessment summary

MHQA Final Weighting - GHFF	AU 1	AU 2	AU 4	AU 5	AU 6
Site Condition (/4)	2.40	2.51	2.40	2.40	1.89
Site Context (/3)	2.05	2.05	2.05	2.05	2.05
Species Stocking Rate (/3)	1.20	1.80	1.20	1.80	1.80
Assessment Unit Area (Impact) (ha)	7.46	76.82	2.21	8.06	92.54
Total Impact Area (ha)	187.09	187.09	187.09	187.09	187.09
Size Weighting	0.040	0.411	0.012	0.043	0.495
AU Weighted Score	0.23	2.61	0.07	0.27	2.84
Total Weighted Score	6.01				

3.3.5 Greater Glider – Modified Habitat Quality Assessment Methodology

All trees over 300 mm Diameter at Breast Height (DBH) were plotted throughout the impact area with a handheld GPS device (Trimble) to record locations (accuracy ±1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of Diameter at Breast Height (DBH);
- height of the tree estimated in metres from ground;
- canopy spread estimated in metres from ground;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

The entire tree trunk and branches are visually surveyed from ground for habitat values including hollows. The spread of trees over 300 mm DBH was mapped to indicate foraging habitat for the species as per the conservation advice. Hollow bearing trees were plotted across the entire site as part of earlier assessments for this species.

Notably, retained corridors that were not tree plotted for trees over 300 mm DBH are considered functionally lost to the Greater Glider due to their susceptibility to disturbance that will arise as a result of the action. The proportion of foliage cover in impact portions of each assessment unit were therefore attributed to retained conservation areas to estimate total foraging habitat potentially impacted.

The subject site has been assessed using a modified version of the Guideline. The purpose of this guideline is to provide a methodology for proponents to determine the habitat quality of a site under the Queensland Environmental Offsets framework. The Guideline is a step-by-step methodology explaining how to measure habitat quality for land-based offsets. This methodology has been adopted and tailored/modified to assess the impacts and offsets relating to Matters of National Environmental Significance (MNES).

The traditional terrestrial habitat quality assessment assesses three (3) core indicators—site condition, site context and species habitat index.

For the spatial analysis, the modified habitat quality assessment (MHQA) combines the three (3) key indicators from the Queensland State Government guide into two (2) (site condition and site context) with each being weighted 30% of the final score. The balance of the weighting, 40%, has been attributed to the third indicator (species stocking rate), that is independent of the Queensland State Government habitat quality assessment. The species stocking rate has been added to the MHQA to better incorporate MNES, and specifically the endangered Greater Glider. The following subsections detail the methodology utilised to assess the site condition, site context and species stocking rate under the MHQA.

The features based assessment to cater for Greater Glider denning and breeding habitat relies on hollow counts plus an error margin of 20% for field surveys based on relevant literature.

3.3.5.1 Site Condition (30%)

The site condition assessment under the MHQA is assessed using 15 condition characteristics being: recruitment of woody perennial species in EDL;

- native plant species richness – trees;
- native plant species richness – shrubs;
- native plant species richness – grasses;
- native plant species richness – forbs;
- tree canopy height;
- sub-canopy cover;
- tree canopy cover;
- native grass cover;
- organic litter;
- large trees;
- coarse woody debris;
- non-native plant cover;
- quality and availability of food and foraging habitat; and
- quality and availability of shelters.

Assessment of the above condition characteristics do not differ from the traditional habitat quality assessment. Scoring tables for the site condition attributes follows the scoring tables within the BioCondition manual (refer above). In developing the MHQA to better incorporate MNES, two (2) species habitat index characteristics, being, (1) quality and availability of food and foraging habitat, and (2) quality and availability of shelter have been added to the site condition indicator. The quality and availability of food and foraging habitat index attributes are based on the site condition features that relate to the presence of canopy in the ecologically dominant layer where the species feeds scored as a proportion against the T1 tree canopy cover benchmark, where <33% of the expected benchmark scores 1, 33% to 66% scores 5, and >66% scores 10. The T1 canopy cover is considered a suitable metric for foraging habitat given the size class includes only the T1 dominant layer and all Regional Ecosystems contain Greater Glider foraging species within the ecologically dominant layer according to the relevant Regional Ecosystem technical descriptions. The quality and availability of shelter habitat index attributes are based on hollow counts per hectare plus an error margin of 20% based on relevant literature relative to conservation advice expectations (i.e. 2 to 4 hollows per 2 ha), where <1 hollow per ha scores 1, 1 to 2 hollows per ha scores 5, and greater than 2 hollows per ha scores 10.

As the Greater Glider is most reliant upon upper tree canopy for foraging and hollows for shelter than other ecosystem attributes, the overall Site Condition score has been additionally weighted 40% for the traditional condition attributes (species richness etc.), 20% for quality of foraging habitat and 40% for quality of shelter habitat.

3.3.5.2 Site Context (30%)

The site context assessment deals with the site and its adjacent surroundings. Site context is measured using a suite of attributes to describe the location of the habitat within the surrounding landscape and the influence of its associated threats. This assessment also considers the influence of adjacent vegetated areas and State mapped ecological corridors. Under the MHQA, site context is measured using the following seven characteristics:

- size of patch;
- connectedness;
- context;
- State mapped ecological corridors;
- role of site location to species overall population in the state;
- threats to the species; and
- species mobility capacity.

Unlike the traditional habitat quality assessment methodology where site connectedness is assessed against the surrounding remnant vegetation only, the MHQA site connectedness is assessed against the surrounding MNES habitat, in this instance, Greater Glider habitat as per Eyre et al. 2022.

Assessment methodology for site context assessment for Greater Glider is outlined below:

1. Patch size – The calculation of the area of the patch size uses the method outlined in the Biocondition assessment manual v2.2 that considers the patch to be areas connected by corridors greater than 200 m wide within a 1 km radius of the site. This methodology includes use of a "segmentation" process that removes areas connected to the assessment area by narrow corridors.
2. Connectedness – Connectedness relates to the capacity that the species have to disperse through the landscape. The attribute is calculated using GIS by measuring the length of habitat that is along the boundary of the site.
3. Context – The context score is calculated by GIS to quantify the amount of vegetation immediately surrounding the assessment site. The attribute is measure of the percentage of habitat within a 1 km buffer of the site.
4. State mapped ecological corridors – This attribute is as per the methods of the Guide to determining terrestrial habitat quality V1.2 and is used to determine if a site is located within or shares a boundary with an ecological corridor that facilitates long term ecosystem function by connecting large patches of remnant vegetation with sufficient tract size (corridor width in relation to the fragmentation of the landscape) (EHP 2014). These corridors support the habitat of MNES by providing opportunity for long term dispersal of habitat species following landscape level changes in climate. Although the ecological corridors allow for the dispersal of MNES themselves, this is not their primary function when assessing the attribute. The ecological corridors have been mapped by the Queensland State Government under the 'CORR_TYPE' attribute table. The mapping can also be viewed on Queensland Globe in the 'Statewide Biodiversity Corridors' layer.

5. Role of site location to species overall population in the state – This attribute is based on the observed role of the site in relation to the overall population of the species. The scoring table considers the species' use of the site – such as whether it is used for feeding and/or nesting and the effect that damage to or removal of the site would have to the likelihood of the species' overall population survival.
6. Threats to species – Threats to Greater Glider are predominantly habitat loss, feral predator attack, barbed wire and uncontrolled bushfire. Threats are scored as per the relevant State guideline.
7. Species mobility capacity – This attribute is a measure of the presence and severity of factors that would contribute to a reduction in mobility of Greater Glider and is scored on the presence of roads or cleared areas.

In developing the MHQA, three (3) species habitat index characteristics were nominated — role of site location to overall species population in the state, threats to the species and species mobility capacity.

3.3.5.3 Species Stocking Rate (40%)

The MHQA incorporates species stocking rate as an attribute not discussed under the traditional terrestrial habitat assessment methodology. Species stocking rates are estimates of the Greater Glider carrying capacity of the site at the time of undertaking the survey. Given the discreet nature of the Greater Glider and limited to no published literature on habitat carrying capacity of the species, the species stocking rate scoring methodology has been derived through the collation of site-specific surveys and surrounding contextual habitat analysis.

Species stocking rate is calculated using the following parameters:

- Species presence on or adjacent to the assessment unit – evidence of Greater Glider on or adjacent to the assessment unit.
- Species usage (habitat type and evidenced usage) – evidence of Greater Glider usage of the assessment unit.
- Approximate density of the species – evidence of Greater Glider records in the assessment unit.
- Role/importance of species population on site – considers whether the site is a key source population for breeding, dispersal, is necessary for maintaining genetic diversity or near the limit of the species' range.

3.3.6 Greater Glider Discussion

The Greater Glider was not recorded on site despite multiple targeted surveys, including additional detailed work carried out by a third party Greater Glider expert. Additionally, there have been no records of the Greater Glider within 5 km of the impact site within the last 20 years. Pre 2000 records occur within 5 km of the impact site. There are multiple records between 5 and 20 km from the site within the last 5 years, especially to the east.

Despite the relatively poor quality of site habitat, historical logging and absence of records for the species, all Assessment Units with potential to support site hollows were applied as potential habitat impacted for the species on site. Of note all historical pastoral fences surrounding and spanning the entire site contain barbed wire strands that are a physical threat to dispersing Greater Glider.

Of note, the impact site maintains Greater Glider foraging habitat potentially lost due to the action that totals 246.8 ha.

AU1 to AU 6 scored 68.84%, 63.40%, 101.25%, 66.70%, 50.23% and 23.20% for canopy coverage against the benchmark, therefore scoring 10, 5, 10, 10, 5 and 1 for quality and availability of food and foraging habitat. Based on hollow counts, the Assessment Units scored 5, 5, 1, 10, 10, 5 for quality and availability of shelter habitat, respectively.

Given the relative canopy cover in all layers and stages of growth, but presence of relatively high disturbance and proximity to residences, threats and species mobility for these were scored moderate at 7.

The final component of the MHQA technique is species stocking rate. Species stocking rates are estimates of the Greater Glider carrying capacity of each assessment unit at the time of undertaking the survey. A species stocking rate score of 10 out of 70 was attributed to all assessment units. This was largely attributed to the fact that evidence of Greater Glider does not occur onsite nor in the vicinity given their inability to disperse long distances.

Taking into account the Site Condition, Site Context and SSR scores, the impact site spatial MHQA scores a 4 (4.06) out of 10 for potential Greater Glider habitat.

The impact site maintains a total of 300 hollows representing denning and breeding habitat (or shelter) that, taking into consideration the 20% error margin, suggests a total of 360 hollow features will potentially be lost to the species.

Refer **Table 22** for s summary of the impact site greater glider MHQA results.

Table 22: Impact area greater glider MHQA results summary

MHQA Final Weighting	AU 1	AU 2	AU 3	AU 4	AU 5	AU 6
Site Condition (/3)	1.89	1.74	1.49	2.56	2.30	1.37
Site Context (/3)	1.88	1.88	1.88	1.88	1.88	1.88
Species Stocking Rate (/4)	0.57	0.57	0.57	0.57	0.57	0.57
Assessment Unit Area (Impact) (ha)	14.42	110.08	3.37	3.51	8.06	107.36
Total Impact Area (ha)	246.80	246.80	246.80	246.80	246.80	246.80
Size Weighting	0.06	0.446	0.01	0.01	0.03	0.44
AU Weighted Score	0.25	1.87	0.05	0.07	0.15	1.66
Total Weighted Score	**4.06**					

3.3.7 Swift Parrot – Features-based Assessment Methodology

All key foraging species were plotted throughout the impact area with a handheld GPS device (Trimble) to record locations (accuracy ±1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of DBH;
- height of the tree estimated in metres from ground;
- canopy spread estimated in metres from ground;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

Foraging species over 300 mm DBH are considered suitable to provide preferred foraging habitat for the life of the approval, in this case the key foraging species *Eucalyptus tereticornis* and *Corymbia citriodora*.

3.3.8 Swift Parrot Discussion

The Swift Parrot was not recorded on site despite targeted surveys. There have been no records of the Swift Parrot within 5 km of the impact site. There are limited records between 5 and 20 km from the site to the north of the subject site. A total of 2,894 key foraging trees for the swift parrot will be removed under the proposal (refer **Table 23**).

Table 23: Impact site swift parrot summary

Key Foraging Species	Count Impacted
Corymbia citriodora	1,570
Eucalyptus tereticornis	1,324
Total	2,894

3.3.9 Regent Honeyeater – Features-based Assessment Methodology

All key foraging species were plotted throughout the impact area with a handheld GPS device (Trimble) to record locations (accuracy ±1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of DBH;
- height of the tree estimated in metres from ground;
- canopy spread estimated in metres from ground;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

Foraging species over 300 mm DBH are considered suitable to provide preferred foraging habitat for the life of the approval, in this case the key foraging species *Corymbia citriodora*.

3.3.10 Regent Honeyeater Discussion

The regent honeyeater was not recorded on site despite targeted surveys. There are two records for the regent honeyeater within 5 km of the impact site. There are limited records between 5 and 20 km from the site to the north and west of the subject site. A total of 1,570 key foraging trees for the regent honeyeater will be removed under the proposal (refer **Table 24**).

Table 24: Impact site regent honeyeater MHQA results

Key Foraging Species	Count Impacted
Corymbia citriodora	1,570
Total	1,570

4. Overview of Offset Area

4.1. Offset Property Description and Tenure

The Marrambi offset area is located at Bryden, QLD, 4312, within the Somerset Regional Council (SRC) Local Government Area (LGA), approximately 19 km west of the Queensland town of Esk and approximately 15km south of Somerset Dam. The offset area is currently zoned as Rural under the Somerset Regional Council Planning Scheme and is comprised of Lot 169 on S312673, Lot 4 on SP165393, Lot 83 on S311739, Lot 90 on S311776 and Lot 91 on S311776. The offset area is located approximately 66 km north-west of the impact area (refer **Plan 3**). Key details relating to the offset area are provided in **Table 25.**

Table 25: Marrambi offset area summary

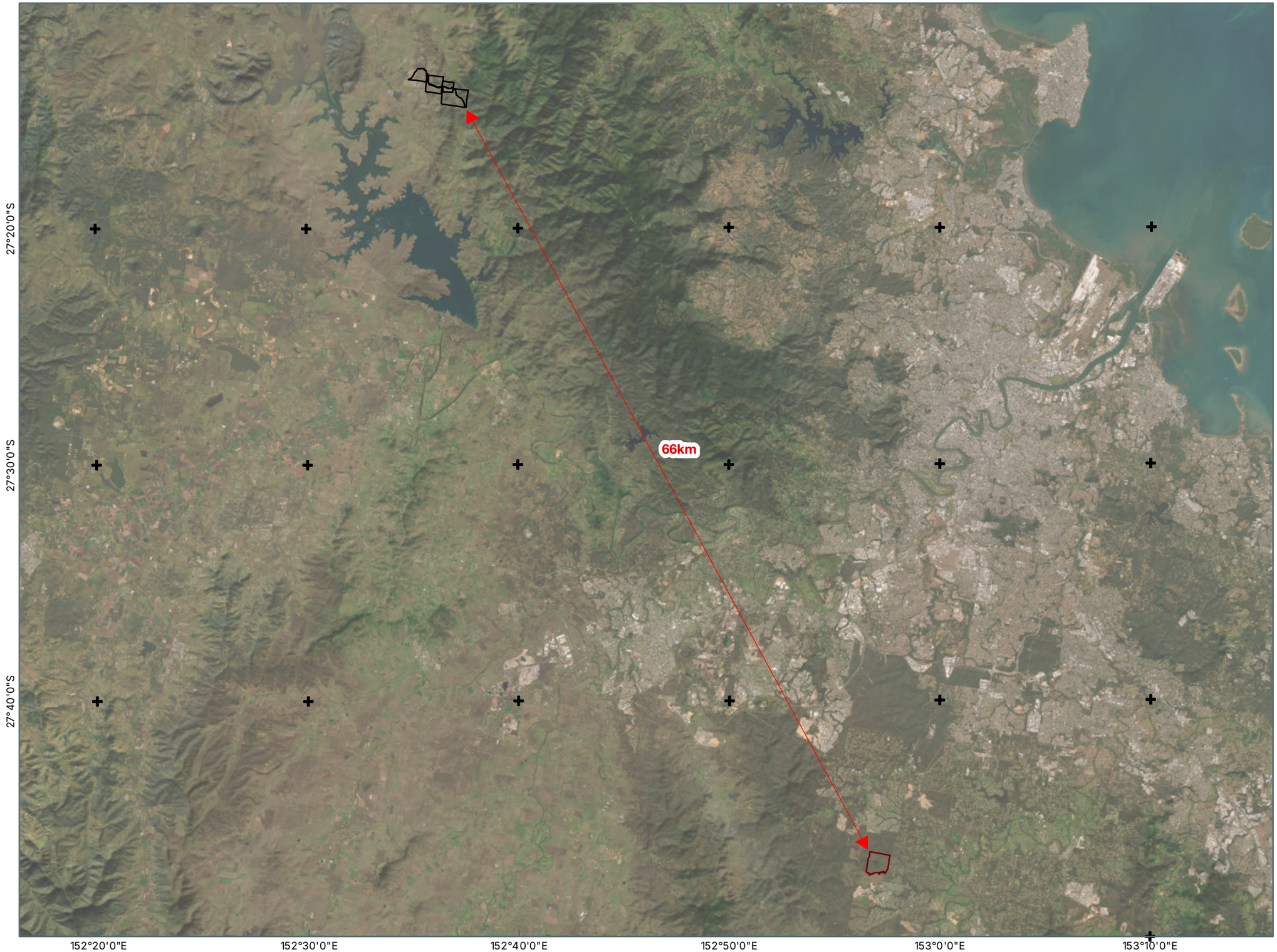
Address:	Bryden, QLD, 4312				
Lot/plan(s):	169S312673	4SP165393	83S311739	90S311776	91S311776
Area (ha):	3.14 ha	95.22 ha	161.87 ha	228.24 ha	64.75 ha
Total lot area:	553.22 ha (total offset area 544.61 ha)				
Tenure:	Freehold				
Local Government:	Somerset Regional Council (SRC)				

The Marrambi offset site has been secured to help compensate for the New Beith Project's significant residual impact on Koala, Grey-headed Flying-fox, Greater Glider, Swift Parrot and Regent Honeyeater. The offset proposal is a direct land-based solution that will establish new habitat and restore and rehabilitate regrowth and remnant habitat. Based on ground-truthed AUs, the offset area is 544.61 ha in size with 137.95 ha remnant, 221.94 ha regrowth and 184.72 ha being Category X (Non-remnant) vegetation.

The mix of paddock and scattered trees within the offset area as a result of historical disturbance allows for the intended conservation outcomes of restoration to be achieved (refer **Plan 4** and **Plan 5**). The offset area contains large mature eucalypts and hollow-bearing trees within scattered and dense vegetation patches with the ability to potentially support koala, grey-headed flying-fox, greater glider, swift parrot and regent honeyeater habitat with well-connected and functioning corridors to adjacent patches of intact vegetation. The rehabilitation of the proposed offset area will provide a net gain of threatened species habitat by strategic habitat restoration. As it is adjacent to regional biodiversity corridors and conservation areas, this habitat is optimally located to maximise the projected benefits to MNES.

Upon EPBC Act Approval, the offset will be protected by the mechanism chosen by DCCEEW. Most likely this will be via a Voluntary Declaration under the *Vegetation Management Act 1999* followed by a covenant either under the *Land Act 1994* or *Land Titles Act 1994*, which will provide protection for the duration of the impact. An assessment of the suitability of the proposed offset area is provided in **Section 5**.

03. MARRAMBI CONTEXT



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill. Unless a development approval states otherwise, this is not an approved plan.

Layer Sources
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
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Updated data available at
http://qldspatial.information.qld.gov.au/catalogue/
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LEGEND

- Impact site
- Marrambi Offset Site boundaries



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FRASERS PROPERTY
NEW BEITH PTY LTD

MARRAMBI OFFSET
MANAGEMENT PLAN

0 2 4 6 8 km
Transverse Mercator
GDA 2020 | Zone 56
1:300,000
@ A3

N

RPD: 83S311739

24/10/2025

9383 E 03 Marrambi OMP3 Context A

04. MARRAMBI AERIAL



Notes:
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Layer Sources

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LEGEND

- Qld DCDB
- Marrambi Offset Site



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MARRAMBI OFFSET
MANAGEMENT PLAN

0 100 200 300 400 m
Transverse Mercator
GDA 2020 | Zone 56

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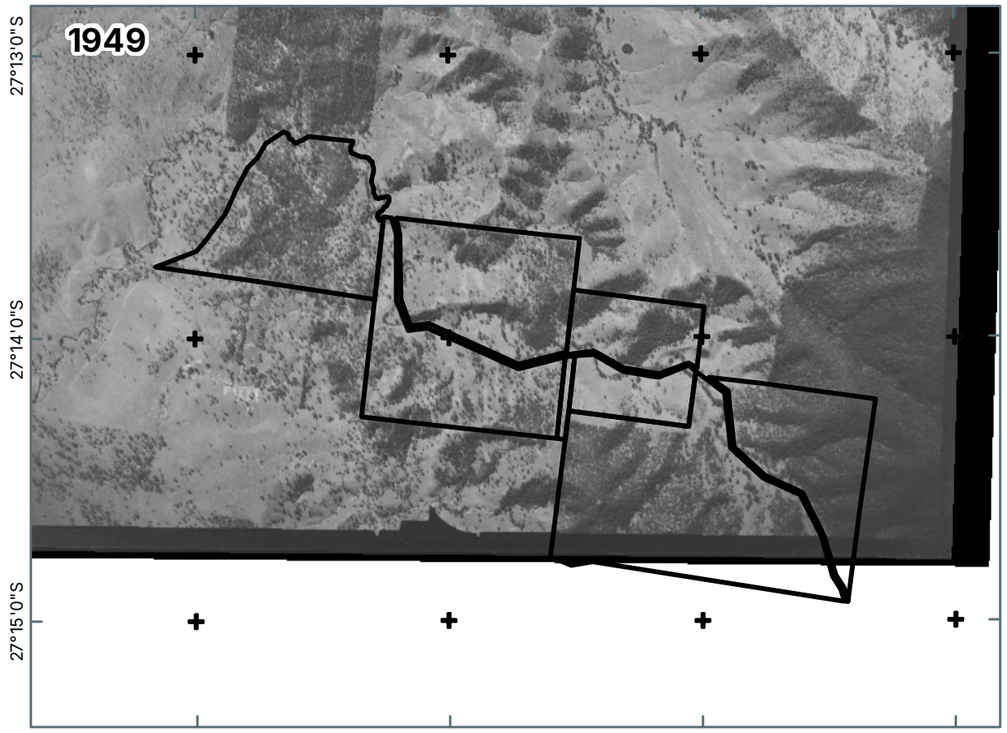
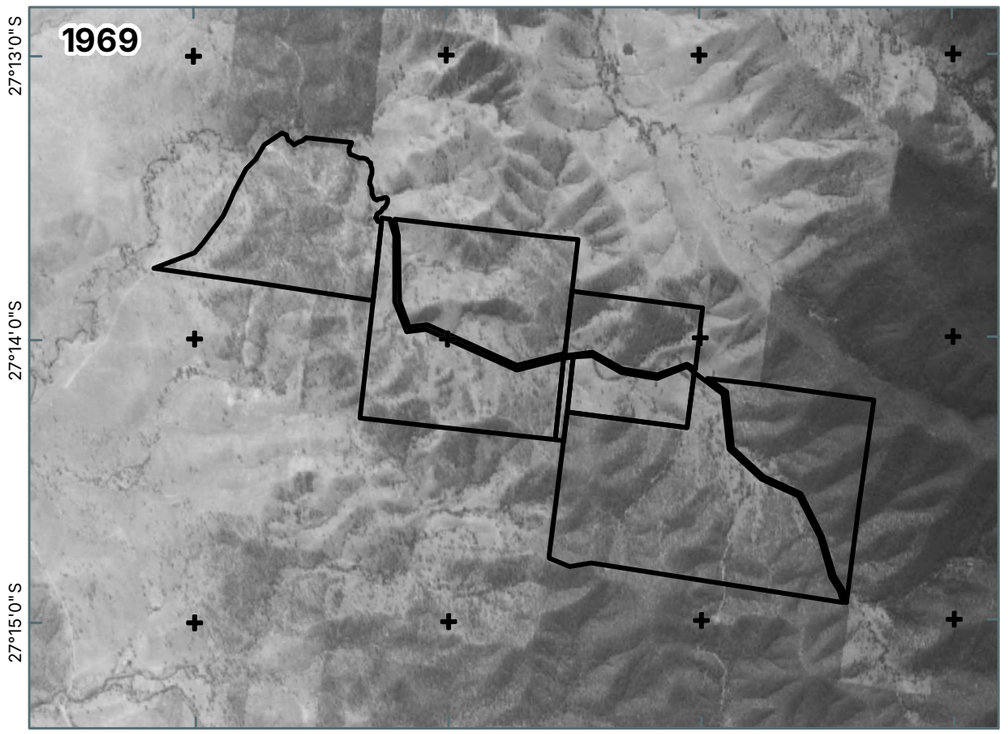
RPD: 83S311739

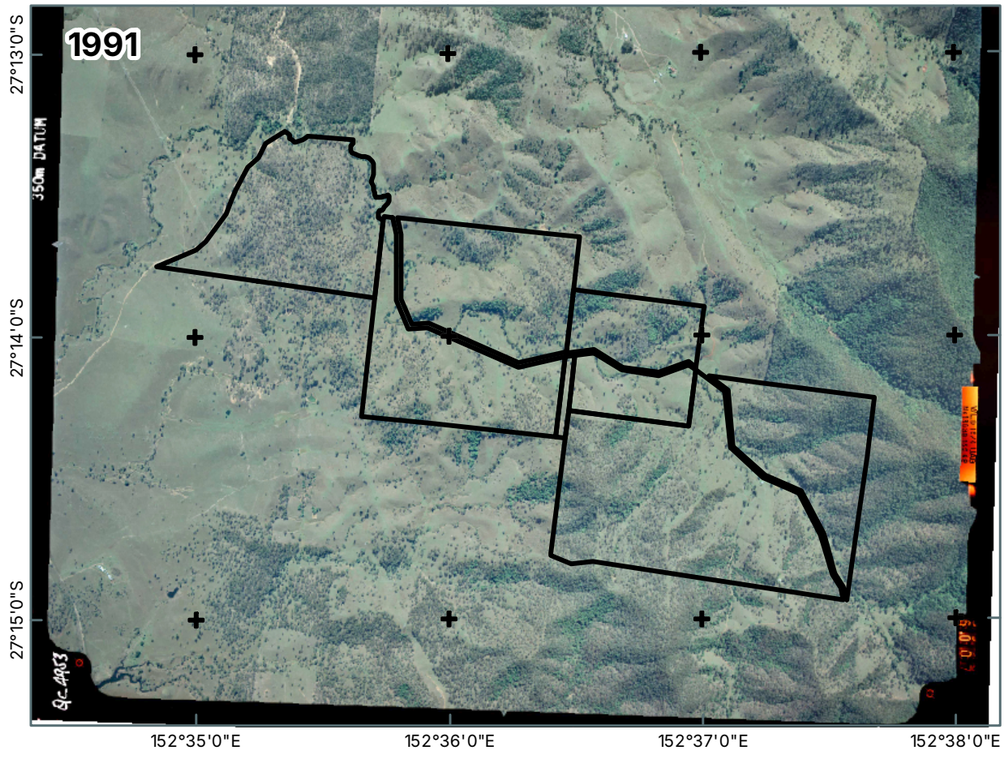
24/10/2025

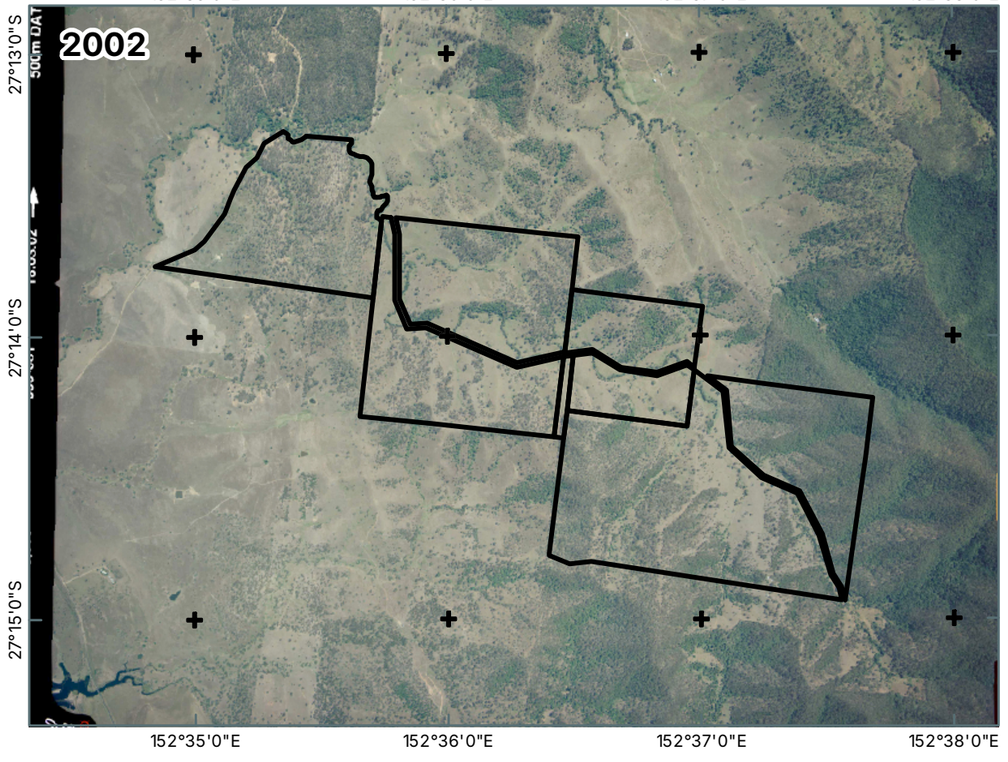
9383 E 04 Marrambi OMP3 Aerial A

05. MARRAMBI HISTORICAL AERIAL IMAGERY









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LEGEND

Marrambi Offset Site boundaries



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5. Offset Area Suitability

As detailed **Section 4**, one (1) offset area has been selected to be secured to help acquit the impacts to MNES under EPBC 2019/8389 and provide benefit additional to the required compensation for residual impacts. The suitability of the offset area is discussed within this section and considers the bioregional context of the site, ecological values, water resources and topography and existing habitat values for MNES.

5.1. Bioregional Context

Queensland is divided into 13 biogeographical areas to identify biodiversity features at a regional scale. The offset area is located in the South East Queensland (SEQ) Bioregion. The SEQ Bioregion shares its western boundary with the Brigalow Belt Bioregion and extends from the Border Ranges on the New South Wales border, north to the dry coastal corridor between Gladstone and Rockhampton (DEHP 2016). The McPherson Range borders the southern boundary of the bioregion while the Great Dividing Range is to the west. Ranges extend north south through the central region creating an altitudinal gradient from the coast. Small volcanic plugs remain in the landscape offering distinctive conditions for taxa and ecosystems (DEHP 2016). Large sand islands off the coast offer unique environments and create sheltered bays and passages within which marine and coastal plants and animals thrive (DEHP 2016). The impact area and offset area are both in the same sub-bioregion, being the Moreton Basin.

5.2. Offset Area Values

5.2.1 Regional and landscape context

The proposed offset area sits adjacent to the Biodiversity Planning Assessment regional corridor and South East Queensland Regional Plan (‘*ShapingSEQ 2023*’) regional biodiversity corridor that spans from the Noosa headland in the north, down to Mount Barney and Lamington National Park on the Queensland border (refer **Plan 6**).The corridor aims to encompass large tracts of vegetation, terrestrial connectivity, aquatic connectivity, species richness, diversity and refugia, ecosystem representation and uniqueness and climate resilience areas (Queensland Government 2017).

The regional biodiversity corridor forms part of the Great Eastern Ranges terrestrial corridor which extends from the mountains of Victoria to the Atherton Tablelands in far north Queensland (Mackay *et al.* 2010). The Great Eastern Ranges corridor provides habitat and movement for a range of species that have Federal, State and Local significance, supports significant cultural heritage values and offers scenic amenity and outdoor recreation opportunities (Mackay *et al*. 2010).

The proposed offset area will conserve freehold land surrounding the regional biodiversity corridor, extending the habitat within the adjoining legally bound environmental offset areas and that is generally available around the remnant vegetation within the regional biodiversity corridor. The proposed offset site is well positioned to provide high conservation values once rehabilitated through the management actions proposed in this OMP and contribute to the provision of protected, well-connected, and high-quality MNES habitat in the region. By assisting the natural revegetation, replanting, and removing pests, weeds, and threats, the property will provide biodiversity offsets that ensure an ecological gain on the residual impacts

resulting from the impact area which aligns with offset principle 1 of the Environmental Offsets Policy (EOP).

5.2.2 Topography

Topographically, the offset area reflects a series of slopes, with several drainage features falling away from the central Middle Creek that runs through the site (refer **Plan 7**). Elevation ranges from approximately 450 meters above sea level (AHD) at the summit in the south of the property down to approximately <145 meters AHD in the western portions of the site and gully lines. The terrain generally rises from west to east, with steeper slopes and higher elevations concentrated in the eastern sections of the property.

The impact site and offset site are also located within the same Southeast Queensland bioregion (SEQ Bioregion 12) established and mapped by the Queensland Government. Furthermore, both the impact and offset properties are located within the same sub-region of Bioregion 12 mapped under the Southeast Queensland Biodiversity Planning documents, therefore experiencing similar climatic, landform, geological, topographical, vegetation and biota patterns. It is noted that the offset area is 66 km north-west of the impact site (**Plan 7**).

5.2.3 Water resources

Five (5) waterways are mapped throughout the offset area, being Middle Creek that is Moderate (Amber) risk and four (4) Low (Green) risk Waterways for Waterway Barrier Works (WWBW) under the Queensland *Fisheries Act 1994* (**Plan 7**). Several flow paths that are undetermined features under the *Water Act 2000* are also mapped in upper reaches throughout the offset property. These features contribute to a network of gully lines that flow toward Middle Creek.

Middle Creek transverses through the centre of the offset area fed by multiple tributaries. Kilner Creek is situated to the north of the site with Lake Wivenhoe approximately 7 km to the west of the site. This graduation in topography and hydrology indicates the offset property's potential to support a range of aquatic and terrestrial ecological functions. These watercourses can be observed in **Plan 7**. Vegetation is consistent across the proposed offset area.

5.2.4 MNES habitat

The proposed offset area comprises of a mixture Category X (non-remnant), Category C (High-value Regrowth) and Category B (remnant) vegetation which is mapped with numerous regional ecosystems. Species present are indicative of the vegetation communities are described in **Table 26.**

Table 26: Regional ecosystem descriptions

Status	Regional Ecosystem	Description
Least Concern	RE 12.3.7	*Narrow fringing woodland of Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca viminalis. Other species associated with this RE include Melaleuca bracteata, M. trichostachya, M. linariifolia. North of Brisbane Waterhousea floribunda commonly occurs and may at times dominate this RE . Melaleuca fluviatilis occurs in this RE in the north of the bioregion. Lomandra hystrix often present in stream beds. Occurs on fringing levees and banks of rivers and drainage lines of alluvial plains throughout the region. (BVG1M: 16a)*

Status	Regional Ecosystem	Description
Least Concern	RE 12.9-10.2	*Corymbia citriodora subsp. variegata open forest or woodland usually with Eucalyptus crebra. Other species such as Eucalyptus tereticornis, E. moluccana, E. acmenoides and E. siderophloia may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of Lophostemon confertus (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b)*
Least concern	RE 12.11.3	*Eucalyptus siderophloia and E. propinqua open forest +/- E. microcorys, Lophostemon confertus, Corymbia intermedia, E. biturbinata, E. acmenoides, E. tereticornis, E. moluccana, Angophora leiocarpa, Syncarpia verecunda with vine forest species and E. grandis or E. saligna in gullies. Eucalyptus pilularis and E. tindaliae sometimes present e.g. mid D'Aguilar Range, Conondale Range. Occurs predominantly on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 9a).*
Least concern	RE12.11.5	*Corymbia citriodora subsp. variegata open forest to woodland, usually including Eucalyptus siderophloia/E. crebra (sub coastal ranges), E. propinqua and E. acmenoides or E. carnea. Other species that may be present and abundant locally include Corymbia intermedia, C. trachyphloia subsp. trachyphloia, Eucalyptus tereticornis, E. microcorys, E. portuensis, E. helidonica, E. major, E. longirostrata, E. biturbinata, E. moluccana and Angophora leiocarpa. Lophostemon confertus often present in gullies and as a sub-canopy or understorey tree. Mixed understorey of grasses, shrubs and ferns. Occurs on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 10b).*
Least concern	RE 12.12.5	*Open forest to woodland of Corymbia citriodora subsp. variegata, usually with Eucalyptus crebra. Other species such as Eucalyptus exserta and E. moluccana present in scattered patches or in low densities. Understorey generally grassy. Occurs on hills and ranges on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 10b).*
Of concern (pre-clear)	RE 12.12.12	*Eucalyptus tereticornis, Corymbia intermedia, E. crebra open forest to woodland. Other species present can include Eucalyptus melanophloia, Corymbia tessellaris, Angophora subvelutina, A. leiocarpa, C. clarksoniana (central and northern parts) and E. siderophloia with Melaleuca quinquenervia, Lophostemon suaveolens near drainage lines in moister areas. Occurs on Mesozoic to Proterozoic igneous rocks usually on lower slopes, especially granite lowlands and basins. Contains Palustrine. (BVG1M: 9g).*

5.2.5 Current management arrangement

Presently, the proposed offset area is utilised for cattle grazing and is managed through various farming practices. This includes the use of the following management activities:

- Controlled grazing to ensure ground cover levels are maintained, subsoil moisture is retained, and pasture growth is encouraged
- Invasive and noxious weed control in grazing areas where practicable, and;

- Establishing and maintaining adequate firebreaks across the property.

5.2.6 Current Threats

The offset property contains a number of agricultural land uses, which attracts threats to both livestock and native wildlife. The major and obvious threat within the offset area and broader offset property is feral dogs. The SRC lists feral dogs as abundant and widespread throughout the Somerset region with wild dogs (*Canis familiaris dingo*, *Canis familiaris dingo* X *Canis familiaris*, *Canis familiaris*) listed as declared pest animals by SRC. The SRC website documents that wild dog numbers are at an all-time high across Somerset Regional Council area. Further, residents are increasingly engaged in raising livestock and poultry, resulting in a readily available food sources for wild dogs.

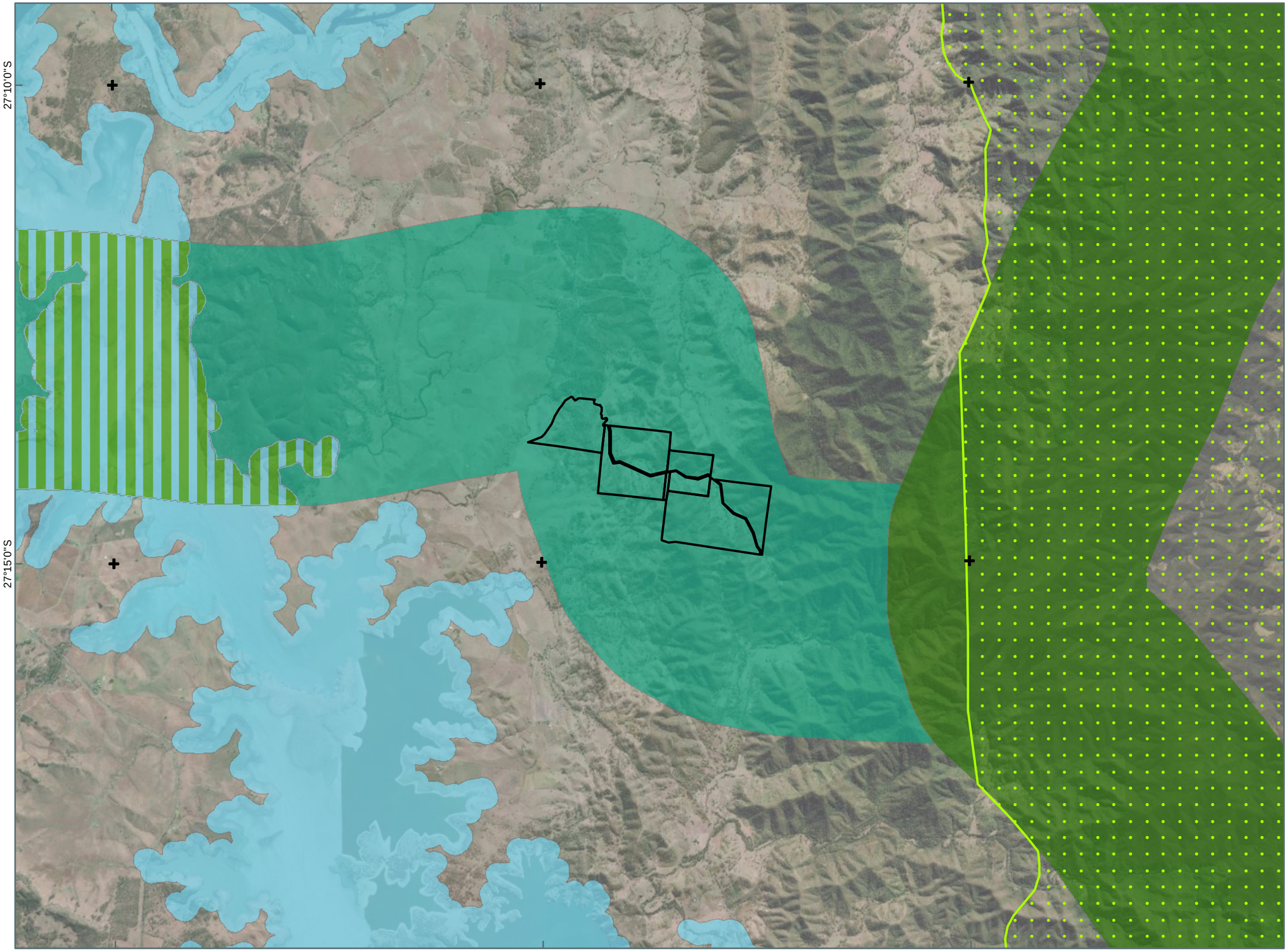
In addition, *Canis familiaris* (wild dog), *Cervus elaphus* (Red deer) and *Vulpes vulpes* (European foxes) are confirmed to occur within the offset property. The Queensland WildNet database identifies numerous confirmed records of *Canis* sp. and/or *Canis familiaris* (wild dog), European foxes and feral cats within 20 km of the offset area, located within connected vegetation. Wild dogs are known to travel up to 20 km seeking prey with home ranges of individuals likely to overlap with the offset area.

Presently, under the Queensland *Biosecurity Act 2014*, there is the 'general biodiversity obligation' for landholders to manage biosecurity risks that are under their control and take reasonable and practical steps in doing so. To determine the extent of management and to determine if it is necessary to take reasonable and practical steps in managing the biosecurity risk, the landholder is required to assess the risk and its potential harm (*i.e.,* extensive productivity loss). Currently, the landholder does not undertake feral animal control as it is assessed under the 'general biosecurity obligation' of the *Biosecurity Act 2014*, that feral animal threat to productivity does not have a positive cost benefit to the current land use (*i.e.,* the expenditure to undertake feral animal control would not result in enough economic gain in productivity to warrant implementation).

Other threats include:

- clearing and harvesting of timber for pastoral uses,
- uncontrolled wildfire;
- barbed wire; and
- significant weed infestations, in particular, *Lantana camara*.

06. SOUTH EAST QUEENSLAND BIODIVERSITY CORRIDORS



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LEGEND

- Qld DCDB
- Marrambi Offset Site
- SEQ Regional Plan 2017 - regional biodiversity corridor

Qld Biodiversity Planning Assessment

- State (Riparian)
- State (Riparian/Terrestrial)
- State (Terrestrial)
- Regional (Terrestrial)



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GDA 2020 | Zone 56

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RPD: 83S311739

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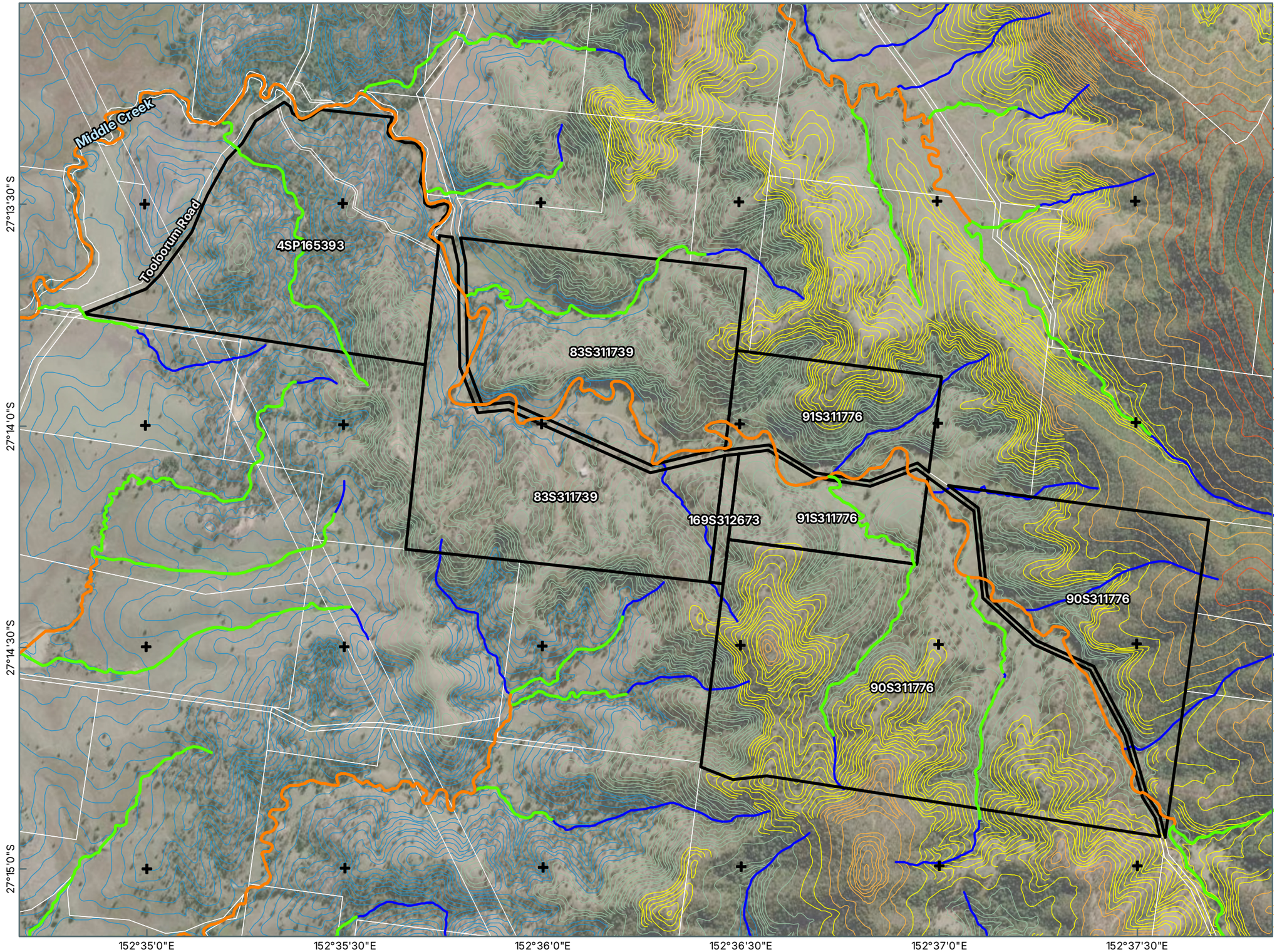
07. MARRAMBI TOPOGRAPHY AND WATER



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

5m contours

- < 145m
- 145 - 205m
- 205 - 265m
- 265 - 350m
- 350 - 450m
- Water Act - Undefined feature

DAF Waterways

- Low risk
- Moderate risk



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5.3. Suitability Analysis – Environmental Offset Policy

The objective of this OMP is to outline appropriate management actions to achieve the offset outcomes specified within the EPBC Act and provide an overall improved conservation outcome and net gain in Koala habitat, thereby ensuring the long-term viability of this species. **Table 27** lists the principles of the EPBC Act EOP and describes how the proposed offset has been developed to adhere to these principles.

Table 27: Offset suitability analysis – Environmental Offsets Policy

EOP Requirements	Delivery
Suitable offsets must:	
Deliver an overall conservation outcome that improves or maintains the viability of the protected matter	The offset area will directly contribute to the ongoing viability of the MNES. Protection and management of the offset area in accordance with this OMP aims to deliver an overall conservation and net gain in MNES habitat. Prior to the impact, the offset area was not protected or managed for conservation outcomes. This OMP and management actions within will support regeneration and restoration of habitat, contributing to a connected corridor with reduced threats. In doing so, the OMP aims to encourage the use of restored and new areas of habitat through providing increased numbers and area of MNES food, foraging and shelter trees, removal of weeds and reduction in predators and other threats. The proposed offset aims to contribute to the resilience of the target MNES by increasing landscape connectivity provided through the protection of the offset properties.
Be built around direct offsets but may include other compensatory measures	The offset is built around direct offsets and easily compensates for the potential impact. The offset area is to be legally secured for conservation purposes prior to the impact occurring and will endure for the duration of the impact. Legally securing and managing the offset area in accordance with this OMP protects the areas from incompatible land uses and contributes to the viability of the MNES.
Be in proportion to the level of statutory protection that applies to the protected matter	The Offset Assessment Guide (OAG) lists the probability of annual extinction of the koala, GHFF and greater glider as 0.2%, and the swift parrot and regent honeyeater as 6.8%. The use of these measurements in the OAG ensures that the appropriate level of statutory protection is applied. All threats to MNES outlined in the Department's Species Profile and Threats Database (SPRAT) and EPBC Act listing advice and documents have been addressed within this OMP.

EOP Requirements	Delivery
Be of a size and scale proportionate to the residual impacts on the protected matter	Permanent protection and management for the lifetime of the approval will deliver a conservation gain adequately compensating for the quantum impact for each matter. The total offset area for protection and management is 544.61 ha, delivering a significant proportion of the offset requirements for each MNES that, in conjunction with the separate offsets concurrently under assessment, exceeds 100% of the requirement. Management actions outlined within this OMP aim to protect and enhance MNES habitat, compensating for and exceeding habitat quality of the impact. The offset and management actions will provide: • Legally secured and long-term protection of 544.61 ha of MNES habitat. • Improvement of habitat through revegetation and natural regeneration of food, foraging and shelter trees and removal of weeds. • Contribution to a large contiguous protected habitat and biodiversity corridor with reduced threats. • Long-term reduction in threats, through the removal of incompatible land uses. • Reduced risk of MNES mortality or injury due to vehicle strike. • Reduced risk of MNES mortality or injury due to predators, through control of non-native predators, and removal of other threats such as fencing, • Reduced risk of high intensity fire through management of fuel loads. • Reduced risk of the spread of diseases and/or pathogens.

EOP Requirements	Delivery
Effectively account for and manage the risks of the offset not succeeding	Confidence in the success of the offset is high (≥75%) given the detail and intensity of the management actions outlined within this OMP. The confidence is supported by the offset area selection, design of management actions, and clear monitoring and reporting procedures. The offset area contains well-maintained access tracks that will facilitate access to high priority weed treatment areas and planting areas. Non-remnant vegetation areas across the offset area are considered to have a lower confidence level reflecting the potential risks relating to higher levels of disturbance, revegetation processes and plant stock success/failure rates, and natural events. Risks associated with the offset delivery will be mitigated and managed through the detailed management actions outlined in **Section 9**. Management actions have been drawn from offset targets which aim to protect and conserve large, connected areas of MNES habitat to support viable populations.
Be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs	Legally securing the offset area for the duration of the impact will ensure existing and future owners are prohibited from conflicting land uses, including clearing. Management beyond minimum legislative requirements is proposed across the whole area to ensure loss of habitat values does not occur through intensification of weeds causing loss of connectivity, destruction of habitat via hot, intense fires, or increased risk of mortality or injury by predator attack.
Be efficient, effective, timely, transparent, scientifically robust and reasonable	Efficient and Effective: • The offset area is large and located within a contiguous landscape of connected MNES habitat. Management actions will ensure efficient delivery of outcomes over the offset area and proactive management, monitoring and reporting will ensure response/corrective actions are timely and focused. • Prior to the EPBC Act process, the offset area was not protected or managed for conservation outcomes. Protection and management of the offset area in accordance with this OMP aims to deliver an overall improved conservation outcome and net gain in MNES habitat. Timely: • The non-remnant vegetation provided within the offset area allows for the achievement of immediate and long-term

EOP Requirements	Delivery
	conservation outcomes. The offset area is to be legally secured prior to the commencement clearing above at the project site. • Following the approval and implementation of this OMP, management actions outlined within **Section 9** will commence. Adaptive management processes will ensure management actions respond to technology improvements, natural events and potential risks identified in the risk assessment. Transparent: • The baseline surveys established the survey methodology to be used for the monitoring and reporting required for the lifetime of the approval. A clear monitoring and reporting framework is established within this OMP (refer **Section 6**). Monitoring and reporting of the offset area will be summarised within the Offset Area Annual Report provided by the Offset Provider which is then included in the Annual Compliance Reports for project. Scientifically robust: • The proposed offset area was assessed by qualified and experienced ecologists. Ongoing management and monitoring actions will be conducted in collaboration with other qualified ecologists and regeneration specialists to achieve the outcomes specified within the EPBC Act approval and this OMP. • The baseline surveys conducted for the offset area follows standard, accepted monitoring methodology and are considered scientifically robust, reliable and repeatable. This will ensure the monitoring and compliance reporting are consistent and relate back to the overall outcomes specified within the EPBC Act approval. Reasonable: • The offset is considered reasonable as the offset areas are greater than the significant residual impact on all MNES (using the OAG). • This OMP outlines appropriate management actions to achieve the offset outcomes specified within the EPBC Act approval and an overall improved conservation outcome and net gain in MNES habitat, ensuring the long-term viability of the protected matters.

EOP Requirements	Delivery
Have transparent governance arrangements including being able to be readily measures, monitored, audited and enforced	This OMP provides a detailed monitoring and reporting framework, performance criteria and corrective actions (refer **Sections 9**). These provide minimum requirements for success/failure of management actions and triggers for corrective actions. The approval holder will engage qualified and experienced consultants and specialists periodically throughout the offset delivery to ensure the offset outcomes are achieved. Section 491 of the EPBC Act makes it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. As such, engaged consultants and specialists are required to complete a declaration of accuracy in reports provided to the Department, acknowledging their responsibility and accountability for information provided to the Department. Annual Compliance Reports must be published on the approval holder's website in accordance with an EPBC Act approval and may be subject to audit by the Department by an independent auditor in accordance with section 458 of the EPBC Act, and/or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the Department's website or through the general media.

5.3.1 Recovery plans and advice

5.3.1.1 Koala

Koala Conservation Advice and National Recovery Plan

The Conservation Advice for *Phascolarctos cinereus* (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory came into effect on 12 February 2022. It lists six conservation and recovery actions that are categorised into 'supporting strategies' which provide governance to coordinate actions, led by the Australian Government in partnership with the States and Territories, and 'on-ground (direct) strategies' which relate to improving habitat quality and restoration, implemented at the site level.

The impact and offset are considered to be consistent with the on-ground strategies detailed in the Conservation Advice and recovery Plan:

- Strategy 3: Increase habitat protection
- Strategy 5: Strategic habitat restoration

- Strategy 6: Active metapopulation management

Strategy 3: Increase habitat protection

Land-use change is the most significant threat to the Koala through habitat loss, fragmentation, and degradation. Increasing the total area of protected, connected, quality koala habitat is important to protect and recover koala populations.

The proposed offset area will create a net gain of Koala habitat, with improved habitat quality, connectivity, and longevity over the impact area. The eventual dedication of the offset site will protect this gain in koala habitat in perpetuity, securing it from the threat of land-use change or increases in the intensity of current grazing practices.

Strategy 5: Strategic habitat restoration

Restoration increases the overall habitat available for koalas and increases the connectivity between areas of habitat to contribute to ensuring the long-term survival of koala populations. It involves restoring lost and degraded habitat to improve environmental functions.

While the project proposes to impact MNES habitat within the impact area that consists of a mixture of moderate and low value habitat as a result of high levels of disturbance and poor value habitat. At approximately two times the size of the impact area and with greater contextual suitability that will be protected, the rehabilitation of the proposed offset site will provide a net gain of MNES habitat by strategic habitat restoration in conjunction with the additional offsets. As it is surrounded by other offset sites and adjacent to a regional biodiversity corridor, this habitat is located well to maximise the projected benefit to MNES.

Strategy 6: Active metapopulation management

Metapopulation management concerns the movement of individuals and genes between populations. Consideration of metapopulation management is reflected in the design of the development, specifically the creation and rehabilitation of conservation areas to promote connectivity and koala movement within the landscape, and through the removal of hazards to koala.

Although the project will involve the removal of habitat critical to the survival of the koala, all significant residual impacts are to be compensated through the provision of land-based offsets. Proposed offsets will be located amongst koala-occupied areas of connected and resilient habitat, and within the same sub-bioregion as the impact area.

South East Queensland Koala Conservation Strategy

The South East Queensland Koala Conservation Strategy 2020-2025 (the Strategy) came into effect on 16 February 2020 and addresses the key threats facing koalas and outlines strategies to stop the decline of koala numbers and set in train the species' recovery. Issues addressed in the Strategy include:

Habitat Protection

The project will involve the removal of habitat critical to the survival of koala as defined under the EPBC Act and koala habitat area mapped under the Strategy.

All vegetation clearing under the project will continue to be governed by impact and pre-clearing management protocols including preparation of a site-based management plans and pre-start checklists.

Habitat Restoration for Koalas
The impact area is located within the approved masterplanned development which is located within the urban land-use of the Flagstone PDA. Habitat restoration is recommended within areas of connected habitat. Proposed offsets will be located in areas of connected and resilient habitat.

Threat Management
Section 5.2.6 lists the relevant threats to this species (vehicle strike, dog attack and weed invasion) and effective mitigation measures to reduce risks during the construction and operational phases of the proposed action. Mitigation measures are to be incorporated into Vegetation Clearing and Management Plans (VC&MPs) and Fauna Management Plans (FMPs). All contractors and visitors are to undertake site inductions to address threats and risks to MNES.

Improved mapping, monitoring, research and reporting
Not applicable.

Strong Community engagement and partnerships
Awareness signage and traffic calming devices will be employed to ensure motorists are aware that koalas have potential to occur in the area, making them more conscious of potentially dispersing koalas and encouraging them to maintain a low vehicle speed. The proponent will continue to be involved in perpetuity the proposed development, providing ongoing management of the action.

Partnerships and strategic coordination
Not Applicable.

The proposed action has sought to reduce impacts to the Koala through the avoid, mitigate and offset hierarchy. The proposed residential development will be entirely located within the approved masterplanned project area which is approved for development under approval ref EPBC 2019/8389. The proposed action has been sited within the referral area to reduce impacts to higher quality habitat within the State mapped Koala Habitat Areas as well as maintaining and enhancing connected habitat to the east and west. As such, only areas that are relatively fragmented and with low habitat scores and with lesser koala habitat value are proposed for removal and development. All vegetation clearing under the proposal will be government by State requirements for fauna management and any significant residual impacts are to be compensated through land-based offsets.

5.3.1.2 Grey-headed Flying-fox

Grey-headed Flying-fox National Recovery Plan
The purpose of the National Recovery Plan for the grey-headed flying-fox is to set out the management and research actions necessary to stop the decline of and support the recovery of the grey-headed flying-fox over the next 10 years. The overall objectives of the grey-headed flying-fox recovery plan are:

- to improve the grey-headed flying-fox's national population trend by reducing the impact of the threats outlined in the plan on grey-headed flying-foxes through habitat identification, protection, restoration and monitoring, and

- to assist communities and grey-headed flying-foxes to coexist through better education, stakeholder engagement, research, policy and continued support to fruit growers.

The plan addresses the key threats facing the grey-headed flying-fox and recovery objectives that are provided below with responses relevant to the proposed action:

Identify, protect and increase native foraging habitat that is critical to the survival of the Grey-headed Flying-fox

Although no roosts were identified on-site, the grey-headed flying-fox was recorded foraging within the referral area and as a fly-over. Habitat critical to the survival of the species is considered important winter and spring flowering vegetation communities. Important winter and spring vegetation communities are those that contain *Eucalyptus tereticornis, E. albens, E. crebra, E. fibrosa, E. melliodora, E. paniculata, E. pilularis, E. robusta, E. seeana, E. sideroxylon, E. siderophloia, Banksia integrifolia, Castanospermum australe, Corymbia citriodora, C. eximia, C. maculata, Grevillea robusta, Melaleuca quinquenervia* or *Syncarpia glomulifera* (Eby and Law 2008; Eby 2016; Eby et al. 2019).

Of the species listed above, *Corymbia Citriodora, Eucalyptus crebra and Eucalyptus tereticornis* were recorded within the referral area. However, as a result of historical clearing mature specimens are concentrated within mapped remnant vegetation within the referral area. The grey-headed flying-fox is a highly mobile species and the closest known active grey-headed flying-fox camp is approximately 7.9 km away.

Reviewing the above, the referral area vegetation is considered to provide foraging habitat for this species. As such, the proposed action will result in the loss of 187.09 ha of potential foraging habitat for the Grey-headed Flying-fox to facilitate the development and is considered unavoidable. Approximately 59.7 ha of vegetation, comprising of Round Mountain, Greater Flagstone Creek and a central corridor connecting these areas, will be retained as habitat and biodiversity corridors. A further 32.23 ha of the referral area will be used for open space (excluding local parks and district sports park), ensuring this vegetation will remain accessible for highly mobile species including the grey-headed flying-fox.

Identify, protect and increase roosting habitat of Grey-headed Flying-fox camps.
No roosts were identified within the comprehensive surveys of the referral area between 2018 and 2021 and the nearest known active roost site located approximately, 7.9 km south of the site. However, this species was observed as a fly over species and foraging within the referral area. Given the site's proximity to a significant roosting site, it is considered likely that the referral area provides and will continue to provide foraging habitat for this species.

Determine trends in the Grey-headed Flying-fox population so as to monitor the species' national distribution, habitat use and conservation status.
Not applicable. Mitigation measures will be implemented during construction and operation of the proposed action to reduce threats.

Build community capacity to coexist with flying-foxes and minimise the impacts on urban settlements from new and existing camps while avoiding interventions to move on or relocate entire camps.

There are no observed roosts on-site, with the nearest known roost site located approximately 7.9 km south of the site.

Increase public awareness and understanding of Grey-headed Flying-foxes and the recovery program, and involve the community in the recovery program where appropriate.
Mitigation measures, including wildlife awareness signage, speed limits and vehicle slow points, to increase awareness for this species within the community.

Improve the management of Grey-headed Flying-fox camps in areas where interaction with humans is likely.
Not Applicable. There are no observed roosts on-site, with the nearest known active roost site located approximately 7.9 km south of the site.

Significantly reduce levels of licenced harm to Grey-headed Flying-foxes associated with commercial horticulture.
Not applicable.

Support research activities that will improve the conservation status and management of Grey-headed Flying-foxes.
Not applicable.

Reduce the impact on Grey-headed Flying-foxes of electrocution on power lines, and entanglement in netting and on barbed-wire.
This species was identified foraging and as fly-overs during field surveys. No roosts were identified on-site and the nearest known roost site located approximately 7.9 km south of the referral area. As such, it is considered that the referral area vegetation provide foraging habitat for this species.

The proposed action will involve the removal of 187.09 ha of potential foraging habitat within the referral area. However, 59.7 ha of vegetation, will be retained as habitat and biodiversity corridors and a further 32.23 ha of the referral area will be used for open space (excluding local parks and district sports park), ensuring this vegetation will remain accessible for highly mobile species including the grey-headed flying-fox. Electrocution on powerlines where they occur is a risk, however, entanglement in netting and on barbed-wire is considered highly unlikely and can be managed through the implementation of mitigation measures and procedures outlined within future management documents including the VC&MP and FMP. As such, the proposed action is not considered likely to impact the recovery of this species.

5.3.1.3 Greater Glider

Greater Glider Conservation Advice

The conservation advice for *Petauroides volans* (greater glider (southern and central)) came into effect on 5th July 2022. The document combines the approved conservation advice and listing assessment for the species and provides a foundation for conservation action and further planning.

Key threats to the greater glider are frequent and intense bushfires, inappropriate prescribed burning, climate change, land clearing and timber harvesting. The primary conservation objective is that within the next three generations, the population size as well as the extent, quality and connectivity of habitat required to maintain the population will have increased.

Conservation and management priorities

Habitat loss, disturbance and modification (including fire)
In the wake of the recent bushfires, unburnt areas are to be protected to support population recovery. The referral area is not part of the recent bushfire impacts in question, nor was the species recorded on site. The proposal will result in retained habitat areas to be handed over and managed by Council in close proximity to residential development. It is not anticipated that prescribed burns undertaking by Council in this setting would impact on hollow bearing trees.

The proposal will result in the clearing of potential greater glider habitat. Notably, substantial offsets are proposed that will include potential foraging and denning habitat to be enhanced including with hollow carving and nest boxes where necessary, as well as additional regrowth and re-established future foraging and denning habitat for the species. The proposed offset is considered suitable habitat, being recognised foraging species with denning resources that are suitably connected to external habitat values.

Climate change
The impact site is not considered to be a climate change refuge. Notably, retained habitat areas will be rehabilitated to remove weeds and improve natural microclimate resources.

Invasive species (including threats from predation, grazing, trampling)
The proposed action will not introduce threats from predation that are not already present. Notably, dogs will be excluded from retained habitat areas under Council management.

Ex-situ recovery actions
Translocation is not proposed in the absence of the species. Notably, connected areas of potential foraging habitat for the species will be retained and rehabilitated on site.

Stakeholder and Community Engagement
Not applicable to the proposed action.

Survey and Monitoring Priorities
Not applicable to the proposed action.

Information and Research Priorities
Not applicable to the proposed action.

Recovery Plan
There Is not yet a recovery plan for the species.

5.3.1.4 Swift Parrot

National Recovery Plan for Swift Parrot
The National Recovery Plan for the swift parrot considers the conservation requirements of the species across its range, identifies the actions to be taken to ensure its long-term viability in nature and the parties who will undertake these actions.

The overall objective of this plan is to prevent further population decline of the swift parrot and to achieve a demonstrable sustained improvement in the quality and quantity of swift parrot habitat to increase

carrying capacity. The specific recovery objectives of the National Recovery Plan are provided below with responses relevant to the proposed action.

Objective 1: Maintain known Swift Parrot breeding and foraging habitat at the local, regional and landscape scales.
The referral area has not been identified as a priority site or region under the National Recovery Plan. This species was not recorded during field surveys and mature key tree species were relatively limited within the referral area and of sub-optimal foraging status.

Roost-tree requirements in mainland Australia are likely similar to nest-tree requirements in Tasmania. Nest-tree suitability has been shown to increase with increasing height, diameter at breast height, degree of senescence, and number of hollows (Webb et al. 2012). The referral area is compromised due to historical logging and pastoral activities. As a result, large diameter eucalypts and hollows are limited across the referral area. Aggressive competitor species were observed within the referral area during field surveys, reducing the potential for opportunistic use of on-site vegetation by this species.

Further, the closest record for this species is located approximately 10 km north of the referral area. The referral area is not considered to be used by the species.

The vast majority of potential habitat is located and protected within Regional Biodiversity Corridors under the SEQ Regional Plan.

Objective 2: Reduce impacts from Sugar Gliders at Swift Parrot breeding sites
Not applicable – the site does not support breeding habitat.

Objective 3: Monitor and manage other sources of mortality.
Not applicable. This species was not recorded during field surveys.

Objective 4: Develop and apply techniques to measure changes in population trajectory in order to measure the success of recovery actions
Not applicable. This species was not recorded during field surveys.

Objective 5: Improve understanding of foraging and breeding habitat use at a landscape scale in order to better target protection and restoration measures.
Not applicable.

Objective 6: Engage community and stakeholders in Swift Parrot conservation.
Not applicable.

Objective 7: Coordinate, review and report on recovery progress.
Not applicable

Reviewing the above, the proposed action is not considered to impact the recovery of this species.

5.3.1.5 Regent Honeyeater

National Recovery Plan for the Regent Honeyeater

The National Recovery Plan for the regent honeyeater considers the conservation requirements of the species across its range, identifies the actions to be taken to ensure its long-term viability in nature and the parties who will undertake these actions.

The overall objective of this plan is to reverse the long-term population trend of decline and increase the numbers of regent honeyeaters to a level where there is a viable, wild breeding population even in poor breeding years and to enhance the condition of habitat across the regent honeyeaters range to maximise survival and reproductive success, and provide refugia during periods of extreme environmental fluctuation.

The specific recovery objective strategies of the National Recovery Plan are provided below with responses relevant to the proposed action.

Objective 1: Improve the extent and quality of Regent Honeyeater habitat.
The referral area is not within a key breeding area under the National Recovery Plan. This species was not recorded during field surveys and suitable foraging species and specimens were relatively limited within the referral area and of sub-optimal foraging status where present.

Although there is remnant vegetation within the western portion of the site, the referral area includes non-remnant vegetation and the entire site has been subject to historical logging and pastoral activities. As a result, large diameter foraging trees are relatively limited across the referral area. Also, aggressive competitor species were observed within the referral area during field surveys, potentially reducing opportunistic use of on-site vegetation by this species.

The proposed action will directly impact sub-optimal foraging habitat (mapped remnant vegetation). However, large areas of conservation and corridors will be retained and rehabilitated on-site, providing ongoing potential foraging habitat for the species.

Further, the closest record for this species is located approximately 4.2 km south-west of the referral area. The referral area is not considered to be optimal habitat used by the species.

Objective 2: Bolster the wild population with captive-bred birds until the wild population becomes self-sustaining
Not applicable.

Objective 3: Increase the understanding of the size, structure, trajectory and viability of the wild population.
Not applicable. This species was not recorded during field surveys.

Objective 4: Maintain and increase community awareness, understanding and involvement in the recovery program.
Not applicable. This species was not recorded during field surveys.

Reviewing the above, the proposed action is not considered to impact the recovery of this species.

6. Baseline Surveys

6.1. Offset Area Baseline Surveys – Methodology

Baseline field surveys to determine habitat quality for MNES were completed on 24th February 2025 through to 16th July 2025. Refer to **Table 28** and the subsections below for specific details on survey dates for each method applied.

Table 28: Offset area baseline field surveys methods summary

Date	Methods
24th February 2025	Initial site overview - confirming vegetation communities, Camera set up (14 cameras – baited with chicken necks)
25th February 2025	MHQA transects (T1 - T5), GHFF stem counts, SATs (4)
26th February 2025	MHQA transects (T6 - T10), GHFF stem counts, SATs (3)
27th February 2025	MHQA Transects (T11-T14), GHFF stem counts, SAT (4)
28th February 2025	MHQA Transects (T15-T19), GHFF stem counts, SAT (2)
5th March 2025	MHQA Transects (T20, T21) Observation Points 1 & 2; Move camera out of creek to top bank (due to cyclone Alfred)
17th March 2025	MHQA Transects (T22- 25) + Tree Plot =/>300mm DBH and / or with hollows
18th – 21st March 2025	Tree Plot =/>300mm DBH and / or with hollows + weed mapping
24th March 2025	Rebait and change 14 camera batteries (2nd deployment)
25th March 2025	MHQA Transects (T26- 28)
2nd April 2025	MHQA Transects (T29 - 30), GHFF stem counts, SATs (2)
7th – 8th April 2025	Tree Plot =/>300mm DBH and / or with hollows + weed mapping
9th April 2025	MHQA Transects (31), Tree Plot =/>300mm DBH and / or with hollows + weed mapping
11th April - 6th June	Tree Plot =/>300mm DBH and / or with hollows + weed mapping
11th June 2025	Rebait and change 14 camera batteries (3rd deployment)
17th June – 13 July 2025	Tree Plot =/>300mm DBH and / or with hollows + weed mapping
14th July 2025	Tree Plot =/>300mm DBH and / or with hollows + weed mapping + final camera collection
15th – 16th July 2025	Tree Plot =/>300mm DBH and / or with hollows + weed mapping

6.1.1 Habitat - MNES

The MNES habitat quality assessment methods utilising the MHQA and FHA methodology used for the impact area (described in **Section 3.3**) were also applied to the offset area. Site condition within the offset area was assessed using the BioCondition method as recommended under the Queensland environmental offsets framework within the two (2) AUs identified in the offset area. These are summarised in **Table 29** and shown in **Plan 8**. Site condition was measured through the completion of MHQA transects (refer also **Plan 9**). Assessment at multiple locations per assessment unit is necessary where possible to measure vegetation condition at representative locations across the spatial extent of each assessment unit.

Site condition was assessed through the completion of a total of thirty-one (31) MHQA transects within the offset area with at least two (2) transects in each AU.

Table 29: Summary of assessment units and MHQA transects – offset area

AU	Vegetation community	Area (ha)	MHQA transect
AU1	Remnant - RE 12.12.5	87.80 ha	Transect 2, 3, 6
AU2	Remnant - RE12.11.5/12.11.3	50.15 ha	Transect 26, 27 and 31
AU3	High Value Regrowth - RE12.3.7	8.91 ha	Transect 22 and 28
AU4	Non-remnant - Preclear RE 12.9-10.2	19.65 ha	Transect 11, 12
AU5	Non-remnant - Preclear RE 12.12.12	3.29 ha	Transect 19, 25
AU6	Non-remnant - Preclear RE 12.12.5	142.49 ha	Transect 4, 7, 14,15,17
AU7	High Value Regrowth - RE12.11.5/12.11.3	13.52 ha	Transect 29 and 30
AU8	High Value Regrowth - RE12.12.5	145.58 ha	Transect 1, 13,16,18
AU9	High Value Regrowth - RE 12.9-10.2	53.93 ha	Transects 5, 10, 21 and 23
AU10	Non-remnant - Preclear RE 12.3.7	12.68 ha	Transect 20 and 24
AU11	Non-remnant - Preclear RE 12.11.5/12.11.3	6.61 ha	Transect 8 and 9

6.1.2 Spot Assessment Technique surveys

Baseline Koala activity levels were determined through utilising the Spot Assessment Technique (SAT) (Phillips et al. 2011). The SAT method is an industry recognised technique for identifying presence/absence of koala at a site and is specified as an appropriate survey method in the EPBC Act Referral Guidelines for the Vulnerable Koala. Results from the SAT surveys are compared against current available published scientific literature to identify an estimated koala carrying capacity (stocking rate) to be determined. A total of twenty-three (23) SAT surveys were completed across the offset area in conjunction with the MHQA transects to target presence of koala (**Plan 8** and **Plan 9**).

6.1.3 Habitat Mapping

All trees over 300 mm DBH were plotted throughout the offset area with a handheld GPS device (Trimble) to record locations (accuracy ±1 m), and the following parameters of each tree specimen were recorded:

- tree species, via a combination of observations of the gum nuts, buds, leaves, bark and growth form;
- diameter of the trunk of the tree measured using the standard method of Diameter at Breast Height (DBH);
- height of the tree estimated in metres from ground;
- canopy spread estimated in metres from ground;
- health assessment (canopy, trunk); and
- habitat values (for example, presence and/or number of hollows, nests, termites, scratches and scats).

The entire tree trunk and branches are visually surveyed from ground for habitat values including hollows. The spread of trees over 300 mm DBH was mapped to indicate foraging habitat for the species as per the conservation advice. Hollow bearing trees were plotted across the entire offset site.

6.1.4 Weed Mapping

Based on MHQA transects and general observations the primary weed species located within the offset area is *Lantana camara* (Lantana) which is identified as a WONS. An indication of the relative cover of weeds for the offset area was applied at the GIS scale as presented in **Plan 10**.

Notably, the Offset Provider is developing a Weed Management Plan for the Offset property, which ensures consistent and property-wide approaches to weed monitoring and management. It will include a quantitative and repeatable weed cover monitoring method that will enable assessment against the completion criteria "≤5% weed cover by year 10". It will also include photo-monitoring requirements as well as management actions to be employed. WONS mapping will include:

- Preparation of a Weed Management Plan by the Offset Provider in Year 1 of the offset
- Implementation of the Weed Management Plan by the Offset Provider including baseline weed cover surveys and photo-monitoring in Year 1 of the offset (in accordance with the method outlined in the Weed Management Plan)

6.1.5 Motion-triggered camera trapping

Surveys for non-native vertebrate pest presence, primarily targeting wild dogs which are the primary threat to koala, were completed via the use of infrared motion-triggered camera trapping. Camera trapping involves setting up a fixed digital camera to capture images or video of animals that pass in front of a camera with an infrared trigger. This survey technique identifies fauna activity beyond the scope of direct observational studies and with the absence of potential observer impacts. The method for determining camera locations utilised the standard grid-based system which is common practice on sites where access is good. In lieu of any published guidelines from DCCEEW for monitoring wild dogs, the number of cameras/distances between cameras was driven by several case studies and existing guidelines. These documents state a suggested distance of between 500 m and 1000 m between camera locations, given the vast home range and mobility of wild dogs. For this assessment the lower threshold of 500 m was utilised to improve the chance of wild dog detection within the proposed offset area.

Once the camera locations were determined, cameras were directed to animal trails which are more likely to support fauna. Heavy, loose vegetation was avoided to reduce the chance of false triggering, and the camera was aimed to avoid sun shining directly onto the lens. Cameras were attached 30-100 cm from the ground on a tree or post and directed towards landscape features.

Fourteen (14) camera traps were installed across the proposed offset area and immediate surrounds for a minimum period of 14 nights with three (3) separate rounds of deployment from 24 February 2025 to 14 July 2025, baited with chicken necks to target wild dogs and other known potential threats to MNES in the broader area. Refer to **Plan 9** for the location of cameras and **Table 30 and Table 31** for a description of camera deployment locations.

Table 30: Fauna camera summary (February 2025 – July 2025)

Camera	'Name'	1st Deployment	Baited	2nd Deployment	Re-Baited	3rd Deployment	Re-Baited	Latitude	Longitude
Camera 1	Beetle	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.228669 °	152.58194°
Camera 2	Daisy	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.225625°	152.588861°
Camera 3	Shark	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.222558°	152.589206°
Camera 4	Owl	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.226729°	152.591413°
Camera 5	Turtle	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.228732°	152.596723°
Camera 6	Nemo	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.232739°	152.596838°
Camera 7	Yeti	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.237318°	152.597114°
Camera 8	Cassowary	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.22957°	152.606401°
Camera 9	Bug	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.234476°	152.607781°
Camera 10	Mole	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.237951°	152.603482°

Camera	'Name'	1st Deployment	Baited	2nd Deployment	Re-Baited	3rd Deployment	Re-Baited	Latitude	Longitude
Camera 11	Possum	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.236704°	152.612126°
Camera 12	Monkey	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.234266°	152.611966°
Camera 13	Hippo	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.240465°	152.620956°
Camera 14	Frog	24.02.2025	Chicken Necks	24.03.2025	Chicken Necks	11.06.2025	Chicken Necks	-27.245963°	152.620796°

Table 31: Fauna camera locations (February 2025 – July 2025)

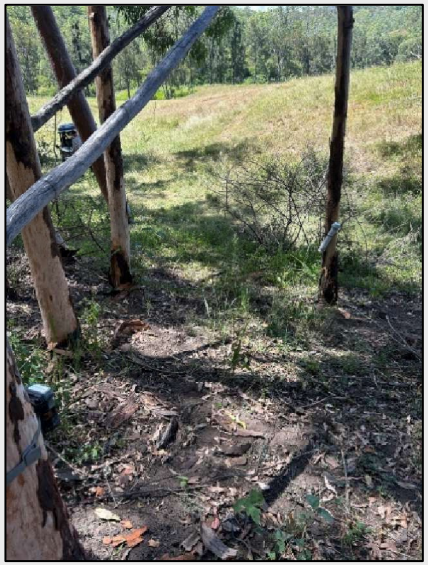
Camera	'Name'			Comments/general description
Camera 1	Beetle			Located in the southwest corner of Lot 4 on SP165393, adjacent to Tooloorum Road. Area is mapped as non-remnant vegetation utilised for cattle grazing purposes and contains scattered large *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark) trees, some of which contain various size tree hollows. The subcanopy and shrub layers are mostly absent with a ground layer containing both introduced and native species.
Camera 2	Daisy			Camera is located towards the centre of Lo t 4 on SP165393 within vegetation mapped as High Value Regrowth containing Least Concern Regional Ecosystem 12.9-10.2, dominated by *Corymbia citriodora* (Spotted Gum). The camera is located near a constructed dam, with the area dominated by native species.

Camera	'Name'			Comments/general description
Camera 3	Shark			Camera is located towards the northern portion of Lot 4 on SP165393 within vegetation mapped as High Value Regrowth containing Least Concern Regional Ecosystem 12.9-10.2, dominated by *Corymbia citriodora* (Spotted Gum). The camera in an area with limited weeds.
Camera 4	Owl			Camera is located towards the centre of Lot 4 on SP165393 within vegetation mapped as High Value Regrowth containing Least Concern Regional Ecosystem 12.9-10.2, dominated by *Corymbia citriodora* (Spotted Gum). The camera is located near a constructed dam, with the area dominated by native species.

Camera	'Name'			Comments/general description
Camera 5	Turtle			Camera is located towards the centre of Lot 83 on S311739 within a mapped moderate waterway near the intersection of a low value waterway. Vegetation is mapped as containing non-remnant vegetation however the waterway contains elements of Least Concern Regional Ecosystem 12.3.7 including *Casuarina Cunninghamiana* (River She Oak). Camera was moved out of the creek due to severe weather events from the 5th of March 2025, to top of bank.
Camera 6	Nemo			Camera is located on the southern side of a moderate value waterway towards the centre of Lot 83 on S311739. The vegetation is mapped as High Value Regrowth containing Least Concern RE12.12.5 however it is noted that elements of Least Concern RE12.3.7 are observed along the mapped waterway.

Camera	'Name'			Comments/general description
Camera 7	Yeti			Camera is located towards the southwest corner of Lot 83 on S311739 within vegetation mapped as containing High Value Regrowth containing Least Concern regional ecosystem 12.12.5. Canopy is dominated in this area by *Corymbia citriodora* (Spotted Gum) with scattered *Corymbia tessellaris* (Morton Bay Ash).
Camera 8	Cassowary			Camera is located towards the northeast portion of Lot 83 on S311739 within vegetation mapped as containing High Value Regrowth containing Least Concern regional ecosystem 12.12.5. Canopy is dominated in this area by *Corymbia citriodora* (Spotted Gum) with scattered Eucalyptus crebra (Narrow Leaf Ironbark). Site is mid slope area with exposed surface rocks.

Camera	'Name'			Comments/general description
Camera 9	Bug			Camera is located along the sites access track within road reserve directly north of Lot 169 on S312673. Vegetation is mapped as non-remnant with the camera focused along a fence at a cattle grate.
Camera 10	Mole			Camera is located towards the southeast corner of Lot 83 on S311739 within vegetation mapped as containing High Value Regrowth containing Least Concern regional ecosystem 12.12.5. Canopy is dominated in this area by *Corymbia citriodora* (Spotted Gum) with scattered *Corymbia tessellaris* (Morton Bay Ash).

Camera	'Name'			Comments/general description
Camera 11	Possum			Camera is located towards the south boundary of Lot 91 on S311776 within vegetation mapped as containing High Value Regrowth containing Least Concern regional ecosystem 12.12.5. Canopy is dominated in this area by *Corymbia citriodora* (Spotted Gum) with scattered *Eucalyptus crebra* (Narrow Leaf Ironbark). Camera is located toward the lower slopes adjacent to cleared paddocks utilised for cattle grazing.
Camera 12	Monkey			Camera is located along the access track adjacent to a low value waterway within mapped remnant Least Concern Regional Ecosystem 12.12.5 in Lot 90 on S311776. Area is highly disturbed due to weed invasion. Canopy trees include *Corymbia citriodora* (Spotted Gum), *Lophostemon confertus* (Brush Box) and *Corymbia intermedia* (Pink Bloodwood).

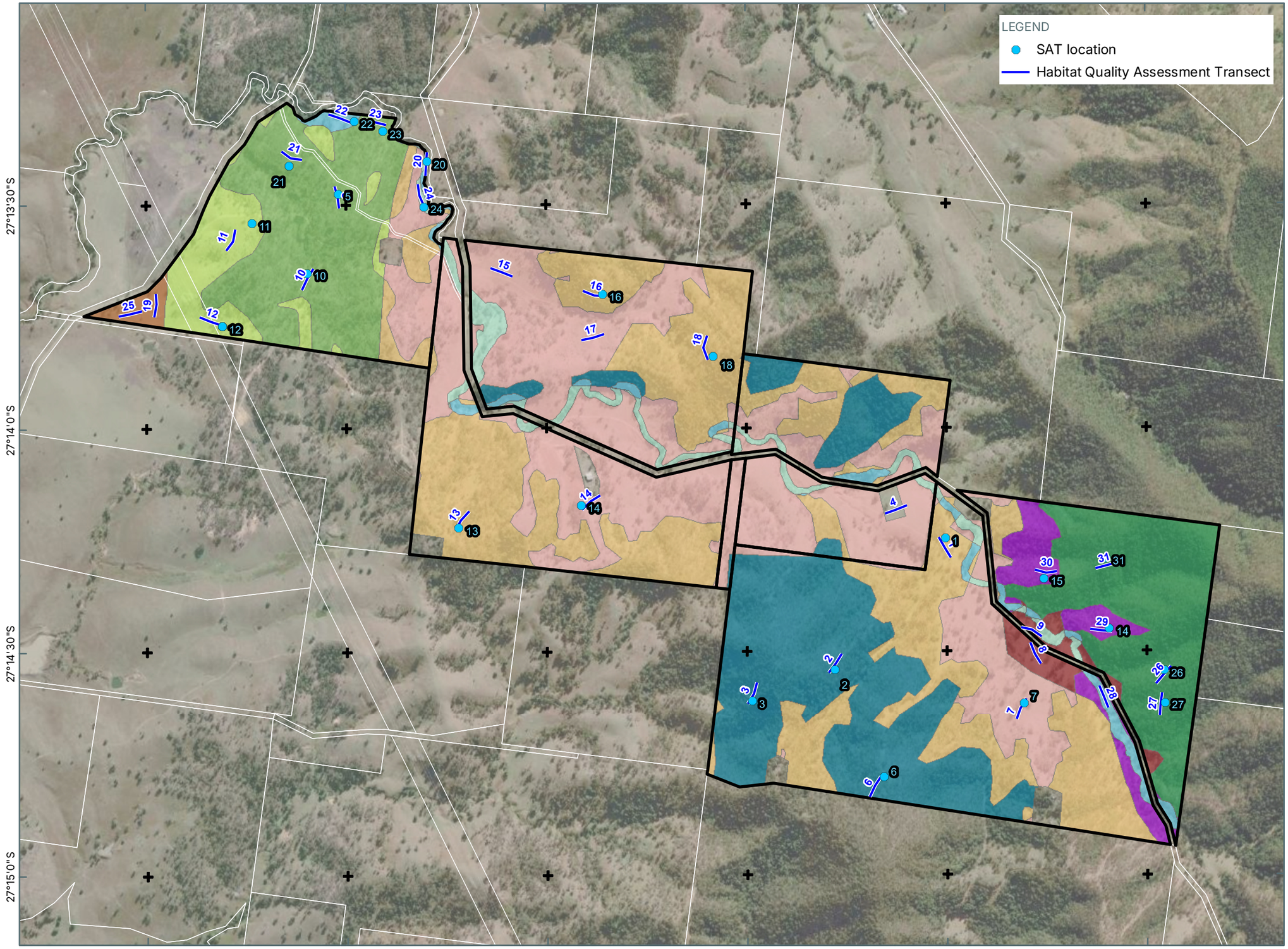
Camera	'Name'			Comments/general description
Camera 13	Hippo			Camera is located towards the centre of Lot 90 on S311776 with non-remnant vegetation. The area is adjacent to a mapped moderate waterway and areas mapped as both remnant and High Value Regrowth vegetation containing Least Concern Regional ecosystem 12.11.5 and 12.11.3.
Camera 14	Frog			Camera is located towards the southeast corner of Lot 90 on S311776 within vegetation mapped as non-remnant. Tree species in the area were dominated by *Corymbia citriodora* (Spotted Gum) and representative of Least Concern RE12.12.5.

6.1.6 Relative Abundance Index

The results of the motion-triggered camera detection survey (recorded species and number of occurrences over days of camera deployment) were utilised to provide relative abundance of non-native vertebrate pest species over the proposed offset area, reducing bias and increasing repeatability.

A relative abundance index (RAI) is then calculated for feral animal abundance, using the formula **RAI= D/TN x 100**, where D is number of individual detections and TN is the total number of camera-trap nights (all cameras combined). This methodology ensures that the surveys are representative of the entire area and are repeatable for future monitoring requirements. A higher RAI indicates a higher pest presence.

08. MARRAMBI ASSESSMENT UNITS



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha]
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [142.49 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]



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MARRAMBI OFFSET
MANAGEMENT PLAN

0 100 200 300 400 m
Transverse Mercator
GDA 2020 | Zone 56

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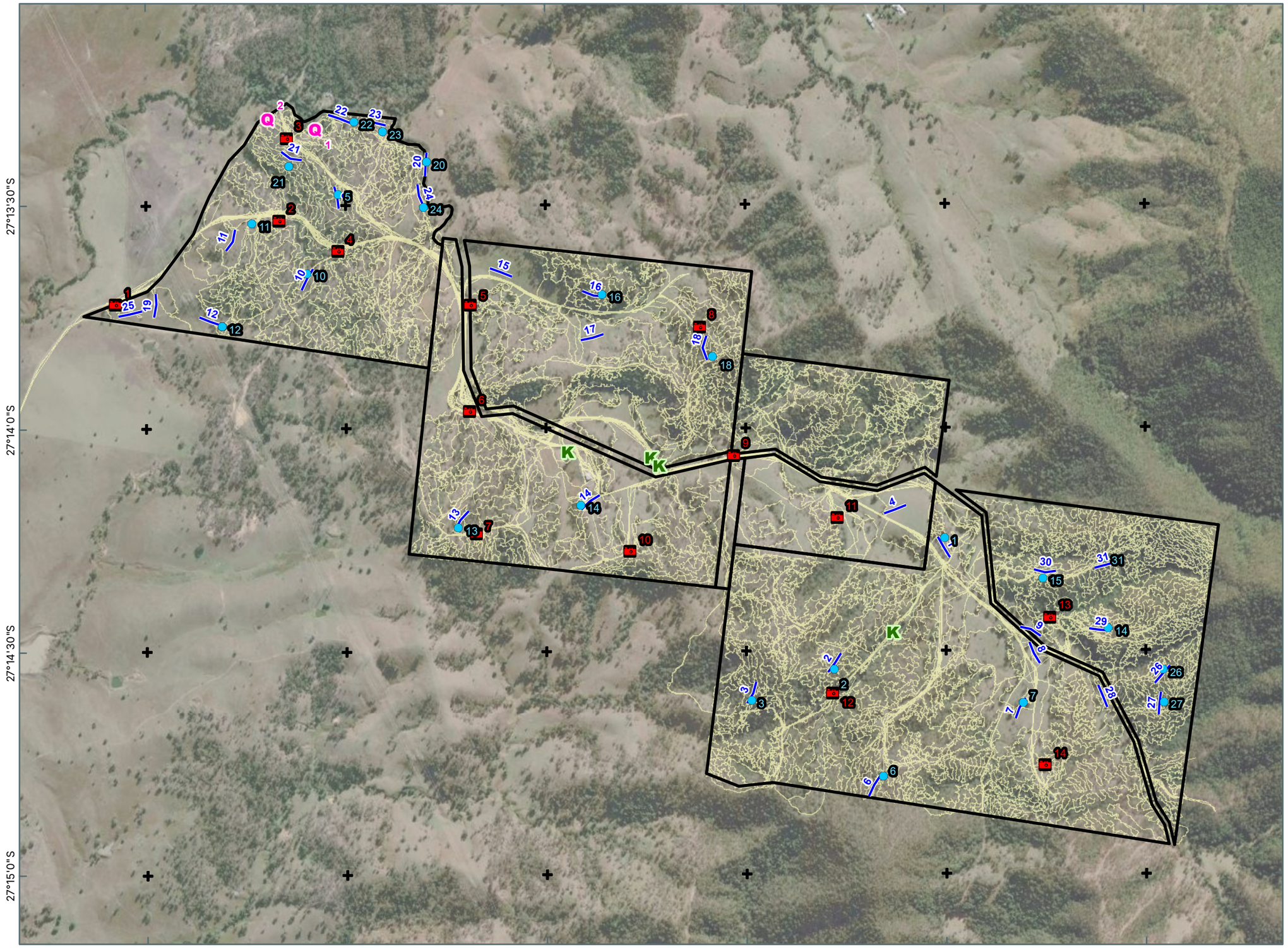
RPD: 83S311739

24/10/2025

9383 E 08 Marrambi OMP3 AUs B

09. MARRAMBI FIELD SURVEY



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LEGEND

- Marrambi Offset Site boundaries
- Habitat Quality Assessment Transect
- SAT location
- Quarternary Survey
- Motion sensor camera
- Koala Sighting
- GPS Tracklog



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MARRAMBI OFFSET
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RPD: 83S311739

24/10/2025

9383 E 09 Marrambi OMP3 Field Survey A

6.2. Offset Area Baseline Assessment Results

6.2.1 Assessment unit description

6.2.1.1 Assessment Unit 1

Assessment Unit 1 (AU1) is mapped as containing remnant vegetation associated with the 'Least Concern' Regional Ecosystem 12.12.5, described as *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark) woodland occurring on Mesozoic to Proterozoic igneous rocks. This community is typically classified as a sparse structure category, with a crown cover of approximately 20–50% and trees reaching heights of 10–30 metres. Transect 2 is located towards the upper northeast facing slope. Recent evidence of fire in the lower canopy of the trees approximately six meters in height. Transect 2 alignment is 212°SW with the average tree height within T1 canopy being 21.15 m and the average tree height of T2 subcanopy being 8.85 m. The average trunk diameter of trees searches within the SAT survey associated with Transect 2 is 194 mm. Transect 3 is located towards the upper northeast facing slope. Introduced species in the form of *Lantana camara* (lantana) is dominated within the lower slopes. Transect 3's alignment is 15°N with the average tree height within T1 canopy being 21 m and the average tree height of T2 subcanopy being 11 m. The average trunk diameter of trees searches within the SAT survey of transect 3 is 194 mm. Transect 6's alignment is 206°SW. The average tree height within T1 canopy is 22 m with the average tree height of T2 subcanopy being 10 m. The average trunk diameter of trees searches within the SAT survey is 154mm. **Photo set 1** shows the vegetation present within this AU.



Photo set 1: AU1 – Remnant RE 12.12.5 (both – transect 2)

6.2.1.2 Assessment Unit 2

Assessment Unit 2 (AU2) is mapped as containing remnant vegetation with a composite 'Least Concern' Regional Ecosystem containing RE12.11.5 and RE12.11.3. 'Least Concern' Regional Ecosystem 12.11.5 described as *Corymbia citriodora* woodland to open forest +/- *Eucalyptus siderophloia/Eucalyptus crebra*, *Eucalyptus carnea, Eucalyptus acmenoides, Eucalyptus propinqua* on metamorphics +/- interbedded volcanics. Regional ecosystem 12.11.3 is described as *Eucalyptus siderophloia, Eucalyptus propinqua open forest +/- Eucalyptus microcorys, Lophostemon confertus, Corymbia intermedia, Eucalyptus acmenoides* open forest on metamorphics +/- interbedded volcanics. Transect 26 is consisted of open paddock with weed densities increased towards the lower slopes and steep gully lines. Transect

alignment is 356°N. The vegetation within Transect 31 closely represents RE 12.11.5 as it is dominated by *C. citriodora* and *E. crebra*. Some species present, such as *C. tessellaris*, are not characteristic of either RE but are located as such. The understory is largely consisted of dense invasion of Lantana throughout the site, evidencing disturbance. **Photo set 2** shows the vegetation present within this AU.



Photo set 1: AU2 - Remnant RE 12.11.5 / 12.11.3 (left – Transect 26) (right – Transect 31)

6.2.1.3 Assessment Unit 3

Assessment Unit 3 (AU3) was rectified on-ground as containing non-remnant regrowth vegetation representative of 'Least Concern' Regional Ecosystem 12.3.7 described as *Eucalyptus tereticornis, Casuarina Cunninghamiana* subsp. *Cunninghamiana* +/- *Melaleuca* spp. fringing woodland. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Transect 22 is within a waterway dominated by *Eucalyptus tereticornis* with a limited subcanopy and shrub layer. Transect 28 is within a waterway dominated by *Casuarina Cunninghamiana*. Transect alignment is 129°SE. **Photo set 3** shows the vegetation present within this AU.



Photo set 3: AU3 – Regrowth RE 12.3.7 (left – Transect 22) (right – Transect 28)

6.2.1.4 Assessment Unit 4

Assessment Unit 4 (AU4) is mapped as containing non-remnant vegetation with preclear mapping once containing Regional Ecosystem 12.9-10.2 described as *Corymbia citriodora* +/- *Eucalyptus crebra* open forest on sedimentary rocks. Transect 11 displays an open forest community in a mid-dense community structure with a canopy density of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The canopy is absent and the subcanopy recorded one tree being 11 meters in height. The plot alignment of transect 11 is 158°SW and the area has been cleared for grazing purposes with scattered *Corymbia tessellaris* and *Eucalyptus crebra* regrowth outside of the transect alignment. The plot alignment of Transect 12 is 158°SW. This area has been cleared for grazing purposes with scattered *Corymbia tessellaris* and *Eucalyptus crebra* regrowth, but outside of transect area. **Photo set 4** shows the vegetation present within this AU.



Photo set 4: AU4 – non-remnant - Preclear RE 12.9-10.2(left – Transect 11) (right- Transect 12)

6.2.1.5 Assessment Unit 5

Assessment Unit 5 (AU5) is mapped as non-remnant vegetation once containing 'Of Concern' Regional Ecosystem 12.12.12 described as *Eucalyptus tereticornis, Corymbia intermedia, Eucalyptus crebra +/- Lophostemon suaveolens* woodland on Mesozoic to Proterozoic igneous rocks. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Transect 19 and 25 are within an open paddock area utilised for cattle grazing with some scattered large *Eucalyptus tereticornis* throughout. Transect 19 alignment is 47°North. **Photo set 5** shows the vegetation present within this AU.



Photo set 5: AU5 – non-remnant – Pre- clear RE 12.12.12 (left – Transect 19) (right- Transect 25)

6.2.1.6 Assessment Unit 6

Assessment Unit 6 (AU6) is mapped as containing non-remnant vegetation with preclear mapping once containing 'Least Concern' Regional Ecosystem 12.12.5, described as *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark) woodland occurring on Mesozoic to Proterozoic igneous rocks. This community is typically classified as a sparse structure category, with a crown cover of approximately 20–50% and trees reaching heights of 10–30 metres. Only two established trees are recorded in the transect 4 locations with the balance area cleared for cattle grazing. No dominant species or recruitment recorded. Transect 4's alignment is 62°NE. Transect 7, 14 and 15 contain scattered native trees within open paddock areas. Transect 7's alignment is 190°S, transect 14 is 2°N and transect 15 is 358°N. **Photo set 6** shows the vegetation present within this AU.



Photo set 6: AU6 – non-remnant - Pre-clear RE 12.12.5 (left – transect 4) (right – transect 14)

6.2.1.7 Assessment Unit 7

Assessment Unit 7 (AU7) is mapped as high-value regrowth of the composite Regional Ecosystem containing the Least Concern RE 12.11.5 and RE 12.11.3. RE 12.11.5 is described as a *Corymbia citriodora* open forest woodland on metamorphic and interbedded volcanics (Landzone 11), usually with *Eucalyptus siderophloia/E. crebra, E. propinqua, E. acmenoides* or *E. carnea*. The subcanopy often consists of *Lophostemon confertus* in gullies and understory a mixture of grasses, shrubs and ferns. RE 12.11.3 is described as a *Eucalyptus siderophloia* and *E. propinqua* open forest on Landzone 11, with *E. microcorys, Lophostemon confertus, Corymbia intermedia* or *E. acmenoides*. In gullies, vine thicket species and *E. grandis* or *E. saligna* are present. Develops dense vine thicket in absence of fire, prone to invasion to *Lantana camara*. The vegetation in transect 29 closely represents RE 12.11.5 as it is dominated by *C. citriodora*. Some species present, such as *C. tessellaris* are not characteristic of either RE, although *M. azedarach* is often associated with dry rainforest ecosystems. The understory within this AU is largely consisted of dense invasion of Lantana throughout the site, evidencing disturbance. **Photo set 7** shows the vegetation present within this AU.



Photo set 7: AU7 – Regrowth RE 12.11.5/12.11.3 (left – transect 29) (right- transect 30)

6.2.1.8 Assessment Unit 8

Assessment Unit 8 (AU9) is mapped as containing High Value Regrowth vegetation associated with the 'Least Concern' Regional Ecosystem 12.12.5, described as *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark) woodland occurring on Mesozoic to Proterozoic igneous rocks. This community is typically classified as a sparse structure category, with a crown cover of approximately 20–50% and trees reaching heights of 10–30 metres. Transect 1 is positioned on the upper east-facing slope of the site, within a paddock managed for cattle grazing with shrubs largely absent due to land use. Transect 13 consists of *Corymbia citriodora* as the dominant species with scattered *Corymbia tessellaris*. *Lantana camara* also is observed throughout the centre of this Transect. Transect 16 and 18 consist of *Corymbia citriodora* as the dominant species with scattered *Eucalyptus crebra*. *Lantana camara* is also dense in some areas. Transect 16 alignment is 1° and Transect 18 is 357°N. **Photo set 8** shows the vegetation present within this AU.



Photo set 8: AU8 – Regrowth RE 12.12.5 (left – transect 1) (right – transect 13)

6.2.1.9 Assessment Unit 9

Assessment Unit 9 (AU9) is mapped as containing High Value Regrowth vegetation containing 'Least Concern' Regional Ecosystem 12.9-10.2 described as *Corymbia citriodora* +/- *Eucalyptus crebra* open forest on sedimentary rocks. This open forest community is a mid-dense community structure with a canopy density of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The average tree height in transect 5 is 21.14 meters with the subcanopy being 7.86 meters. The plot alignment is 147°SE. The area towards the end of transect 5 contained exposed large surface rocks. The average tree height in Transect 10 is 22 meters with the subcanopy being 11 meters. The plot alignment is 196°S. Some exposed surface rocks were noted, typical of landzone 9-10 with the area containing some evidence of cattle and old logging evidence. Transect 21 average tree height in the transect is 21 meters with the subcanopy being 7 meters. The plot alignment is 263°W. Some exposed surface rocks were also noted, typical of landzone 9-10 with the area containing some evidence of cattle and old logging evidence. Transect 23 is within a waterway dominated by *Eucalyptus tereticornis* with a limited subcanopy and shrub layer It is noted that although the transect is located within an area mapped as landzone 3, these characteristics are toward the lower slopes. This area is more suitable for the Least Concern RE12.9-10.2. **Photo set 9** shows the vegetation present within this AU.



Photo set 9: AU9 – Regrowth RE 12.9-10.2 (left – transect 5)(right – transect 10)

6.2.1.10 Assessment Unit 10

Assessment Unit 10 (AU10) is mapped as non-remnant vegetation formerly mapped as 'Least Concern' Regional Ecosystem 12.3.7 described as *Eucalyptus tereticornis, Casuarina Cunninghamiana* subsp. *Cunninghamiana* +/- *Melaleuca* spp. fringing woodland. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Transect 20 with an alignment of 180°S is within a waterway dominated by *Casuarina cunninghamiana*. Transect 24 is also within a waterway dominated by *Eucalyptus moluccana*. **Photo set 10** shows the vegetation present within this AU.



Photo set 10: AU10 – non-remnant RE 12.3.7 (left – transect 20)(right – transect 24)

6.2.1.11 Assessment Unit 11

Assessment Unit 11 (AU11) is mapped as containing non-remnant vegetation with preclear mapping the area as once containing a composite Regional Ecosystem containing RE12.11.5 and RE12.11.3. Least Concern Regional Ecosystem 12.11.5 is described as *Corymbia citriodora* woodland to open forest +/- *Eucalyptus siderophloia/Eucalyptus crebra*, *Eucalyptus carnea*, *Eucalyptus acmenoides*, *Eucalyptus propinqua* on metamorphic +/- interbedded volcanics. Regional ecosystem 12.11.3 is described as *Eucalyptus siderophloia*, *Eucalyptus propinqua* open forest +/- *Eucalyptus microcorys*, *Lophostemon confertus*, *Corymbia intermedia*, *Eucalyptus acmenoides* open forest on metamorphic +/- interbedded volcanics. transect area is located towards the lower slopes. Transect 8 alignment is approximately 148°SE. Transect 9 is located towards the lower slopes incorporating parts of the creek line vegetation that has some minor and lineal elements of landzone 3. Transect alignment is approximately 120°SE. **Photo set 11** shows the vegetation present within this AU.



Photo set 11: AU6 – Non-remnant – Pre-Clear - RE 12.11.5 / 12.11.3 (left – transect 8) (right – transect 9)

6.2.2 Non-native vertebrate pest records – broader offset site

Wild dogs and foxes have been reported to occur within the broader offset property and public database records indicate records are present in the surrounding landscape. Further vertebrate pest abundance surveys will be completed in Year 1 of the offset.

There were six (6) individual sightings of non-native animals over a combined total of one hundred and forty–two (142) survey nights per camera as part of preliminary baseline surveys (refer to **Table 32**). Non-native predator species were detected, being *Canis lupis familiaris* (Wild Dog), *Cervus elaphus* (Red Deer) and *Vulpes vulpes* (Red Fox) (refer **Photo sets 12-14**). Other native fauna species were also captured during this survey. Any non-native animal was recorded as a new individual if >1 hour had elapsed between sightings.

A baseline RAI was calculated using the formula **RAI = D/TN x 100**, where D is numbers of detection and TN is the total number of camera-trap nights (all cameras combined). This methodology ensures that the surveys are representative of the entirety of the proposed offset area and are repeatable for future monitoring requirements. The RAI for non-native pests is **11.77** (refer **Table 32)**

Table 32: Non-native pest survey results summary

Camera Number	Camera Title	Records	Survey Duration (TN)	Detection (D)	RAI
Camera 1	Beetle	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer) *Vulpes vulpes* (Red Fox)	142	8 22 2	**11.77**
Camera 2	Daisy	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	8 2	
Camera 3	Shark	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	5 18	
Camera 4	Owl	*Canis lupus familiaris* (Wild Dog)	142	6	
Camera 5	Turtle	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	6 31	
Camera 6	Nemo	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	13 10	
Camera 7	Yeti	*Canis lupus familiaris* (Wild Dog)	142	17	
Camera 8	Cassowary	*Canis lupus familiaris* (Wild Dog)	142	1	
Camera 9	Bug	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	34 6	
Camera 10	Mole	N/A	142	N/A	
Camera 11	Possum	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	3 7	
Camera 12	Monkey	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer) *Vulpes vulpes* (Red Fox)	142	10 13 1	
Camera 13	Hippo	*Cervus elaphus* (Red Deer)	142	9	
Camera 14	Frog	*Canis lupus familiaris* (Wild Dog) *Cervus elaphus* (Red Deer)	142	2 1	
Totals		**29**	**1,988**	**234**	

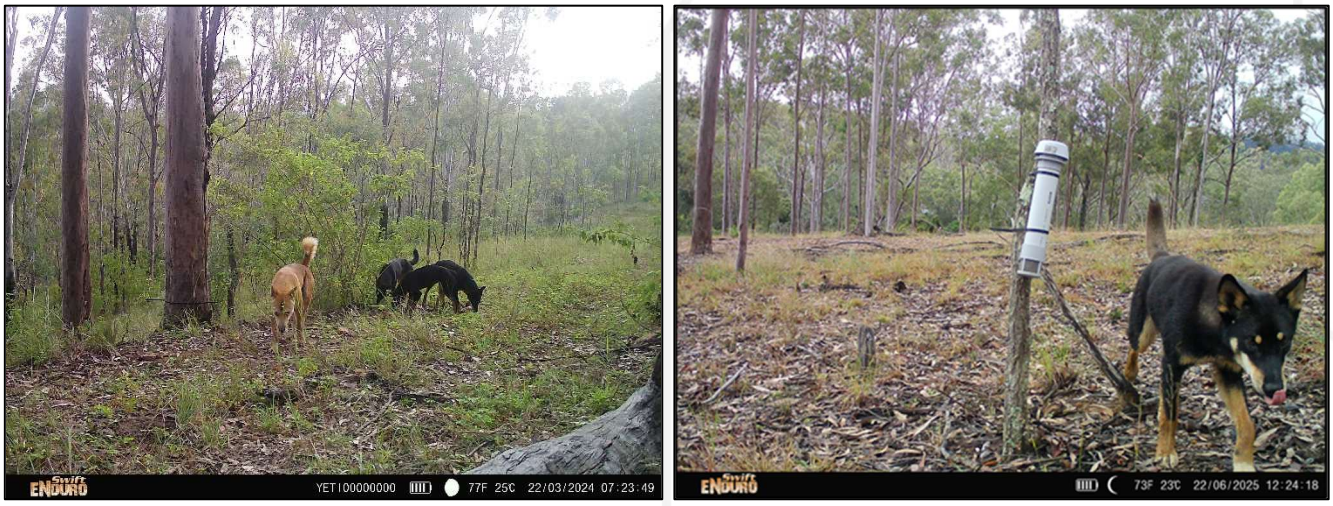


Photo set 12: *Canis lupus familiaris* (Wild Dog) captured on camera traps (pictured Nemo + Shark)



Photo set 13: *Cervus elaphus (Red Deer)* captured on camera traps (pictured turtle)



Photo set 14: *Vulpes vulpes* (Red Fox) captured on camera traps (pictured Monkey + Beetle)

6.2.3 Weed Mapping

Based on MHQA transects, general observations during MNES surveys and weed mapping, broad areas of uncontrolled lantana infestation are present across the offset area including within the gully lines and paddock areas. Lantana was recorded across most transect locations. Refer to **Photo set 15** for photos of lantana infestations. Grass coverage on site is heavily dominated by pasture grasses as a result of historical land-uses including native *Heteropogon contortus* (Black Spear Grass), *Imperata cylindrica* (Blady Grass), *Cymbopogon refractus* (Barbed Wire Grass), *Panicum decompositum* (Native Millet) and invasive *Sporobolus pyramidalis* (Giant Rat's Tail Grass), *Melinis repens* (Red Natal Grass), *Solanum mauritianum* (Rhodes Grass) and *Sporobolus africanus* (Paramatta Grass). **Table 33** presents the summary of weed coverage within the transect data.



Photo set 15: Lantana infestations present across the offset area

Table 33: Weed coverage transects summary

	Total dominant species coverage (%)		Area (ha)	Relative cover of non-native flora (ha)
	Non-native species	Native species		
AU1				
Transect 2	45	19	87.8	36.29
Transect 3	70	25		
Transect 6	9	34		
Average	**41.33**	**26.00**		
AU2				
Transect 26	11	42	50.15	5.18
Transect 27	15	31		
Transect 31	5	24		
Average	**10.33**	**32.33**		
AU3				
Transect 22	15	77		

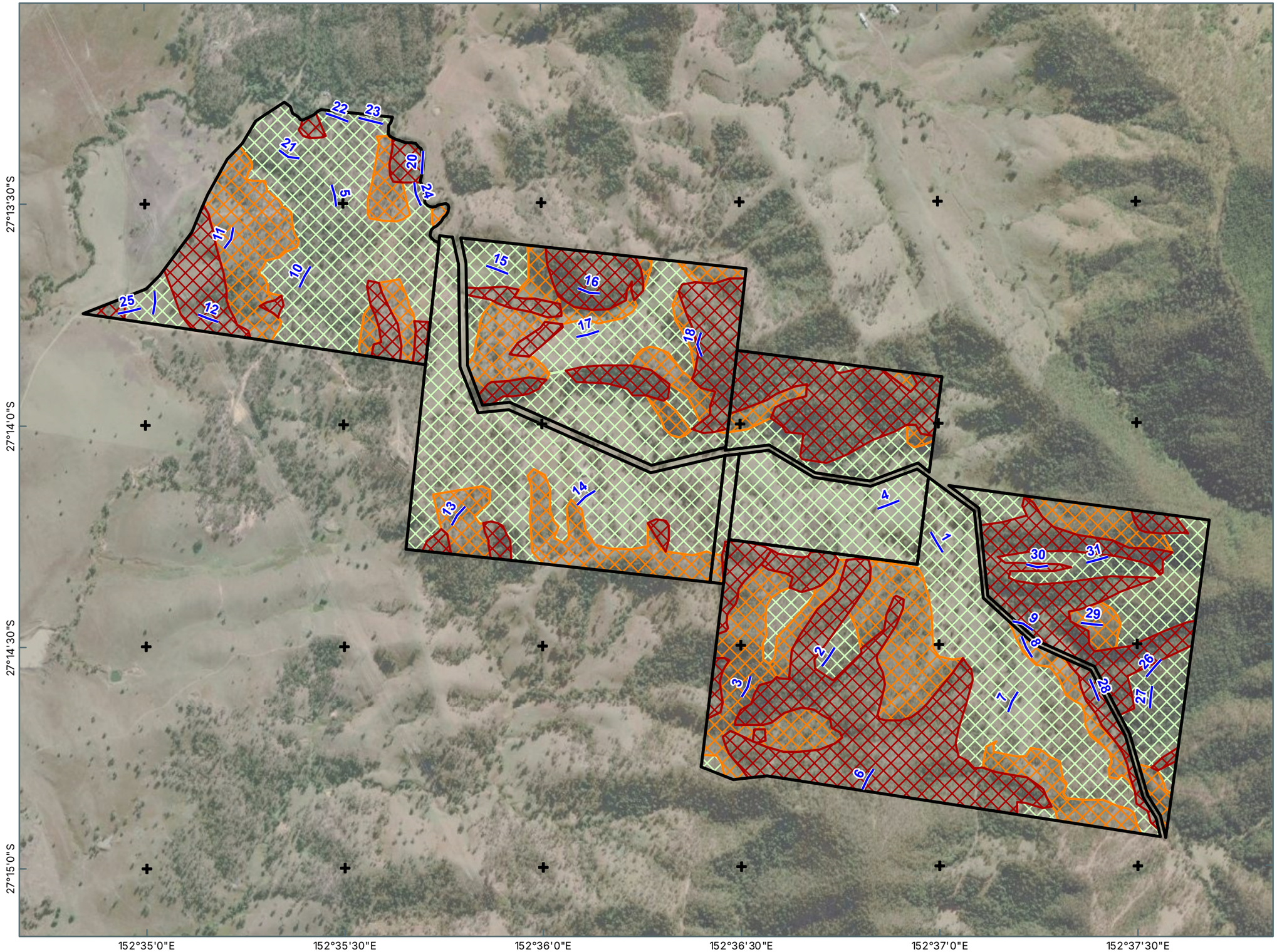
Transect 28	95	6	8.91	4.90
Average	**55.00**	**41.50**		
AU4				
Transect 11	40	67	19.65	9.33
Transect 12	55	41		
Average	**47.50**	**54**		
AU5				
Transect 19	5	65	3.29	1.15
Transect 25	65	60		
Average	**35.00**	**62.50**		
AU6				
Transect 4	18	85	142.29	23.72
Transect 7	20	69		
Transect 14	10	72		
Transect 15	15	79		
Transect 17	20	64		
Average	**16.60**	**73.80**		
AU7				
Transect 29	45	17	13.52	6.76
Transect 30	55	11		
Average	**50.00**	**14.00**		
AU8				
Transect 1	15	66	145.58	52.77
Transect 13	35	59		
Transect 16	80	38		
Transect 18	15	52		
Average	**36.25**	**53.75**		
AU9				
Transect 5	10	76	53.93	3.1
Transect 10	12	82		
Transect 21	2	56		
Transect 23	5	41		
Average	**7.25**	**63.75**		
AU10				
Transect 20	80	8	12.68	5.39
Transect 24	5	96		
Average	**42.50**	**52.00**		
AU11				
Transect 8	35	37		

Transect 9	65	49	6.61	3.31
Average	**50.00**	**43.00**		
Combined Total			**545.53**	**218.66**

Notably, the Offset Provider is developing a weed management plan for entire South Kipper Offset below Property, including this offset area, which ensures consistent and property-wide approaches to weed monitoring and management. It will include a quantitative and repeatable weed cover monitoring method that will enable assessment against the completion criteria "≤ 5% weed cover by year 10". It will also include photo-monitoring requirements as well as management actions to be employed. Weed mapping will include:

- Preparation of a Weed Management Plan by the Offset Provider in Year 1 of the offset
- Implementation of the Weed Management Plan by the Offset Provider including baseline weed cover surveys and photo-monitoring in Year 1 of the offset (in accordance with the method outlined in the Weed Management Plan)

10. MARRAMBI BASELINE WEED COVERAGE



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LEGEND

- Marrambi Offset Site boundaries
- Habitat Quality Asssment Transects

Weed coverage mapping

- High (above 50%)
- Moderate (25-50%)
- Low (less than 25%)



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9383 E 10 Marrambi OMP3 Baseline Weeds A

6.2.4 Koala MHQA

6.2.4.1 Site Condition (30%)

The site condition scoring for the offset area is summarised in **Table 34**. Refer to **Appendix A** for detailed baseline koala MHQA scoring and **Appendix B** for the raw data.

Table 34: Site condition scores for offset area assessment units - Koala

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Regional Ecosystem	12.12.5	12.11.5	12.3.7	12.9-10.2	12.12.12	12.12.5	12.11.5	12.12.5	12.9-10.2	12.3.7	12.11.5
Status*	R	R	HVR	NR	NR	NR	HVR	HVR	HVR	NR	NR
Recruitment of woody perennial species in EDL	5	3	3	3	0	3	5	5	5	5	3
Native plant species richness - trees	5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	2.5
Native plant species richness - shrubs	2.5	2.5	2.5	2.5	0	0	2.5	2.5	2.5	2.5	0
Native plant species richness - grasses	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Native plant species richness - forbs	2.5	2.5	0	2.5	0	0	2.5	2.5	2.5	0	0
Average tree canopy height*	5	5	5	4	0	4	5	5	5	5	5
Average tree canopy cover*	4	5	5	2	0	3.5	5	4	3.5	3.5	3.5
Shrub canopy cover	5	5	3	5	0	3	0	3	5	3	0
Native grass cover	3	5	5	5	5	5	1	5	5	5	5
Organic litter	3	5	0	0	3	0	3	2	3	5	0
Large trees	5	5	5	5	5	5	5	3	5	5	5
Coarse woody debris	5	5	2	2	0	0	5	5	2	2	0

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Non-native plant cover	3	5	0	3	3	5	3	5	5	3	3
Quality and availability of food and foraging habitat	5	10	5	5	1	5	5	3	5	5	5
Quality and availability of shelter	5	10	5	5	1	5	5	5	5	5	5
Total (Out of 100)	**60.5**	**75.5**	**45.5**	**49**	**23**	**43.5**	**52**	**55**	**58.5**	**56.5**	**39.5**
Score out of 3	**1.82**	**2.27**	**1.37**	**1.47**	**0.69**	**1.31**	**1.56**	**1.65**	**1.76**	**1.70**	**1.19**

* R = Remnant, HVR = High Value Regrowth, NR = Non-remnant

The site condition values for AU1 – AU11 are scored as above.

6.2.4.2 Site Context (30%)

The site context characteristics for koala are shown on **Plan 11a** and **Plan 11b** with scores summarised in **Table 35**.

Table 35: Koala site context scores for offset area

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Size of patch	10	10	10	10	10	10	10	10	10	10	10
Connectedness	5	5	5	5	5	5	5	5	5	5	5
Context	4	4	4	4	4	4	4	4	4	4	4
Ecological corridors	6	6	6	6	6	6	6	6	6	6	6
Role of the site location to species overall population in the state	5	5	5	5	5	5	5	5	5	5	5
Threats to species	7	7	7	7	7	7	7	7	7	7	7
Species mobility capacity	7	7	7	7	4	7	7	7	7	7	4
Total (out of 56)	**44**	**44**	**44**	**44**	**41**	**44**	**44**	**44**	**44**	**44**	**41**
Score out of 3	**2.36**	**2.36**	**2.36**	**2.36**	**2.20**	**2.36**	**2.36**	**2.36**	**2.36**	**2.36**	**2.20**

Size of patch

The offset area is connected to a patch of 500 ha therefore achieves a score of **10 out of 10**.

Connectedness

The offset area shares 77.5% of its boundary with koala habitat therefore achieves a score of **5 out of 5**.

Context

The offset area includes habitat coverage of 60.7% within 1 km of the offset area and scores **4 out of 5**.

Ecological corridors

The offset area is located partially within a Statewide corridor of regional significance (refer **Plan 6**) therefore achieves a score of **6 out of 6**.

Role of Site

The offset area is a suitable offset so scores **5 out of 5**.

Threats to species

Threats to koala are present across the Marrambi Offset Property and includes potential for dog and fox attack, degradation of habitat through uncontrolled weed infestations, mostly *Lantana camara* (Lantana), uncontrolled wildfire and the presence of barbed wire. Additional to this is the likelihood of non-native feral herbivores to destroy revegetation areas.

The presence of moderate to severe Lantana infestations is a threat to the koala habitat by reducing the potential for natural regeneration of habitat. Wild dogs are known to occur within the locality and have been reported within the broader offset property. Additionally, the Queensland WildNet database identifies 3 confirmed records of *Canis* sp. and/or *Canis familiaris*, 4 records of European foxes and 3 records of feral cats within 20 km of the offset area, located within connected vegetation. Wild dogs are known to travel up to 20 km seeking prey with home ranges of individuals likely to overlap with the offset area.

Given the presence of multiple threats across the offset area, a score of 7 or 'moderate' was considered appropriate.

An adaptive management approach is proposed to manage threats from dogs and other vertebrate pest species for the life of the offset (20 years).

Species mobility capacity

Species mobility capacity is considered consistent across all AUs that are relatively vegetated, being 'moderately restricted' (score 7) due to the scattered state of vegetation and presence of weed species such as *Lantana camara* which is considered to present a notable impediment to koala movement. Open paddock areas (AU5 and AU11) scored 4 for mobility given the lack of available refuge habitat.

6.2.4.3 Species Stocking Rate (40%)

Evidence of koala was recorded within the offset area through the detection of scats during SAT surveys as part of the baseline field surveys A summary of the SAT survey results completed at each MHQA transect are provided in **Table 36** with raw data provided at **Appendix B**.

Table 36: Baseline SAT survey results

SAT ID (MHQA transect)	Number of scats	Evidence of koala activity (%)	Koala use (East Coast med-high)
AU1			
SAT 2 – Transect 2	4	13.33%	Low
SAT 3 – Transect 3	0	0.00%	No activity
SAT 5 -Transect 6	1	3.33%	Low
AU2			
SAT 19 – Transect 26	1	3.33%	Low
SAT 20 – Transect 27	1	3.33%	Low
Sat 24 – Transect 31	1	3.33%	Low
AU3			
SAT 16 – Transect 22	5	16.67%	Low
SAT 21 – Transect 28	0	0.00%	No activity
AU4			
SAT 8 – Transect 11	2	6.67%	Low
SAT 9 – Transect 12	1	3.33%	Low
AU5			
N/A			
AU6			
SAT 6 – Transect 7	4	13.33%	Low
SAT 11 – Transect 14	3	10.00%	Low
AU7			
SAT 22 – Transect 29	2	6.67%	Low
SAT 23 – Transect 30	6	20.00%	Low
AU8			
SAT 1 – Transect 1	3	10.00%	Low
SAT 10 – Transect 13	0	0.00%	No activity
SAT 12 – Transect 16	1	3.33%	Low
SAT 13 – Transect 18	0	0.00%	No activity
AU9			
SAT 4 – Transect 5	2	6.67%	Low
SAT 7 – Transect 10	4	13.33%	Low
SAT 15 – Transect 21	3	10.00%	Low
SAT 17 – Transect 23	2	6.67%	Low
AU10			
SAT 14 – Transect 20	1	3.33%	Low
SAT 18 – Transect 24	0	0.00%	No activity
AU11			
N/A			

The SAT surveys demonstrate that koalas utilise most of the AUs across the site and that the offset area has the capacity to support ecological gain for the koala.

The species stocking rate for koala scored **40 out of 70** for AU1, AU2, AU3, AU4, AU6, AU7, AU8, AU9 and AU10 and **20 out of 70** for AU5 and AU11, (refer **Table 37**). Further details on the assessment are provided below:

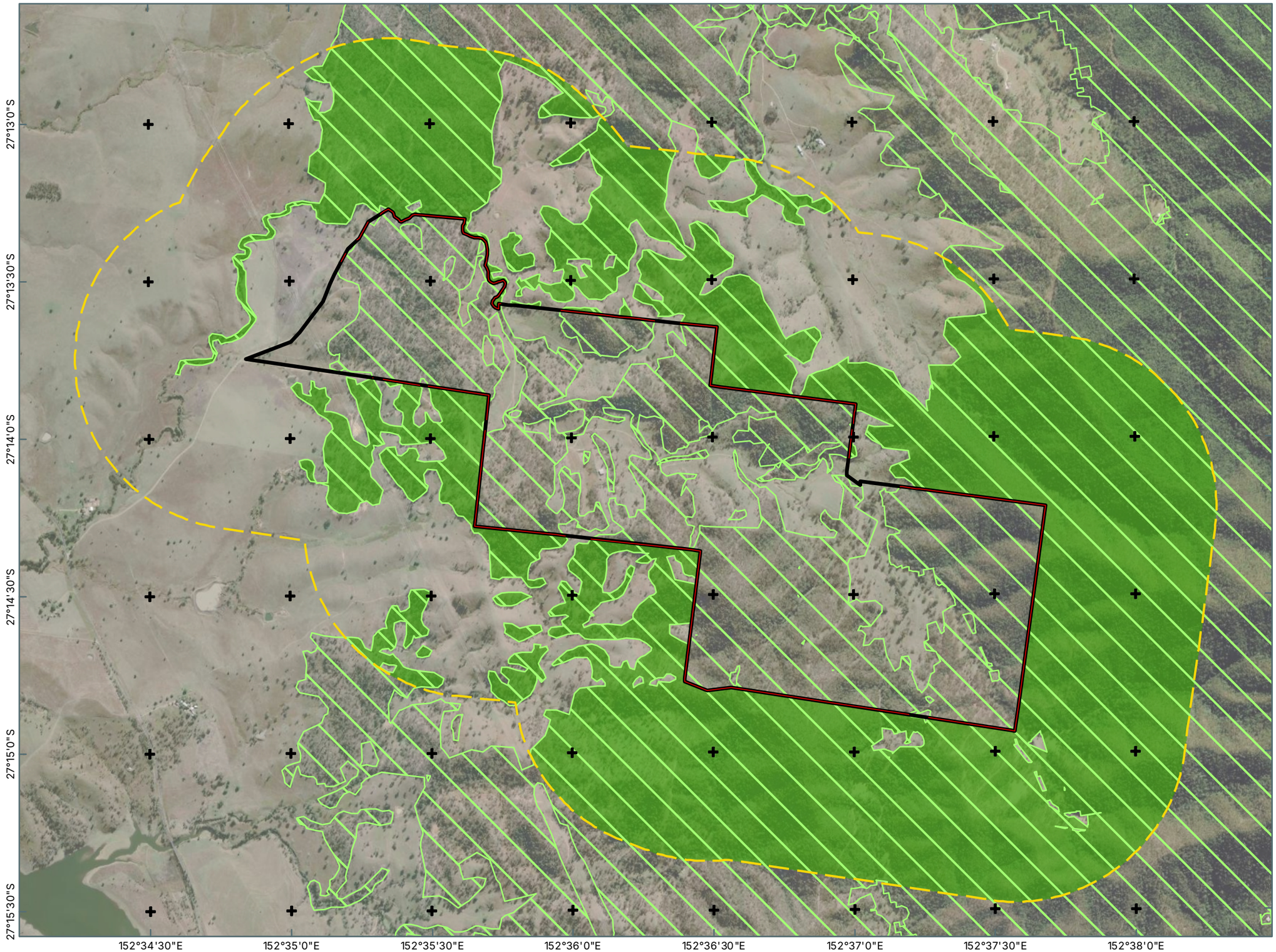
- A koala was observed within the broader offset area therefore 'presence detected on or adjacent to site' was assigned a score of **10 out of 10** for all assessment units.
- All AUs scored a **15 out of 15** for evidence of use indicating foraging/breeding habitat as trees were present as per Department expectations.
- The 'approximate density' for AU5 and AU11 was scored as **0 out of 30** due to the absence of evidence of utilisation within these assessment units. It is considered that the variability in the landscape of the offset area, koalas utilised the more heavily treed and connected habitat areas. It is anticipated that the capacity of these non-remnant assessment units to support koala will improve with weed management and active regeneration. The remaining AUs scored **10 out of 30** for low use.
- Using the precautionary principle, the offset area is considered a key source for population for dispersal under 'role/importance of species population on-site' therefore was scored a **5 out of 15**.

Table 37: Koala species stocking rate scores within offset area assessment units

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Presence detected on or adjacent to site (neighbouring property with connecting habitat) (/10)	10	10	10	10	10	10	10	10	10	10	10
Species usage of the site (habitat type and evidenced usage) (/15)	15	15	15	15	15	15	15	15	15	15	15
Approximate density (per ha) (/30)	10	10	10	10	0	10	10	10	10	10	0
Role/importance of species population on site* (/15)	5	5	5	5	5	5	5	5	5	5	5
Total Species Stocking Rate Score (/70)	40	40	40	40	30	40	40	40	40	40	30
Species Stocking Rate Score – out of 4	2.29	2.29	2.29	2.29	1.71	2.29	2.29	2.29	2.29	2.29	1.71

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Key source population for breeding (/5)	0	0	0	0	0	0	0	0	0	0	0
Key source population for dispersal (/5)	5	5	5	5	5	5	5	5	5	5	5
Necessary for maintaining genetic diversity (/15)	0	0	0	0	0	0	0	0	0	0	0
Near the limit of the species range (/15)	0	0	0	0	0	0	0	0	0	0	0

11a. MARRAMBI KOALA MHQA CONTEXT ASSESSMENT



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LEGEND

- Marrambi Offset Site Assessment Area
- 1km buffer
- Percentage of offset area boundary length supporting a koala critical habitat connection off and on site - 77.5%
- Percentage of Koala Critical habitat within 1 km of offset area 60.7%)
- Size of Koala critical habitat patch adjoining offset site - >1,000 ha



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9383 E 11a Marrambi OMP3 Koala Context A

11b. MARRAMBI KOALA LANDSCAPE CONTEXT ASSESSMENT

27°10'0"S

27°20'0"S

152°20'0"E

152°30'0"E

152°40'0"E

152°50'0"E

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LEGEND

- Marrambi Offset Site Assessment Area
- Site 5km Buffer
- Site 20km Buffer
- Potential Koala habitat within 20km of offset site

Koala Records within 20km of Site (ALA, 2024)

- Koala (*Phascolarctos cinereus*) Records within 20km of Offset Area recorded within the last 5 years - 202
- Koala (*Phascolarctos cinereus*) Records within 20km of Offset Area recorded between 5 and 20 years ago - 393
- Koala (*Phascolarctos cinereus*) Records within 20km of Offset Area recorded without a sighting date - 67
- Koala (*Phascolarctos cinereus*) Records within 20km of Offset Area recorded over 20 years ago - 257



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9383 E 11b Marrambi OMP3 Koala Context

6.2.5 Grey-headed flying-fox FHA

6.2.5.1 Site Condition (40%)

The baseline site condition characteristics for grey-headed flying-fox are summarised in **Appendix C**.

6.2.5.2 Site Context (30%)

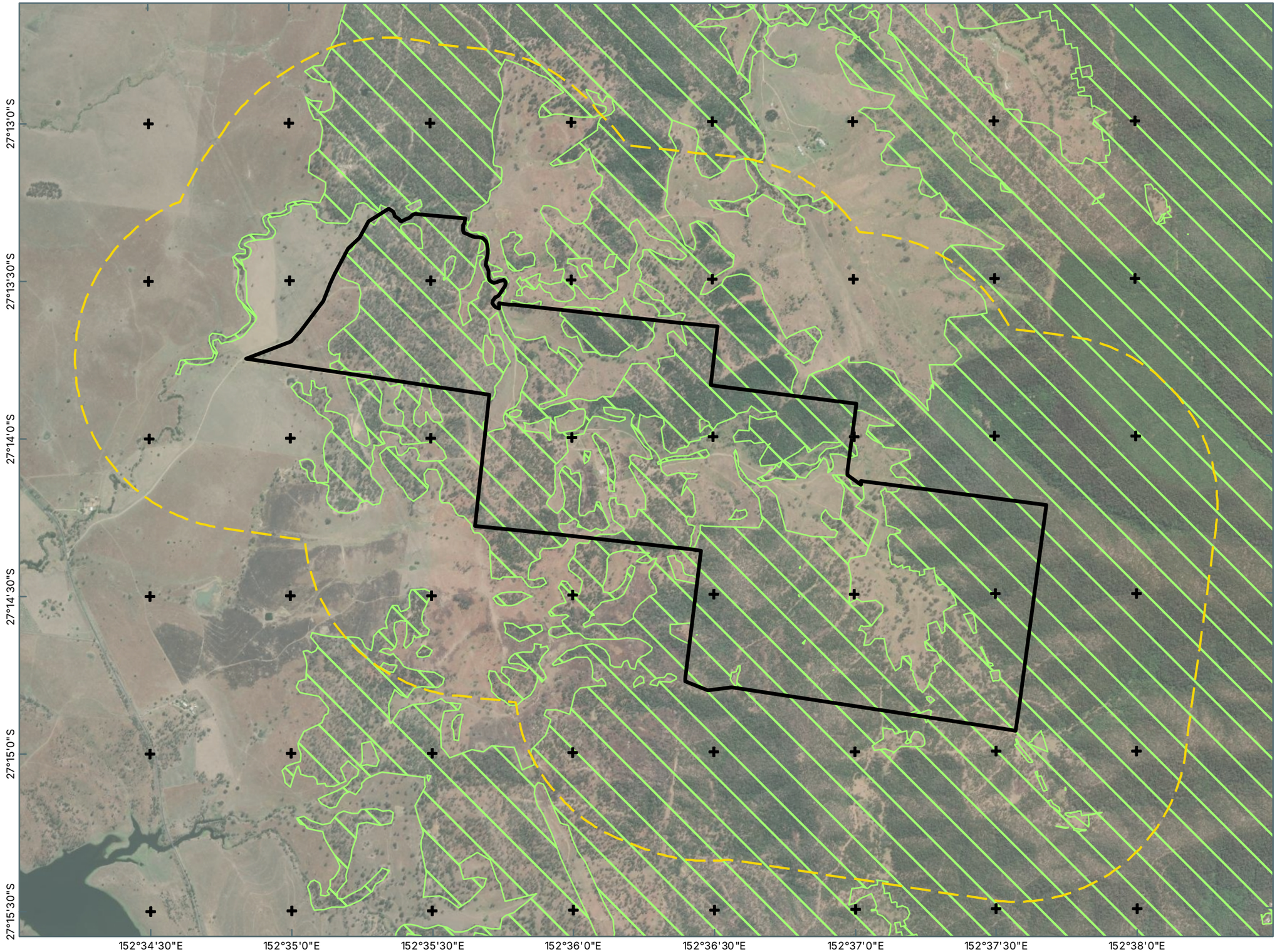
The baseline site context characteristics for grey-headed flying-fox are shown on **Plan 12a** and **Plan 12b** with results summarised in **Appendix C.**

A 'moderate' level of threats to GHFF are present within the offset area including the presence of barbed wire.

6.2.5.3 Species Stocking Rate (30%)

The baseline species stocking rate scores is determined by the stem density of GHFF foraging species. The offset area species stocking rate results for grey-headed flying-fox are summarised in **Appendix C.**

12a. MARRAMBI GREY-HEADED FLYING-FOX FHA CONTEXT ASSESSMENT



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LEGEND

- Marrambi Offset Site Assessment Area
- 1km buffer
- Size of Grey-headed Flying-fox critical habitat patch adjoining offset site >1,000 ha



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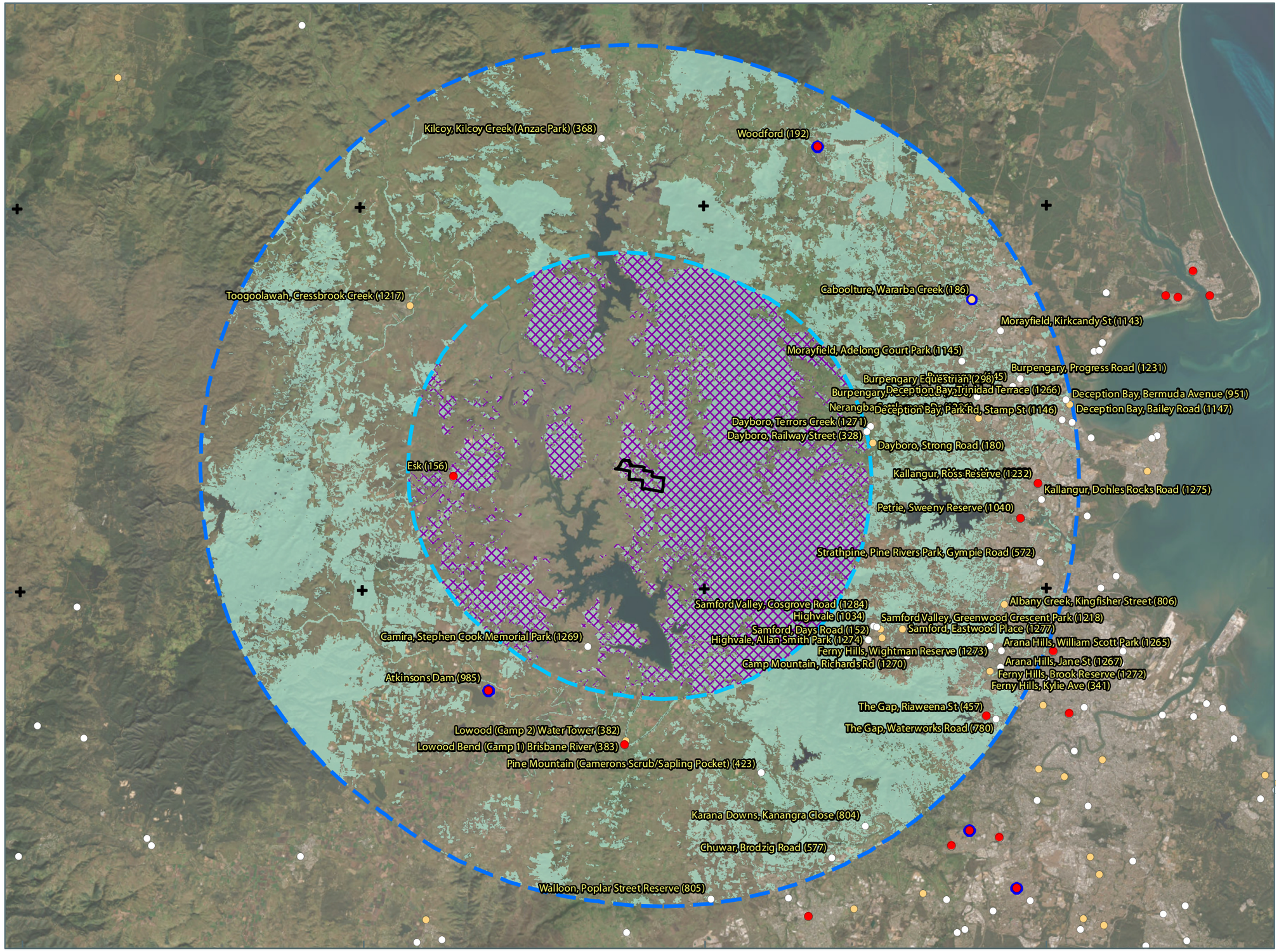
9383 E 12a Marrambi OMP3 GHFF Context A

12b. MARRAMBI GREY-HEADED FLYING-FOX FHA CONTEXT ASSESSMENT



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LEGEND

- Marrambi Offset Site Assessment Area
- Site 20km Buffer
- Site 40km Buffer

Grey Headed Flying Fox Camp Locations

(last survey data published: 2024)

- Grey-headed Flying Fox roost inactive within recent surveys
- Grey-headed Flying Fox roost active within recent surveys
- Grey-headed Flying Fox roost active within recent surveys with a population level of 3 or above
- Nationally significant Grey-headed Flying-Fox roost active within recent surveys
- Nationally significant Grey-headed Flying-Fox roost active within recent surveys with a population level of 3 or above
- Offset site 40km buffer area - Potential and Known Grey-headed Flying-fox Foraging Habitat
- Potential and Known Grey-headed Flying-fox Foraging Habitat Within 20km of Offset Site [49.6%]



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6.2.6 Greater Glider MHQA

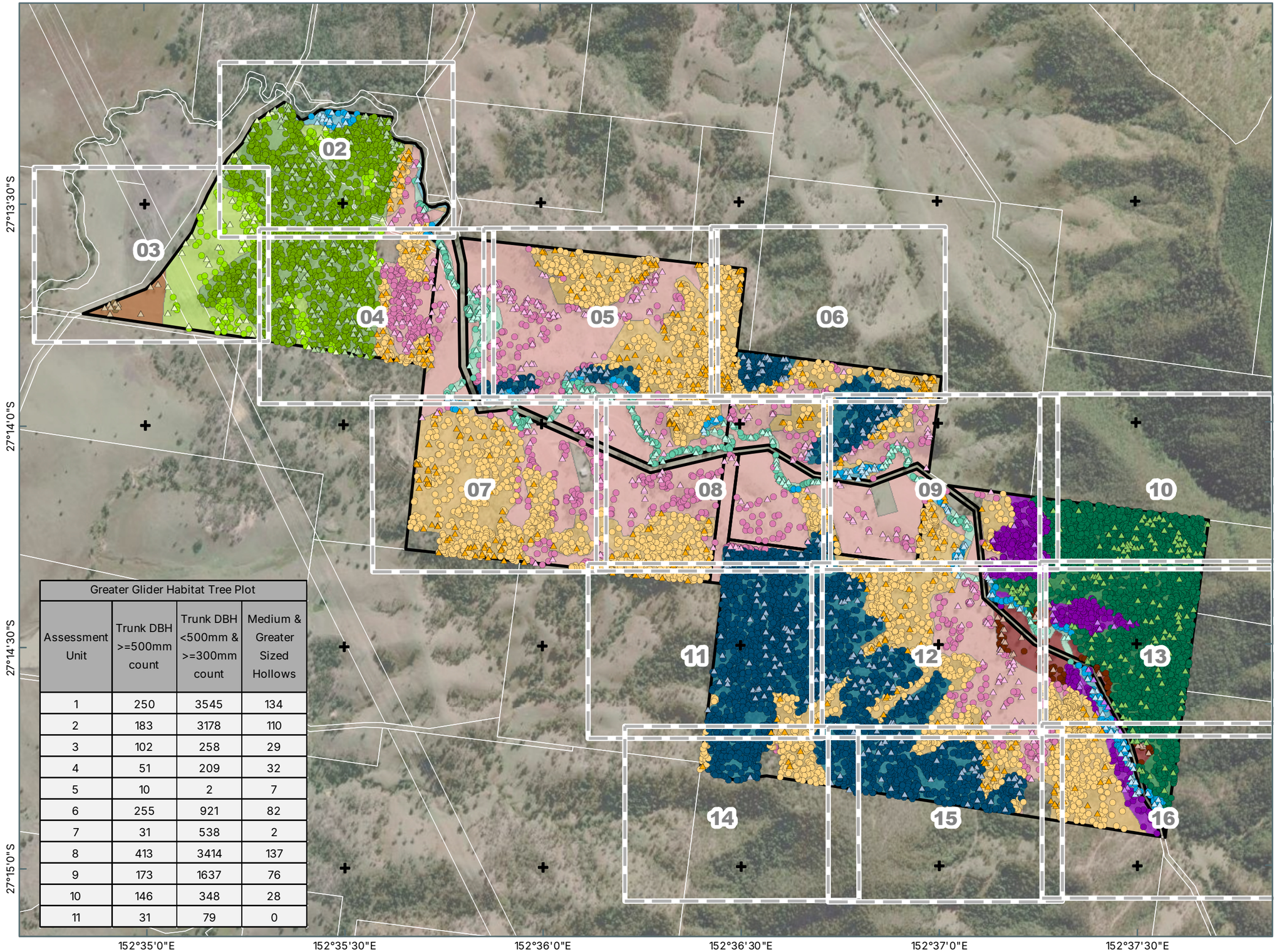
6.2.6.1 Features

The number of existing hollow features recorded per assessment unit are presented in **Table 38** and **Plan 13a**. The counts of potential foraging trees between 300 mm DBH and 500 mm DBH and over per assessment unit are also presented in **Plan 13a**.

Table 38: Hollow records

Assessment Unit	≥ Medium Hollow Count
1	134
2	110
3	29
4	32
5	7
6	82
7	2
8	137
9	76
10	28
11	0

13a.01. MARRAMBI GREATER GLIDER HABITAT



Greater Glider Habitat Tree Plot			
Assessment Unit	Trunk DBH >=500mm count	Trunk DBH <500mm & >=300mm count	Medium & Greater Sized Hollows
1	250	3545	134
2	183	3178	110
3	102	258	29
4	51	209	32
5	10	2	7
6	255	921	82
7	31	538	2
8	413	3414	137
9	173	1637	76
10	146	348	28
11	31	79	0

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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha]
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [142.49 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

Greater Glider Habitat Tree Plot

- ○ Trunk DBH: < 500mm & >= 300 mm
- △ Trunk DBH: >= 500 mm



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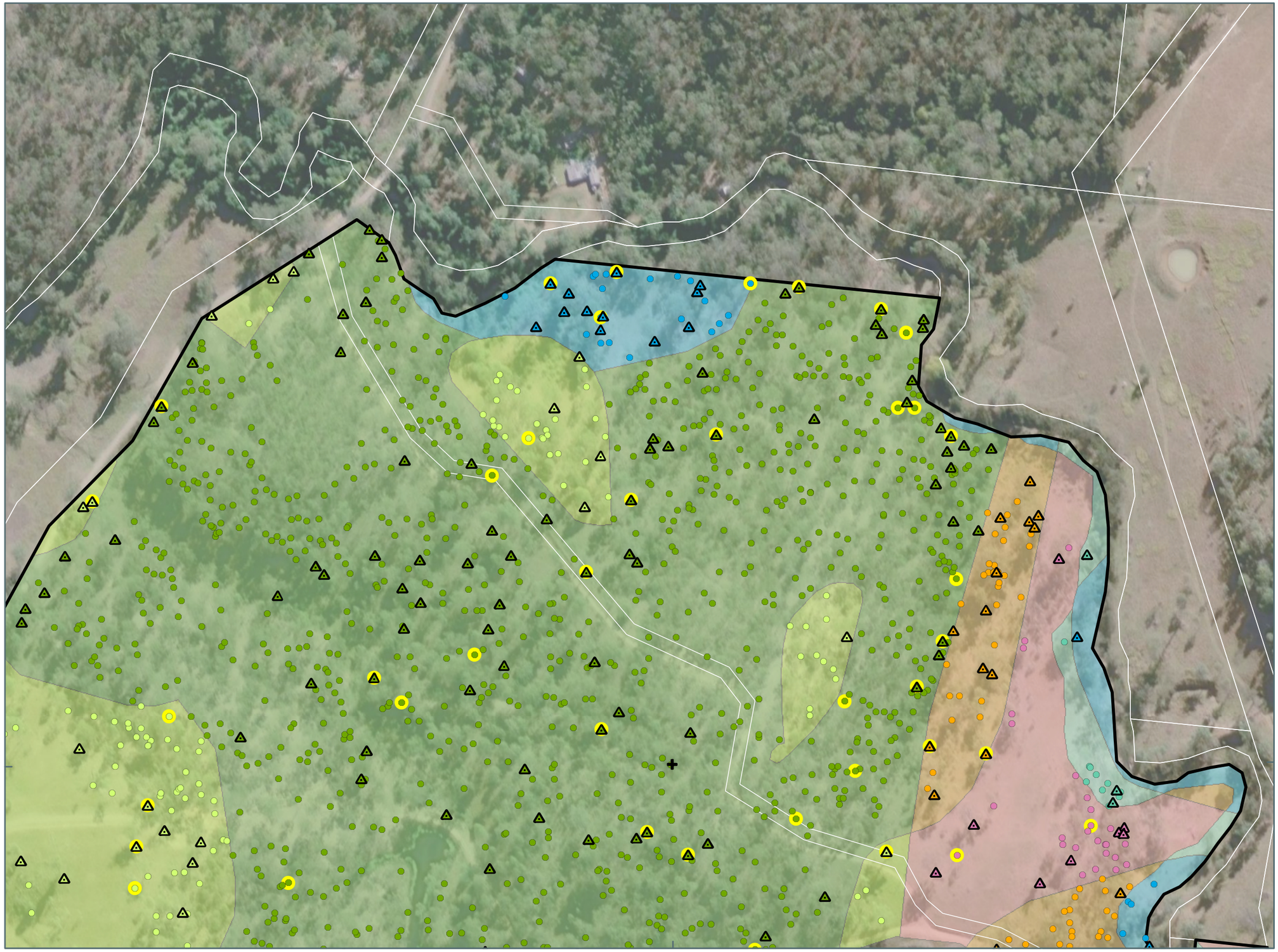
13a.02. MARRAMBI GREATER GLIDER HABITAT



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha] {Medium & greater sized hollow count: 134}
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [142.49 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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RPD: 83S311739

24/10/2025

9383 E 13.02a Marrambi OMP3 GG Habitat B

13a.03. MARRAMBI GREATER GLIDER HABITAT



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- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

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Greater Glider Habitat Tree Plot

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- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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9383 E 13.03a Marrambi OMP3 GG Habitat B

13a.04. MARRAMBI GREATER GLIDER HABITAT



152°35'30"E

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- Qld DCDB
- Marrambi Offset Site boundaries

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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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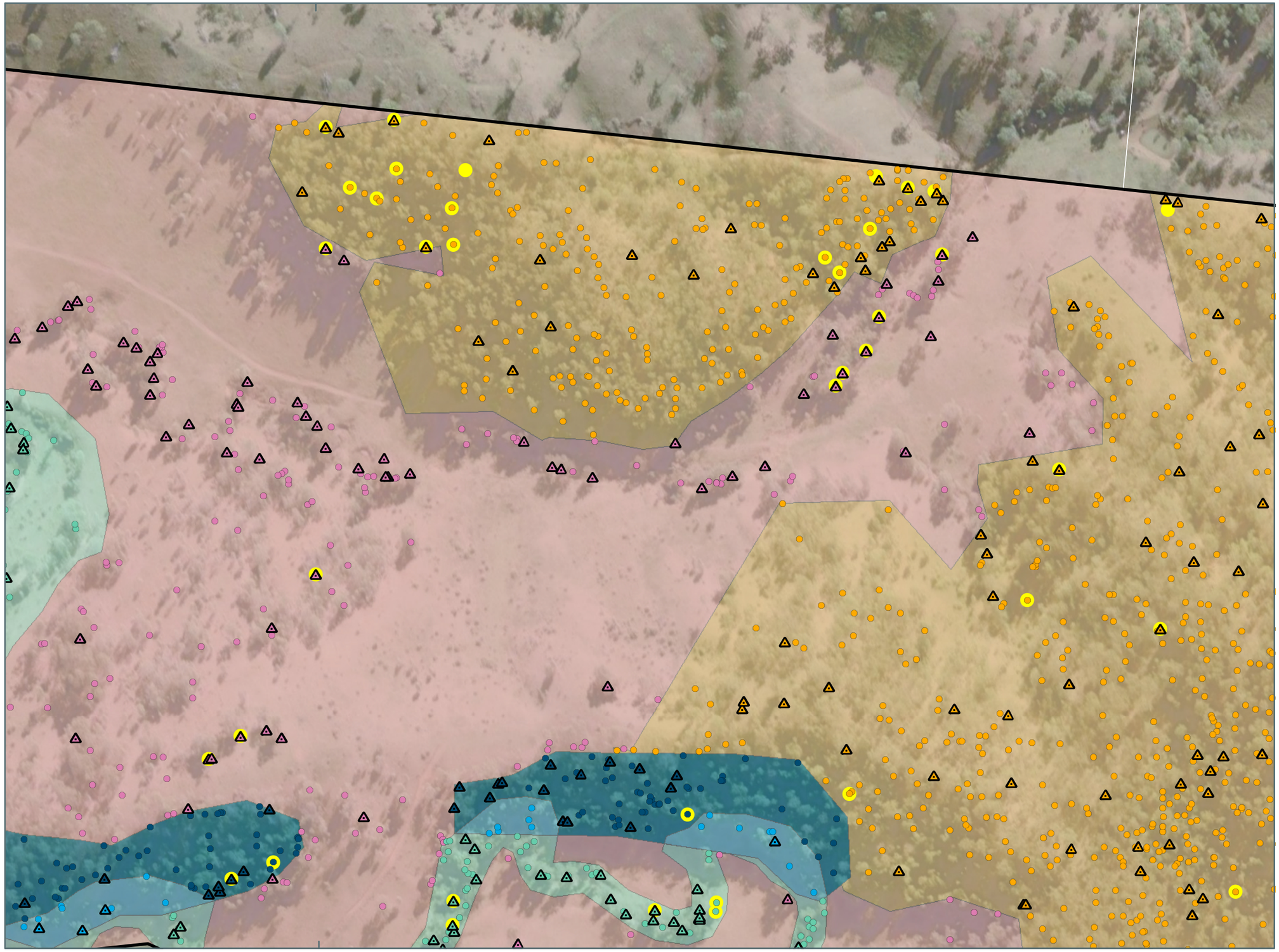
9383 E 13.04a Marrambi OMP3 GG Habitat B

13a.05. MARRAMBI GREATER GLIDER HABITAT



152°36'0"E

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- Qld DCDB
- Marrambi Offset Site boundaries

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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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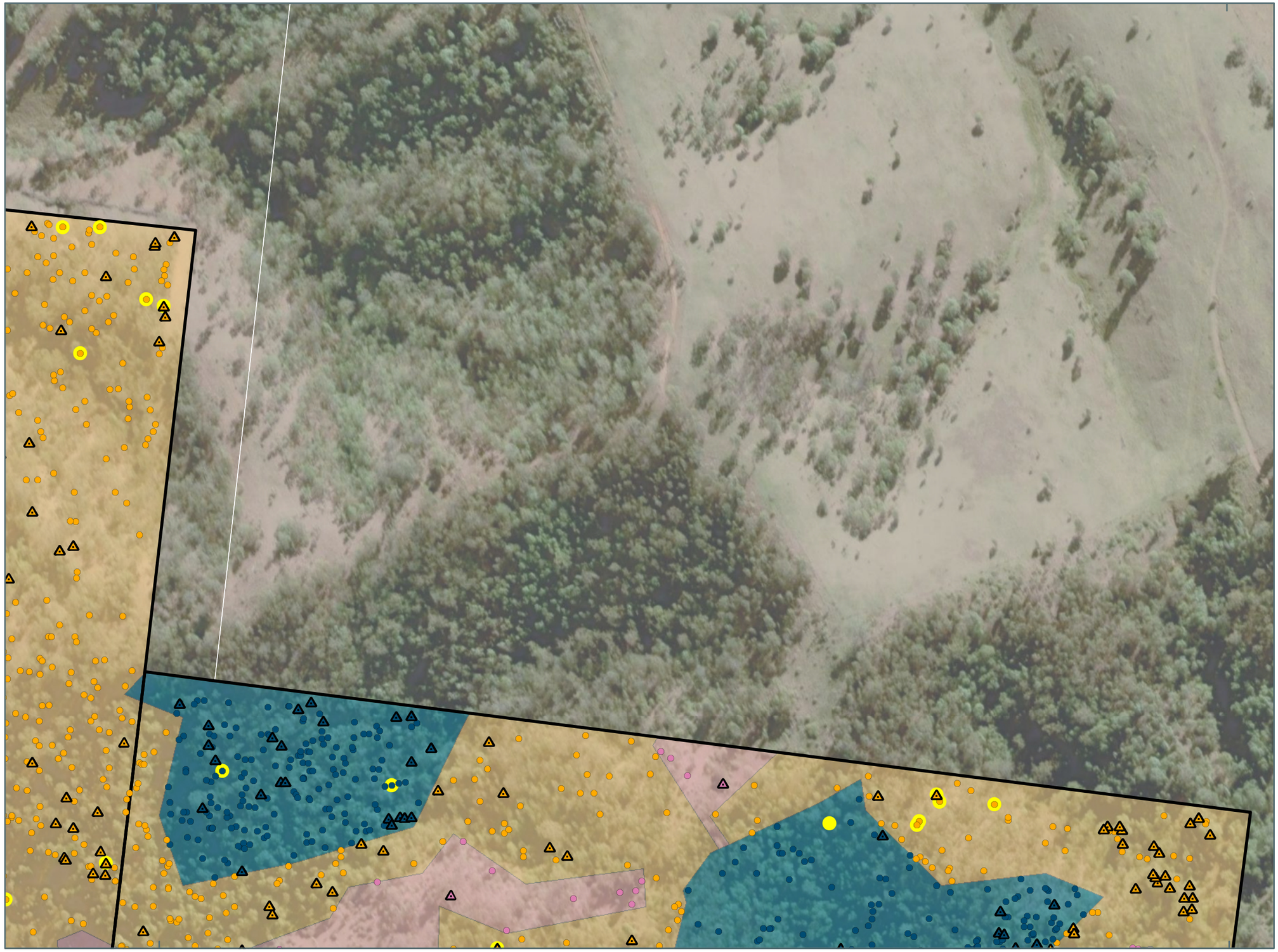
9383 E 13.05a Marrambi OMP3 GG Habitat B

13a.06. MARRAMBI GREATER GLIDER HABITAT



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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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9383 E 13.06a Marrambi OMP3 GG Habitat B

13a.07. MARRAMBI GREATER GLIDER HABITAT

27°14'0"S

152°36'0"E

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Greater Glider Habitat Tree Plot

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- Tree with medium or greater sized hollow/s



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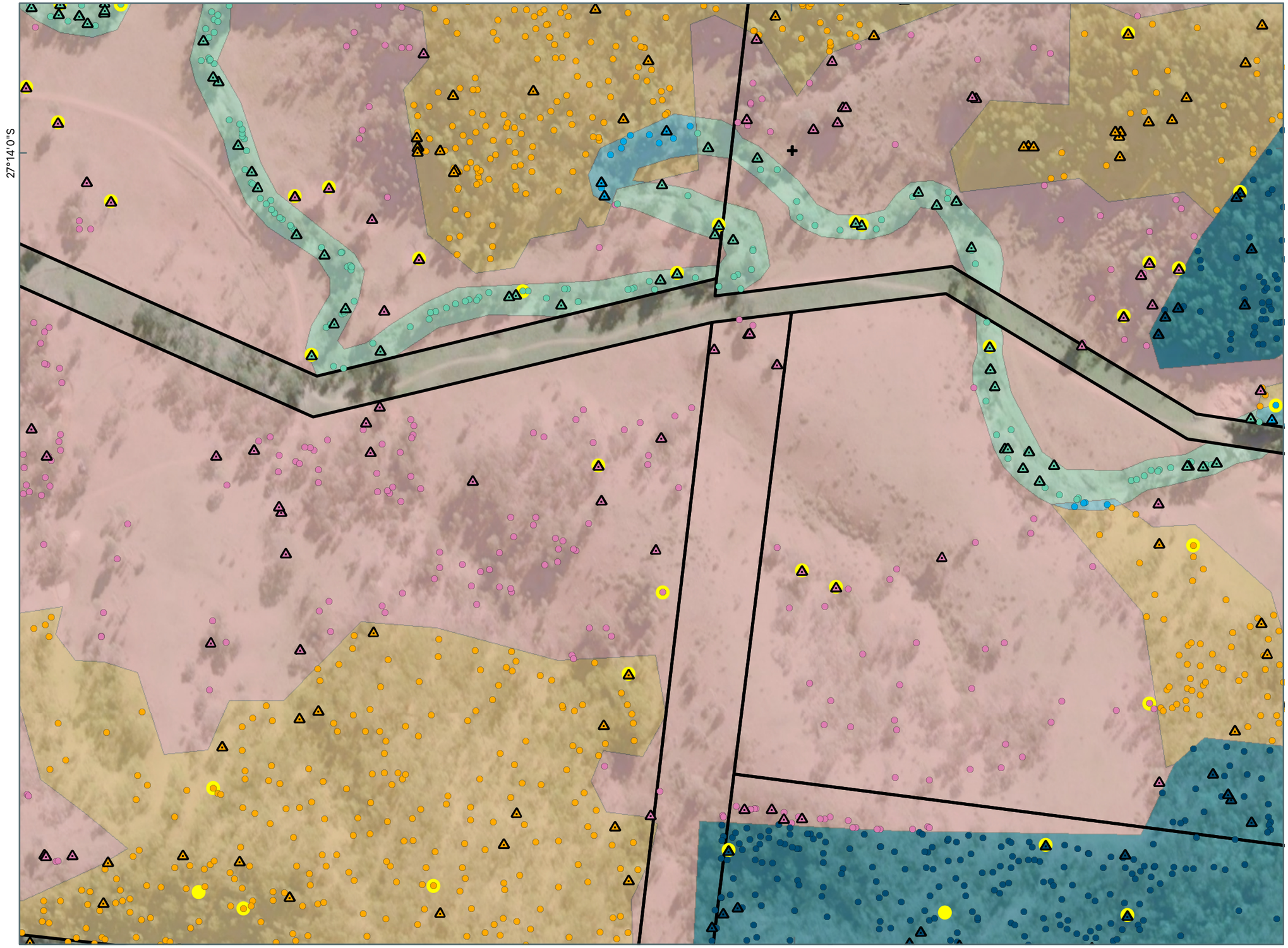
9383 E 13.07a Marrambi OMP3 GG Habitat B

13a.08. MARRAMBI GREATER GLIDER HABITAT



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- Marrambi Offset Site boundaries

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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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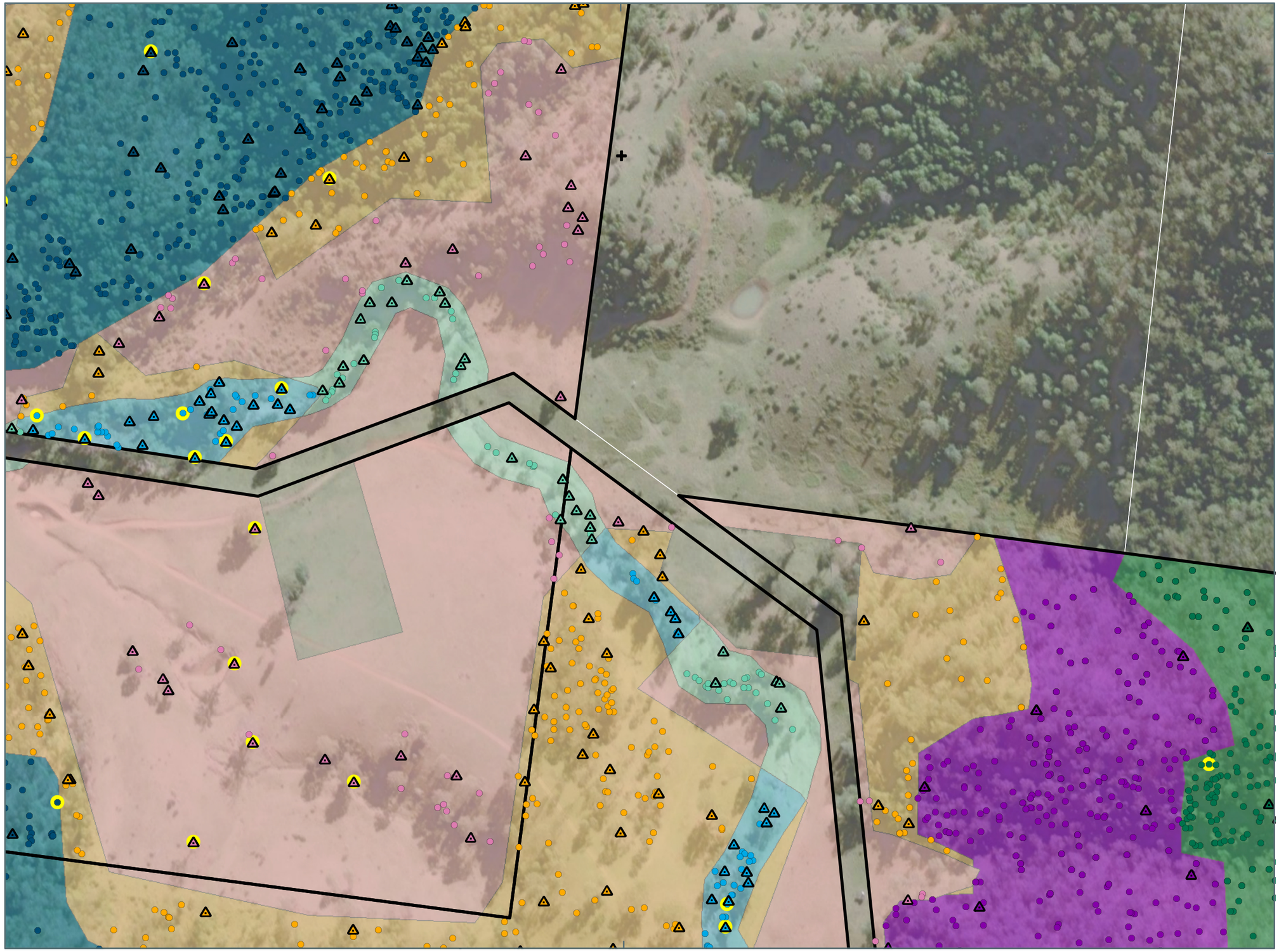
9383 E 13.08a Marrambi OMP3 GG Habitat B

13a.09. MARRAMBI GREATER GLIDER HABITAT



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- Qld DCDB
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Greater Glider Habitat Tree Plot

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9383 E 13.09a Marrambi OMP3 GG Habitat B

13a.10. MARRAMBI GREATER GLIDER HABITAT

27°14'0"S

152°37'30"E

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Greater Glider Habitat Tree Plot

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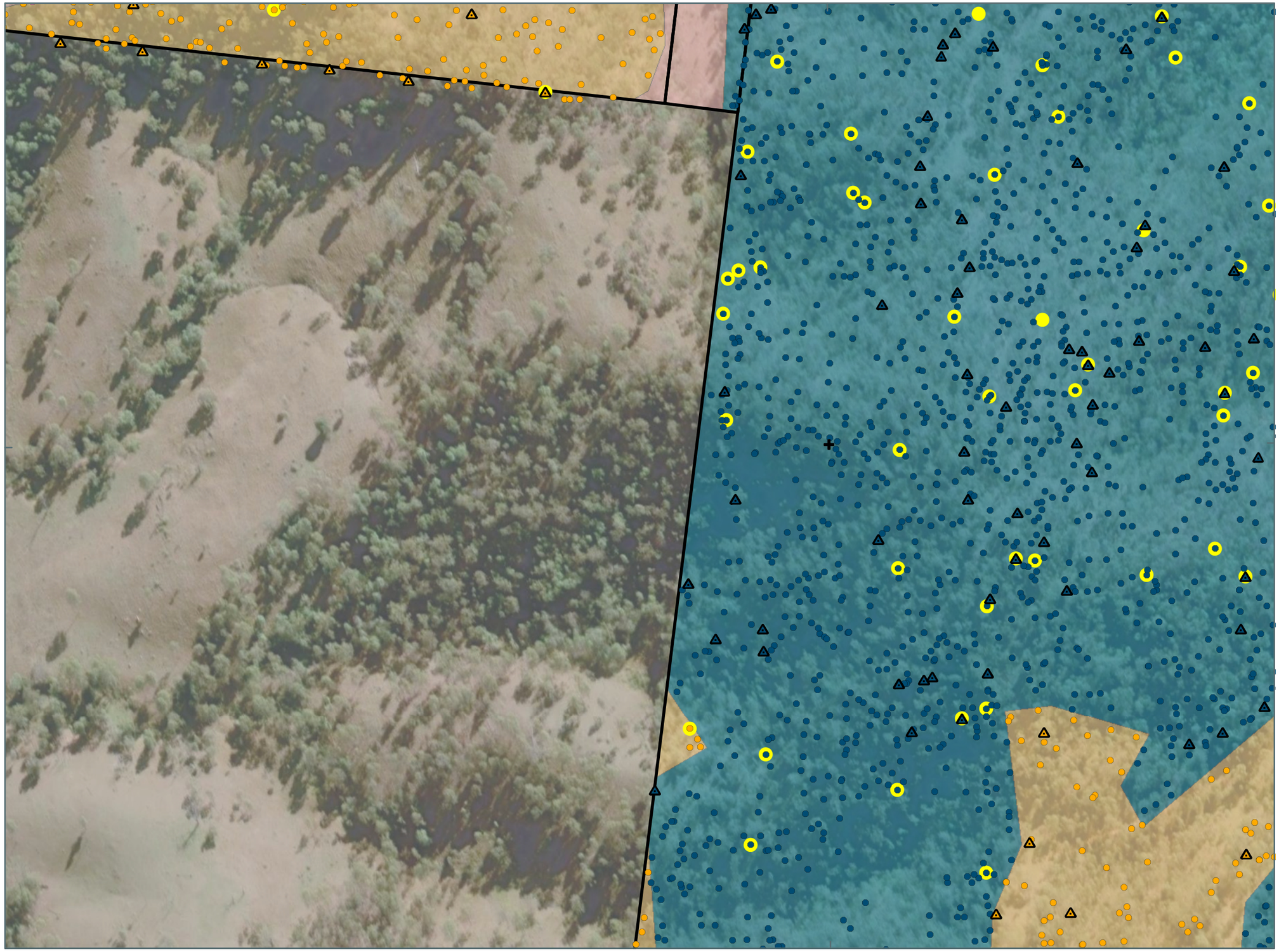
9383 E 13.10a Marrambi OMP3 GG Habitat B

13a.11. MARRAMBI GREATER GLIDER HABITAT



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- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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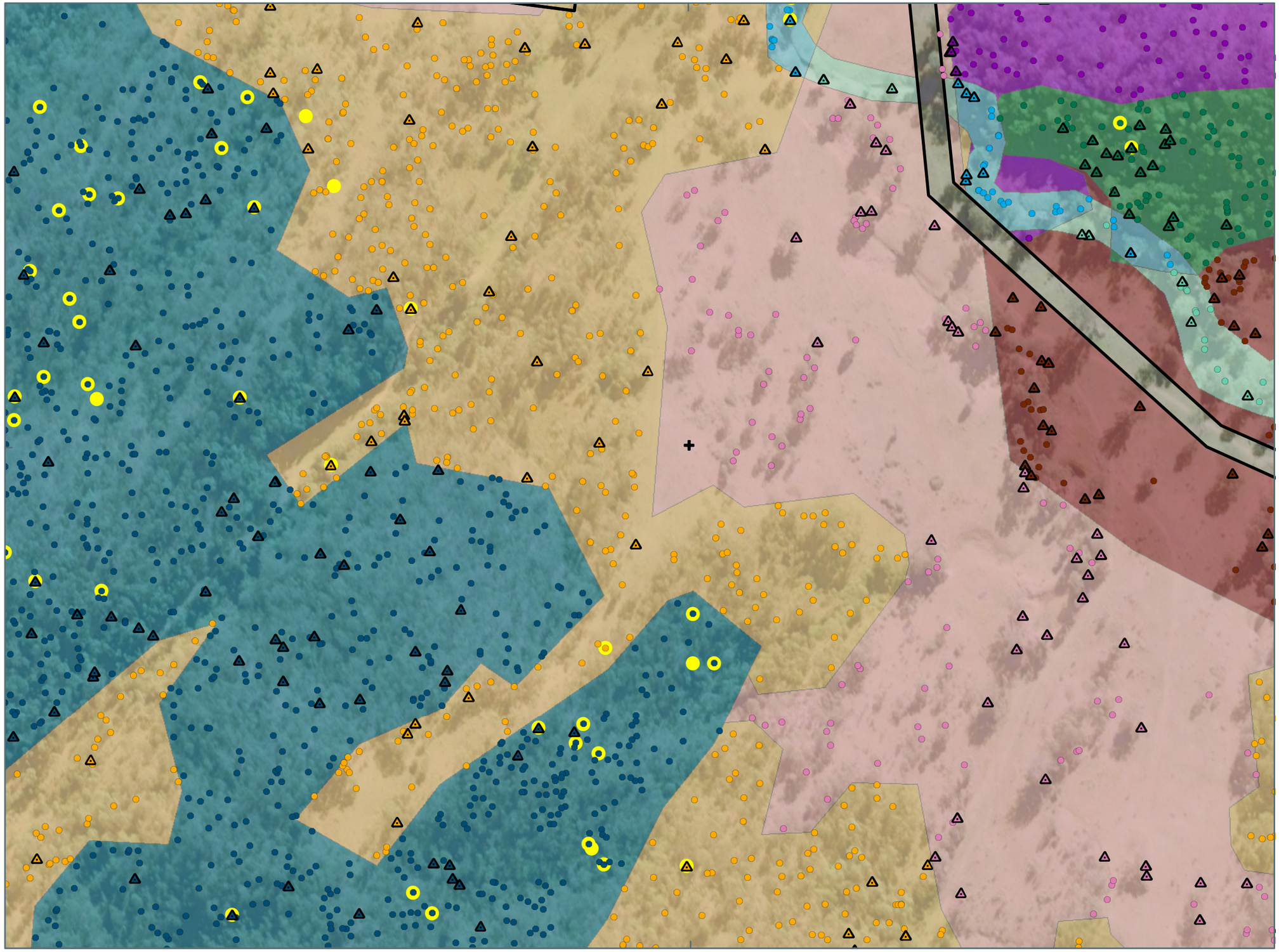
9383 E 13.11a Marrambi OMP3 GG Habitat B

13a.12. MARRAMBI GREATER GLIDER HABITAT



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha] {Medium & greater sized hollow count: 134}
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- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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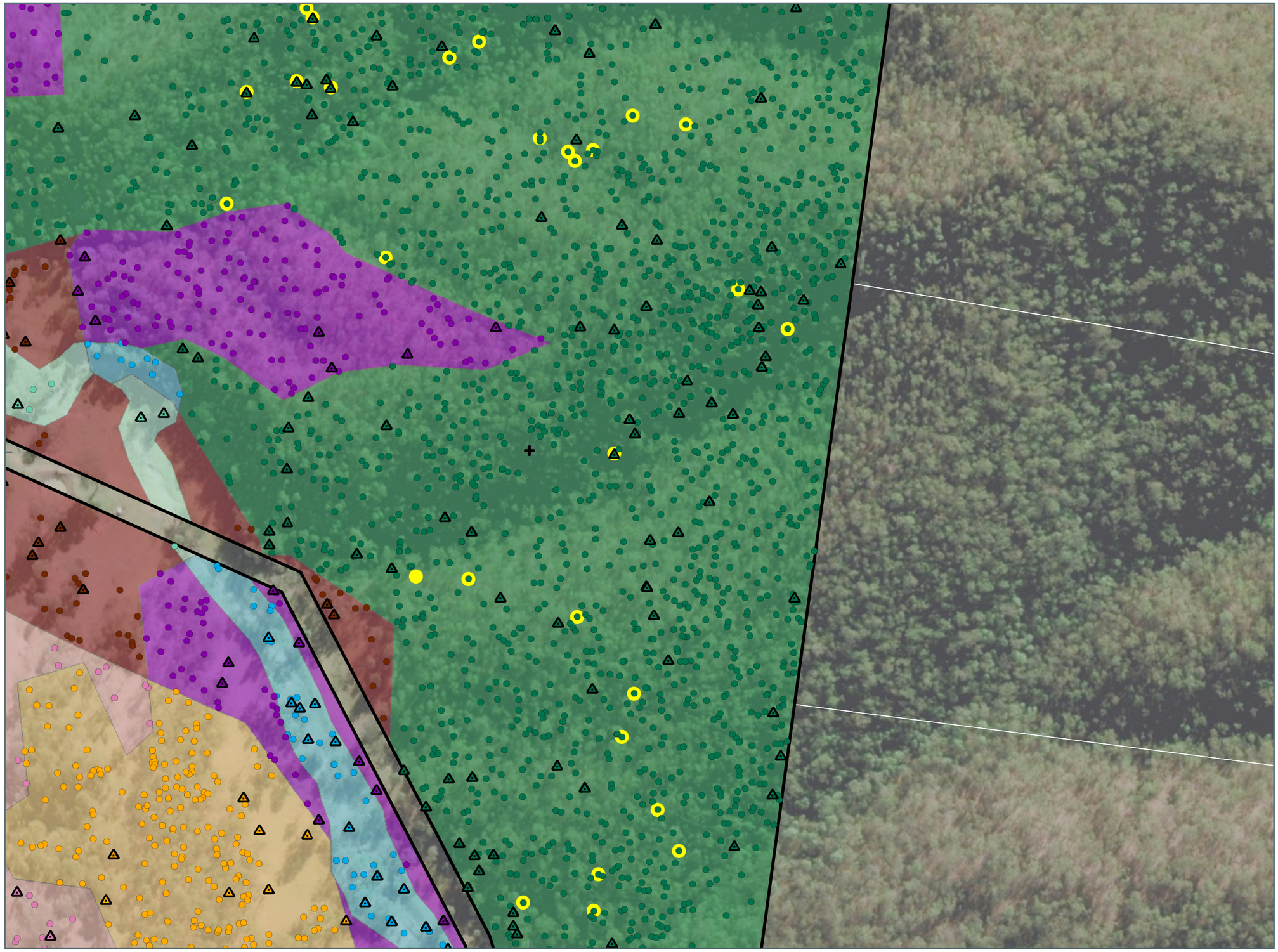
13a.13. MARRAMBI GREATER GLIDER HABITAT



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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
- Trunk DBH: >= 500 mm
- Tree with medium or greater sized hollow/s



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13a.14. MARRAMBI GREATER GLIDER HABITAT



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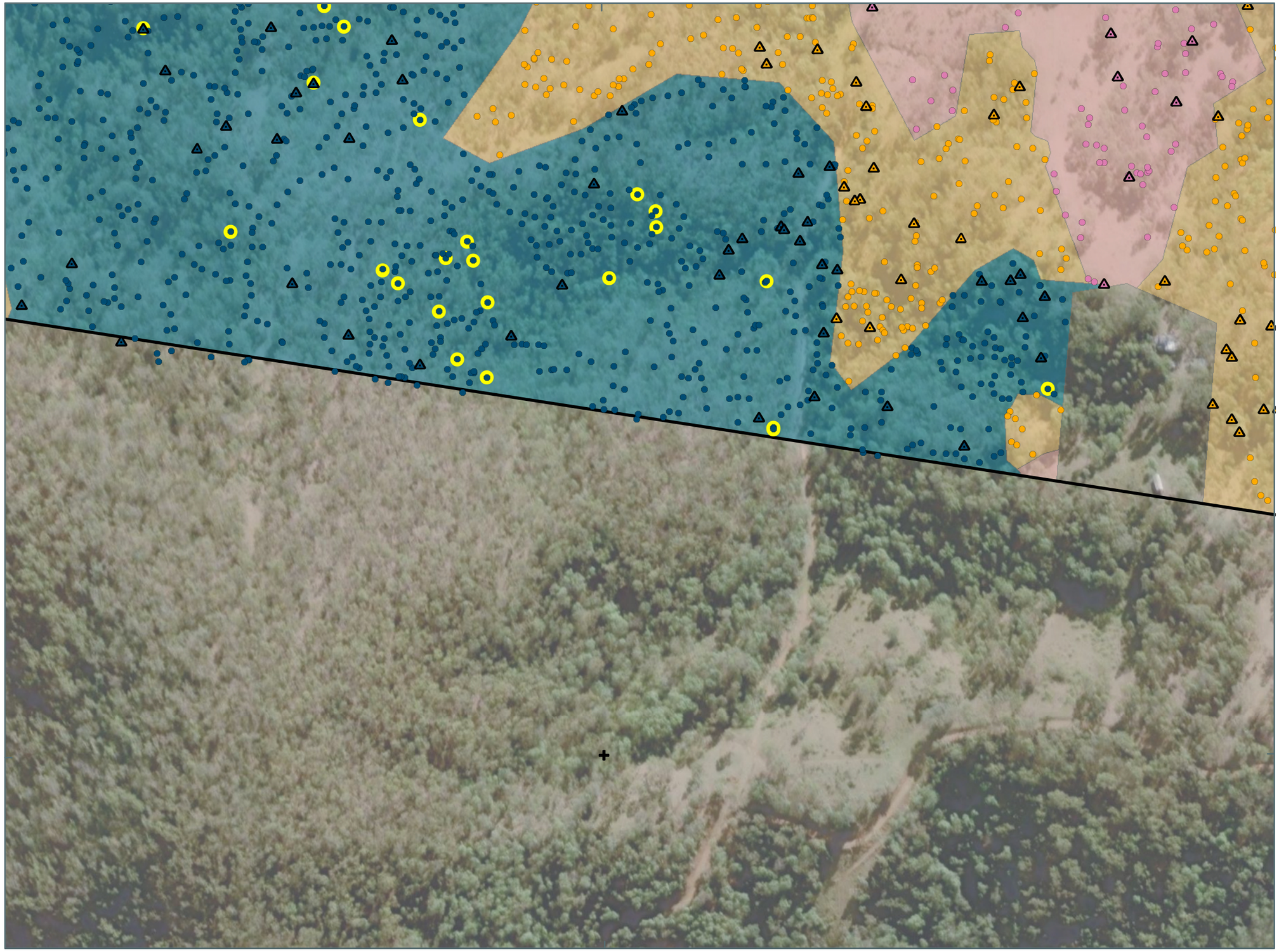
9383 E 13.14a Marrambi OMP3 GG Habitat B

13a.15. MARRAMBI GREATER GLIDER HABITAT



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

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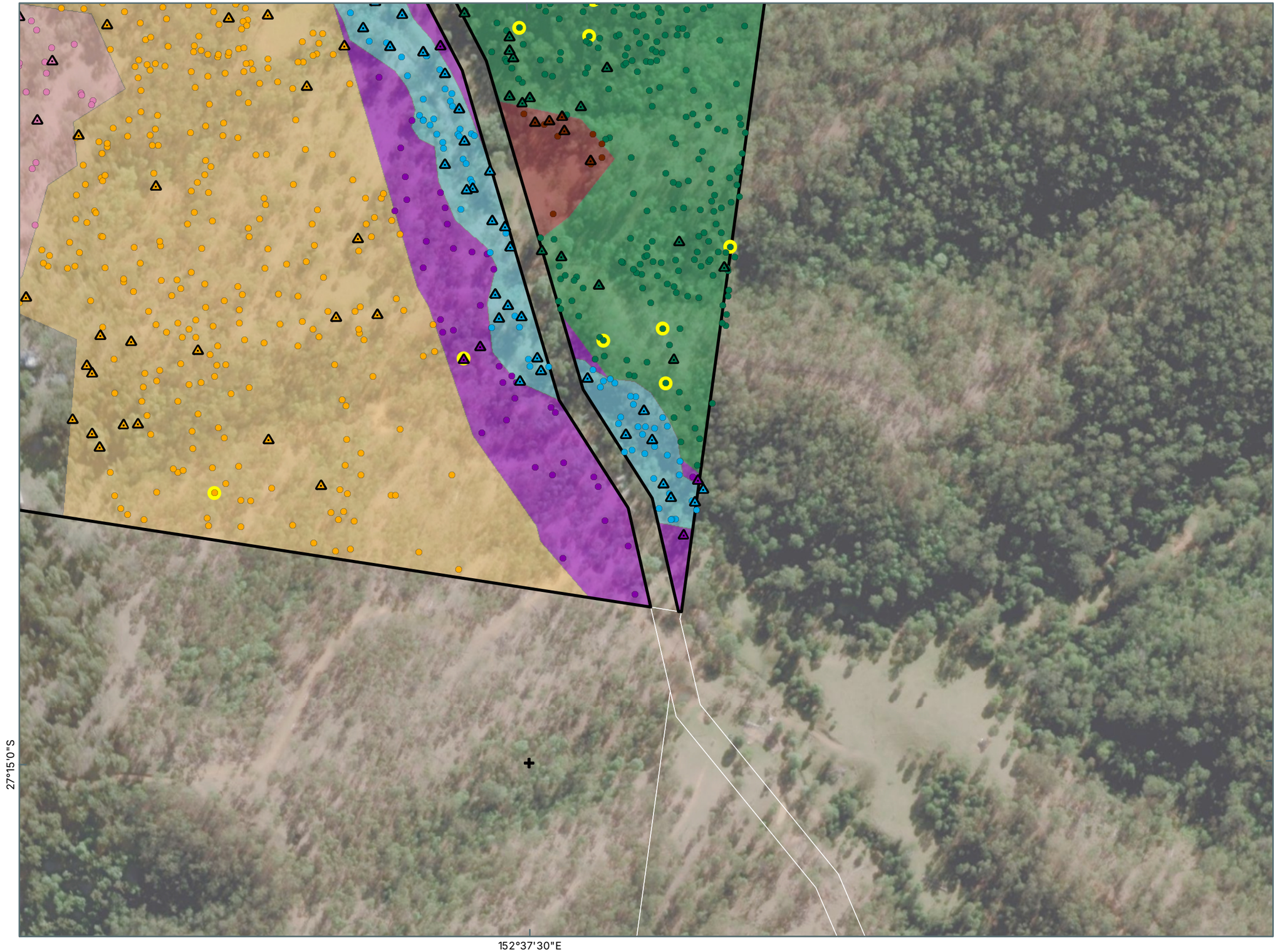
9383 E 13.15a Marrambi OMP3 GG Habitat B

13a.16. MARRAMBI GREATER GLIDER HABITAT



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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

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Greater Glider Habitat Tree Plot

- Trunk DBH: < 500mm & >= 300 mm
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- Tree with medium or greater sized hollow/s



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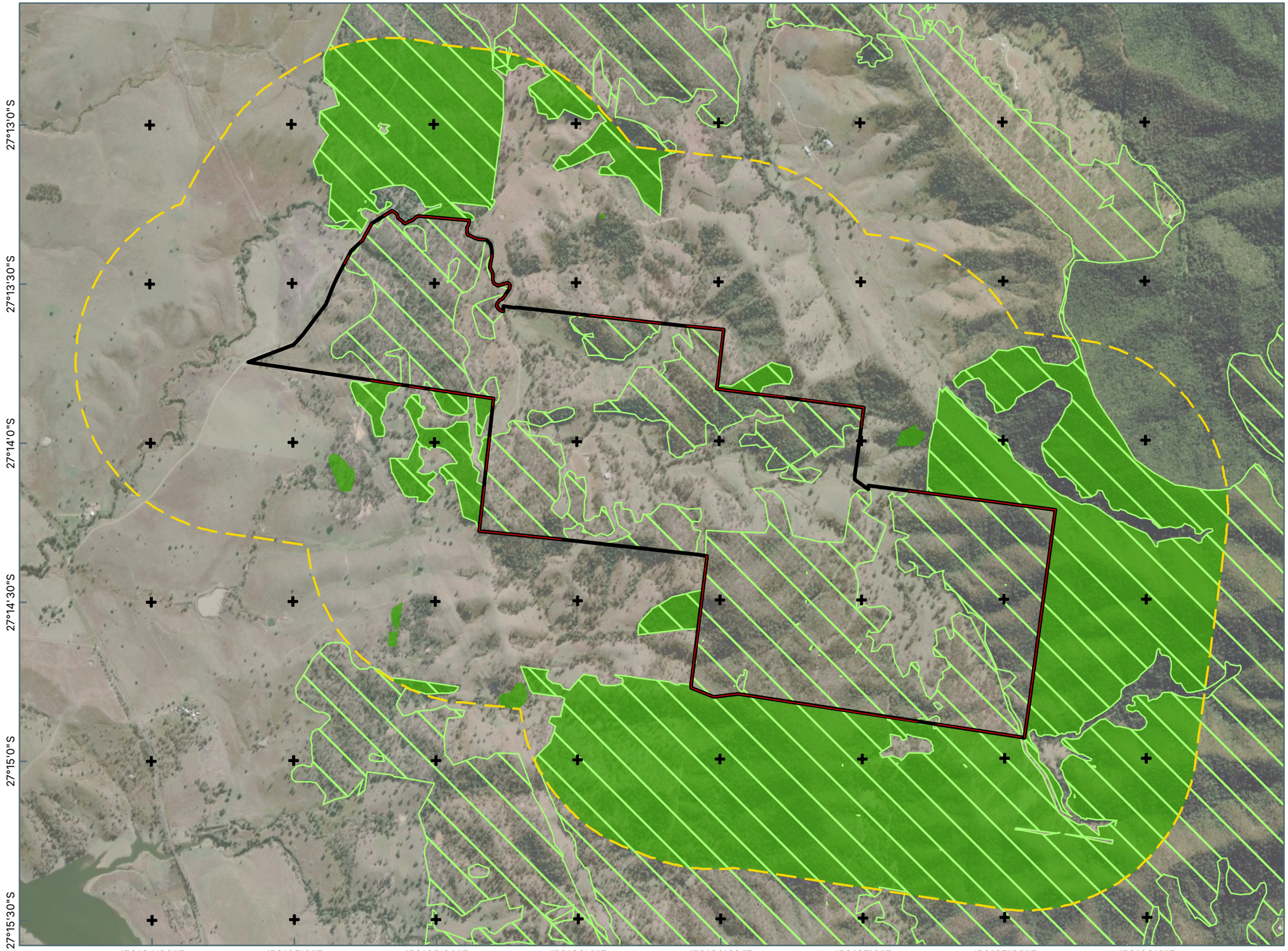
13b. MARRAMBI GREATER GLIDER MHQA CONTEXT ASSESSMENT



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LEGEND

- Marrambi Offset Site Assessment Area
- 1km buffer
- Percentage of offset area boundary length supporting a Greater Glider habitat connection off and on site - 67.5%
- Percentage of Greater Glider habitat within 1 km of offset area 42.7%)
- Size of Greater Glider habitat patch adjoining offset site - >1,000 ha



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9383 E 13b Marrambi OMP3 GG Context A

13c. MARRAMBI GREATER GLIDER LANDSCAPE CONTEXT ASSESSMENT

27°10'0"S

27°20'0"S

152°20'0"E

152°30'0"E

152°40'0"E

152°50'0"E

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LEGEND

- Marrambi Offset Site Assessment Area
- Site 5km Buffer
- Site 20km Buffer
- Potential Greater Glider habitat within 20km of offset site

Greater Glider Records within 20km of Site ALA, 2025.07

- Greater Glider (*Petauroides minor*) Records within 20km of Offset Area without a record date [2]
- Greater Glider (*Petauroides minor*) Records within 20km of Offset Area recorded over 20 years ago [20]
- Greater Glider (*Petauroides minor*) Records within 20km of Offset Area recorded between 5 to 20 years ago [4]
- Greater Glider (*Petauroides volans*) Records within 20km of Offset Area recorded between 5 to 20 years ago [2]
- Greater Glider (*Petauroides volans*) Records within 20km of Offset Area recorded within the last 5 years [2]



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9383 E 13c Marrambi OMP3 GG Context A

6.2.6.2 Site Condition (30%)

The site condition scoring for the offset area is summarised in **Table 39**. Refer to **Appendix D** for detailed baseline greater glider MHQA scoring and **Appendix B** for the raw data. Please note 40:20:40 relative weighting.

Table 39: Site condition scores for offset area assessment units – Greater Glider

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Regional Ecosystem	12.12.5	12.11.5	12.3.7	12.9-10.2	12.12.12	12.12.5	12.11.5	12.12.5	12.9-10.2	12.3.7	12.11.5
Status*	R	R	HVR	NR	NR	NR	HVR	HVR	HVR	NR	NR
Recruitment of woody perennial species in EDL	5	3	3	3	0	3	5	5	5	5	3
Native plant species richness - trees	5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	2.5
Native plant species richness - shrubs	2.5	2.5	2.5	2.5	0	0	2.5	2.5	2.5	2.5	0
Native plant species richness - grasses	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Native plant species richness - forbs	2.5	2.5	0	2.5	0	0	2.5	2.5	2.5	0	0
Average tree canopy height*	5	5	5	4	0	4	5	5	5	5	5
Average tree canopy cover*	4	5	5	2	0	3.5	5	4	3.5	3.5	3.5
Shrub canopy cover	5	5	3	5	0	3	0	3	5	3	0
Native grass cover	3	5	5	5	5	5	1	5	5	5	5
Organic litter	3	5	0	0	3	0	3	2	3	5	0
Large trees	5	5	5	5	5	5	5	3	5	5	5
Coarse woody debris	5	5	2	2	0	0	5	5	2	2	0
Non-native plant cover	3	5	0	3	3	5	3	5	5	3	3

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Quality and availability of food and foraging habitat	10	10	10	1	1	1	10	10	10	10	1
Quality and availability of shelter	5	10	10	5	10	1	1	5	5	10	1
Total (Out of 100)	**65.25**	**77.75**	**77.75**	**40**	**52.5**	**22.75**	**45**	**62.5**	**64.25**	**83.25**	**20.75**
Score out of 3	**1.96**	**2.63**	**2.33**	**1.20**	**1.58**	**0.68**	**1.35**	**1.88**	**1.93**	**2.50**	**0.62**

* R = Remnant, HVR = High Value Regrowth, NR = Non-remnant

The site condition values for AU1 – AU11 are scored as above.

6.2.6.3 Site Context (30%)

The site context characteristics for greater glider are shown on **Plan 13b** and **Plan 13c** with scores summarised in **Table 40.**

Table 40: Greater Glider context scores for the offset area

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Size of patch	10	10	10	10	10	10	10	10	10	10	10
Connectedness	2	2	2	2	2	2	2	2	2	2	2
Context	4	4	4	4	4	4	4	4	4	4	4
Ecological corridors	6	6	6	6	6	6	6	6	6	6	6
Role of the site location to species overall population in the state	5	5	5	5	5	5	5	5	5	5	5
Threats to species	7	7	7	7	7	7	7	7	7	7	7
Species mobility capacity	7	7	7	4	4	4	7	7	7	7	4
Total (out of 56)	**41**	**41**	**41**	**38**	**38**	**38**	**41**	**41**	**41**	**41**	**38**
Score out of 3	**2.20**	**2.320**	**2.20**	**2.04**	**2.04**	**2.04**	**2.20**	**2.20**	**2.20**	**2.20**	**2.04**

Size of patch

The offset area is connected to a patch of 500 ha therefore achieves a score of **10 out of 10**.

Connectedness

The offset area shares 67.5% of its boundary with Greater Glider habitat therefore achieves a score of **4 out of 5**.

Context

The offset area includes habitat coverage of 42.7% within 1 km of the offset area and scores **4 out of 5**.

Ecological corridors

The offset area is located partially within a Statewide corridor of regional significance (refer **Plan 6)** therefore achieves a score of **6 out of 6**.

Role of Site

The offset area is a suitable offset so scores **5 out of 5**.

Threats to species

Threats to greater glider are present across the broader Marrambi Offset Property and includes potential for dog and fox attack, degradation of habitat through uncontrolled weed infestations, namely *Lantana camara* (Lantana), uncontrolled wildfire and the presence of barbed wire fencing. Additional to this is the likelihood of non-native feral herbivores to destroy revegetation areas.

The presence of moderate to severe Lantana infestations is a threat to the greater glider habitat by reducing the potential for natural regeneration. Feral predators are known to occur within the locality and have been reported within the broader offset property. The property fencing includes barbed wire that is major threat to greater glider.

Given the general lack of safe shelter in trees and presence of multiple threats across the offset area, a score of 7 or 'moderate' was considered appropriate.

Species mobility capacity

Species mobility capacity is considered consistent across all AUs that have relatively intact canopy cover, being 'moderately restricted' (score 7) due to the scattered state of vegetation and highly restricted (Score 4) where the ecological dominant layer is relatively patchy and there is an absence of connected canopy for greater glider dispersal (AUs 4, 5, 6 and 11).

6.2.6.4 Species Stocking Rate (40%)

The species stocking rate for greater glider scored **15 out of 70** for all AUS where dispersal canopy habitat was present and **10 out of 70** where habitat was not considered suitable AUs 4, 5, 6 and 11, refer **Table 41**). Further details on the assessment are provided below:

- Greater glider have been recorded within nearby National Park, therefore 'presence detected on or adjacent to site' was assigned a score of **5 out of 10** for all assessment units.
- No greater glider were recorded on site. Regardless, where intact canopy is considered present the assessment units scored as **5 out of 15** for 'species usage of the site (habitat type and evidenced usage)' to reflect the use as dispersal habitat, and where habitat was lacking the assessment units score **0 out of 15** 'not habitat (AUs 4, 5, 6 and 11).
- The 'approximate density' for each assessment unit was scored as **0 out of 30** due to the absence of evidence of utilisation within this assessment unit.
- Using the precautionary principle, the offset area is considered a key source for population for dispersal under 'role/importance of species population on-site' therefore was scored a **5 out of 15**.

Table 41: Greater glider species stocking rate scores within offset area assessment units

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Presence detected on or adjacent to site (neighbouring property with connecting habitat) (/10)	5	5	5	5	5	5	5	5	5	5	5
Species usage of the site (habitat type and evidenced usage) (/15)	5	5	5	0	0	0	5	5	5	5	0
Approximate density (per ha) (/30)	0	0	0	0	0	0	0	0	0	0	0
Role/importance of species population on site* (/15)	5	5	5	5	5	5	5	5	5	5	5
Total Species Stocking Rate Score (/70)	0.21	0.21	0.21	0.14	0.14	0.14	0.21	0.21	0.21	0.21	0.14
Species Stocking Rate Score – out of 4	0.86	0.86	0.86	0.57	0.57	0.57	0.86	0.86	0.86	0.86	0.57

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Key source population for breeding (/5)	0	0	0	0	0	0	0	0	0	0	0
Key source population for dispersal (/5)	5	5	5	5	5	5	5	5	5	5	5
Necessary for maintaining genetic diversity (/15)	0	0	0	0	0	0	0	0	0	0	0
Near the limit of the species range (/15)	0	0	0	0	0	0	0	0	0	0	0

Greater glider have been recorded in the vicinity of the proposed offset area with connectivity evident (**Plan 13c**).

6.2.7 Swift Parrot MHQA

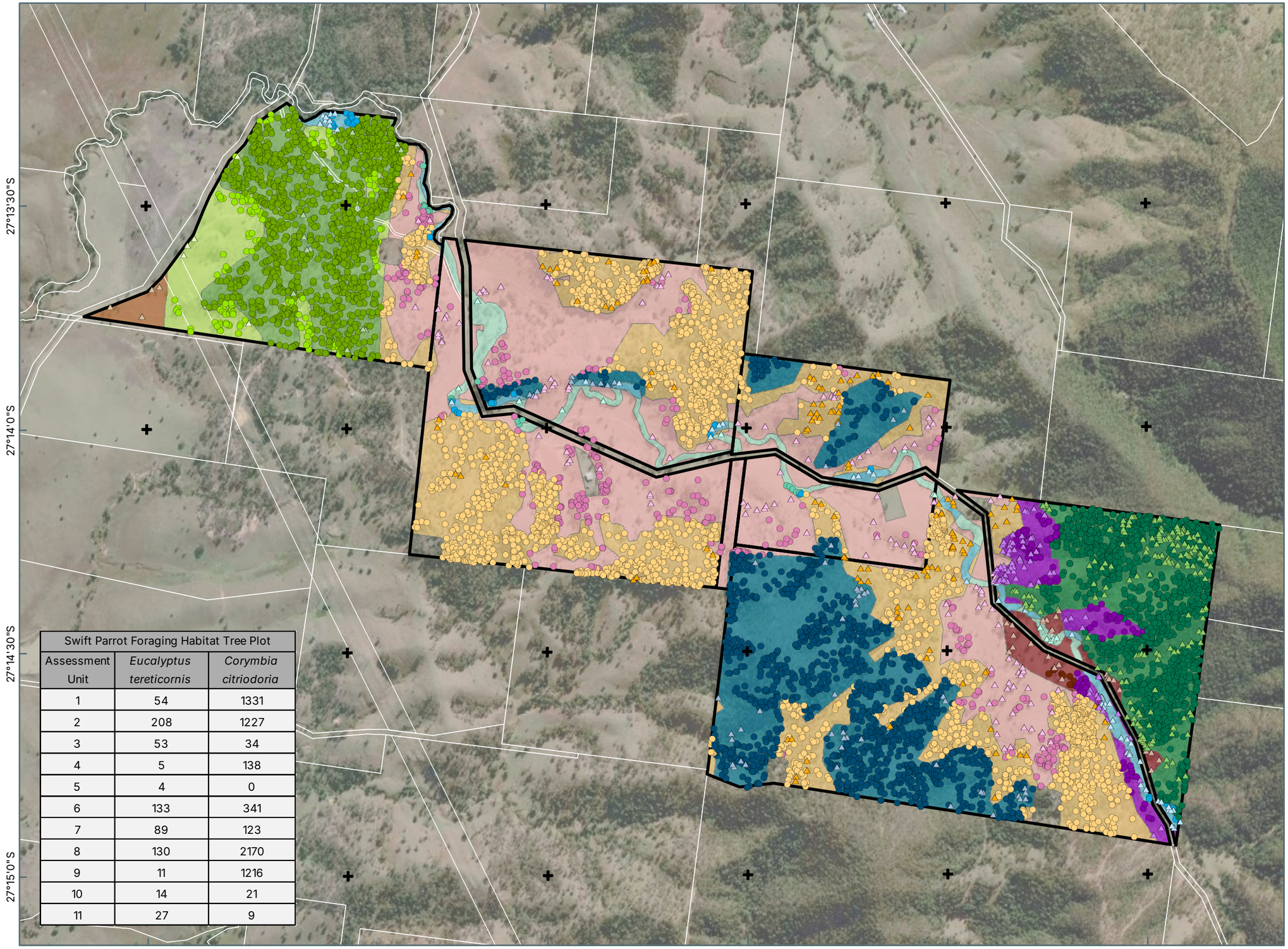
6.2.7.1 Features

Table 42 and **Plan 14a** set out the key foraging species mapped for swift parrot on the offset site. Swift parrot have not been recorded in the vicinity of the proposed offset area due largely to their rarity but are highly mobile and there is ample suitable habitat in the surrounding landscape (refer **Plan 14b**).

Table 42: Offset site swift parrot key foraging species counts

Assessment Unit	*E. tereticornis*	*C. citriodora*	Total Key Species
1	54	1,331	1,385
2	208	1,227	1,435
3	53	34	87
4	5	138	143
5	4	0	4
6	133	341	474
7	89	123	212
8	130	2,170	2,300
9	11	1,216	1,227
10	14	21	35
11	27	9	36

14a. MARRAMBI SWIFT PARROT FORAGING HABITAT



Swift Parrot Foraging Habitat Tree Plot		
Assessment Unit	*Eucalyptus tereticornis*	*Corymbia citriodoria*
1	54	1331
2	208	1227
3	53	34
4	5	138
5	4	0
6	133	341
7	89	123
8	130	2170
9	11	1216
10	14	21
11	27	9

Notes:
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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha]
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [142.49 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

Swift Parrot Foraging Habitat Tree Plot

- *Corymbia citriodoria*
- *Eucalyptus tereticornis*



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GDA 2020 | Zone 56

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@ A3

RPD: 83S311739

24/10/2025

9383 E 14a Marrambi OMP3 SP Habitat B

14b. MARRAMBI SWIFT PARROT LANDSCAPE CONTEXT ASSESSMENT

27°10'0"S

27°20'0"S

152°20'0"E

152°30'0"E

152°40'0"E

152°50'0"E

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LEGEND

- Marrambi Offset Site Assessment Area
- Site 5km Buffer
- Site 20km Buffer
- Potential Swift Parrot Foraging habitat within 20km of offset site

Swift Parrot Records within 20km of Site

ALA, 2025.07

- Swift Parrot (*Lathamus discolors*) Records within 20km of Offset Area [0]



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RPD: 83S311739

24/10/2025

9383 E 14b Marrambi OMP3 SP Context A

6.2.8 Regent Honeyeater MHQA

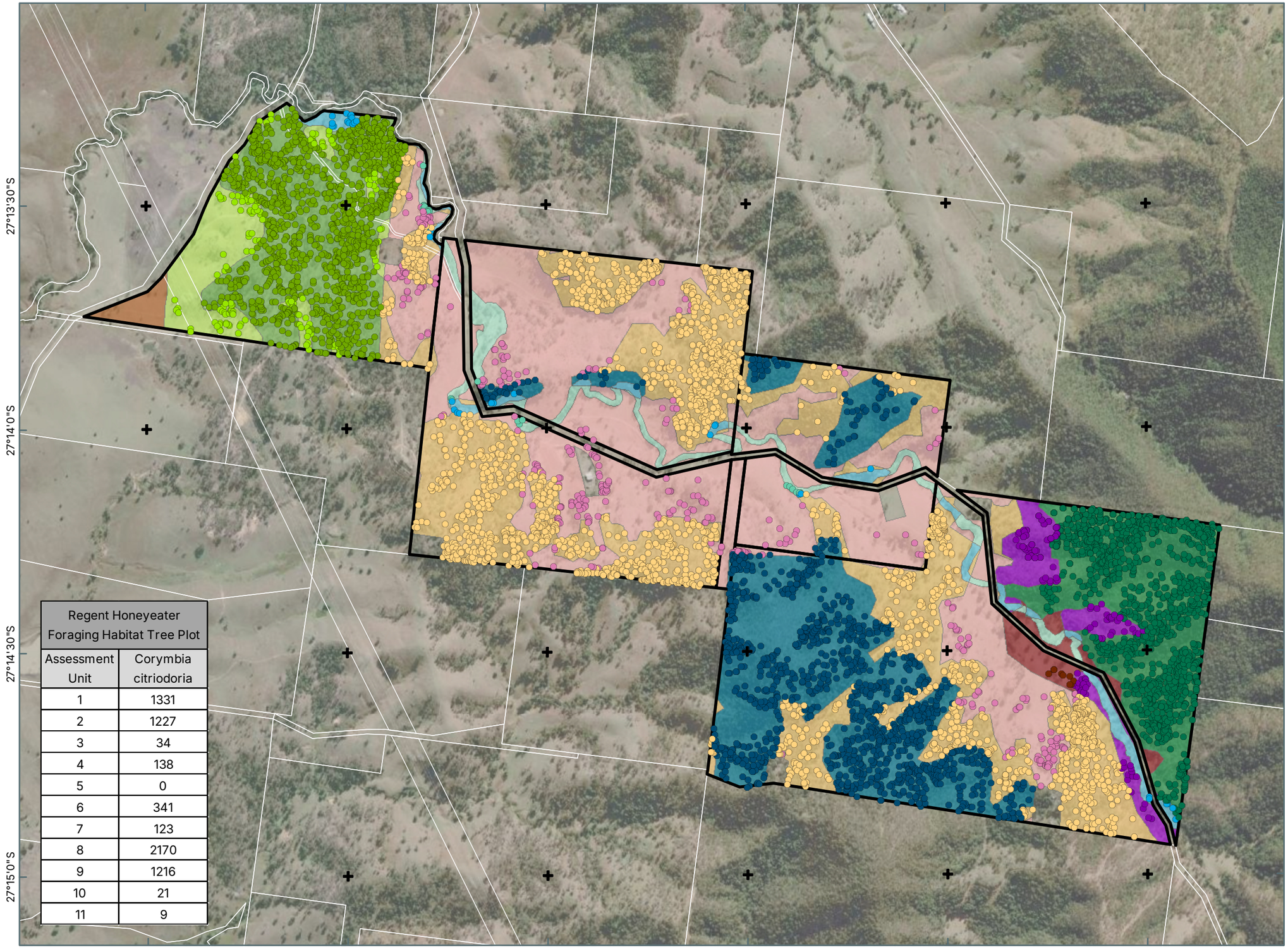
6.2.8.1 Features

Table 43 and **Plan 15a** set out the key foraging species mapped for regent honeyeater on the offset site. Regent honeyeater have not been recorded in the vicinity of the proposed offset area due largely to their rarity but are highly mobile and there is ample suitable habitat in the surrounding landscape (refer **Plan 15b**).

Table 43: Offset site regent honeyeater key foraging species counts

Assessment Unit	*C. citriodora*
1	1,331
2	1,227
3	34
4	138
5	0
6	341
7	123
8	2,170
9	1,216
10	21
11	9

15a. MARRAMBI REGENT HONEYEATER FORAGING HABITAT



Regent Honeyeater Foraging Habitat Tree Plot	
Assessment Unit	Corymbia citriodoria
1	1331
2	1227
3	34
4	138
5	0
6	341
7	123
8	2170
9	1216
10	21
11	9

Notes:
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LEGEND

- Qld DCDB
- Marrambi Offset Site boundaries

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha]
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [143.19 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.80 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

Regent Honeyeater Foraging Habitat Tree Plot

- *Corymbia citriodoria*



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RPD: 83S311739

24/10/2025

9383 E 15a Marrambi OMP3 RHE Habitat B

15b. MARRAMBI REGENT HONEYEATER LANDSCAPE CONTEXT ASSESSMENT

27°10'0"S
27°20'0"S
152°20'0"E
152°30'0"E
152°40'0"E
152°50'0"E

Notes:
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LEGEND

- Marrambi Offset Site Assessment Area
- Site 5km Buffer
- Site 20km Buffer
- Potential Regent Honeyeater Foraging habitat within 20km of offset site

Regent Honeyeater Records within 20km of Site ALA, 2025.07*

- Regent Honeyeater (*Anthochaera phrygia*) Records within 20km of Offset Area [0]

*Records have been generalised to a 10x10km grid to protect actual record location



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9383 E 15b Marrambi OMP3 RHE Context A

6.2.9 Summary of baseline scores for offset area

The overall baseline habitat quality scores for MNES at the offset area are presented in **Tables 44 to 46**.

Table 44: Offset Area MHQA score summary - koala

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Site Condition (/3)	1.82	2.27	1.37	1.47	0.69	1.31	1.56	1.65	1.76	1.70	1.19
Site Context (/3)	2.36	2.36	2.36	2.36	2.20	2.36	2.36	2.36	2.36	2.36	2.20
Species Stocking Rate (/4)	2.29	2.29	2.29	2.29	1.71	2.29	2.29	2.29	2.29	2.29	1.71
MHQA Score*	**6.46 (6)**	**6.91 (7)**	**6.01 (6)**	**6.11 (6)**	**4.60 (5)**	**5.95 (6)**	**6.20 (6)**	**6.2 (6)**	**6.40 (6)**	**6.34 (6)**	**5.10 (5)**

*number in parentheses is rounded score

Table 45: Offset area FHA score summary – grey-headed flying-fox

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Site Condition (/3)	2.48	2.68	1.38	1.17	0.48	1.43	1.92	1.68	1.74	1.51	1.37
Site Context (/3)	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Species Stocking Rate (/4)	1.20	1.20	1.20	1.20	0.00	0.60	1.20	1.20	1.20	1.20	0.60
MHQA Score*	**5.43 (5)**	**5.63 (6)**	**4.33 (4)**	**4.12 (3)**	**2.23 (2)**	**3.78 (4)**	**4.87 (5)**	**4.63 (5)**	**4.69 (5)**	**4.46 (4)**	**3.72 (4)**

*number in parentheses is rounded score

Table 46: Offset area MHQA score summary – greater glider

Assessment Unit	AU1	AU2	AU3	AU4	AU5	AU6	AU7	AU8	AU9	AU10	AU11
Site Condition (/3)	1.96	2.63	2.33	1.25	1.58	0.68	1.35	62.5	1.93	2.50	0.62
Site Context (/3)	2.30	2.30	2.30	2.14	2.14	2.14	2.30	2.30	2.30	2.30	2.14
Species Stocking Rate (/4)	0.86	0.86	0.86	0.57	0.57	0.57	0.86	0.86	0.86	0.86	0.57
MHQA Score*	**5.12 (5)**	**5.79 (6)**	**5.49 (5)**	**3.96 (4)**	**4.29 (4)**	**3.40 (3)**	**4.51 (5)**	**5.04 (5)**	**5.09 (5)**	**5.66 (6)**	**3.34 (3)**

*number in parentheses is rounded score

7. Environmental Outcomes

This OMP identifies outcomes focused management actions pursuant to the EPBC Act, for the provision of koala (*Phascolarctos cinereus*), grey-headed flying-fox (*Pteropus poliocephalus*), greater glider (*Petauroides volans*), swift parrot (*Lathamus discolor*) and regent honeyeater (*Anthochaera phrygia*) habitat offset (target MNES). The management objectives for the offset area, in alignment with the Environmental Offsets Policy (EOP) will:

- Deliver an overall conservation outcome that improves the viability of habitat for the target MNES.
- Provide a direct offset that is in proportion to the level of statutory protection that applies to the target MNES.
- Be of a size and scale proportionate to the residual impacts on the target MNES.
- Effectively account for and manage the risks of the offset not being successful within the required management timeframe.
- Provide a conservation gain additional to what is already required by a duty of care or to any environmental planning laws at any level of Government.
- Be efficient, effective, timely, transparent, scientifically robust and reasonable with appropriate transparent governance arrangements in place for measuring, monitoring, auditing and enforcing the management of the offset area.

7.1. Koala

A summary of the baseline and improvement scoring for each assessment unit within the offset area is outlined in **Table 47**. Detailed environmental outcomes showing the specific attributes which are improved by the offset actions including interim milestones are provided at **Appendix E**.

Table 47: Koala baseline MHQA and offset improvement scores

Assessment Unit	Site Condition		Site Context		Species Stocking Rate		Habitat Score		Rounded Score	
	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift
1	1.82	2.70	2.36	2.52	2.29	2.29	6.46	7.51	6	8
2	2.27	2.70	2.36	2.52	2.29	2.29	6.91	7.51	7	8
3	1.37	2.70	2.36	2.52	2.29	2.29	6.01	7.51	6	8
4	1.47	2.70	2.36	2.52	2.29	2.29	6.11	7.51	6	8
5	0.69	2.70	2.20	2.52	2.29	2.29	4.60	7.51	5	8
6	1.31	2.70	2.36	2.52	2.29	2.29	5.95	7.51	6	8
7	1.56	2.70	2.36	2.52	2.29	2.29	6.20	7.51	6	8
8	1.65	2.70	2.36	2.52	2.29	2.29	6.29	7.51	6	8
9	1.76	2.70	2.36	2.52	2.29	2.29	6.40	7.51	6	8
10	1.80	2.70	2.36	2.52	2.29	2.29	6.34	7.51	6	8
11	1.19	2.70	2.20	2.52	2.29	2.29	5.10	7.51	5	8

7.2. Grey-headed flying-fox

A summary of the baseline and improvement scoring for each assessment unit within the offset area is outlined in **Table 48**. Detailed environmental outcomes showing the specific attributes which are improved by the offset actions including interim milestones are provided at **Appendix C**.

Table 48: GHFF baseline FHA and offset improvement scores

Assessment Unit	Site Condition		Site Context		Species Stocking Rate		Habitat Score		Rounded Score	
	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift
1	2.48	2.92	1.75	2.00	1.20	1.80	5.43	6.72	5	7
2	2.68	3.12	1.75	2.00	1.20	1.80	5.63	6.92	6	7
3	1.38	3.20	1.75	2.00	1.20	1.80	4.33	7.00	4	7
4	1.17	3.20	1.75	2.00	1.20	1.80	4.12	7.00	4	7
5	0.48	3.20	1.75	2.00	0.00	1.80	2.23	7.00	2	7
6	1.43	3.20	1.75	2.00	0.60	1.80	3.78	7.00	4	7
7	1.92	3.20	1.75	2.00	1.20	1.80	4.87	7.00	5	7
8	1.68	3.20	1.75	2.00	1.20	1.80	4.63	7.00	5	7
9	1.74	3.20	1.75	2.00	1.20	1.80	4.69	7.00	5	7
10	1.51	3.20	1.75	2.00	1.20	1.80	4.46	7.00	4	7
11	1.37	3.20	1.75	2.00	0.60	1.80	3.72	7.00	4	7

7.3. Greater glider

A summary of the baseline and improvement scoring for each assessment unit within the offset area is outlined in **Table 49**. Detailed environmental outcomes showing the specific attributes which are improved by the offset actions including interim milestones are provided at **Appendix E**.

Table 49: Greater glider baseline MHQA and offset improvement scores

Assessment Unit	Site Condition		Site Context		Species Stocking Rate		Habitat Score		Rounded Score	
	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift	Baseline	Uplift
1	1.96	2.70	2.30	2.52	0.86	0.86	5.12	6.08	5	6
2	2.63	2.70	2.30	2.52	0.86	0.86	5.79	6.08	6	6
3	2.33	2.70	2.30	2.52	0.86	0.86	5.49	6.08	4	6
4	1.25	2.70	2.14	2.52	0.57	0.86	3.96	6.08	4	6
5	1.58	2.70	2.14	2.52	0.57	0.86	4.29	6.08	4	6
6	0.68	2.70	2.14	2.52	0.57	0.86	3.40	6.08	3	6
7	1.35	2.70	2.30	2.52	0.86	0.86	4.51	6.08	5	6
8	1.88	2.70	2.30	2.52	0.86	0.86	5.04	6.08	5	6
9	1.93	2.70	2.30	2.52	0.86	0.86	5.09	6.08	5	6
10	2.50	2.70	2.30	2.52	0.86	0.86	5.66	6.08	6	6
11	0.62	2.70	2.14	2.52	0.57	0.86	3.34	6.08	3	6

For the features uplift, a Hollow Monitoring and Management Plan (HMMP) based on detailed Arborist assessment of offset site tree values and suitability for hollow carving has been compiled (refer **Appendix F**). From the HMMP, the number of hallows that can potentially be carved per assessment unit was utilised to determine assessment units that required hollow augmentation to achieve 1.5 hollows per hectare, which equates to the hollow density estimated for the impact site, and is within suitability range for the species as per the conservation advice (2 to 4 hollows per 2 hectares). On the rare occasion where tree count and structure is not suitable for enough hollow carving to achieve 1.5 hollows per hectare (e.g. AU7



with limited old growth trees) nest boxes are proposed to achieve target denning opportunities based on recent evidence of their utility provided the nest boxes are suitable and appropriately installed (Gracanin et al. 2025 and **Appendix F**). **Table 50** provides a summary of the features uplift achieved under the HMMP for the offset site.

Table 50: Greater glider features-based uplift summary

Assessment Unit	Area	Estimated hollows*	Hollows / ha	Carving options**	Carving required	Nest Boxes	Target Hollows / ha
1	87.8	161	1.83	164	None	None	1.83
2	50.15	132	2.63	42	None	None	2.63
3	8.91	35	3.93	37	None	None	3.93
4	19.65	38	1.93	38	None	None	1.93
5	3.29	8	2.43	9	None	None	2.43
6	142.49	98	0.69	161	116	None	1.50
7	13.52	2	0.15	16	16	2	1.50
8	145.58	164	1.13	172	54	None	1.50
9	53.93	91	1.69	58	None	None	1.69
10	12.68	34	2.68	51	None	None	2.68
11	6.61	0	0.00	31	10	None	1.50

*Hollow count plus 20% margin for sample error
**Refer HMMP

7.4. Swift Parrot

The intent for the features based uplift for swift parrot is to deliver at least 130% of the offset requirement across all three offset sites to allow a buffer of 30% for planting losses, which is well above the acceptable margin of 10% losses under the South East Queensland Ecological Restoration Framework. **Table 51** summarises the number of plantings required at the offset site to achieve this goal.

Table 51: Swift parrot features summary

Impacted Features	Required Offset*	EMZ Areas** - Marrambi (ha)	EMZ Areas - All Sites (ha)	Marrambi Area Proportion	Offset Count - Marrambi
2,894	18,707	406.65	830.34	0.49	9,162

*OAG required features to achieve 100% offset requirement plus 30% margin
**Refer Plan 16

In essence, from **Table 51** at least 9,162 *Eucalyptus tereticornis* and *Corymbia citriodora* need to be planted at the Marrambi offset site to achieve 130% of the OAG requirements for features factoring in all offset sites (refer **Appendix G** for OAG features reference showing 14,390 features achieves 100.05% of the offset requirement).

Further analysis shows that, when the offset site is broken into Environmental Management Zones (EMZs) for rehabilitation (refer **Plan 16** and **Section 9.7** for further details), 406.65 ha of the offset site is suitable for restoration works including plantings. Review of the Regional Ecosystem technical descriptions across EMZs suggests that on average 7.2% of plantings will be *Eucalyptus tereticornis* and 40.3% of plantings will be *Corymbia citriodora*, except for EMZ2 where only *E. tereticornis* is present at 5%. If we assume for the purpose of this analysis that for EMZ1 open paddock trees can be planted at 1/10m^2 as per the South East Queensland Ecological Restoration Framework, for EMZ2 and EMZ3 sparse regrowth trees can be

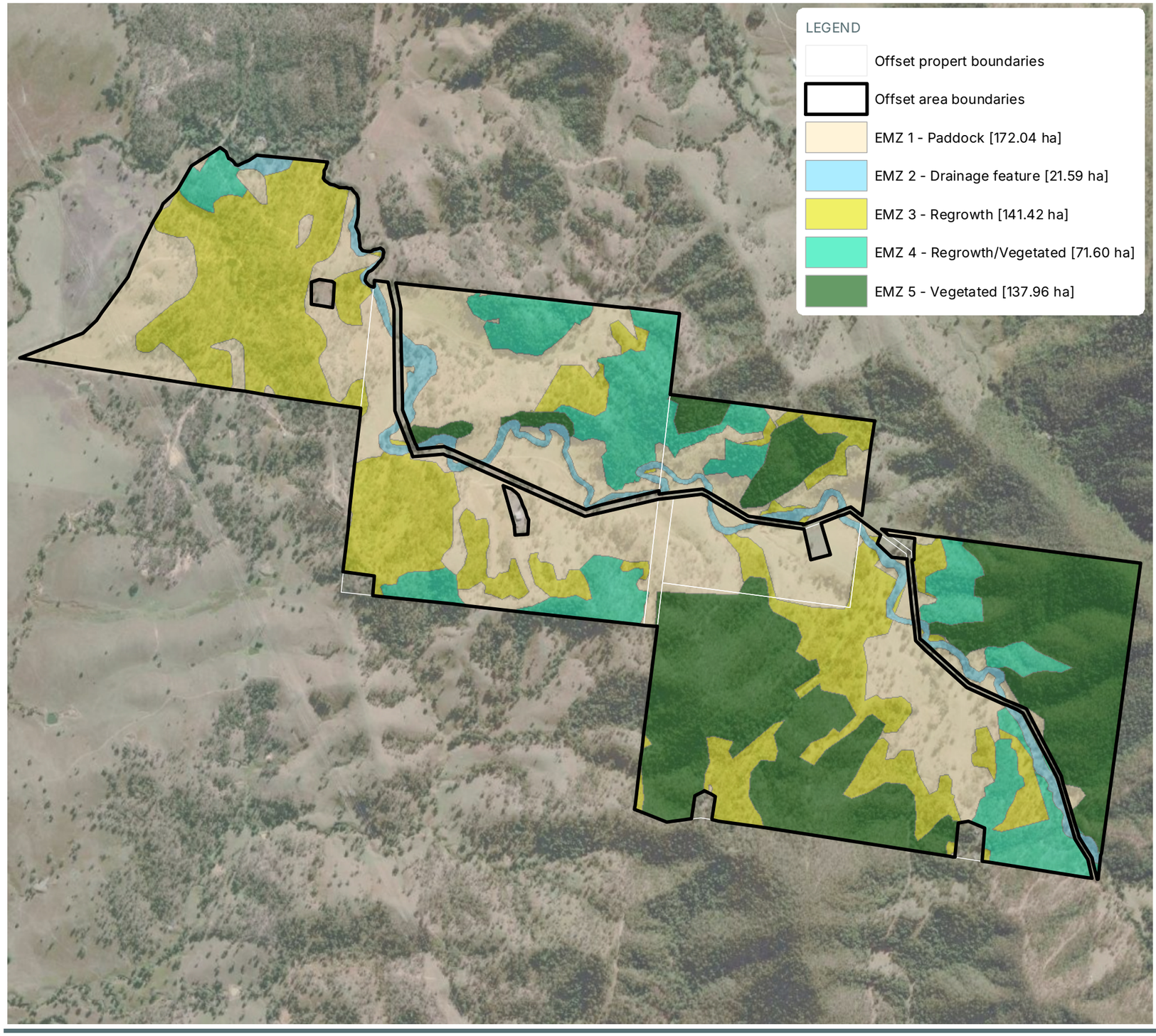
planted at a lower density of 1/50m^2, for EMZ4 dense regrowth trees can be planted at the lower density of 1/100 m^2 and no trees will be planted in EMZ5 that is relatively vegetated, then it is anticipated an estimated 97,733 *E. tereticornis* and *C. citriodora* could be planted at the offset site to achieve expected tree species richness and relative abundance as per the Regional Ecosystem technical descriptions (refer **Table 52**).

Table 52: Swift parrot potential offset site tree planting rates analysis

EMZ	Area (ha)	Status	Planting Rate	Total Plantings	Average Cover		Combined Proportion	EMZ Count	Total Count
					E. tereticornis	C. citriodora			
1	172.04	Paddock	1/10 m^2	172,040	0.07	0.40	0.47	80,859	97,733
2	21.59	Sparse Regrowth	1/50 m^2	4,318	0.05	0	0.05	216	[redacted]
3	141.42	Sparse Regrowth	1/50 m^2	28,284	0.07	0.40	0.47	13,293	
4	71.6	Dense Regrowth	1/100 m^2	7,160	0.07	0.40	0.47	3,365	

In summary, ecological restoration of the offset site targeting rehabilitation and re-establishment of inherent Regional Ecosystems will ably allow for the required number of offset plantings as set out in **Table 51** (at least 9,162).

16. MARRAMBI ENVIRONMENTAL MANAGEMENT ZONES



Environmental Management Zones (EMZ)

EMZ 1 (Open paddocks) – Predominantly Restoration Planting

Existing native trees, shrubs and groundcovers to be protected and retained.

Appropriate weed management methodology within this zone initially to encourage natural regeneration. The management methodology must utilise sensitive techniques that will stabilise soil and minimise damage to existing native vegetation.

Entire zone to be reconstructed though full restoration planting of a mixture of trees, shrubs and groundcovers, following weed management works at densities appropriate for providing foraging habitat for koala, grey-headed flying-fox, regent honeyeater and swift parrot. Where possible, species to be of local provenance and consistent with native species occurring naturally on site and/or EMZ's Preclear regional ecosystems.

EMZ 2 (Sparse Vegetation & Regrowth Drainage Feature) – Mixture of Infill Planting & Weed Management

Existing native trees, shrubs and groundcovers to be protected and retained.

Appropriate weed management methodology within this zone initially to encourage natural regeneration. The management methodology must utilise sensitive techniques that will stabilise soil, minimise damage to existing native vegetation, drainage feature banks and minimise impacts to aquatic / semi-aquatic fauna.

Existing disturbed banks and areas disturbed from weed management works are to be infill planted with a mixture of trees, shrubs and groundcovers at densities appropriate for providing foraging habitat for koala, grey-headed flying-fox, regent honeyeater and swift parrot. Planting on the drainage bank to comply with 'Categories of channel vegetation'. Where possible, species to be of local provenance and consistent with native species occurring naturally on site and/or EMZ's Preclear regional ecosystems.

EMZ 3 (Sparse Vegetation & Regrowth Areas) – Mixture of Infill Planting & Weed Management

Existing native trees, shrubs and groundcovers to be protected and retained.

Appropriate weed management methodology within this zone initially to encourage natural regeneration. The management methodology must utilise sensitive techniques that will stabilise soil and minimise damage to existing native vegetation.

Existing paddock and areas disturbed from weed management works are to be infill planted with a mixture of trees, shrubs and groundcovers at densities appropriate for providing foraging habitat for koala, grey-headed flying-fox, regent honeyeater and swift parrot. Where possible, species to be of local provenance and consistent with native species occurring naturally on site and/or EMZ's Preclear regional ecosystems.

EMZ 4 (Regrowth and Vegetated Areas)- Predominantly Weed Management with Infill Planting

Existing native trees, shrubs and groundcovers to be protected and retained.

Appropriate weed management methodology within this zone initially to encourage natural regeneration. The management methodology must utilise sensitive techniques that will stabilise soil and minimise damage to existing native vegetation.

Infill planting only within areas heavily disturbed from weed management works and where natural regen is not possible. Infill planting is to occur utilising seedling trees, shrubs and groundcovers where required to supplement density of foraging tree species for koala, grey-headed flying-fox, regent honeyeater and swift parrot. Trees to be planted at locations >3m from existing tree trunks. Where possible, species to be of local provenance and consistent with native species occurring naturally on site and/or EMZ's Preclear regional ecosystems.

EMZ 5 (Remnant Vegetation)- Weed Management

Existing native trees, shrubs and groundcovers to be protected and retained.

Appropriate weed management methodology within this zone initially to encourage natural regeneration. The management methodology must utilise sensitive techniques that will stabilise soil and minimise damage to existing native vegetation.

Infill planting only within areas heavily disturbed from weed management and where natural regen is not possible. Infill planting is to occur utilising seedling trees, shrubs and groundcovers where required to supplement density of foraging tree species for koala, grey-headed flying-fox, regent honeyeater and swift parrot. Trees to be planted at locations >3m from existing tree trunks. Where possible, species to be of local provenance and consistent with native species occurring naturally on site and/or EMZ's Preclear regional ecosystems.

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REFERENCES
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

AMENDMENTS

ISSUE	DATE	DESCRIPTION	DRAWN	CHECKED
B	24/10/2025	Updated AU areas	TC	AD

CLIENT
FRASERS PROPERTY
NEW BEITH PTY LTD

PROJECT
MARRAMBI OFFSET
MANAGEMENT PLAN

DRAWING TITLE
ENVIRONMENTAL
MANAGEMENT ZONES

DRAWING NO.
9383 E 16 Marrambi EMZs B

7.5. Regent Honeyeater

The intent for the features based uplift for regent honeyeater is to deliver at least 130% of the offset requirement across all three offset sites to allow a buffer of 30% for planting losses, which is well above the acceptable margin of 10% losses under the South East Queensland Ecological Restoration Framework. **Table 53** summarises the number of plantings required at the offset site to achieve this goal.

Table 53: Regent honeyeater features summary

Impacted Features	Required Offset*	EMZ Areas** - Marrambi (ha)	EMZ Areas - All Sites (ha)	Marrambi Area Proportion	Offset Count - Marrambi
1,570	10,147	406.65	830.34	0.49	4,969

*OAG required features to achieve 100% offset requirement plus 30% margin
**Refer Plan 16

In essence, from **Table 53** at least 4,969 *Corymbia citriodora* need to be planted at the Marrambi offset site to achieve 130% of the OAG requirements for features factoring in all offset sites (refer **Appendix G** for OAG features reference showing 7,805 features archives 100.03% of the offset requirement).

Further analysis shows that, when the offset site is broken into EMZs for rehabilitation (**Plan 16** and refer also **Section 9.7** for further details), 406.65 ha of the offset site is suitable for restoration works including plantings. Review of the Regional Ecosystem technical descriptions across EMZs suggests that on average 40.3% of plantings will be *Corymbia citriodora*, except for EMZ2 where only *E. tereticornis* is present. If we again assume for the purpose of this analysis that for EMZ1 open paddock trees can be planted at 1/10m^2 as per the South East Queensland Ecological Restoration Framework, for EMZ2 and EMZ3 sparse regrowth trees can be planted at a lower density of 1/50m^2, for EMZ4 dense regrowth trees can be planted at the lower density of 1/100 m^2 and no trees will be planted in EMZ5 that is relatively vegetated, then it is anticipated an estimated 82,994 *C. citriodora* could be planted at the offset site to achieve expected tree species richness and relative abundance as per the Regional Ecosystem technical descriptions (refer **Table 54**).

Table 54: Regent honeyeater potential offset site tree planting rates analysis

EMZ	Area (ha)	Status	Planting Rate	Total Plantings	Average Cover C. citriodora	EMZ Count	Total Count
1	172.04	Paddock	1/10 m^2	172,040	0.40	68,816	82,994
3	141.42	Sparse Regrowth	1/50 m^2	28,284	0.40	11,314	
4	71.6	Dense Regrowth	1/100 m^2	7,160	0.40	2,864	

In summary, ecological restoration of the offset site targeting rehabilitation and re-establishment of inherent Regional Ecosystems will ably allow for the required number of offset plantings as set out in **Table 53** (at least 4,969).

7.6. Offset Assessment Guide – Calculator

Tables 55 to 59 outline summaries of the MNES offset compensation associated with the impacts. The offset compensation for the impacts on MNES is derived from the OAG calculator and habitat quality gains achieved from the successful implementation of the management actions.

Refer to **Appendix H** for the detailed EPBC offset calculator sheets and **Appendix E** for uplift justifications.

Table 55: Summary of Koala offset compensation

Impact Area			Offset Area		
Impact Area	Impact Score	Quantum Impact (QI) Area	Habitat Quality Gain	Offset Area (ha)	% of Impact Offset
			AU1		
187.0 9ha	6/10	112.25 QI ha	6/10 to 8/10	87.8	12.78%
			AU2		
			7/10 to 8/10	50.15	3.65%
			AU3		
			6/10 to 8/10	8.91	2.36%
			AU4		
			6/10 to 8/10	19.65	2.52%
			AU5		
			5/10 to 8/10	3.29	0.63%
			AU6		
			6/10 to 8/10	142.49	18.27%
			AU7		
			6/10 to 8/10	13.52	1.97%
			AU8		
			6/10 to 8/10	145.58	21.18%
			AU9		
			6/10 to 8/10	53.93	7.85%
			AU10		
			6/10 to 8/10	12.68	1.83%
			AU11		
			5/10 to 7/10	6.61	1.27%
			Combined Total		**73.05%**

Table 56: Summary of GHFF offset compensation

Impact Area			Offset Area		
Impact Area	Impact Score	Quantum Impact (QI) Area	Habitat Quality Gain	Offset Area (ha)	% of Impact Offset
			AU1		
187.09 ha	6/10	112.25 QI ha	5/10 to 7/10	87.8	12.78%
			AU2		

Impact Area			Offset Area		
			6/10 to 7/10	50.15	3.65%
			AU3		
			4/10 to 7/10	8.91	1.94%
			AU4		
			4/10 to 7/10	19.65	3.78%
			AU5		
			2/10 to 7/10	3.29	1.06%
			AU6		
			4/10 to 7/10	142.49	27.40%
			AU7		
			5/10 to 7/10	13.52	1.97%
			AU8		
			5/10 to 7/10	145.58	21.18%
			AU9		
			5/10 to 7/10	53.93	7.85%
			AU10		
			4/10 to 7/10	12.68	2.44%
			AU11		
			4/10 to 7/10	6.61	127%
			Combined Total		**85.32%**

Table 57: Summary of GG offset compensation

Impact Area			Offset Area			
Impact Area	**Impact Score**	**Quantum Impact (QI) Area**	**Habitat Quality Gain**	**Offset Area (ha)**	**% of Impact Offset - MHQA**	**% of Impact Offset - Features**
			AU1			
246.8 ha	4/10	98.72 QI ha	5/10 to 6/10	88.6	7.26%	0.00%
			AU2			
			6/10 to 6/10	50.1	0.00%	0.00%
			AU3			
			5/10 to 6/10	8.91	0.74%	0.00%
			AU4			
			4/10 to 6/10	19.9	2.87%	0.00%
			AU5			
			4/10 to 6/10	3.3	0.48%	0.00%
			AU6			
			3/10 to 6/10	146.8	31.20%	23.22%
			AU7			
			4/10 to 6/10	13.5	1.12%	3.6%
			AU8			
			5/10 to 6/10	148	12.04%	10.81%
			AU9			
			5/10 to 6/10	54	4.46%	0.00%
			AU10			
			5/10 to 6/10	12.7	0.00%	0.00%
			AU11			

Impact Area			Offset Area			
			3/10 to 6/10	6.6	1.45%	2.00%
[redacted]						
			Combined Total		**69.65%**	**39.63%**

Table 58: Summary of swift parrot offset compensation

Impact Features	Baseline Features	Additional Features	Total Features	% of Impact Offset - Features
2,894	7,388	9,162	16,550	63.70%

Table 59: Summary of regent honeyeater offset compensation

Impact Features	Baseline Features	Additional Features	Total Features	% of Impact Offset - Features
1,570	6,610	4,969	11,579	63.68%

7.6.1 Completion Criteria

The management framework designed to achieve the proposed environmental outcomes summarised above are detailed in **Section 9** of this OMP.

A summary of the management actions and their completion criteria required to achieve the environmental outcomes are provided in **Table 60.** The management actions will result in a net gain of the overall habitat quality for the MNES over the period of effect of the offset through active management, maintenance, monitoring and reporting.

This OMP includes completion criteria and performance targets that evidence protection or improvement of koala and grey-headed flying-fox habitat. For the purpose of the plan:

a) **completion criteria** are longer term time-bound values, specified for measurable parameters, that if attained and maintained ensure the plan's environmental outcomes are achieved; and

b) **performance targets** are time-bound short- and medium-term targets guided by prescribed management measures, for management interventions and environmental condition, that are used to monitor, evaluate, review and improve the effectiveness of the plan to offset impacts.

Refer to **Appendix E** for species specific milestone frameworks. Here the intended goals for each assessment period have been provided at 5-yeraly intervals (Years 5, 10, 15 and 20) for each of the MHQA and FHA criteria, including justification for scoring uplift framed around specific management actions, milestone reporting and adaptive management criteria. It is understood these tables are typically incorporated into the EPBC Act approval.

Tracking of progress against the environmental outcomes will be measured at milestone monitoring years using the baseline survey methodologies detailed in **Section 6.1**. A schedule of monitoring and reporting is provided in **Section 8**.

Table 60: Completion criteria and performance targets

Management Action	OMP Section	Performance Targets	Completion criteria
Management Action 1 – Legally Secure Offset Area	9.3	Not applicable	• The offset area is legally secured for conservation via a suitable method. It is anticipated that this will be via a Voluntary Declaration (VDEC) process administered under the Queensland *Vegetation Management Action 1999* in the interim prior to the impacts occurring followed by a covenant under the *Land Act 1994* or *Land Titles Act 1994*. • The Department is notified of the legal securement within 5 business days of securing the offset area. • The offset area is not used for other purposes – site access is restricted.
Management Action 2 – Non-native Vertebrate Pest Management	9.4	• Development and implementation of a property-wide feral animal management program specifying techniques (trapping, baiting, shooting) and ongoing monitoring methods (including datasheets) to be utilised will be completed within Year 1 of the offset. • A suitably qualified pest management contractor will be engaged to manage pests within the offset area for the life of the offset.	• Non-native vertebrate pests and evidence of pests are suppressed within the offset area.
Management Action 3 – Management of Weeds	9.5	• Establish photo monitoring locations in Year 1 of the offset to monitor any increase in weeds extent • All weeds will receive on-going maintenance • Follow-up treatment of weeds will occur annually or as needed, determined by the suitably qualified regeneration contractor.	• The management actions must maintain the extent of weed cover below 5% of the offset area once achieved for the life of the offset (20 years).
Management Action 4 – Bushfire Management Plan	9.6	• A Bushfire Management Plan (BMP) will be developed and implemented in accordance with relevant Queensland guidelines and endorsed by an experienced bushfire practitioner to reduce potential threats from fires to Koala.	• Firebreaks and fuel loads are maintained through the life of the offset • Vegetation composition and restoration regime is not negatively affected by prescribed fire regimes.
Management Action 5 – Habitat Creation and Regeneration	9.7	• By the end of Year 5, 10, 15 and 20 site condition metrics have improved in accordance with environmental outcomes (**Appendix E**).	• Rehabilitated areas are established, regenerated and mapped as remnant vegetation under Queensland's *Vegetation Management Act 1999* (VMA) successor legislation by Year 20 which requires 70% of canopy height and 50% of expected cover according to the relevant Regional Ecosystem benchmark to be reached. • Site condition metrics in accordance with environmental outcomes (**Appendix E**).

Management Action	OMP Section	Performance Targets	Completion criteria
Management Action 6 – Fencing and Signage	9.8	• Fencing and signage is installed and retrofitted by the end of Year 1 of the offset and maintained for the life of the offset (20 years).	• All fencing and signage has been installed, retrofitted and maintained for the life of the offset • Risk of mortalities or injury to MNES as a result of barbed-wire fencing is mitigated. • Fencing enables MNES to move through he offset area and into surrounding land. • Risk of stock breaches or unauthorised access mitigated. If stock breaches or unauthorised access is observed, fencing is rectified within 2 weeks
Management Action 7 – Hollow Monitoring and Management Plan	9.9	• The Hollow Monitoring and Management Plan is implemented from commencement of the OMP. • A target of 1.5 hollows per hectare are created. •	• Foraging habitat is established. • At least 1.5 hollows per hectare are created and maintained.

8. Monitoring and Reporting Schedule

The timing and frequency of monitoring and reporting actions, corrective actions and responsibilities for the proposed offset area are provided in **Table 61**. The monitoring schedule is considered appropriate to allow the Proponent, Offset Provider and appointed suitably qualified person to assess the quality of the proposed offset area and success of management actions. In addition, if any non-compliances or ineffectiveness of management action are identified, adaptive management strategies can be implemented to ensure the proposed offset area will increase in quality for the MNES.

Table 61: Timeline for monitoring and reporting actions

Management Action	Monitoring action(s)	Reporting Action and Timing	Responsible person(s) for activity/reporting
1. Legally secure offset area	The offset area will be secured via a suitable method. This will be completed via a Voluntary Declaration administered under the Queensland *Vegetation Management Act 1999* in the interim prior to impacts occurring followed by a covenant under the *Land Act 1994* or *Land Titles Act 1994*.	The Department will be notified that the offset area has been secured. Evidence in the form of the shapefiles and confirmation of declaration from the Queensland Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development will be provided with the notification. Details will be included in the Annual Compliance Report (ACR).	Offset Provider
2. Pest management	Monitoring will occur before the end of Years 5, 10, 15, and 20 and will include a repeat of baseline survey methodologies (i.e., motion triggered detection camera deployment) and sightings (direct and indirect) with evidence of non-native predators GPS recorded. Evidence of pest presence within the offset area and pest management implementation will be extracted from the Offset Area Annual Report (OAAR)	An Offset Area Annual Report (OAAR) will be completed annually within one (1) month of the end of each offset year detailing pest management implementation. Milestone Reports will be prepared three (3) months after the completion of milestone surveys at Years 5, 10, 15, and 20 of the offset and included in the ACR.	Offset Provider and / or suitably qualified contractor as appointed by the Offset Provider. Suitably qualified Ecologist appointed by the Proponent.

Management Action	Monitoring action(s)	Reporting Action and Timing	Responsible person(s) for activity/reporting
	and will be used in assessments of the relative success of the management of threats and progress towards the environmental outcomes and milestone criteria.		
3. Weeds management	Weed photo monitoring annually for first three years. Weed cover surveys and mapping, and MHQA surveys will be conducted before the end of Years 5, 10, 15, and 20 of the offset in accordance with baseline survey methodologies to track progress against interim milestone targets and completion criteria, and identify any issues for rectification. The monitoring will be undertaken during the same time of year at every monitoring event, to ensure that the timing is consistent and aligns with the baseline assessment.	An OAAR will be completed within one (1) month of the end of each offset year detailing weeds management implementation, where required, and progress against the performance targets. OAARs will be included in the ACR. Milestone Reports will be prepared three (3) months after the completion of milestone surveys at Years 5, 10, 15, and 20 of the offset and included in the ACR.	Offset Provider and / or suitably qualified weed management contractor as appointed by the Offset Provider. Suitably qualified Ecologist appointed by the Proponent.
4. Bushfire Management Plan	Annual monitoring requirements to review access tracks, fire breaks, seasonal fuel loads and outcomes of controlled burns or other management in accordance with the associated Bushfire Management Plan.	An OAAR will be completed within one (1) month of the end of each offset year which documents bushfire management actions undertaken under the direction of the local authority or recommended in consultation with the Queensland Rural Fire Brigade. OAARs will be included in the ACR.	Offset Provider and suitably qualified bushfire management contractor as appointed by the Offset Provider.
5. Habitat creation and regeneration	Photo monitoring will be completed annually during the first three (3) years of the offset and documented in the OAAR. Photo monitoring will encompass areas of assisted natural regeneration and reconstruction to	An OAAR will be completed within one (1) month of the end of each offset year with input from the suitably qualified bush regeneration contractor to document: • Planting/seedling events	Offset Provider and suitably qualified bush regeneration contractor as appointed by the Offset Provider. Suitably qualified Ecologist appointed by the Proponent.

Management Action	Monitoring action(s)	Reporting Action and Timing	Responsible person(s) for activity/reporting
	document on-ground progress. Photo monitoring coordinates are to be recorded and occur in the same location each survey period. **Reconstruction areas** subject to infill planting will be annually monitored after the completion of planting works until establishment is reached. The monitoring timing is dependent on the planting cycle of the engaged bush regeneration contractor. Monitoring will occur regularly after initial planting in accordance with watering schedules. MHQA surveys will be conducted before the end of Years 5, 10, 15, and 20 of the offset in accordance with baseline survey methodologies to track progress against interim milestone targets and completion criteria and identify any issues for rectification.	• Watering schedule • Implemented corrective actions • Success/failure rates within initial maintenance period/watering period until establishment • Certificate of practical completion of planting works; and • Certificate/sign off that establishment has been reached. OAARs will be included in the ACR. Milestone Reports prepared three (3) months after the completion of milestone surveys at Years 5, 10, 15, and 20 of the offset and will be included in the ACR.	
6. Fencing and signage	Status of fencing and signage and any issues requiring rectification will be identified through regular site inspections to be determined by the Offset Provider.	Installation and maintenance of fencing will be reported in the Year 1 OAAR. Ongoing status of fencing/signage and any rectification works will be reported in OAARs for the relevant offset year and subsequently in the Annual Compliance Report (ACR) for the project period.	Offset Provider

Management Action	Monitoring action(s)	Reporting Action and Timing	Responsible person(s) for activity/reporting
7. Hollow Monitoring and Management	Hollow Monitoring and Management Plan to be implemented.	Audit of hollows to be completed at Years 5, 10, 15 and 20 will be included in the ACR. Hollows to be installed in suitable host trees targeting 1.5 hollows per hectare.	Hollow Monitoring and Management Plan to be implemented by the Proponent in Year 1. Proponent and suitably qualified Arborist/Contractor as appointed by the Proponent to implement.

Monitoring Summary								
Monitoring action	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 10**	**Year 15**	**Year 20**
Pest monitoring	×	×	×	×	✓	✓	✓	✓
Weed photo monitoring	✓	✓	✓	×	×	×	×	×
Weed mapping	✓ (baseline)	×	×	×	✓	✓	✓	✓
MHQA	×	×	×	×	✓	✓	✓	✓
Planting	×	✓	✓	✓	✓	✓	✓	✓
Hollow monitoring	Annually for the life of the offset							
Bushfire monitoring	Annually for the life of the offset							
Fencing and signage	Annually for the life of the offset							

9. Management Framework

This section outlines the management framework to be implemented for the life of the offset (20 years) including management measures to be implemented by the Offset Provider or appointed contractor, annual monitoring requirements, and interim milestone monitoring of environmental outcomes for relevant management actions to be completed by a suitably qualified person at Years 5, 10, 15, and 20 of the offset. These management actions are designed to minimise the risks associated with key threatening processes to the MNES and enhance the quality of the habitat within the proposed offset area. The proposed monitoring actions are summarised in a monitoring and reporting schedule in **Section 8.**

9.1. Management Approach

The measures outlined in the following subsections are considered effective for the listed status of the MNES in addition to the size and scale of the offset and the focus on priority management actions, which are efficient, timely and transparent (*i.e.,* able to be monitored and are auditable). Additionally, a number of these measures correspond to Priority Management Actions outlined in the following documents:

- *Conservation Advice for Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Koala Northern Designable Unit*)
- *National Recovery Plan for the Koala Phascolarctos cinereus*
- *National Recovery Plan for the Grey-headed Flying-Fox (Pteropus poliocephalus)*
- *Conservation advice for Petauroides volans (greater glider (southern and central))*
- *National Recovery Plan for the Swift Parrot Lathamus discolor*
- *Conservation Advice for Anthochaera phrygia (Regent Honeyeater)*

Although the measures have been developed to achieve the required offset environmental outcomes as a priority, they will deliver an overall improvement in the condition and quality of a wide range of native species present within the offset area.

9.2. Operational Management Units

For the purpose of the management framework, the Assessment Units are termed Operational Management Units (OMUs). The consistent vegetation type and single assessment unit across the referral area results in a single OMU, details for the proposed offset area is provided in **Table 62**.

Table 62: Offset area operational management units

OMU	Assessment Unit	VMA Status	Regional Ecosystem	Area (ha)
OMU1	AU1	Remnant	RE 12.12.5	87.8 ha
OMU2	AU2	Remnant	RE12.11.5/12.11.3	50.15 ha
OMU3	AU3	High Value Regrowth	RE12.3.7	8.91 ha

OMU	Assessment Unit	VMA Status	Regional Ecosystem	Area (ha)
OMU4	AU4	Non-remnant	Preclear RE 12.9-10.2	19.65 ha
OMU5	AU5	Non-remnant	Preclear RE 12.12.12	3.29 ha
OMU6	AU6	Non-remnant	Preclear RE 12.12.5	142.29 ha
OMU7	AU7	High Value Regrowth	RE12.11.5/12.11.3	13.52 ha
OMU8	AU8	High Value Regrowth	RE12.12.5	145.58 ha
OMU9	AU9	High Value Regrowth	RE 12.9-10.2	53.93 ha
OMU10	AU10	Non-remnant	Preclear RE 12.3.7	12.68 ha
OMU111	AU11	Non-remnant	Preclear RE 12.11.5/12.11.3	6.61 ha

9.3. Management Action 1 – Legally Secure Offset Area

The proposed offset area must be protected and managed against known and potential threats for the Koala in perpetuity to attain a conservation gain. As such, the proposed offset area will be legally secured for conservation prior to impacts occurring via a suitable method such as a covenant and VDEC process administered under the Queensland VMA. Notification of declaration will be supplied to DCCEEW.

The declared area will be recognised as making significant contribution to the conservation of biodiversity. The offset provider will continue to manage the proposed offset area for the life of the offset, whilst reporting required milestones and data to the proponent annually. Legally securing the proposed offset area is listed in the Conservation Advice as a Priority Management Action, under "Habitat Loss, Disturbance and Modification".

Demonstration of this management action will be further provided in the Annual Compliance Report.

9.4. Management Action 2 – Non-native Vertebrate Pest Management

9.4.1 Justification

Feral or unwanted domestic dogs have been identified as a key threatening process under the EPBC Act and are confirmed as a direct predation risk to MNES. Managing animal predation is listed as a Priority Management Action under the Koala Conservation Advice.

Additionally, the presence of other non-native predators which may pose a level of threat, such as *Felis catus* (feral cat), *Vulpes vulpes* (European red fox) and various species of feral Deer, have the potential to attack MNES and indirectly stress them making them more susceptible to disease. Predation rates by wild dogs are difficult to quantify because it often occurs in locations infrequently visited by people and the carcasses of the killed animals are buried, eaten or may go undetected (Beyer *et al*. 2018). Wild dog attack is routinely cited as one of the main causes of mortality of koalas (Rhodes *et al*. 2011; Gonzalez-

Astudillo *et al.* 2017; Beyer *et al.* 2018). Wild dogs are also identified as regional pest species by Somerset Regional Council.

Removal of the wild dog threat produced significant gains in the survival of koalas in a study where the causes of mortality of 291 koalas were tracked over four years (Beyer *et al.* 2018). Wild dogs were confirmed as the cause of death for 117 (40.2% of total) deaths during the study. In addition, wild dogs were attributed to another 38 (13.1% of the total) deaths but were not confirmed. Population growth rates of koala in the study increased from 0.659 in the first year to 1.20 in the fourth year of the project through a combination of reduction in predation and disease treatment. Modelling indicated that the population would increase in size by 21% within a decade with continued management (Beyer *et al.* 2018).

Key species assessed as high priority to receive management measures, and their associated risks, are presented in **Table 63**.

Table 63: Predator species management priorities

Priority (category)	Scientific name (Common name)	Queensland Biosecurity Act 2014 status	Risks (potential and actual)	Distribution and prevalence	Objective
1 (high)	*Canis familiaris* (Wild Dog)	Class 2	Actual impacts on agricultural production values – HIGH Actual impacts on native fauna – MEDIUM	Widespread occurrence in low to medium densities	Control
2 (medium)	*Felis catus* (Feral Cat)	Class 2	Actual impacts on native fauna – HIGH	Widespread occurrence in low to medium densities	Control
3 (medium)	*Vulpes vulpes* (Red Fox)	Class 2	Actual impacts on native fauna – MEDIUM Actual impacts on agricultural production values – LOW	Widespread occurrence in low to medium densities	Control

9.4.2 Baseline surveys

Wild dog presence within the proposed offset area was targeted through the use of motion-triggered baited camera traps. Camera trapping involves setting up a fixed digital camera to capture images or video of animals that pass in front of a camera with an infrared trigger. This survey technique identifies fauna activity beyond the scope of direct observational studies and with the absence of potential observer impacts.

Cameras were attached 30-100 cm from the ground on a tree or post and directed towards landscape features. Fourteen (14) camera traps were installed on 24th February 2025 and collected on 14 July 2025, for a period of five (5) months. Multiple wild dogs were recorded within the proposed offset area on several occasions indicating a real risk to MNES. Feral deer and European foxes have also been recorded during survey efforts across the broader offset property.

Baseline surveys and results are detailed in **Sections 6.1** and **Section 6.2**.

9.4.3 Proposed action and management measures

The control and prevention of invasive animal incursions will be undertaken in accordance with the relevant legislation (such as the Commonwealth *Biosecurity (Consequential Amendments and Transitional Provisions) Act 2015* and the *Queensland Biosecurity Act 2014*) and include the control of non-native predators by legal methods by suitably qualified pest management contractor(s). Any required hazardous materials must be handled and stored in accordance with the material's safety data sheets and the *Approved Code of Practice for the Storage and Handling of Dangerous Goods*. Non-native predator control will be undertaken in a humane manner.

Management measures will be implemented by the Offset Provider for the life of the offset (20 years) for the control of the pest species identified in **Table 63** across the proposed offset area include:

- Development and implementation of a property wide feral animal management program specifying techniques (trapping, baiting, shooting) and ongoing monitoring methods (including datasheets) will be utilised, completed within Year 1 of the offset.
- Where possible and practicable, adjacent land holders will be consulted for the potential of collaboration in a localised landscape-wide pest management effort. As vertebrate pest management is best achieved on a property-wide scale, this will occur across adjacent offset holdings at a minimum.
- Where practicable and appropriate, cooperative participation in non-native predator management planning and implementation with local land managers (government departments, local governments and utility providers) will occur to ensure effective management in the locality of the offset area, being Somerset Regional Council.
- Signage installation informing that feral animal control being undertaken within the offset area.

Control methods that may be implemented at the discretion of the suitably qualified pest contractor for predator species are listed in **Table 64**. These have been adapted from the *National Wild Dog Action Plan: Promoting and supporting community-driven action for landscape scale wild dog management* (WoolProducers Australia 2014). Any control methods will be used in consultation with local residents and authorities.

The implementation of the non-native vertebrate pest management actions will be reported annually by the Offset Provider in the OAAR and provide detail on detected species, control efforts, and total trapped/baited individuals during the given management period and identified trends of the population of non-native predators within the proposed offset area

Table 64: Predator species control methods - WoolProducers Australia 2014

Method	Efficacy	Cost effectiveness	Target specificity	Humaneness acceptability	Comment
Ground baiting with 1080	Effective	Cost-effective	High	Conditionally acceptable	Currently the most cost-effective technique available. Poison baits are made from raw animal meat or offal or manufactured baits are used. Average and minimum weights vary between states. Sodium fluoroacetate (1080) is the main toxin used for control of wild dogs – reference to relevant State directions for use will be required.
Shooting to euthanise trapped dogs / fox / cats	Effective	Cost-effective	High	Acceptable	Effective technique although will require to be completed in accordance with existing State laws and guidelines.
Ground shooting	Can be effective to target individual dogs / foxes – largely opportunistic	Moderately expensive and time consuming	Moderate to high	Conditionally acceptable, dependent on skillset of shooter. Welfare issues arise if animal is not shot humanely	Limited effectiveness for broadscale population reduction, however, can achieve sustained control within a local area.

Method	Efficacy	Cost effectiveness	Target specificity	Humaneness acceptability	Comment
Exclusion fencing	Effective in suitable areas	Expensive	Can be effective in specific situations	Acceptable	Requires substantial resource input both initially, during installation, and in an ongoing capacity due to high maintenance requirements. Electric fencing can be an effective barrier when used appropriately and in conjunction with supplementary management techniques. Often adequate defence against reinvasion of controlled areas. Due to high levels of maintenance and upkeep required, fencing can be difficult to effectively maintain.
Aversion techniques	Not known	Not known	Not certain – possible short-term until target species become familiar with technique	Acceptable	Suggested aversion methods include flashing lights, sounding alarms, objects flapping in the wind and chemicals.

9.4.4 Adaptive management for non-native predator species

Given the extended management timeline, it is not possible or intended that this Offset Management Framework will provide a detailed prescription of management actions. This framework has been based on the current state of knowledge of species ecology and best practice habitat management approaches for MNES habitat. It is anticipated that new techniques will become available over the course of the management period to monitor environmental values through indicators including vegetation composition, MNES absence, presence and abundance, and weed presence or density (including level of infestation). In addition, given the variable nature of pest management, an adaptive management approach has been adopted to ensure the Pest Management Plan works effectively for any species over the area, as well as integrating future research and insights into management and monitoring actions. This will ensure best practice techniques can be adopted as new information becomes available over time via an adaptive management approach, ensuring the anticipated delivery and measurement of offset outcomes.

Adaptive management refers to a way of managing natural resources where management actions are regularly reviewed and, if necessary, modified, based on observed changes in environmental condition and/or updates in knowledge which underpins the original management approach.
Adaptive management will be used to incorporate changes into management processes across the proposed offset area, and will include the following:

- Assimilation of new data or information – such as updates to conservation advice or new threat abatement plans relevant to the Koala.
- Annual review of risks – to reassess existing risks/threats to the offset area and ensure best practice methodology is implemented to achieve effective management of target species.
- Annual review of management measure effectiveness – to reassess management actions where monitoring performance criteria are not met.

9.4.5 Milestone monitoring

A suitably qualified person will complete monitoring for non-native vertebrate pests before the end of Years 5, 10, 15, and 20 of the offset.

The following non-native predator monitoring methodology will be implemented by a suitably qualified person:

- Desktop Assessment
    - Review previous survey mapping and camera locations, field datasheets, photos and notes.
- Field Survey
    - Grid-based motion detection camera deployment at 5-year milestones. Motion detection camera locations are to be recorded with hand-held GPS. GPS coordinates and photos to be recorded.
    - Field datasheet will detail the time of year of the monitoring event, record observed scats or tracks, photo location and notes of any evidence of positive and/or negative changes in non-native predator occurrence.
    - A GPS will be used to locate the presence of non-native predator species, with a focus on species identified during baseline field surveys via notable tracks or scats.
    - Transfer GPS data to spatial data programs to generate non-native predator occurrences and collate all data in excel spreadsheets and save all digital photos to file for ongoing monitoring and reporting purposes.

- Where non-native predator presence is detected, targeted trapping and baiting programs, will be implemented on completion of the monitoring program.

Milestone monitoring survey results will be reported by the suitably qualified person in the Year 5, 10, 15, and 20 Milestone Report and included in the ACR. This will provide detail on survey methodologies and detected predator abundance with reference to the baseline survey data.

9.5. Management Action 3 – Management of Weeds

9.5.1 Justification

The listing and prioritisation of Weds of National Significance (WONS) is a joint initiative of the States, Territories and Australian Government and their long-term control is of national interest. *L. camara* and its impact on Koala movement is listed as a key threatening process, prolonging time spent on the ground and therefore increasing susceptibility to predators (Paull *et al.* 2019, The Honourable Leeanne Enoch 2019). The Queensland Koala Strategy 2019-2024 lists Koala habitat restoration, including removal of weeds, as a key priority, and these recommendations were developed at the advice of the Koala expert panel (Queensland Government 2019).

As well as limiting movement for Koalas and other MNES, *L. camara* also changes the structure and health of the ecosystem, which can lead to a decline in the health and quality of Koala food and habitat. *L. camara* is a transformer weed, altering wildfire behaviour, potentially resulting in destruction of native trees on a larger scale (Berry et al 2011, DAF 2016). *L. camara* also supresses eucalypt recruitment, both through its allelopathic properties and its capacity to shade out other species. Without management intervention this leads to an overall decline in habitat health (Threatened Species Scientific Committee, 2010). If eucalypt species cannot recruit the succession of vegetation is interrupted, threatening the future health of the ecosystem.

Weed control is fundamental to improving biodiversity and the ecological condition of the habitat within the offset area. Historical land uses across the proposed offset area have resulted in the introduction and spread of a variety of environmental weeds. Weeds recorded on-site are generally confined to ground cover species such as pasture grasses which dominate the area. *Lantana camara* (Lantana), a WONS, is a persistent weed in SEQ and is widespread across the broader Marrambi Offset Property. The ongoing maintenance of <5% weeds is considered relevant, particularly given the potential for *Lantana camara* (Lantana) to seed from adjacent dense patches and quickly spread. Germination can occur rapidly after wet weather or when a parent plan is removed. Therefore, on-going repeat visits to the offset area following are required to maintain low abundance of *Lantana camara* (lantana).

9.5.2 Proposed action

The majority of weeds recorded on-site are ground cover species indicative of cattle grazing country. As such, the suppression of weeds will likely occur following the reinstatement of native vegetation and canopy cover. Direct weed control will be implemented where necessary to achieve the scoring as proposed. Given the potential for *Lantana camara* (Lantana) infestation to occur, future works will be adaptive and any new infestations of *Lantana camara* (Lantana), or any other WONS, will be prioritised. Weed management strategies for Lantana specifically are listed in **Table 65** and other WONS in **Table 66**.

The management actions must maintain weed cover at or below 5% over the entire offset site by Year 10 of the offset, as detailed in the environmental outcomes (**Appendix E**). The timing for the implementation of management measures includes:

- Establish photo monitoring locations
- Treatment of WONS and other weeds will occur annually and when needed.

Table 65: Lantana management methods

Type of infestation	Physical	Mechanical	Chemical	Fire	Biological
Small (few plants, small area)	Hand grubbing only suitable for seedlings. Wear gloves for protection from thorns.	Not suitable.	Spot spray plants less than 2 m in height between summer and autumn with a registered herbicide.	Not suitable.	There are four useful biological control agents. They are already distributed throughout their potential range.
Medium (medium density, medium total area)		Bulldoze, plough, stick-rake or slash infestations. Soil disturbance will lead to mass seed germination, so follow up with further controls. Do not use mechanical control in areas susceptible to erosion. A permit may be required.	Spraying is uneconomical for medium or large infestations. Helicopter spraying is used when there is no access for mechanical control, eg very steep slopes.	Under permit, burn in summer with good fuel load of grass and/or mechanically cleared lantana. Also use as follow-up. Do not burn in rainforests.	
Large (many plants, many ha)					

Note: table extracted from CRC for Australian Weed Management, 2003, *Weed Management Guide, Lantana – Lantana camara*, Commonwealth Department of the Environment and Heritage.

Table 66: Weed treatment and removal methods

No.	Family	Scientific name	Common name	Non-chemical control	Chemical control
1	Amaranthaceae	*Alternanthera philoxeroides*	Alligator Weed	Refer to Business Queensland: Invasive Plants at https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/landmanagement/health-pests-weeds-diseases/weeds-diseases/invasive-plants for additional guidance. Or WONS weed management guides available at https://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html	Herbicides must be applied by appropriately qualified / supervised persons in accordance with the Agricultural Chemicals and Distribution Control Act 1966 at rates identified on registered product labels, or on an Australian Pesticides and Veterinary Medicines Authority issued off-label permit where applicable. Also refer to: Business Queensland: Invasive Plants at https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/landmanagement/health-pests-weeds-diseases/weeds-diseases/invasive-plants for additional guidance.
2	Gramineae	*Andropogon gayanus*	Gamba Grass		
3	Annonaceae	*Annona glabra*	Pond Apple		
4	Basellaceae	*Anredera cordifolia*	Madeira Vine		
5	Asparagaceae	*Asparagus aethiopicus cv. Sprengeri*	Asparagus Ground Fern		
6	Asparagaceae	*Asparagus africanus*	Ornamental Asparagus, Asparagus Fern		
7	Asparagaceae	*Asparagus asparagoides*	Bridal Creeper		
8	Asparagaceae	*Asparagus declinatus*	Bridal Veil, South African Creeper		
9	Asparagaceae	*Asparagus plumosus*	Asparagus Fern		
10	Asparagaceae	*Asparagus scandens*	Climbing Asparagus Fern		
11	Cactaceae	*Austrocylindropuntia spp.*	Prickly Pears		
12	Cabombaceae	*Cabomba caroliniana*	Cabomba		
13	Asteraceae	*Chrysanthemoides monilifera subsp. Monilifera*	Boneseed		
14	Asteraceae	*Chrysanthemoides monilifera subsp. rotundata*	Bitou Bush		
15	Asclepiadaceae	*Cryptostegia grandiflora*	Rubber Vine		

No.	Family	Scientific name	Common name	Non-chemical control	Chemical control
16	Cactaceae	*Cylindropuntia spp.*	Prickly Pears		Southeast Queensland Ecological Restoration Framework WONS weed management guides available at https://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html
17	Fabaceae	*Cytisus scoparius*	Common Broom		
18	Bignoniaceae	*Dolichandra (Macfadyena) unguis-cati*	Cat's Claw Creeper		
19	Pontederiaceae	*Eichhornia crassipes*	Water Hyacinth		
20	Fabaceae	*Genista linifolia*	Flax-leaved Broom, Mediterranean Broom		
21	Fabaceae	*Genista monspessulana*	Montpellier Broom, Cape Broom, Canary Broom		
22	Poaceae	*Hymenachne amplexicaulis*	Hymenachne		
23	Euphorbiaceae	*Jatropha gossypifolia*	Bellyache Bush		
24	Verbenaceae	*Lantana camara var. camara*	Lantana		
25	Solanaceae	*Lycium ferocissimum*	African Boxthorn		
26	Mimosaceae	*Mimosa pigra*	Giant Mimosa		
27	Gramineae	*Nassella neesiana*	Chilean Needle Grass		
28	Gramineae	*Nassella trichotoma*	Serrated Tussock		
29	Cactaceae	*Opuntia spp.*	Prickly Pears		
30	Cactaceae	*Parkinsonia aculeata*	Parkinsonia		
31	Asteraceae	*Parthenium hysterophorus*	Parthenium Weed		
32	Mimosaceae	*Prosopis pallida*	Algaroba		
33	Rosaceae	*Rubus fruticosus aggregate*	Blackberry		

No.	Family	Scientific name	Common name	Non-chemical control	Chemical control
34	Alismataceae	*Sagittaria platyphylla*	Delta Arrowhead, Arrowhead, Slender Arrowhead		
35	Salicaceae	*Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii*	Willows (except Weeping Willow, Pussy Willow and Sterile Pussy Willow)		
36	Salviniaceae	*Salvinia molesta*	Salvinia		
37	Asteraceae	*Senecio madagascariensis*	Fireweed		
38	Solanaceae	*Solanum elaeagnifolium*	Silver Nightshade		
39	Tamaricaceae	*Tamarix aphylla*	Athel Pine		
40	Fabaceae	*Ulex europaeus*	Gorse, Furze		

Weed notes

Weed management typically comprises a major part of rehabilitation site works. Weed management provides the basis of aiding natural regeneration and assisted natural regeneration.

Weed Management will be undertaken in accordance with the SEQERF Primary, Follow-up and Maintenance works notes.

Critical skills for Weed Management include:

- Knowledge of relevant legislation.
- Plant Identification skills.
- Knowledge of different weed management techniques.

Knowledge of different weed management techniques

A range of weed management techniques are available to combat varying weed species and scenarios. Refer to the following **Table 67** for a summary of contemporary weed management techniques extracted from the SEQERF.

Table 67: Weed treatment schedules (source: SEQERF)

Method	Description
Herbicide	The herbicide weed control techniques described below provide a range of proven methods that can be used on a restoration site
Cut- scrape - paint	Cut the stem of the plant close to the ground (approximately 1-2cm) ensuring that soil does not come in contact with the cut surface. The cut can be made at a slight angle in order to increase the surface area that is exposed to the chemical. Apply herbicide immediately to the cut stump using poison pot and brush or dripper bottle. Using a knife, scrape the sides of the stump thoroughly to expose the green tissue. Apply herbicide to the scraped stump. The chemical must be applied within 10 seconds of the cut or scrape being made in order for it to be fully effective.
Cut– paint	Cut the stem of the plant close to ground level. Apply herbicide to the cut stump using poison pot and brush or dripper bottle. This method is best suited to easy-to-treat weeds such as small-leaved privet (*Ligustrum sinense*), provided that the diameter of the stem at ground level is less than approximately three centimetres. If a glyphosate-/ metsulfuron methyl herbicide mix is being used in the poison pot, a greater range of weeds can be controlled using this method e.g., Easter cassia.
Scrape - paint	Scrape as much of the stem as possible (one side of the stem) using a knife and apply herbicide to the scrape. Leave a small section of the vine unscraped, and then twist the vine so that the next scrape is made on the opposite side of the stem to the preceding scrape. Continue along the length of the vine, scraping and painting as much of the stem as possible, with scraping to be concentrated along the thicker stems close to the root of the plant. This is the best method to use for madeira vine, as it allows the chemical to translocate to the underground storage organs and aerial tubers which may be hanging in large clusters above head height. This avoids the potential problem of tubers from cut stems left hanging in the trees from dropping to the ground and sprouting. When scraping madeira vine stems a deep scrape is advisable - scrape right through to the fibrous, stringy



Method	Description
	section of the stem, taking care not to sever the vine. This method is also suitable for treatment of ochna.
Over-spraying	Over-spraying involves the use of knapsacks or power sprayers to treat large expanses of weed such as lantana thickets. The foliage must be covered with herbicide but not to the point of running off the plant. The dead plants remain in place and can be cut down at a later stage. Prior to over-spraying, any weeds that are growing closely around established native plants must be hand removed or treated by cut-scrape-paint.
Oil-hang	Vines such as mile-a-minute (*Ipomoea cairica*) which produce long stolons extending many metres along the surface of the ground, are suited to the oil- hang method. Locate the base of the plant and carefully pull up the runners and roll them up. The resulting roll of vine is then hung in the fork of a tree to dry out as if it is left on the ground it is likely to re-shoot. Where runners are climbing up into a tree they are cut off at head height prior to the runner being rolled up - there is no need to pull cut vines down from trees as this action is likely to damage the tree. The base of the vine is treated using the cut scrape- paint method.
Gouge-paint	This method applies to plant species that have a fleshy underground storage organ, such as the large tuber that is often found at the base of madeira vine. It is also particularly appropriate for the treatment of climbing asparagus (*Protasparagus plumosus*). If using this technique on climbing asparagus, first cut the stems that are growing into the canopy at head height and also at the base. The fleshy rhizome can then be gouged, or alternatively in the case of climbing asparagus, it may be struck several times firmly with the head of a pair of loppers, allowing the brown outer covering of the crown to peel away exposing the white fleshy inner section of the rhizome for application of herbicide. Gouge out sections of the fleshy base with a knife and apply herbicide using a paint pot and brush or dripper bottle within 10 seconds
Basal Barking	This method involves mixing an oil soluble herbicide in diesel/kerosene and painting or spraying the full circumference of the trunk or stem of the plant from ground level to a height of approximately 45cm. Basal bark application is suitable for thin-barked woody weeds including saplings, regrowth and multi- stemmed shrubs. The method will usually result in the mortality of difficult-to- control woody weeds at any time of the year, provided the bark is not wet or too thick to enable the herbicide to penetrate. The method should not be used in wet weather, adjacent to waterways or in areas where native trees and shrubs are located. The use should be restricted to situations where a weed is particularly difficult to control e.g., cherry guava and where other methods have been unsuccessful.
Splatter Gun	This small gas-powered injector kit is fitted into a knapsack for easy carrying and delivers large droplets in a stream over the weed. The gun is used to deliver a concentrated herbicide (glyphosate or metsulfuron methyl) across large dense expanses of weed. This method is used for species such as lantana (ratio of 1:9 of glyphosate water). Splatter gun involves spraying strips at one to two meter intervals over the thicket. The herbicide is then translocated throughout the entire plant. The method does not require the whole plant to be covered as in over-spray

Method	Description
Spot-spraying	A knapsack filled with an appropriate herbicide mix is used by the operator to selectively control environmental weeds. A keen eye and an ability to distinguish between the native and weed species likely to be present, especially at seedling stage, is essential. Marker dye is added to the chemical mix to allow the operator to see what has already been sprayed, thus covering the ground weeds comprehensively and thoroughly Glyphosate and metsulfuron methyl are the main herbicides used for spot-spraying in ecological restoration, together with the addition of a penetrant and/or surfactant and marker dye
Stem Injection	Large woody weeds such as camphor laurel, coral trees (*Erythrina spp.*, *Privet Ligustrum spp.*) and umbrella trees are generally treated by stem-injection. Holes are drilled at regular intervals around the base of the tree and exposed roots using a drill. A tree injection syringe attached to a small capacity knapsack is used to fill the holes with herbicide. Stem-injection of trees can also be undertaken using a hatchet to create cuts in a brickwork pattern in trunks of trees for the application of herbicide (known as tree filling). Frilling is more labour intensive than drilling. The greatest benefit of stem injection is that the trees can be left standing in situ as they die, provided there is no risk to humans or infrastructure from falling limbs. This creates convenient roosts for birds and other animals and prevents the formation of large amounts of debris on the ground and damage to understorey plants which would result if the trees were to be cut down using a chainsaw.
Wick Wiping	Wick wipers can be manually used with a sponge or wick applicator, attached to a container filled with herbicide or as an attachment towed by a tractor. The manual method can be used to selectively apply herbicide to the leaves of weeds growing in sensitive situations. The hand held container can leak, and generally spot spraying would be recommended. The use of a tractor drawn wick wiper is used to control taller growing species such as introduced grasses and to encourage the growth of lower growing species. This method could be used in preparation for planting.
Mechanical	Mechanical weed control involves the use of powered and non-powered equipment such as brushcutters, chainsaws, slashers, shovels, pruners, saws, etc. These methods are best used in situations where there is a large, uninterrupted stand of weeds.
Dig and Bag	Dig and remove tuberous/ rhizomatous root systems. Remove roots or whole plant in hard/ compacted soils. Place in suitable container and remove from site, dispose of by deep burial, burn or burial at a land fill, must not place declared weed species in recycling (mulch).
Hand-pull	Remove totally from ground by hand (human). Perform when soil is moist. Applicable to small infestations or areas of environmental sensitivity (including sensitive watercourses, when frogs are breeding, or presence of threatened species).
General Mechanical	May involve use of machinery (e.g., brushcutter, chainsaw, slasher, dozer, excavator). Suitable for large infestations and weed trees. Initially cost-effective, but requires immediate revegetation of site or matting/ mulch application and

Method	Description
	extensive maintenance periods, Generates excessive soil and vegetation disturbance

9.5.4 Milestone monitoring

A suitably qualified person will complete monitoring for weeds before the end of Years 5, 10, 15, and 20 of the offset to track against the interim milestone and completion criteria in the environmental outcomes as outlined in **Appendix E**.

The methodology for non-native plant survey will be repeated by the suitably qualified person in accordance with the monitoring and reporting schedule in **Section 6**. Surveys include the search and recording of infestations and MHQA transects to record weed cover. The following procedures will be implemented to ensure that the monitoring events align with the baseline survey methodology:

- Desktop Assessment
    - Reviewing previous survey mapping, field datasheets, photos and notes including WONS priority areas where applicable.
    - Reviewing weed and bush regeneration records for the last year.

- Field Survey
    - MHQA transects are carried out at baseline survey locations,
    - Utilising the weed cover assessment methodology discussed in **Section 6.1**, inspect previously identified weeds infestations. Mapping of any new WONS infestation areas using GPS unit and quantify using weed cover transects.
    - Record non-native flora species list,
    - Provide photo monitoring at established locations to be set up in Year 1 of the offset with photo location and direction, and
    - Notes of any notable positive and/or negative changes in weed density and coverage.

Milestone monitoring survey results will be reported by the suitably qualified person in the Year 5, 10, 15, and 20 Milestone Report and included in the ACR. This will provide detail on survey methodologies and detected predator abundance with reference to the baseline survey data.

9.6. Management Action 4 – Bushfire Management Plan

9.6.1 Justification

Fire management of the offset area is critical to achieving the intended outcomes and conservation gains over the management period. Managing the vegetation to promote natural regeneration and reduce the impacts of uncontrolled wildfire within the offset area will ensure management objectives are achieved. Uncontrolled wildfire is considered a key threat to Koala populations, with impacts inclusive of mortality, injury, and loss of or altered habitat resulting in a reduction in food source and potentially increased exposure to predators.

The management measures contained in this OMP will be used to assess baseline fuel loads and indicate management techniques and planning, specific to the offset area in the context of the surrounding landscape. The overall objective is to prevent fire-induced Koala mortality via targeted fuel hazard reduction and prescribed fire management. Managing the vegetation to promote natural regeneration and

reduce the impacts of uncontrolled wildfire within the offset area will ensure management objectives are achieved.

Under current Queensland legislation, landowners are required to prepare and plan for bushfire hazards by being aware of fire management issues in the area, trimming trees, mowing grass, removing flammable material around the home, and clearing vegetation, particularly if land boundaries are shared with bushland. It is important to balance undertaking these activities and preventing harm to the natural environment and areas of cultural heritage. This can be achieved through property planning or preparing and implementing a land and water management system. At present, the proposed offset area and broader offset property has internal tracks and access along existing fence lines that may act as fire trails. Specific actions as directed by the local authorities must be implemented which may include prescribed burning or other techniques undertaken in consultation with the Queensland Rural Fire Brigade to manage fuel loads if required.

9.6.2 Proposed action and management measures

9.6.2.1 Bushfire Management Plan

A specific Bushfire Management Plan (BMP) will be developed by qualified bushfire consultants in Year 1 of the offset. The purpose of the BMP will be to guide fire management on the Offset Property to manage the risk of high intensity fire impacting vegetation communities and associated fauna species including koala, greater glider and grey-headed flying fox. The BMP principles will aim to enhance bushfire resilience and vegetation community health through fuel load management, risk-reduction measures and appropriate fire regimes. The BMP will combine information from a variety of sources including land manager discussions, industry best practice, This OMP, as well as the following technical documents:

- Queensland Fire and Emergency Services. (2020). Queensland Bushfire Plan.
- Queensland Parks and Wildlife Services (QPWS) Bioregional Planned Burn Guidelines
  - Queensland Parks and Wildlife Service. (2022). Planned Burn Guidelines: Introductory Volume.
  - Queensland Parks and Wildlife Service. (2022). Planned Burn Guidelines: Southeast Queensland Bioregion of Queensland.
  - Queensland Parks and Wildlife Service. (2012). Planned Burn Guidelines - How to Assess if Your Burn is Ready to Go. www.bom.gov.au
  - Queensland Parks and Wildlife Service. (2012). QPWS Planned Burn Fire Behaviour Tables.
- Queensland Fire and Emergency Services. (2019). Bushfire Resilient Communities (BRC) Technical Reference Guide for the State Planning Policy State Interest “Natural Hazards, Risk and Resilience Bushfire.
- Australasian Fire Authorities Council (AFAC) National Burning Project.
- Queensland Fire and Biodiversity Consortium (2022). Burnett Mary Fire Management Guidelines

The BMP will include the following components, with further initial detail on some of these components in the below sections:

- Fire management for MNES: Description of fire management considerations for koala, grey-headed flying fox and greater glider, including threats from inappropriate fire regimes.
- Bushfire hazards: A comprehensive landscape-scale assessment and historical review of the key factors characterising the area’s bushfire risk, including fire weather, topography and fire history. Site fuel load assessment. A brief description of hazards on the Offset Property is provided in Section 9.6.2.2 below.

- Operation Fire Management Units (FMUs): outlining site fire management activities including but not limited to weed management, stock grazing and planned burning for fuel reduction and ecological management, access and fire break maintenance and habitat protection measures (further detailed in Section 9.6.2.3 below).
- Fire management plan: Provides a land management plan that outlines Fire Management Units, including land management zones (including operational and site information).
- Monitoring and maintenance schedule: Describing an approach for adaptive management and monitoring to evaluate the effectiveness of fire management regimes and land management activities (monitoring methods outlined in Section 9.6.2.4 below).

9.6.2.2 Bushfire risk areas and potential ignition sources

External bushfire risk areas

The Offset Property is bordered to the north, west and south by rural pastoral land and to the east by extensive areas of native vegetation associated with D'Aguilar National Park and adjoining vegetated lands. These surrounding land uses present potential pathways for bushfire to originate outside the Offset Property and enter the site, particularly under elevated fire weather conditions. Higher external bushfire risk is associated with:

- Eastern boundaries, where continuous native vegetation connects the Offset Property to D'Aguilar National Park, increasing the potential for large landscape scale fires to enter the site.
- Northern, western and southern boundaries, where fire may originate from neighbouring rural properties due to pasture management activities, machinery use or escaped planned burns; and
- Roadside corridors and access tracks adjoining or entering the Offset Property, which may act as ignition sources during periods of high fire danger.

Internal bushfire ignition sources

Potential sources of bushfire ignition within the Offset Property include:

- Escaped planned fire management activities, including ecological or hazard reduction burning.
- Operational activities, such as use of farm machinery and vehicle movements along internal tracks.
- Natural ignition sources, including lightning strikes, particularly along ridgelines and elevated areas; and
- Accumulated fine fuels, including grasslands, regrowth areas and edge interfaces between cleared land and remnant vegetation.

Bushfire hazard characteristics

Bushfire behaviour across the Offset Property is influenced by fuel, weather and topography. Fuel loads vary spatially and include heavily grazed areas and regenerating vegetation. Areas of woody vegetation, particularly along vegetated creek lines, present a higher potential bushfire intensity.

Notably, the BMP will review and address relevant bushfire risk overlays and criteria specified within the State Planning Policy.

Existing access tracks and cleared areas provide opportunities for fire containment and suppression, subject to prevailing fire weather conditions and fire behaviour.

Fire management across the Offset Property will prioritise asset protection and prevention, with the offset values and restoration areas treated as critical assets requiring protection from high-intensity or unplanned fire.

9.6.2.3 Fire access, breaks and water resources

Site access and fire management lines

The Offset Property contains an established network of internal access tracks and entry points that provide access for land managers and emergency services (refer **Plan 17**). These tracks also function as fire management lines, enabling fire suppression access and assisting in fire containment during bushfire events.

Existing internal tracks and boundary access routes will be maintained to support safe and effective fire management and may be utilised as fire breaks where appropriate.

Boundary fire breaks

Fire breaks are located along the property boundaries and internal interfaces and will be maintained to reduce the risk of fire entering or exiting the Offset Property. Boundary fire breaks may comprise cleared lines, managed grazing areas or existing tracks and will be managed in a manner that balances bushfire risk reduction with protection of environmental values (**Plan 17**).

Water resources and fire management infrastructure

Several farm dams, water bores and water storage tanks are located across and adjoining the Offset Property and are shown on **Plan 17**. These water sources may provide suitable access points for fire management vehicles and emergency services during bushfire suppression activities.

The approximate locations of existing water resources are identified to support fire response planning. Locations for temporary or permanent fire management infrastructure, including additional water tanks or equipment storage areas, will be further assessed and refined through the development of the BMP.

Protection of revegetation and rehabilitation areas

Fire management will specifically address the heightened vulnerability of developing revegetation and rehabilitation areas, which are at increased risk of damage from unplanned or high intensity fire, particularly during early establishment phases. Fire regimes will be designed to minimise the likelihood of fire impacting these areas until vegetation communities have sufficiently matured.

Protection of restoration areas is critical to achieving offset objectives and will be a key consideration in fire management planning, prioritisation of suppression response and selection of fuel management techniques.

9.6.2.4 Fuel management

Various techniques may be used to reduce and manage the fuel load within the landscape or modify the connectivity between fuel layers (Queensland Fire and Emergency Services, 2020). Fuel management techniques include the following (to be further detailed in the BMP):

- Stock grazing to manage near surface fuel loads (only to be undertaken under an approved Livestock Management Plan).
- Appropriate planned burn regimes to reduce fuel loads, control fire susceptible weeds and/or maintain ecological processes, and
- Targeted chemical or mechanical weed management and removal.

It is acknowledged that the primary aim of the Offset Property is to manage habitat and food resources for MNES, therefore fuel management should be implemented as part of an integrated land management approach that aims to appropriately manage the offset site values and risk profile.

9.6.3 Monitoring and reporting

Monitoring and adaptive site management will be incorporated into the management of bushfire risk within the Offset Property to assess the effectiveness of management activities. Specifically, monitoring will occur prior to and after implementing planned burns, as well as ongoing monitoring vegetation and fuel condition during rotational grazing. The adaptive management program may pose simple questions such as those provided below, or more complexed assessment. For example:

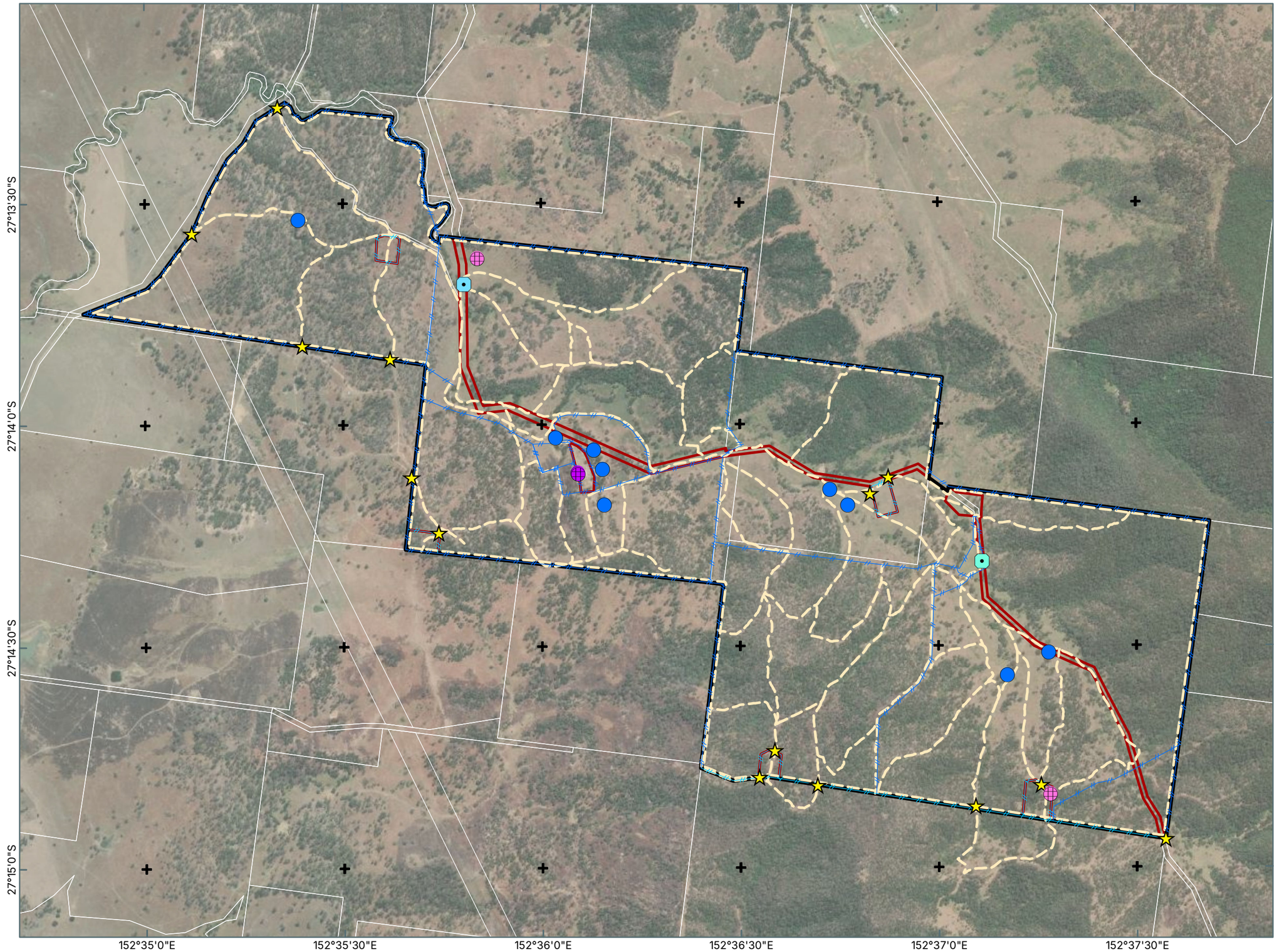
- Was the fuel hazard reduced to the targeted level for the FMU?
- Did the management activity contribute to a fire regime that is maintaining offset targets and environmental values?
- Did target regrowth or planted canopy species of a specific size survive the management activity?

If the answer to these questions is no, then adjustments to the land management actions or schedule may need to be made. The fuel hazard, vegetation condition and fire management tracks will be comprehensively assessed annually, as well as periodically as part of regular property activity, and especially before the start of the bushfire season (August – November).

9.6.3.1 Fuel hazard monitoring

Fuel hazard monitoring within each FMU (to be determined in the BMP) can be used to identify triggers for implementing proposed fuel reduction measures to evaluate the effectiveness of these measures. The Overall Fuel Hazard Assessment Guide (OFHAG) (Hines et al., 2010) provides a quick and representative estimate of fuel hazard on site that can be used for ongoing fuel hazard monitoring to inform management intervention. The OFHAG methodology is based on the structure and availability of fuels within various strata categories (bark, elevated, near surface and surface) and is widely used by land managers across southeast Queensland. The BMP will detail the proposed fuel management prescriptions and monitoring triggers for each FMU.

17. MARRAMBI PROPOSED FENCING, SIGNAGE & FIRE TRAILS



Notes:
The information on this plan is not suitable for any purpose other than the expressed use of the Client. Property dimensions, areas, numbers of lots and contours and other physical features may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed design or for any financial dealings involving the land. Saunders Havill therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of Saunders Havill.Unless a development approval states otherwise, this is not an approved plan.
Layer Sources
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
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Updated data available at
http://qldspatial.information.qld.gov.au/catalogue/
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LEGEND

- Qld DCDB
- Marrambi property boundary
- Offset area
- Offset area access tracks/fire trails
- Proposed Offset Signage / Fire Trail Access Points
- Existing fencing to be retrofitted to fauna friendly design and adjusted to Offset area boundaries
- New fencing to be fauna friendly design

Water resources

- Dam
- Bore
- Solar bore
- Tank
- House tank



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FRASERS PROPERTY
NEW BEITH PTY LTD

MARRAMBI OFFSET
MANAGEMENT PLAN

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GDA 2020 | Zone 56

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9.7. Management Action 5 – Habitat creation and regeneration

9.7.1 Justification

Habitat creation and regeneration is a key management action that will improve existing habitat values within the proposed offset area and expand habitat values in areas that have been subject to weed infestation. In addition, regeneration is a Priority Management Action listed under "Habitat Loss, Disturbance and Modification" of the Conservation Advice for the Koala. Rehabilitation aims to enhance degraded areas through assisted natural regeneration and Management Action 3 which will continue to manage weeds. Assisted natural regeneration applies to areas where the native plant community is largely healthy and functioning or where native plant seed is still stored in the soil, can easily disperse from nearby natural areas, or be readily dispersed by animals. It is applied when limited human intervention, such as weed control, minor soil amelioration, fencing works or cessation of slashing etc., is enough to trigger the recovery process and natural regeneration. Planting occurs where necessary and does not interfere with natural process.

Management Actions 3 to 5 will work together to improve habitat quality through weed removal/control, bushfire management and native species establishment.

9.7.2 Management actions

Operational Management Units listed in **Section 9.1** will be established across the offset area and range from higher quality remnant vegetation to non-remnant vegetation. As such, the key management actions across the OMUs will differ (refer **Table 68** and **Table 62** for summary). Key management actions will include assisted natural regeneration practises to expand patches of regrowth throughout areas where high levels of weed management is required. Reconstruction and infill planting will be applied within the non-remnant and historically cleared or newly disturbed areas to assist in vegetation coverage and composition.

EMZs and rehabilitation areas summarising OMU treatments are shown on **Plan 16.**

Table 68: Operational management unit rehabilitation method summary

OMU	Description	Rehabilitation Method
Remnant vegetation area (OMU 1)	Canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required
Remnant vegetation area (OMU 2)	Canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required

OMU	Description	Rehabilitation Method
High-Value Regrowth vegetation area (OMU 3)	Discontinuous canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required
Non-remnant vegetation area (OMU 4)	Paddock and discontinuous canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required
Non-remnant vegetation area (OMU 5)	Paddock and discontinuous canopy vegetation	• Assisted natural regeneration • Reconstruction • Weed removal/control • Bushfire management • Planting as required
Non-remnant vegetation area (OMU 6)	Paddock and discontinuous canopy vegetation	• Assisted natural regeneration • Reconstruction • Weed removal/control • Bushfire management • Planting as required
High-Value Regrowth vegetation area (OMU 7)	Discontinuous canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required
High-Value Regrowth vegetation area (OMU 8)	Discontinuous canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required
High-Value Regrowth vegetation area (OMU 9)	Discontinuous canopy vegetation	• Assisted natural regeneration • Weed removal/control • Bushfire management • Planting as required

OMU	Description	Rehabilitation Method
Non-remnant vegetation area (OMU 10)	Paddock and discontinuous canopy vegetation	• Assisted natural regeneration • Reconstruction • Weed removal/control • Bushfire management • Planting as required
Non-remnant vegetation area (OMU 11)	Paddock and discontinuous canopy vegetation	• Assisted natural regeneration • Reconstruction • Weed removal/control • Bushfire management • Planting as required

9.7.3 Rehabilitation methodology

Following the resolution of site analysis and management areas as part of rehabilitation design, prioritising site works should be considered. Prior to site works commencing, the site should be secured from degrading impacts such as grazing by stock, unauthorised access and rubbish. Some factors that may require immediate attention include:

- The presence of highly invasive weed species which may disperse further prior to substantial site works commencing.
- The presence of weed species which may have a long-term impact on ecological communities such as exotic and weed varieties of vines.
- Flammable materials (including weed thickets, grasses and vines).
- Damaging and easy access by 4WD, motorbikes, and pedestrians into core retained vegetation and ecological restoration areas. This may require installation of temporary fencing if deemed appropriate.

Site works can be typically broken down into the following categories depending on the condition of the site prior to works commencing:

- Primary Works
- Follow-up Works
- Maintenance Works

Primary works

Primary works, or initial works, within the site or a section of the site will commonly involve a sequence of activities such as the control of groundcover weeds, woody weeds in the understorey and exotic vines prior to the control of weed trees. Primary work has the effect of creating a large degree of disturbance which will stimulate the germination of native and exotic species. Therefore, continuing works should be scheduled shortly after the initial visit to allow for timely control of the newly regenerating weeds. Where present, highly invasive weeds should be treated as a priority during primary work in order to avoid invasion of newly disturbed areas. Some weeds will need to be treated in steps e.g., where weeded areas are being used by nesting birds or where the staged removal of canopy weed trees is required. Techniques



used during primary work commonly involve spot spray, cut-scrape paint, cut-paint, scrape-paint, roll-hang and over spraying (source: SEQERF).

Following completion of weed management, rehabilitation such as assisted natural regeneration, construction, and fabrication planting can occur in areas unaffected by weed management activities or areas where primary weed management activities have concluded. At the end of primary work, the zone will have been comprehensively and systematically worked, ready for follow-up works.

Follow-up works

At intervals, which will vary according to the type of weed impacting the site and growing conditions, follow-up work will be necessary. This generally involves the spot-spraying of newly germinating weeds and re-sprouting sections of woody weeds and vines. It is at this stage that observational visits should be made to the site to assess the progress of vegetation regeneration and determine whether follow-up work is necessary. A site that receives poorly-timed, too frequent, or too little follow-up will rapidly experience setbacks, as weed propagules will quickly become established in the newly disturbed areas.

Germinating native seedlings may be outcompeted by weeds or damaged by inexperienced operators thereby exhausting the seed bank. Unless adequate follow-up can be ensured when planning restoration works, there is little point in commencing primary work, as time and resources are consumed with no substantial gain achieved (source: SEQERF).

Maintenance works

By the maintenance stage, the vegetation community supports germination and establishment of native plant species and canopy formation. Weed density decreases as the native plants, which have been supported through restoration works, are able to out-compete the weed species. One of the fundamental principles of ecological restoration involves creating or re-establishing a self-sustaining ecosystem. Therefore, the underlying goal is that maintenance will progressively decrease. While this goal is not always possible due to factors such as the continual reintroduction of weed propagules to the site from adjoining properties, unfavourable seasons or significant weather events, persistent weed species, or global influences such as the enhanced greenhouse effect, it should always be strived for (source: SEQERF).

Maintenance works may include minor, ongoing weed management and infill planting depending on site conditions. All rehabilitation works are to be carried out by a suitably qualified bush regeneration contractor.

Plant identification skills

Both native and weed species should be identified prior to primary weed removal works and ongoing throughout the follow-up and maintenance periods. This will maximise natural regeneration by reducing the likelihood of accidental weed spraying to native vegetation. Regenerating species are to be treated and maintained in a similar manner to planted tube stock. Where a contractor is unsure of species, advice should be sought from a botanist, specialist contractor, or confirmed with Queensland Herbarium. Refer to indicative Weed Treatment schedules derived from the *South East Queensland Ecological Restoration Framework: Manual* (2012) for an indication of weed species and treatments (refer **Table 67**).

Planting notes

Areas subjected to weed removal and control may require infill planting (assisted natural regeneration) where lack of natural regeneration is evident. Prior to installation, the following items should be considered:

- Species selection;
- Sourcing plant material;
- Timing of planting;
- Site preparation;
- Planting density; and
- Planting installation.

Species selection

Species selection is critical to achieving the desired ecological restoration outcomes for rehabilitation sites. Planting is typically derived from:

- Local and pre-clear Regional Ecosystem descriptions;
- Observed site native vegetation;
- Bioretention guideline requirements;
- Climatic and weather conditions observed on-site (frost, salt-spray, etc);
- 'Pioneer' species, which are useful in site stabilisation and encouraging native regeneration;
- The utilisation of flowering and fruiting species to attract wildlife and result in introduction of seeds;
- Diverse vegetation layers (trees, shrubs, groundcovers); and
- Species availability from seed propagation and or local nurseries.

Sourcing plant material

There are several options for sourcing plant material for infill planting purposes. Propagation from site seed is a good outcome but is often limited by the required timing of works. Sourcing plants from local nurseries is the more commonly chosen option and has the following benefits:

- Awareness of genetic considerations when collecting seed;
- Experience with breaking dormancy mechanisms in hard to germinate seeds;
- Highly successful propagation techniques;
- Ability to provide high quality stock to order; and
- Draw on industry resources.

Timing of planting

The timing of planting should ideally be aligned with the wet season in SEQ (Summer and Autumn). This minimises the need for intensive watering to establishment planting. Planting between February - May is the most beneficial as it generally avoids intense heat periods of summer. However, it is understood planting may occur at various times within rehabilitation areas due to development timing needs.

Site preparation

Site or planting preparation includes:

- Fencing to exclude grazing animals and people (if required);
- Pre-spraying of exotic grasses and other weeds to planting areas;
- Consideration of source of water for new planting (access tracks, temporary irrigation);
- Arranging delivery of mulch, jute netting and tree guards (if required);
- Treatment of heavily compacted soils by ripping and or application of gypsum; and
- Soil amelioration as required.

Planting density

Plant density is calculated on a zone-by-zone basis to cater for various requirements, including infill-only requirements such as canopy trees at low densities.

Planting installation

The following outlines the preferred installation methodology for revegetation works within the rehabilitation areas. It has been designed to maximise plant establishment success rates and minimise plant mortality. Revegetation works shall be either undertaken or directly supervised by an experienced and qualified contractor. All works shall be in accordance with the provisions of this Offset Management Framework, and local government policies and Australian Standards.
Plant installation methods shall include:

- Plants are to be vigorous, well established, hardened off, consistent with species or variety, free from disease and insect pests, with large root systems and no evidence of having been restricted or damaged. The landscape coordinator has the right to inspect and reject stock prior to planting.
- Plants are to be planted immediately after delivery to the planting site.
- Excavate planting medium to a depth suitable for the installation of tube or pot specimens. In areas where planting substrate is deemed to be very poor (compacted, nutrient deficient, hydrophobic etc.) and above areas of potential frequent inundation and waterflow, topsoil may be used.
- Pre-water plant hole if soil is dry to decrease root stress upon planting and assess the infiltration of water through the soil.
- Place plant into hole and backfill ensuring that the plant is upright and the stem is not covered in any less than 10 millimetres (mm) or any more than 20 mm of planting medium.
- Plants are to be watered thoroughly immediately after planting (ensure deep irrigation) and thereafter as required during the construction phase of the development depending on climatic conditions. Creation of a concave hollow around the base of each plant will aid water infiltration to the plant roots.
- A complete, long-term slow-release fertiliser such as Nutricote or similar is recommended, and will be administered appropriately during planting. Topdressing with slow-release fertiliser is preferred to avoid toxic levels of fertiliser accumulating in the plant hole around the plant roots.
- To ensure successful establishment, all planting surfaces must be covered in:
    - a 100 mm layer of high-quality weed-free composted chip mulch (site mulch)- Note: to avoid possible stem rot in some 'drier' species ensure mulch is 'dished' and not covering plant stem by more than 20 mm. Where available, mulch material to be sourced from cleared vegetation material if adequately seasoned, or
    - Suitable individual anchored natural fibre weed mat (jute netting).
- A minimum 90% survival rate should be achieved.

Regeneration monitoring

Once weed removal/control has been completed the engaged suitably qualified environmental consultant will be notified to monitor natural regeneration. Photo point monitoring and GPS locational and extent survey will be utilised.

The coordinates of the initial photo monitoring will be recorded using the handheld GPS which will assist in locating the monitoring point during subsequent monitoring periods. Photo point monitoring will be undertaken annually at the same time of the year post rehabilitation works.
The photos will provide the baseline imagery to compare future photo point monitoring and ensure the integrity of the fence. A record of the photos will be maintained which includes:

- GPS coordinates of the photo point.
- Date, time and number of each photo.
- Direction in which the photo was taken (north, south, east and west).
- After each photo monitoring event, a GPS waypoint of the location of the rehabilitation and a GPS polyline of the extent will be recorded.

If natural regeneration should fail, infill planting will be implemented. Following infill planting, monitoring will commence in the same manner outlined above.

The following elements will be noted on a field datasheet:

- The presence of weeds within the extent.
- Natural regeneration of native species.

If required:

- the planted stock (a physical count of alive plants in the ground).
- The average health of the planted stock.
- The average height of the planted stock.

9.7.4 Annual monitoring and reporting

Rehabilitation works progress reports will be prepared by the suitably qualified regeneration contractor and included in the OAAR.

The suitably qualified regeneration contractor will complete annual monitoring tasks until establishment of plantings is achieved (typically after five years):

Annual photo monitoring
To monitor management action 5, photo point monitoring and GPS locational and extent survey will be utilised. The coordinates of the initial photo monitoring will be recorded using the handheld GPS. Photo point monitoring is to be undertaken annually at the same location and time of the year, before and after planting has commenced. If natural regeneration should fail, infill planting is to be implemented. Following infill planting, monitoring will commence.

The photos provide the baseline imagery to compare future photo point monitoring. A record of the photos will be maintained which includes:

- GPS coordinates of the photo point.
- Date, time and number of each photo.
- Direction in which the photo was taken (north, south, east and west).
- After each photo monitoring event, a GPS waypoint of the location of the rehabilitation and a GPS polyline of the extent will be recorded.

Rehabilitation and regeneration survey
The following elements will be noted on a field datasheet:

- The success of the rehabilitation stock (a physical count of alive plants in the ground).
- The average health of the rehabilitation stock.
- The average height of the rehabilitation stock.
- The presence of weeds within the rehabilitation extent.



- Natural regeneration of native species.

Infill planting records (where required)
The following elements will be noted on a field datasheet:

- The success of the rehabilitation stock (a physical count of alive plants in the ground).
- The average health of the rehabilitation stock.
- The average height of the rehabilitation stock.
- The presence of weeds within the rehabilitation extent.
- Natural regeneration of native species.

9.7.5 Milestone monitoring

The suitably qualified person as appointed by the Proponent will complete MHQA surveys before the end of Years 5, 10, 15 and 20 of the offset to assess against the interim milestones and environmental.

This will include:

- MHQA transects at baseline sampling locations; and
- direct and indirect surveys to target MNES presence, including Spot Assessment Technique surveys, motion triggered camera trapping and spotlighting.

Monitoring will also need to include specific transects targeting establishment of key foraging species for swift parrot and regent honeyeater in relevant assessment units to ensure that target numbers are being achieved. This monitoring will occur quarterly for the first 12 months then annually for years 3 and 4 an then at years 5, 10, 15 and 20.

9.8. Management Action 6 – Fencing and Signage

The offset area is to be suitably fenced and marked with signage to discourage trespass and keep out cattle grazing. Gates leading to the subject offset area will have signage installed for added protection.

In addition, cattle will be managed as specified in this OMP via a combination of temporary and existing paddock fencing and, in time, the temporary fencing may be upgraded to permanent or removed when the broader offset property, surrounding the subject offset area, is secured as an offset and managed under approval.

Internal fences that are not removed include barbed wire will also be retrofitted to further reduce threats to the grey-headed flying-fox, greater glider, swift parrot and regent honeyeater. Barbed wire should be removed from the top strand or covered with poly pipe (refer Bat Conservation & Rescue Qld Inc. (2022)) or tagged to reduce potential impacts to the threatened species.

Refer to **Plan 17** for proposed offset area fencing and signage. The plan shows existing barbed-wire fencing proposed to be retrofitted and existing fauna friendly fencing. Fauna friendly fencing are based on the following specifications:

- Top strand plain wire, and
- Bottom strand either plain wire, or barbed wire set at a minimum 300 mm above ground.

9.9. Management Action 7 – Hollow Monitoring and Management

9.9.1 Justification

Greater glider rely on specific hollows for denning and breeding as per the conservation advice. Monitoring the development of hollows and creating hollows in suitable trees that will be connected via recreated habitat will ensure denning and breeding resources for the greater glider are provided.

9.9.2 Proposed Management Measures

A Hollow Monitoring and Management Plan has been developed to monitor the utility of existing site hollows and creation of new hollows via Arborist / Contractor carving and nest box installation for the greater glider over the 20 year management period. The compilation and implementation of the Hollow Monitoring and Management Plan is the responsibility of the Proponent.

Ample existing trees that are suitable for the creation of hollows have been identified (**Appendix F**). Detailed mapping and monitoring of hollow features and the creation of additional features by carving where required will ensure that enough features to acquit the OAG requirements under the features based assessment will be provided across the relevant assessment units, targeting a minimum of 1.5 hollows per hectare as per the conservation advice and to mitigate the impact.

The following completion criteria under the Hollow Monitoring and Management Plan are proposed:

- Hollow Monitoring and Management Plan implemented in year 1.

9.9.3 Monitoring and Reporting

A detailed monitoring program as per the Hollow Monitoring and Management Plan will ensure enough hollows (features) are present to acquit the minimum OAG requirements by the end of the management period. Monitoring will occur quarterly for the first 12 months then annually to year 20 as per the HMMP.

Reporting on hollow monitoring and creation will be included in Annual Compliance Reports.

9.10. Reporting requirements

Multiple annual reporting mechanisms are proposed to demonstrate compliance with anticipated approval conditions.

An **Offset Area Annual Report (OAAR)** will be prepared by the Offset Provider for each year of the offset detailing management activities undertaken in accordance with the Management Framework and provides clear details on how performance targets are being addressed and any adaptive management measures implemented. It is anticipated that the OAAR will be provided to the Proponent and suitably qualified person preparing the Annual Compliance Report one (1) month after each year of the offset or as specified on approval.

A **Milestone Report** is proposed to be completed by a suitably qualified person before the end of Years 5, 10, 15 and 20 of the offset detailing how the offset is progressing against the interim milestones, key performance indicators and environmental outcomes. This will include an assessment of whether or not each environmental outcome has been, or are likely to be achieved and provide advice of any circumstance/s which they consider is/are affecting the achievement of each outcome. The findings of

each assessment must be documented and should be published within 3 months of the end of the relevant year of the offset in which the assessment is undertaken.

An **Annual Compliance Report** (ACR) will be required to be prepared under the approval. The OAAR and Milestone Reports will be included as part of the Annual Compliance Reports. The ACR will be prepared by a qualified environmental person as directed by the Proponent and published on the project website each year by the conditioned date. The report will address the compliance with each of the conditions of approval, including any incident reports of undesirable impacts upon MNES (including their habitat) and any monitoring and management milestones achieved during the previous 12 months, including progress on key management measures, attainment of performance targets and completion criteria, and adaptive implementation outcomes. The compliance report will also address the effectiveness of the management measures and how the offset area is progressing against performance and completion criteria.

Documentary evidence providing proof of the date of publication of the ACR and non-compliance with any of the conditions of the approval will be provided to DCCEEW at the time of publishing the compliance report if the action is approved.

Section 6 provides a monitoring and reporting schedule for the OMP. This includes the management action, monitoring actions, corrective action trigger, corrective action, reporting action and responsible person/party.

9.11. Data Management

The Proponent, Offset Provider and engaged suitably qualified person appointed by the Proponent and/or Offset Provider will be responsible for the management of data, including interpretation, reporting and presentation. The Proponent will be responsible for the ownership, distribution and availability of data to the DCCEEW.



10. Adaptive Management

An adaptive implementation program will be used to ensure uncertainty is reduced over time, and that completion criteria are attained and maintained for the life of the offset. As more information becomes available following ongoing performance monitoring, the management and monitoring regime will be reviewed and revised to maximise the likelihood of attaining and maintaining the outcomes to be achieved by implementing the OMP. Any updates to the Additional Offset Management Plan which do not result in a material change to the environmental outcomes, performance and completion criteria will be made by the Offset Provider and/or The Proponent without the requirement of informing DCCEEW. If material amendments likely to alter the environmental outcomes, or performance and completion criteria are proposed to the OMP, the amendments and justification for the contingency measures will be provided to DCCEEW in writing.

Adaptive management will be used to incorporate changes in any of the following areas:

1. Assimilation of new data or information - such as, updates to conservation advice or new threat abatement plans relevant to the MNES.
2. Project coordination and scheduling – to manage unforeseen disruptions to schedule such as inclement weather on contractor works for management actions and environmental consultant monitoring events.
3. Annual review of risks – to refresh the mitigation measures should new threats be identified or stochastic events such as unplanned fires or floods occur.
4. Annual review of management measure effectiveness – to increase the frequency or change the method of management actions where monitoring performance criteria are not met.
5. Contingency for unplanned incidents – such as stochastic events including unplanned fires or floods.

An audit of OMP completed every five (5) years with consideration to the areas identified above and is to be directed by the Offset Provider and an appointed suitably qualified person.

10.1. Uncertainty

The plan identifies and manages uncertainty. To this end the plan specifies:

a) key data/information used to formulate the plan;

b) the limitations and/or uncertainty associated with the use of that data/information;

c) the risks that limitation and/or uncertainty represents for plan failure; and

d) how limitations and/or uncertainty, and associated risks, are mitigated during plan implementation. For example, where a margin of safety is applied to management measures until uncertainty is reduced to an acceptable level or performance targets/completion criteria are attained/maintained.

To identify and manage uncertainty, the OMP used regulatory and policy context to formulate the plan, listed below.



10.1.1 Regulatory and policy context

This document has been prepared taking into account the following technical guidelines and legislation:

- Former EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (DoEE, 2014)
- National Recovery Plan for the Koala *Phascolarctos cinereus* (combined populations of Queensland, New South Wales and the Australian Capital Territory) (DAWE 2022)
- The National Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus* (DAWE, 2021)
- Conservation Advice for *Petauroides volans* (greater glider (southern and central) (DCCEEW 2022)
- National Recovery Plan for the Swift Parrot *Lathamus discolor* (DCCEEW 2024)
- National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*)
- *EPBC Act Survey guidelines for Australia's threatened bats* (Department of the Environment, Water, Heritage and the Arts, 2010)
- EPBC Act environmental offsets policy (Department of Sustainability, Environment, Water, Population and Communities, 2012);
- EPBC Act Environmental Management Plan Guidelines (DoEE, 2014)
- Policy Statement: Advanced environmental offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
- *Vegetation Management Act 1999* (legally securing the offset through a Voluntary Declaration under Section 19F)
- Queensland *Environmental Offsets Act 2014*
- Queensland *Environmental Offsets Regulation 2014*.

10.2. Risk of Failure

The plan assesses the risk of failure to achieve the plan's performance targets and/or completion criteria. To this end the plan:

a) states the plan's performance targets and/or completion criteria;

b) identifies events or circumstances that prejudice attainment/maintenance of performance targets and/or completion criteria. The events or circumstances must address scientific/ecological uncertainty, stochastic events and legal/land use planning factors that may represent risks;

c) includes a qualitative assessment of the likelihood and consequence of those events or circumstances, and the residual risk of failure to achieve those criteria due to identified events or circumstances (*assuming management measures will be implemented*);

d) characterises risk as low, medium, high or severe, and derived from likelihood (highly likely, likely, possible, unlikely, rare) and consequence (minor, moderate, high, major and critical); and

e) outlines how consequence, likelihood and risk level for each risk have been determined.

To identify the risk of failure, **Table 69** states the management action, completion criteria, corrective action triggers and corrective actions. In addition, a risk assessment has been completed in **Appendix I.**



Table 69: Risk of failure table and corrective actions

Action	Completion Criteria	Corrective Action Trigger	Corrective Action
Legally secure the offset area	• The offset area is legally secured for conservation via a suitable method such as a VDEC process administered under the Queensland VMA or a covenant under the *Land Act 1994* or *Land Titles Act 1994* prior to the impacts occurring • The Department is notified of the legal securement within 5 business days of the offset area being legally secured. • The offset area is not used for other purposes – site access is restricted.	Offset area is not legally secured.	The offset area is legally secured prior to any impacts occurring.
Non-Native Vertebrate Pest Management	• Non-native vertebrate pests and evidence of pests are suppressed below baseline levels within the offset area.	Pest management is not implemented and/or evidence of predation on MNES is observed. Monitoring actions and OAARs identify ongoing presence of predator and non-native herbivorous or non-predator vertebrates that impact on habitat quality and condition. Monitoring actions and OAARs detect an increase in non-native predator and herbivore detection from the previous survey or relative to the baseline. Control of non-native predators and herbivores has	Implement supplementary control measures, increase frequency of control events or other management actions as recommended by suitably qualified pest contractor within 6 months of a monitoring event where non-native predator or herbivore detection has occurred. Where there is evidence of non-native predator or herbivore activity, a trapping or baiting program by a suitably qualified contractor will be conducted within 6 months of detection.

Action	Completion Criteria	Corrective Action Trigger	Corrective Action
		not been maintained from the time that it is first achieved for the remainder of the life of the offset.	Risk management, corrective actions and adaptive management are to be integrated as required throughout the offset management period in response to changes or natural events. If performance criteria are not achieved by the timeframes outlined, the corrective actions will continue until achieved, extending the management period.
Weeds management	• The management actions must maintain weed cover at or below 5% by the end of Year 10 and be maintained for the life of the offset (20 years).	Weed cover has increased relative to the previous monitoring event, or new weeds are detected. The extent of weed cover has not been maintained as required to reach the environmental outcome as identified in the OAARs and Milestone Reports.	Weed control program to be expanded/adapted to improve outcomes within 6 months following a monitoring event where the weed extent has not been maintained. Source of any new weeds is identified and mitigated. Risk management, corrective actions and adaptive management are to be integrated as required throughout the offset management period in response to changes or natural events. If key milestones and performance criteria are not achieved by the timeframes outlined in **Appendix E**, the corrective actions will continue until achieved, extending the management period.

Action	Completion Criteria	Corrective Action Trigger	Corrective Action
Bushfire management	• Risk of high intensity fires in the offset area mitigated. • Vegetation composition and restoration regime is not negatively affected by prescribed fire regimes.	Bushfire management measures not implemented and/or a high intensity bushfire impacts the offset area. Unexpected bushfire event and resurgence of weeds/decreased habitat. Reduced habitat quality, vegetation dieback or MNES mortality due to failure of prescribed burns.	Undertake audit to inspect impacts within 2 weeks following an event (if deemed safe). Following annual monitoring of fuel loads, implement actions as directed by the local authority including prescribed burning or other techniques undertaken in consultation with the Queensland Rural Fire Brigade to manage fuel loads within 6 months or as soon as appropriate (*i.e.*, consider weather conditions). If required, recovery actions including weed control and management and/or infill planting may be undertaken to ensure the habitat quality performance criteria are achieved within the management period within 6 months following an audit if weather conditions are favourable. Risk management, corrective actions and adaptive management are to be integrated as required throughout the offset management period in response to changes or natural events.

Action	Completion Criteria	Corrective Action Trigger	Corrective Action
Habitat creation and regeneration management	• Rehabilitated areas are established, regenerated and mapped as remnant vegetation under Queensland's VMA successor legislation by Year 20, which requires 70% of canopy height and 50% of expected cover according to the relevant Regional Ecosystem benchmark to be reached. • Site condition metrics for MNES improves in accordance with environmental outcomes (**Appendix E**).	Regeneration measures not implemented as proposed; site condition metrics do not improve according to proposed environmental outcomes. OAARs indicate that the rate of plant stock failure is greater than 10%. Habitat does not achieve performance criteria as identified in Milestone Reports within the management period, implement corrective actions.	Infill planting will be implemented if required within 12 months following MHQA survey intervals. Monitoring of infill planting to occur regularly after initial planting in accordance with watering schedules determined by the bush regeneration contractor and dependent on weather. Monitoring will be undertaken regularly by the Offset Provider or appointed suitably qualified regeneration contractor after planting in accordance with watering schedules (depending on rainfall) of infill planting and supplementary direct seeding, planting, weed control, fertilizer, amelioration or other management actions will be implemented as required to enhance success rate and stimulate tree growth and establishment. Risk management, corrective actions and adaptive management are to be integrated as required throughout the offset management period in response to changes or natural events. The management period may be extended to ensure environmental outcomes are able to be achieved.

Action	Completion Criteria	Corrective Action Trigger	Corrective Action
Fencing and Signage	• Risk of mortalities or injury to MNES mitigated as a result of barbed-wire fencing. • Where stock breaches or unauthorised access is recorded, this is rectified within 2 weeks.	Fencing or signage not installed or retrofitted as proposed causing MNES injury, stock breaches, or other unauthorised access. Fencing disrepair causes stock breaches or other unauthorised access including people and feral animals.	Fencing is repaired and alternative signage and fencing solutions are considered if needed.
Hollow Monitoring and Management	• Hollow Monitoring and Management Plan implemented in year 1. • Hollows and nest boxes installed as per HMMP.	Hollow Monitoring and Management Plan not implemented. Where monitoring records hollow or nest box failure, corrective actions are to include repair or replacement as necessary.	Corrective actions are taken to ensure milestones are rectified, including recovery actions to ensure milestones are implemented prior to the timeline completion as per the HMMP, such as additional specialist resourcing where necessary. Repair or replacement to occur within 3 months of reporting. The management period may be extended to ensure environmental outcomes are able to be achieved.

10.3. Limitations

Although an adaptive management plan will be implemented across the offset area for life of the offset (20 years), potential limitations to achieving these include:

- Associated risks and uncertainty in predicting the occurrence and extent of natural disasters or extreme weather events, including drought and flooding.
- Uncertainty of the rate at which vegetation will re-establish.
- The ability of native fauna (*i.e.,* MNES) to recognise and utilise the site for habitat requirements.
- Uncertainty of future predator occurrence and the effectiveness of the pest management measures.
- Coordinated approaches between local governments and the offset area holder to ensure effective implementation of management plans.

The implementation of adaptive management measures will ensure that identified limitations are avoided and/or the subsequent impacts are mitigated where possible. The promotion of suitable habitat on-site through implementing the various management actions, along with the continuous monitoring of abundance, will assist in species utilisation of the site.

Further, the regular review of this Offset Management Plan, inclusive of the management actions and monitoring methodologies detailed within it, will assist in identifying areas requiring improvement, and conversely, will identify methodology that has been successful. The success or required amendments to the management plans or works on-site will be assessed during the completion of the ACR as required under the anticipated EPBC Approval.

To ensure progress towards environmental outcomes and completion criteria is assessed correctly the baseline surveys have been developed to be repeatable and gather the data required for comparison against the completion criteria. Surveys are to be repeated in the same manner and location throughout the management period to ensure a consistent approach and accurate representation of the conservation values within the offset area.

11. References

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12. Appendices

Appendix A
Koala MHQA Tables

Appendix B
Field Survey Data

Appendix C
GHFF FHA Tables

Appendix D
Greater Glider MHQA Tables

Appendix E
Milestone Framework

Appendix F
Hollow Monitoring and Management Plan

Appendix G
OAG Feature Reference Tables

Appendix H
OAG Tables

Appendix I
Risk Assessment



Appendix A

Koala MHQA Tables

Assessment Unit - Regional Ecosystem	AU 1 - Cat B RE12.12.5							
Koala	**RE12.12.5 Benchmark**	**Transect 3**	**Transect 6**	**Transect 2**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION								
Recruitment of woody perennial species in EDL	**100**	75	100	80	**85.00**	85.00	**5**	5
Native plant species richness - trees	**5**	6	5	5	**5.33**	106.67	**5**	5
Native plant species richness - shrubs	**9**	4	6	3	**4.33**	48.15	**2.5**	2.5
Native plant species richness - grasses	**11**	5	6	8	**6.33**	57.58	**2.5**	2.5
Native plant species richness - forbs	**17**	8	6	11	**8.33**	49.02	**2.5**	2.5
Tree canopy height (Canopy)*	**22**	21	22	22	**21.67**	98.48	5	
Tree canopy height (Sub-canopy)*	**9**	11	10	9	**10.00**	111.11	5	
						***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**41**	44.1	34.5	64.5	**47.70**	116.34	5	
Tree canopy cover (Sub-canopy)**	**10**	22.9	33	31.3	**29.07**	290.67	3	
						****Average tree canopy cover**	**4**	4
Shrub canopy cover	**3**	7	4.7	4.5	**5.40**	180.00	**5**	5
Native grass cover*	**35**	19	25	34	**26.00**	74.29	**3**	3
Organic litter*	**35**	22	11	19	**17.33**	49.52	**3**	3
Large trees (euc plus non-euc) (per ha)	**29**	14	8	6	**9.33**	32.18	**5**	5
Coarse woody debris (per ha)	**578**	142	72	689	**301.00**	52.08	**5**	5 Proportion
Non-native plant cover	**0**	45	70	9	**41.33**	41.33	**3**	3 0.63125
Quality and availability of food and foraging habitat	**NA**	5	5	5	**5**	-	**5**	5
Quality and availability of shelter	**NA**	5	5	5	**5**	-	**5**	5
								60.5
						Site Condition Score (/100)	**60.5**	
						Overall Site Condition Score - out of 3	**1.82**	
SITE CONTEXT								
Size of patch		10	10	10	10		**10**	
Connectedness		5	5	5	5		**5**	
Context		4	4	4	4		**4**	
Ecological Corridors		6	6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5	5		**5**	
Threats to the species		7	7	7	7		**7**	
Species mobility capacity		7	7	7	7		**7**	
						Site Context Score (/56)	**44**	
						Overall Site Context Score - out of 3	**2.36**	
SPECIES STOCKING RATE								
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	40	40	40	40		**40**	
						Species Stocking Rate Score (/70)	**0.57**	
						Overall Species Stocking Rate Score - out of 4	**2.29**	
Overall Assessment Unit Score							**6.46**	

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10 SAT surveys detected koala use on site
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15 Foraging / Breeding
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		10 SAT surveys showed low presence using the east coast (med-high) category
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5 See below
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		40					
SRR Score (out of 4)	**2.285714286**						

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton fo
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 2 - Cat B RE12.11.5/12.11.3							
Koala	**RE12.11.5 Benchmark**	**Transect 26**	**Transect 27**	**Transect 31**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION								
Recruitment of woody perennial species in EDL	**100**	100	20	100	**73.33**	73.33	**3**	3
Native plant species richness - trees	**7**	7	5	8	**6.67**	95.24	**5**	5
Native plant species richness - shrubs	**11**	5	4	9	**6.00**	54.55	**2.5**	2.5
Native plant species richness - grasses	**8**	4	5	9	**6.00**	75.00	**2.5**	2.5
Native plant species richness - forbs	**17**	6	10	14	**10.00**	58.82	**2.5**	2.5
Tree canopy height (Canopy)*	**24**	23	23	18	**21.33**	88.89	5	
Tree canopy height (Sub-canopy)*	**10**	15	12	15	**14.00**	140.00	5	
						***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**60**	65.5	67.1	71.7	**68.10**	113.50	5	
Tree canopy cover (Sub-canopy)**	**14**	23.6	21.1	38.2	**27.63**	197.38	5	
						****Average tree canopy cover**	**5**	5
Shrub canopy cover	**14**	6.5	6.3	23.9	**12.23**	87.38	**5**	5
Native grass cover*	**30**	42	31	24	**32.33**	107.78	**5**	5
Organic litter*	**50**	30	29	64	**41.00**	82.00	**5**	5
Large trees (euc plus non-euc) (per ha)	**26**	8	10	10	**9.33**	35.90	**5**	5
Coarse woody debris (per ha)	**457**	392	100	561	**351.00**	76.81	**5**	5 Proportion
Non-native plant cover	**0**	11	15	5	**10.33**	10.33	**5**	5 0.69375
Quality and availability of food and foraging habitat	**N/A**	10	10	10	**10**	-	**10**	10
Quality and availability of shelter	**N/A**	10	10	10	**10**	-	**10**	10
								75.5
						Site Condition Score (/100)	**75.5**	
						Overall Site Condition Score - out of 3	**2.27**	
SITE CONTEXT								
Size of patch		10	10	10	10		**10**	
Connectedness		5	5	5	5		**5**	
Context		4	4	4	4		**4**	
Ecological Corridors		6	6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5	5		**5**	
Threats to the species		7	7	7	7		**7**	
Species mobility capacity		7	7	7	7		**7**	
						Site Context Score (/56)	**44**	
						Overall Site Context Score - out of 3	**2.36**	
SPECIES STOCKING RATE								
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	40	40	40	40		**40**	
						Species Stocking Rate Score (/70)	**0.57**	
						Overall Species Stocking Rate Score - out of 4	**2.29**	
Overall Assessment Unit Score							**6.91**	

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10 SAT surveys detected koala use on site
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15 Foraging / Breeding
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		10 SAT surveys showed low presence using the east coast (med-high) category
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15	5 See below
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		40					
SRR Score (out of 4)	**2.285714286**						

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton fo
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 3 - Cat C RE 12.3.7 - mapped as 12.11.5/12.11.3 but not characteristic						
Koala	**RE12.3.7 Benchmark**	**Transect 22**	**Transect 28**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION							
Recruitment of woody perennial species in EDL	**100**	100	0	**50.00**	50.00	**3**	3
Native plant species richness - trees	**6**	5	4	**4.50**	75.00	**2.5**	2.5
Native plant species richness - shrubs	**8**	4	4	**4.00**	50.00	**2.5**	2.5
Native plant species richness - grasses	**6**	6	1	**3.50**	58.33	**2.5**	2.5
Native plant species richness - forbs	**17**	5	3	**4.00**	23.53	**0**	0
Tree canopy height (Canopy)*	**22**	17	19	**18.00**	81.82	5	
Tree canopy height (Sub-canopy)*	**12**	10	11	**10.50**	87.50	5	
					***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**31**	40.2	67.1	**53.65**	173.06	5	
Tree canopy cover (Sub-canopy)**	**23**	23.9	7	**15.45**	67.17	5	
					****Average tree canopy cover**	**5**	5
Shrub canopy cover	**22**	10.6	2.8	**6.70**	30.45	**3**	3
Native grass cover*	**8**	77	6	**41.50**	518.75	**5**	5
Organic litter*	**27**	2	0	**1.00**	3.70	**0**	0
Large trees (euc plus non-euc) (per ha)	**60**	10	36	**23.00**	38.33	**5**	5
Coarse woody debris (per ha)	**667**	0	188	**94.00**	14.09	**2**	2 Proportion
Non-native plant cover	**0**	15	95	**55.00**	55.00	**0**	0 0.44375
Quality and availability of food and foraging habitat	**N/A**	5	5	**5**	-	**5**	5
Quality and availability of shelter	**N/A**	5	5	**5**	-	**5**	5
							45.5
					Site Condition Score (/100)	**45.5**	
					Overall Site Condition Score - out of 3	**1.37**	
SITE CONTEXT							
Size of patch		10	10	10		**10**	
Connectedness		5	5	5		**5**	
Context		4	4	4		**4**	
Ecological Corridors		6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5		**5**	
Threats to the species		7	7	7		**7**	
Species mobility capacity		7	7	7		**7**	
					Site Context Score (/56)	**44**	
					Overall Site Context Score - out of 3	**2.36**	
SPECIES STOCKING RATE							
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	40	40	40		**40**	
					Species Stocking Rate Score (/70)	**0.57**	
					Overall Species Stocking Rate Score - out of 4	**2.29**	
Overall Assessment Unit Score						**6.01**	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		40				
SRR Score (out of 4)	**2.285714286**					

10 SAT surveys detected koala use on site

15 Foraging / Breeding

10 SAT surveys showed low presence using the east coast (med-high) category

5 See below

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 4 - Cat X RE12.9-10.2						
Koala	RE12.9-10.2 Benchmark	Transect 11	Transect 12	Average of Transect(s)	% Benchmark	Score	
SITE CONDITION							
Recruitment of woody perennial species in EDL	100	0	100	50.00	50.00	3	3
Native plant species richness - trees	6	2	2	2.00	33.33	2.5	2.5
Native plant species richness - shrubs	7	2	2	2.00	28.57	2.5	2.5
Native plant species richness - grasses	7	4	4	4.00	57.14	2.5	2.5
Native plant species richness - forbs	13	3	9	6.00	46.15	2.5	2.5
Tree canopy height (Canopy)*	21	0	18	9.00	42.86	3	
Tree canopy height (Sub-canopy)*	12	11	9	10.00	83.33	5	
					*Average tree canopy height	4	4
Tree canopy cover (Canopy)**	64	0	27.9	13.95	21.80	2	
Tree canopy cover (Sub-canopy)**	20	6.4	12.4	9.40	47.00	2	
					**Average tree canopy cover	2	2
Shrub canopy cover	6	3.2	4.3	3.75	62.50	5	5
Native grass cover*	21	67	41	54.00	257.14	5	5
Organic litter*	48	0	0	0.00	0.00	0	0
Large trees (euc plus non-euc) (per ha)	38	0	6	3.00	7.89	5	5
Coarse woody debris (per ha)	506	63	170	116.50	23.02	2	2 Proportion
Non-native plant cover	0	40	55	47.50	47.50	3	3 0.4875
Quality and availability of food and foraging habitat	NA	5	5	5	-	5	5
Quality and availability of shelter	NA	5	5	5	-	5	5
							49
					Site Condition Score (/100)	49	
					Overall Site Condition Score - out of 3	1.47	
SITE CONTEXT							
Size of patch		10	10	10		10	
Connectedness		5	5	5		5	
Context		4	4	4		4	
Ecological Corridors		6	6	6		6	
Role of site location to species overall population in the state		5	5	5		5	
Threats to the species		7	7	7		7	
Species mobility capacity		7	7	7		7	
					Site Context Score (/56)	44	
					Overall Site Context Score - out of 3	2.36	
SPECIES STOCKING RATE							
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	40	40	40		40	
					Species Stocking Rate Score (/70)	0.57	
					Overall Species Stocking Rate Score - out of 4	2.29	
Overall Assessment Unit Score						6.11	

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10 SAT surveys detected koala use on site
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15 Foraging / Breeding
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		10 SAT surveys showed low presence using the east coast (med-high) category
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5 See below
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		40					
SRR Score (out of 4)	**2.285714286**						

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 5 - Cat X RE12.12.12					
Koala	RE12.12.12 Benchmark	Transect 19	Transect 25	Average of Transect(s)	% Benchmark	Score
SITE CONDITION						
Recruitment of woody perennial species in EDL	100	0	0	0.00	0.00	0
Native plant species richness - trees	4	0	2	1.00	25.00	2.5
Native plant species richness - shrubs	3	1	0	0.50	16.67	0
Native plant species richness - grasses	9	4	6	5.00	55.56	2.5
Native plant species richness - forbs	28	1	3	2.00	7.14	0
Tree canopy height (Canopy)*	22	0	0	0.00	0.00	0
Tree canopy height (Sub-canopy)*	11	0	0	0.00	0.00	0
					*Average tree canopy height	0
Tree canopy cover (Canopy)**	31	0	0	0.00	0.00	0
Tree canopy cover (Sub-canopy)**	12	0	0	0.00	0.00	0
					**Average tree canopy cover	0
Shrub canopy cover	5	0.6	0	0.30	6.00	0
Native grass cover*	40	65	60	62.50	156.25	5
Organic litter*	35	0	10	5.00	14.29	3
Large trees (euc plus non-euc) (per ha)	60	0	2	1.00	1.67	5
Coarse woody debris (per ha)	500	0	0	0.00	0.00	0
Non-native plant cover	0	5	65	35.00	35.00	3
Quality and availability of food and foraging habitat	N/A	1	1	1	-	1
Quality and availability of shelter	N/A	1	1	1	-	1
					Site Condition Score (/100)	23
					Overall Site Condition Score - out of 3	0.69
SITE CONTEXT						
Size of patch		10	10	10		10
Connectedness		5	5	5		5
Context		4	4	4		4
Ecological Corridors		6	6	6		6
Role of site location to species overall population in the state		5	5	5		5
Threats to the species		7	7	7		7
Species mobility capacity		4	4	4		4
					Site Context Score (/56)	41
					Overall Site Context Score - out of 3	2.20
SPECIES STOCKING RATE						
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	30	30	30		30
					Species Stocking Rate Score (/70)	0.43
					Overall Species Stocking Rate Score - out of 4	1.71
Overall Assessment Unit Score						4.60

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		30				
SRR Score (out of 4)	**1.714285714**					

10	SAT surveys detected koala use on site		
15	Foraging / Breeding		
0	SAT surveys showed low presence using the east coast (med-high) category		
5	See below		

*SSR Supplementary Table			
*Key source population for breeding	Score	0	10
		No	Yes/ Possibly
*Key source population for dispersal	Score	0	5
		No	Yes/ Possibly
*Necessary for maintaining genetic diversity	Score	0	15
		No	Yes/ Possibly
*Near the limit of the species range	Score	0	15
		No	Yes

0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
5	Unknown but using the precautionary principle it is considered possible.
0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
0	The site is not near the limit of koalas range

Assessment Unit - Regional Ecosystem	AU 6 - Cat X RE12.12.5									
Koala	RE12.12.5 Benchmark	Transect 4	Transect 7	Transect 14	Transect 15	Transect 17	Average of Transect(s)	% Benchmark	Score	
SITE CONDITION										
Recruitment of woody perennial species in EDL	100	0	0	100	0	0	20.00	20.00	3	3
Native plant species richness - trees	5	2	5	3	0	0	2.00	40.00	2.5	2.5
Native plant species richness - shrubs	9	0	2	2	0	0	0.80	8.89	0	0
Native plant species richness - grasses	11	5	4	6	4	6	5.00	45.45	2.5	2.5
Native plant species richness - forbs	17	1	2	8	1	0	2.40	14.12	0	0
Tree canopy height (Canopy)*	22	23	19	18	0	0	12.00	54.55	3	
Tree canopy height (Sub-canopy)*	9	12	9	12	0	0	6.60	73.33	5	
							*Average tree canopy height		4	4
Tree canopy cover (Canopy)**	41	14.2	24.1	17.6	0	0	11.18	27.27	2	
Tree canopy cover (Sub-canopy)**	10	0	10.9	16.4	0	0	5.46	54.60	5	
							**Average tree canopy cover		3.5	3.5
Shrub canopy cover	3	0	0.4	1.8	0	0	0.44	14.67	3	3
Native grass cover*	35	85	69	72	79	64	73.80	210.86	5	5
Organic litter*	35	0	14	2	0	0	3.20	9.14	0	0
Large trees (euc plus non-euc) (per ha)	29	4	2	2	0	0	1.60	5.52	5	5
Coarse woody debris (per ha)	578	0	34	0	0	0	6.80	1.18	0	0 Proportion
Non-native plant cover	0	18	20	10	15	20	16.60	16.60	5	5 0.41875
Quality and availability of food and foraging habitat	NA	5	5	5	5	5	5	-	5	5
Quality and availability of shelter	NA	5	5	5	5	5	5	-	5	5
										43.5
								Site Condition Score (/100)		43.5
								Overall Site Condition Score - out of 3		1.31
SITE CONTEXT										
Size of patch		10	10	10	10	10	10		10	
Connectedness		5	5	5	5	5	5		5	
Context		4	4	4	4	4	4		4	
Ecological Corridors		6	6	6	6	6	6		6	
Role of site location to species overall population in the state		5	5	5	5	5	5		5	
Threats to the species		7	7	7	7	7	7		7	
Species mobility capacity		7	7	7	7	7	7		7	
								Site Context Score (/56)		44
								Overall Site Context Score - out of 3		2.36
SPECIES STOCKING RATE										
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	40	40	40	40	40	40		40	
								Species Stocking Rate Score (/70)		0.57
								Overall Species Stocking Rate Score - out of 4		2.29
Overall Assessment Unit Score										5.95

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		40				
SRR Score (out of 4)	**2.285714286**					

10 SAT surveys detected koala use on site

15 Foraging / Breeding

10 SAT surveys showed low presence using the east coast (med-high) category

5 See below

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 7 - Cat C RE12.11..5/12.11.3						
Koala	**RE12.11.5 Benchmark**	**Transect 29**	**Transect 30**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION							
Recruitment of woody perennial species in EDL	**100**	100	100	**100.00**	100.00	**5**	5
Native plant species richness - trees	**7**	6	6	**6.00**	85.71	**2.5**	2.5
Native plant species richness - shrubs	**11**	6	2	**4.00**	36.36	**2.5**	2.5
Native plant species richness - grasses	**8**	4	4	**4.00**	50.00	**2.5**	2.5
Native plant species richness - forbs	**17**	6	5	**5.50**	32.35	**2.5**	2.5
Tree canopy height (Canopy)*	**24**	19	20	**19.50**	81.25	5	
Tree canopy height (Sub-canopy)*	**10**	9	9	**9.00**	90.00	5	
					***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**60**	39.1	46	**42.55**	70.92	5	
Tree canopy cover (Sub-canopy)**	**14**	15.3	21.9	**18.60**	132.86	5	
					****Average tree canopy cover**	**5**	5
Shrub canopy cover	**14**	1.2	0	**0.60**	4.29	**0**	0
Native grass cover*	**30**	17	11	**14.00**	46.67	**1**	1
Organic litter*	**50**	8	8	**8.00**	16.00	**3**	3
Large trees (euc plus non-euc) (per ha)	**26**	12	2	**7.00**	26.92	**5**	5
Coarse woody debris (per ha)	**457**	360	100	**230.00**	50.33	**5**	5 Proportion
Non-native plant cover	**0**	45	55	**50.00**	50.00	**3**	3 0.525
Quality and availability of food and foraging habitat	**N/A**	5	5	**5**	-	**5**	5
Quality and availability of shelter	**N/A**	5	5	**5**	-	**5**	5
							52
					Site Condition Score (/100)	**52**	
					Overall Site Condition Score - out of 3	**1.56**	
SITE CONTEXT							
Size of patch		10	10	10		**10**	
Connectedness		5	5	5		**5**	
Context		4	4	4		**4**	
Ecological Corridors		6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5		**5**	
Threats to the species		7	7	7		**7**	
Species mobility capacity		7	7	7		**7**	
					Site Context Score (/56)	**44**	
					Overall Site Context Score - out of 3	**2.36**	
SPECIES STOCKING RATE							
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	40	40	40		**40**	
					Species Stocking Rate Score (/70)	**0.57**	
					Overall Species Stocking Rate Score - out of 4	**2.29**	
Overall Assessment Unit Score						**6.20**	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		40				
SRR Score (out of 4)	**2.285714286**					

10 SAT surveys detected koala use on site

15 Foraging / Breeding

10 SAT surveys showed low presence using the east coast (med-high) category

5 See below

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 8 - Cat C RE12.12.5								
Koala	**RE12.12.5 Benchmark**	**Transect 1**	**Transect 13**	**Transect 16**	**Transect18**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION									
Recruitment of woody perennial species in EDL	**100**	100	100	100	33.3	**83.33**	83.33	**5**	5
Native plant species richness - trees	**5**	3	4	4	5	**4.00**	80.00	**2.5**	2.5
Native plant species richness - shrubs	**9**	1	7	6	4	**4.50**	50.00	**2.5**	2.5
Native plant species richness - grasses	**11**	6	4	7	5	**5.50**	50.00	**2.5**	2.5
Native plant species richness - forbs	**17**	1	10	7	9	**6.75**	39.71	**2.5**	2.5
Tree canopy height (Canopy)*	**22**	22	18	19	19	**19.50**	88.64	5	
Tree canopy height (Sub-canopy)*	**9**	8	9	9	10	**9.00**	100.00	5	
							***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**41**	49.4	26.8	53.2	44.9	**43.58**	106.28	5	
Tree canopy cover (Sub-canopy)**	**10**	0	28	28.4	25	**20.35**	203.50	3	
							****Average tree canopy cover**	**4**	4
Shrub canopy cover	**3**	0.6	11	9.7	3.2	**6.13**	204.17	**3**	3
Native grass cover*	**35**	66	59	38	52	**53.75**	153.57	**5**	5
Organic litter*	**35**	1	11	24	17	**13.25**	37.86	**3**	3
Large trees (euc plus non-euc) (per ha)	**29**	6	4	12	4	**6.50**	22.41	**5**	5
Coarse woody debris (per ha)	**578**	18	34	233	254	**134.75**	23.31	**2**	2 Proportion
Non-native plant cover	**0**	15	35	80	15	**36.25**	36.25	**3**	3 0.5625
Quality and availability of food and foraging habitat	**NA**	5	5	5	5	**5**	-	**5**	5
Quality and availability of shelter	**NA**	5	5	5	5	**5**	-	**5**	5
									55
							Site Condition Score (/100)	**55**	
							Overall Site Condition Score - out of 3	**1.65**	
SITE CONTEXT									
Size of patch		10	10	10	10	10		**10**	
Connectedness		5	5	5	5	5		**5**	
Context		4	4	4	4	4		**4**	
Ecological Corridors		6	6	6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5	5	5		**5**	
Threats to the species		7	7	7	7	7		**7**	
Species mobility capacity		7	7	7	7	7		**7**	
							Site Context Score (/56)	**44**	
							Overall Site Context Score - out of 3	**2.36**	
SPECIES STOCKING RATE									
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	40	40	40	40	40		**40**	
							Species Stocking Rate Score (/70)	**0.57**	
							Overall Species Stocking Rate Score - out of 4	**2.29**	
Overall Assessment Unit Score								**6.29**	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		40				
SRR Score (out of 4)	**2.285714286**					

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

10 SAT surveys detected koala use on site

15 Foraging / Breeding

10 SAT surveys showed **low** presence using the east coast (medium-high) category — Low, No use, Low, No Use

5 See below

Assessment Unit - Regional Ecosystem	AU 9 - Cat C RE12.9-10.2								
Koala	RE12.9-10.2 Benchmark	Transect 5	Transect 10	Transect 21	Transect 23	Average of Transect(s)	% Benchmark	Score	
SITE CONDITION									
Recruitment of woody perennial species in EDL	100	66.7	100	100	100	91.68	91.68	5	5
Native plant species richness - trees	6	3	4	3	6	4.00	66.67	2.5	2.5
Native plant species richness - shrubs	7	7	4	4	4	4.75	67.86	2.5	2.5
Native plant species richness - grasses	7	5	4	2	6	4.25	60.71	2.5	2.5
Native plant species richness - forbs	13	11	4	7	5	6.75	51.92	2.5	2.5
Tree canopy height (Canopy)*	21	22	22	21	18	20.75	98.81	5	
Tree canopy height (Sub-canopy)*	12	11	8	7	12	9.50	79.17	5	
							*Average tree canopy height	5	5
Tree canopy cover (Canopy)**	64	53.8	35.7	55.9	51.5	49.23	76.91	5	
Tree canopy cover (Sub-canopy)**	20	4	4.7	7	3.9	4.90	24.50	2	
							**Average tree canopy cover	3.5	3.5
Shrub canopy cover	6	6.8	6.6	5.7	17.1	9.05	150.83	5	5
Native grass cover*	21	76	82	56	41	63.75	303.57	5	5
Organic litter*	48	9	0	26	20	13.75	28.65	3	3
Large trees (euc plus non-euc) (per ha)	38	22	10	0	6	9.50	25.00	5	5
Coarse woody debris (per ha)	506	456	56	50	112	168.50	33.30	2	2 Proportion
Non-native plant cover	0	10	12	2	5	7.25	7.25	5	5 0.60625
Quality and availability of food and foraging habitat	NA	5	5	5	5	5	-	5	5
Quality and availability of shelter	NA	5	5	5	5	5	-	5	5
									58.5
							Site Condition Score (/100)	58.5	
							Overall Site Condition Score - out of 3	1.76	
SITE CONTEXT									
Size of patch		10	10	10	10	10		10	
Connectedness		5	5	5	5	5		5	
Context		4	4	4	4	4		4	
Ecological Corridors		6	6	6	6	6		6	
Role of site location to species overall population in the state		5	5	5	5	5		5	
Threats to the species		7	7	7	7	7		7	
Species mobility capacity		7	7	7	7	7		7	
							Site Context Score (/56)	44	
							Overall Site Context Score - out of 3	2.36	
SPECIES STOCKING RATE									
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	40	40	40	40	40		40	
							Species Stocking Rate Score (/70)	0.57	
							Overall Species Stocking Rate Score - out of 4	2.29	
Overall Assessment Unit Score								6.40	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		40				
SRR Score (out of 4)	**2.285714286**					

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

10 SAT surveys detected koala use on site

SAT results= 7+13.33+6.66+10

15 Foraging / Breeding 9.2475

10 SAT surveys showed low presence using the east coast (med-high) category

5 See below

Assessment Unit - Regional Ecosystem	AU 10 - Cat X RE12.3.7						
Koala	RE12.3.7 Benchmark	Transect 20	Transect 24	Average of Transect(s)	% Benchmark	Score	
SITE CONDITION							
Recruitment of woody perennial species in EDL	100	100	100	100.00	100.00	5	5
Native plant species richness - trees	6	6	5	5.50	91.67	5	5
Native plant species richness - shrubs	8	4	3	3.50	43.75	2.5	2.5
Native plant species richness - grasses	6	4	6	5.00	83.33	2.5	2.5
Native plant species richness - forbs	17	2	2	2.00	11.76	0	0
Tree canopy height (Canopy)*	22	21	17	19.00	86.36	5	
Tree canopy height (Sub-canopy)*	12	12	6	9.00	75.00	5	
					*Average tree canopy height	5	5
Tree canopy cover (Canopy)**	23	61	18.7	39.85	173.26	5	
Tree canopy cover (Sub-canopy)**	51	22.8	4.2	13.50	26.47	2	
					**Average tree canopy cover	3.5	3.5
Shrub canopy cover	22	2.1	10.5	6.30	28.64	3	3
Native grass cover*	8	8	96	52.00	650.00	5	5
Organic litter*	27	28	1	14.50	53.70	5	5
Large trees (euc plus non-euc) (per ha)	60	30	0	15.00	25.00	5	5
Coarse woody debris (per ha)	667	177	105	141.00	21.14	2	2 Proportion
Non-native plant cover	0	80	5	42.50	42.50	3	3 0.58125
Quality and availability of food and foraging habitat	N/A	5	5	5	-	5	5
Quality and availability of shelter	N/A	5	5	5	-	5	5
							56.5
					Site Condition Score (/100)	56.5	
					Overall Site Condition Score - out of 3	1.70	
SITE CONTEXT							
Size of patch		10	10	10		10	
Connectedness		5	5	5		5	
Context		4	4	4		4	
Ecological Corridors		6	6	6		6	
Role of site location to species overall population in the state		5	5	5		5	
Threats to the species		7	7	7		7	
Species mobility capacity		7	7	7		7	
					Site Context Score (/56)	44	
					Overall Site Context Score - out of 3	2.36	
SPECIES STOCKING RATE							
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	40	40	40		40	
					Species Stocking Rate Score (/70)	0.57	
					Overall Species Stocking Rate Score - out of 4	2.29	
Overall Assessment Unit Score						6.34	

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10 SAT surveys detected koala use on site
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15 Foraging / Breeding
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		10 SAT surveys showed low presence using the east coast (med-high) category
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5 See below
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		40					
SRR Score (out of 4)	**2.285714286**						

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 11 - Cat X RE12.11.5/12.11.3						
Koala	**RE12.11.5 Benchmark**	**Transect 8**	**Transect 9**	**Average of Transect(s)**	**% Benchmark**	**Score**	
SITE CONDITION							
Recruitment of woody perennial species in EDL	**100**	100	0	**50.00**	50.00	**3**	3
Native plant species richness - trees	**7**	3	7	**5.00**	71.43	**2.5**	2.5
Native plant species richness - shrubs	**11**	0	2	**1.00**	9.09	**0**	0
Native plant species richness - grasses	**8**	4	7	**5.50**	68.75	**2.5**	2.5
Native plant species richness - forbs	**17**	0	0	**0.00**	0.00	**0**	0
Tree canopy height (Canopy)*	**24**	23	23	**23.00**	95.83	5	
Tree canopy height (Sub-canopy)*	**10**	6	10	**8.00**	80.00	5	
					***Average tree canopy height**	**5**	5
Tree canopy cover (Canopy)**	**60**	15.4	20.2	**17.80**	29.67	2	
Tree canopy cover (Sub-canopy)**	**14**	10.1	6.1	**8.10**	57.86	5	
					****Average tree canopy cover**	**3.5**	3.5
Shrub canopy cover	**14**	0	1.7	**0.85**	6.07	**0**	0
Native grass cover*	**30**	37	49	**43.00**	143.33	**5**	5
Organic litter*	**50**	0	1	**0.50**	1.00	**0**	0
Large trees (euc plus non-euc) (per ha)	**26**	4	12	**8.00**	30.77	**5**	5
Coarse woody debris (per ha)	**457**	0	40	**20.00**	4.38	**0**	0 Proportion
Non-native plant cover	**0**	35	65	**50.00**	50.00	**3**	3 0.36875
Quality and availability of food and foraging habitat	**N/A**	5	5	**5**	-	**5**	5
Quality and availability of shelter	**N/A**	5	5	**5**	-	**5**	5
							39.5
					Site Condition Score (/100)	**39.5**	
					Overall Site Condition Score - out of 3	**1.19**	
SITE CONTEXT							
Size of patch		10	10	10		**10**	
Connectedness		5	5	5		**5**	
Context		4	4	4		**4**	
Ecological Corridors		6	6	6		**6**	
Role of site location to species overall population in the state		5	5	5		**5**	
Threats to the species		7	7	7		**7**	
Species mobility capacity		4	4	4		**4**	
					Site Context Score (/56)	**41**	
					Overall Site Context Score - out of 3	**2.20**	
SPECIES STOCKING RATE							
Koala Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	30	30	30		**30**	
					Species Stocking Rate Score (/70)	**0.43**	
					Overall Species Stocking Rate Score - out of 4	**1.71**	
Overall Assessment Unit Score						**5.10**	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		30				
SRR Score (out of 4)	**1.714285714**					

10 SAT surveys detected koala use on site

15 Foraging / Breeding

0 SAT surveys showed low presence using the east coast (med-high) category

5 See below

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low de
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of koalas range
		No	Yes		

Appendix B

Field Survey Data

Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	1	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Liam Brzezinski	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
8	150.38 hectares	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrotwh vegetation containing Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. The transect is lcoated towarsd the upper east facing slope. It is noted that the paddock is managed for cattle grazing with shrubs mostly absent. Although mapped as high value regrowth, the vegetaion within the transect is representative of remnant vegetation, given the average heights and canopy coverage.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	3			EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	Dom / r
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	1		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Aristida calycina*	Common Name	Dark Wire Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Bothriochloa decipiens*	Common Name	Pitted Bluegrass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	1		
Scientific Name		Common Name	
Scientific Name	*Hibbertia stricta*	Common Name	Hibbertia
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	15.00%		
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Glandularia aristigera*	Common Name	Mayne's Pest
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Oxalis stricta*	Common Name	Common Yellow Woodsorrel
Scientific Name	*Sida cordifolia*		Flannel Weed
Scientific Name	*Solanum mauritianum*	Common Name	Wild Tobacco Tree

Scientific Name	*Chloris gayana*	**Common Name**	Rhodes Grass
Scientific Name	*Sporobolus pyramidalis*	**Common Name**	Rats Tail Grass
Scientific Name	*Bidens pilosa*	**Common Name**	Cobblers Pegs

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**18.00**		
1	1.80	**26**	
2		**27**	
3		**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	60%	85%	80%	30%	75%	66%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	10%	10%	0%	15%	7%
Non native forbs and shrubs	35%	5%	10%	70%	10%	26%
Litter	5%	0%	0%	0%	0%	1%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Eucalyptus tereticornis* = 480mm; *Corymbia citridora* = 540mm, 500mm,
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	6		

Median Tree Canopy Height Measurements	**Canopy:**	22	**Sub-canopy:**	8	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**100.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	49.4%	**Sub-canopy:**	0.00%	**Emergent:**	
Shrub canopy cover %	0.60%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	8.3	8.3	**T2**			0.0
T1 *Eucalyptus tereticornis*	21.6	25.2	3.6	**T2**			0.0
T1 *Eucalyptus tereticornis*	27.7	31.0	3.3	**T2**			0.0
T1 *Eucalyptus tereticornis*	31.0	35.1	4.1	**T2**			0.0
T1 *Corymbia citriodora*	35.1	43.1	8.0	**T2**			0.0
T1 *Corymbia citriodora*	43.1	53.7	10.6	**T2**			0.0
T1 *Corymbia citriodora*	58.0	69.5	11.5	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citriodora*	68.6	69.2	0.6	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus tereticornis	8
Corymbia citriodora	9
Total Recorded	17
Total Per hectare	85

Part J: SAT Survey Results

SAT Survey ID	1			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	Corymbia citriodora	Spotted Gum	400	Nil
2	Corymbia citriodora	Spotted Gum	560	Nil
3	Corymbia citriodora	Spotted Gum	520	Nil
4	Eucalyptus tereticornis	Forest Red Gum	340	Nil
5	Eucalyptus tereticornis	Forest Red Gum	460	Nil
6	Eucalyptus tereticornis	Forest Red Gum	390	Nil
7	Eucalyptus tereticornis	Forest Red Gum	460	Nil
8	Eucalyptus tereticornis	Forest Red Gum	490	Nil
9	Eucalyptus tereticornis	Forest Red Gum	620	Scats
10	Eucalyptus tereticornis	Forest Red Gum	680	Nil
11	Eucalyptus tereticornis	Forest Red Gum	240	Nil
12	Eucalyptus melanophloia	Silver Leaved Ironbark	120	Nil
13	Eucalyptus tereticornis	Forest Red Gum	260	Nil
14	Eucalyptus tereticornis	Forest Red Gum	190	Nil
15	Corymbia citriodora	Spotted Gum	220	Scats
16	Corymbia citriodora	Spotted Gum	230	Nil
17	Corymbia citriodora	Spotted Gum	200	Nil
18	Corymbia citriodora	Spotted Gum	500	Nil
19	Corymbia citriodora	Spotted Gum	110	Nil
20	Eucalyptus tereticornis	Forest Red Gum	420	Nil
21	Corymbia citriodora	Spotted Gum	300	Scats
22	Corymbia citriodora	Spotted Gum	310	Nil
23	Corymbia citriodora	Spotted Gum	200	Nil
24	Eucalyptus tereticornis	Forest Red Gum	390	Nil
25	Eucalyptus tereticornis	Forest Red Gum	210	Nil
26	Eucalyptus tereticornis	Forest Red Gum	340	Nil
27	Corymbia citriodora	Spotted Gum	510	Nil
28	Corymbia citriodora	Spotted Gum	340	Nil
29	Corymbia citriodora	Spotted Gum	260	Nil
30	Eucalyptus crebra	Narrow Leaf Ironbark	240	Nil
Total Recorded				3
Total Percenatge Recorded				10%
Total Use (Based on East Coast medium-high)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	2	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Liam Brzezinski	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1	89.57 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing remnant Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. The transect is lcoated towarsd the upper north east facing slope. Recent evidence of fire in teh lower canopy of the trees approximately six meters in height. Transect alignmnet is 212°SW. The average tree height within T1 canopy is 21.15m with the average tree height of T2 subcanopy being 8.85m. The average trunk diameter of trees searches within the SAT surevy is 194mm.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	Dom / r
Scientific Name	*Lophostemon confertus*	Common Name	Brush Box	r
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	r
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark	r
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	3		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Acacia concurrens*	Common Name	Black Wattle
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	8		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Pennisetum alopecuroides*	Common Name	Fountain Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Aristida calycina*	Common Name	Dark Wiregrass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	11		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Lomandra longifolia*	Common Name	Mat Rush
Scientific Name	*Lobelia purpurascens*	Common Name	White Root
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Polymeria calcina*	Common Name	Slender Bindweed
Scientific Name	*Wahlenbergia gracilis*	Common Name	Australian Bluebell
Scientific Name	*Dillwynia retorta*	Common Name	Hairy Parrot Pea
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Fimbristylis ferruginea*	Common Name	A Fringe Rush
Scientific Name	*Cyperus polystachyos*	Common Name	Bunchy Sedge
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	9.00%		
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs
Scientific Name	*Verbena bonariensis*	Common Name	Purpleyop Vervain
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	689.00		
1	3.80	26	
2	1.50	27	
3	0.60	28	
4	4.50	29	
5	0.90	30	
6	1.10	31	
7	3.80	32	
8	1.70	33	
9	6.60	34	
10	6.90	35	
11	1.40	36	
12	0.60	37	
13	3.10	38	
14	1.60	39	
15	4.20	40	
16	2.80	41	
17	0.80	42	
18	2.20	43	
19	7.20	44	
20	1.70	45	
21	2.60	46	
22	0.70	47	
23	1.90	48	
24	3.10	49	
25	3.60	50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	35%	55%	40%	5%	35%	34%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	30%	25%	30%	30%	20%	27%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	10%	0%	0%	5%	0%	3%
Non native forbs and shrubs	0%	0%	0%	0%	0%	
Litter	0%	15%	20%	25%	35%	19%
Rock	0%	0%	0%	0%	0%	
Bare Ground	25%	5%	10%	35%	10%	17%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*Eucalyptus crebra = 450mm; Corymbia citridora = 460mm; Corymbia intermedia = 410mm.*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	6		

Median Tree Canopy Height Measurements	Canopy:	22	Sub-canopy:	9	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	80.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	64.5%	Sub-canopy:	31.30%	Emergent:	
Shrub canopy cover %	4.50%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	4.9	4.9	**T2** *Corymbia citriodora*	11.7	13.7	2.0
T1 *Corymbia citriodora*	5.1	14.1	9.0	**T2** *Eucalyptus melanophloia*	14.0	16.5	2.5
T1 *Eucalyptus melanophloia*	16.7	24.0	7.3	**T2** *Corymbia citriodora*	20.0	22.4	2.4
T1 *Eucalyptus melanophloia*	28.3	32.6	4.3	**T2** *Corymbia citriodora*	32.4	33.6	1.2
T1 *Corymbia citriodora*	32.6	41.0	8.4	**T2** *Eucalyptus crebra*	35.7	38.7	3.0
T1 *Corymbia citriodora*	43.5	51.1	7.6	**T2** *Eucalyptus crebra*	38.7	41.0	2.3
T1 *Corymbia citriodora*	54.1	64.0	9.9	**T2** *Corymbia citriodora*	71.8	75.0	3.2
T1 *Eucalyptus crebra*	64.0	67.6	3.6	**T2** *Corymbia citriodora*	85.3	86.3	1.0
T1 *Corymbia citriodora*	71.0	75.5	4.5	**T2** *Lophostemon confertus*	86.3	97.0	10.7
T1 *Corymbia citriodora*	77.1	82.1	5.0	**T2** *Lophostemon confertus*	97.0	100.0	3.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citridora*	0.0	0.8	0.8	**Shrub**			0.0
Shrub *Corymbia citridora*	42.2	43.0	0.8	**Shrub**			0.0

Shrub *Corymbia citridora*	50.6	51.2	0.6	**Shrub**			0.0
Shrub *Eucalyptus crebra*	56.4	56.7	0.3	**Shrub**			0.0
Shrub *Corymbia citridora*	85.2	86.1	0.9	**Shrub**			0.0
Shrub *Corymbia citridora*	87.0	87.7	0.7	**Shrub**			0.0
Shrub *Acacia concurrens*	91.8	92.2	0.4	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

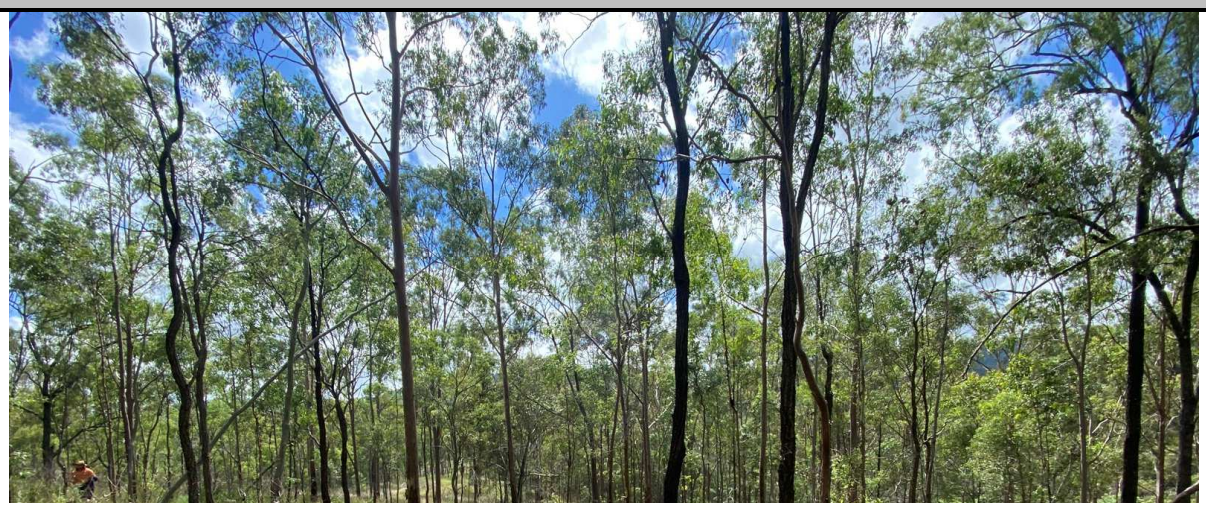
Species Name	Stem Count
Lophostemon confertus	12
Corymbia citriodora	24
Eucalyptus crebra	16
Total Recorded	52
Total Per hectare	260

Part J: SAT Survey Results

SAT Survey ID	2			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	420	Scats
2	*Corymbia citriodora*	Spotted Gum	320	Nil
3	*Eucalyptus crebra*	Narrow Leaf Ironbark	130	Nil
4	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
5	*Corymbia citriodora*	Spotted Gum	100	Nil
6	*Corymbia citriodora*	Spotted Gum	350	Scats
7	*Lophostemon confertus*	Brush Box	180	Scats
8	*Lophostemon confertus*	Brush Box	220	Nil
9	*Lophostemon confertus*	Brush Box	290	Nil
10	*Lophostemon confertus*	Brush Box	210	Nil
11	*Lophostemon confertus*	Brush Box	150	Nil
12	*Eucalyptus crebra*	Narrow Leaf Ironbark	120	Nil
13	*Corymbia citriodora*	Spotted Gum	140	Nil
14	*Corymbia citriodora*	Spotted Gum	130	Nil
15	*Lophostemon confertus*	Brush Box	170	Nil
16	*Corymbia citriodora*	Spotted Gum	120	Scats
17	*Corymbia citriodora*	Spotted Gum	100	Nil
18	*Corymbia intermedia*	Pink Bloodwood	130	Nil
19	*Corymbia citriodora*	Spotted Gum	150	Nil
20	*Corymbia citriodora*	Spotted Gum	210	Nil
21	*Eucalyptus crebra*	Narrow Leaf Ironbark	290	Nil
22	*Eucalyptus crebra*	Narrow Leaf Ironbark	300	Nil
23	*Corymbia citriodora*	Spotted Gum	150	Nil
24	*Eucalyptus crebra*	Narrow Leaf Ironbark	270	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	250	Nil
26	*Corymbia citriodora*	Spotted Gum	100	Nil
27	*Corymbia citriodora*	Spotted Gum	300	Nil
28	*Eucalyptus crebra*	Narrow Leaf Ironbark	150	Nil
29	*Eucalyptus crebra*	Narrow Leaf Ironbark	140	Nil
30	*Corymbia citriodora*	Spotted Gum	120	Nil
Total Recorded				4
Total Percenatge Recorded				13%
Total Use (Based on East Coast medium-high)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	3	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Liam Brzezinski	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1	89.57 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing remnant Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. The transect is lcoated towarsd the upper north east facing slope. Introduced species in the form of Lantana camara (lantana) dominated the lower slopes. Transect alignment is 15°N. The average tree height within T1 canopy is 18.96m with the average tree height of T2 subcanopy being 9.21m. The average trunk diameter of trees searches within the SAT survey is 194mm.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	6			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	Dom / r
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	r
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark	r
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree	
Scientific Name	*Lophostemon suaveolens*	Common Name	Swamp Box	
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaf Ironbark
Scientific Name	*Grewia latifolia*	Common Name	Dogs Balls
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Capillipedium spicigerum*	Common Name	Scented Top
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Lomandra longifolia*	Common Name	Mat Rush
Scientific Name	*Wahlenbergia gracilis*	Common Name	Australian Bluebell
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Lobelia purpurascens*	Common Name	White Root
Scientific Name	*Glossocardia bidens*	Common Name	Native Cobbler's Pegs
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Cyperus polystachyos*	Common Name	Bunchy Sedge
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	45.00%		
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Solanum seaforthianum*	Common Name	Brazilian Nightshade
Scientific Name	*Glandularia aristigera*	Common Name	Mayne's Pest
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	142.00		
1	4.50	26	
2	1.30	27	
3	1.20	28	
4	1.60	29	
5	5.60	30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	5%	45%	45%	0%	0%	19%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	5%	0%	10%	5%	5%	5%
Native shrubs	0%	30%	0%	0%	0%	6%
Non-native grass	0%	15%	15%	55%	70%	31%
Non native forbs and shrubs	0%	0%	10%	0%	0%	2%
Litter	65%	10%	0%	15%	20%	22%
Rock	15%	0%	0%	0%	0%	3%
Bare Ground	10%	0%	20%	25%	5%	12%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*Corymbia citriodora = 520mm, 410mm, 510mm, 420mm; Eucalyptus crebra = 450mm, 410mm; Eucalyptus melanophloia = 450mm;*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	14		

Median Tree Canopy Height Measurements	Canopy:	21	Sub-canopy:	11	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	75.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	44.1%	Sub-canopy:	22.90%	Emergent:	
Shrub canopy cover %	7.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	6.2	6.2	**T2** *Eucalyptus crebra*	7.0	8.5	1.5
T1 *Corymbia citriodora*	6.2	10.1	3.9	**T2** *Corymbia citriodora*	22.5	24.6	2.1
T1 *Corymbia citriodora*	13.1	17.8	4.7	**T2** *Corymbia citriodora*	31.4	36.4	5.0
T1 *Corymbia citriodora*	20.2	24.0	3.8	**T2** *Corymbia citriodora*	53.4	55.9	2.5
T1 *Corymbia citriodora*	24.6	28.0	3.4	**T2** *Corymbia citriodora*	66.5	68.2	1.7
T1 *Corymbia citriodora*	28.0	34.1	6.1	**T2** *Corymbia citriodora*	79.0	84.4	5.4
T1 *Eucalyptus crebra*	35.0	36.2	1.2	**T2** *Alphitonia excelsa*	88.0	92.7	4.7
T1 *Corymbia citriodora*	44.6	47.7	3.1	**T2**			0.0
T1 *Corymbia citriodora*	48.0	53.1	5.1	**T2**			0.0
T1 *Corymbia citriodora*	64.0	69.0	5.0	**T2**			0.0
T1 *Eucalyptus crebra*	72.0	73.6	1.6	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus melanophloia*	3.4	6.2	2.8	**Shrub**			0.0
Shrub *Eucalyptus crebra*	13.7	14.5	0.8	**Shrub**			0.0
Shrub *Corymbia citriodora*	14.5	15.9	1.4	**Shrub**			0.0
Shrub *Eucalyptus melanophloia*	15.9	17.1	1.2	**Shrub**			0.0

Shrub *Eucalyptus crebra*	17.1	17.3	0.2	**Shrub**			0.0
Shrub *Corymbia citriodora*	28.4	29.0	0.6	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	28
Eucalyptus crebra	11
Eucalyptus melanophloia	8
Alphitonia excelsa	1
Lophostemon suaveolens	2
Total Recorded	50
Total Per hectare	250

Part J: SAT Survey Results

SAT Survey ID	3			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	400	Nil
2	*Corymbia citriodora*	Spotted Gum	100	Nil
3	*Corymbia citriodora*	Spotted Gum	100	Nil
4	*Corymbia citriodora*	Spotted Gum	210	Nil
5	*Corymbia citriodora*	Spotted Gum	230	Nil
6	*Corymbia citriodora*	Spotted Gum	370	Nil
7	*Corymbia citriodora*	Spotted Gum	290	Nil
8	*Corymbia citriodora*	Spotted Gum	140	Nil
9	*Corymbia citriodora*	Spotted Gum	100	Nil
10	*Eucalyptus crebra*	Narrow Leaf Ironbark	230	Nil
11	*Eucalyptus melanophloia*	Silver Leaf Ironbark	250	Nil
12	*Corymbia citriodora*	Spotted Gum	160	Nil
13	*Corymbia intermedia*	Pink Bloodwood	110	Nil
14	*Corymbia citriodora*	Spotted Gum	140	Nil
15	*Eucalyptus crebra*	Narrow Leaf Ironbark	370	Nil
16	*Corymbia citriodora*	Spotted Gum	240	Nil
17	*Corymbia citriodora*	Spotted Gum	310	Nil
18	*Lophostemon suaveolens*	Swamp Box	210	Nil
19	*Eucalyptus crebra*	Narrow Leaf Ironbark	150	Nil
20	*Corymbia citriodora*	Spotted Gum	330	Nil
21	*Corymbia citriodora*	Spotted Gum	140	Nil
22	*Eucalyptus melanophloia*	Silver Leaf Ironbark	300	Nil
23	*Eucalyptus crebra*	Narrow Leaf Ironbark	460	Nil
24	*Lophostemon suaveolens*	Swamp Box	160	Nil
25	*Corymbia citriodora*	Spotted Gum	120	Nil
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	220	Nil
27	*Corymbia citriodora*	Spotted Gum	330	Nil
28	*Corymbia citriodora*	Spotted Gum	410	Nil
29	*Eucalyptus crebra*	Narrow Leaf Ironbark	210	Nil
30	*Eucalyptus crebra*	Narrow Leaf Ironbark	100	Nil
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast medium-high)				Nil

Attach Landscape Photos Here

North





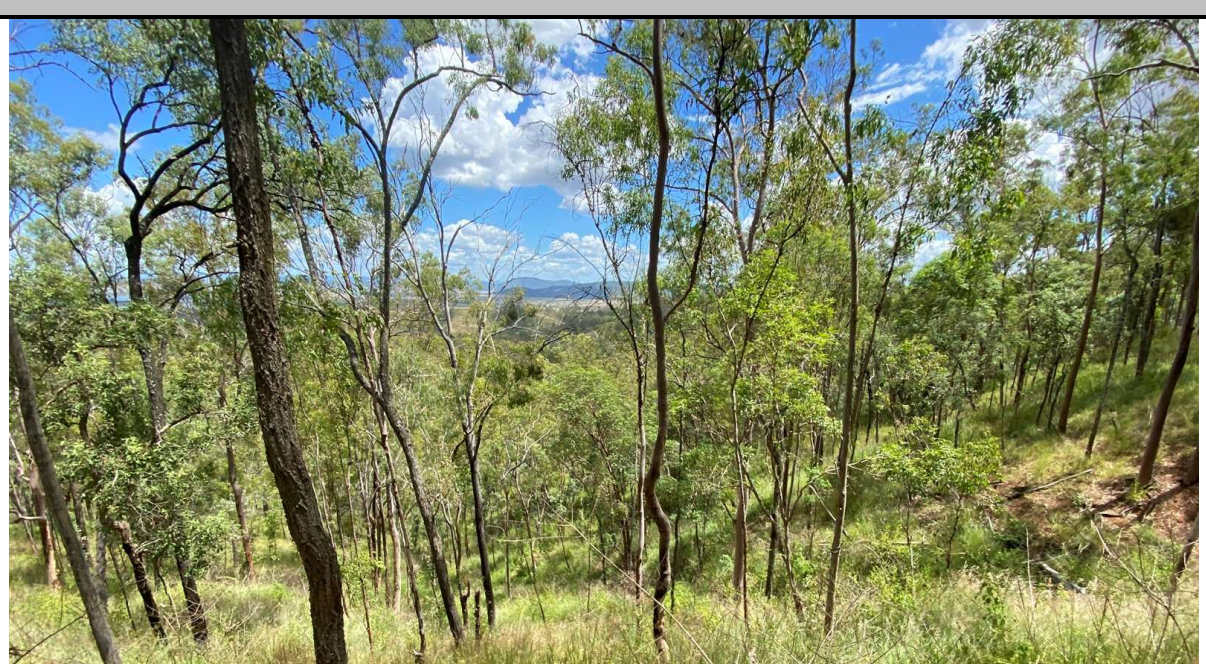
South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	4	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Liam Brzezinski	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	157.12 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing Least Concern Regional Ecosystem 12.12.5 described as *Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. Only two established trees are recorded in the transect location with the balance area cleared for cattle grazing. No dominat species or recruitment recorded. Transect alignment is 62°NE.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	2			EDL / Dom / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL
Scientific Name	*Lophostemon suaveolens*	Common Name	Swamp Box	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Sporobolus caroli*	Common Name	Fairy Grass
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	1		
Scientific Name	*Wahlenbergia stricta*	Common Name	Australian Bluebell
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	18.00%		
Scientific Name	*Sida rhombifolia*	Common Name	Arrowleaf Sida
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Solanum mauritianum*	Common Name	Wild Tobacco
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Glandularia aristigera*	Common Name	Mayne's Pest
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush

Scientific Name	*Chamaecriosta rotundifolia*	**Common Name**	Round Leaf Cassia
Scientific Name	*Crotalaria lanceolata*	**Common Name**	Lance-leaved Rattlepod
Scientific Name	*Sporobolus africanus*	**Common Name**	Paramatta Grass

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	**26**	
2		**27**	
3		**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	95%	80%	85%	75%	90%	85%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	5%	20%	15%	25%	10%	15%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Eucalyptus tereticornis = 1250mm; Lophostemon suaveolens = 940mm;*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	
Total Number Large Trees: per ha	4		

Median Tree Canopy Height Measurements	**Canopy:**	23	**Sub-canopy:**	12	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	14.2%	**Sub-canopy:**	0.00%	**Emergent:**	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Eucalyptus tereticornis*	0.0	14.2	14.2	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus tereticornis	1
Lophostemon suaveolens	1
Total Recorded	2
Total Per hectare	10 (note that no other trees are in the paddock area)

Part J: SAT Survey Results

SAT Survey ID	No Sat			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				
Total Percenatge Recorded				
Total Use (Based on East Coast Medium-High)				N/A

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	5	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Liam Brzezinski	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
9	51.53 ha	12.9-10.2	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrotwh vegetation conatining Least Concern Regional Ecosystem 12.9-10.2 described as*Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks.* This open forest community is a mid-dense community structuure with a canopy denisty of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The average tree height in the transect is 21.14 meters with the subcanopy being 7.86 meters. The plot alignment is 147°SE. The area towards the end of the transect contained exposed large surface rocks.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	3			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	r
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	7		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Ficus coronata*	Common Name	Sand Paper Fig
Scientific Name	*Allocasuarina littoralis*	Common Name	Black She Oak
Scientific Name	*Grewia latifolia*	Common Name	Dogs Balls
Scientific Name	*Alphitonia excellsa*	Common Name	Soap Tree
Scientific Name	*Acacia melanoxylon*	Common Name	Australian Blackwood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Aristida calycina*	Common Name	Dark Wiregrass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	11		
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Eremophila debilis*	Common Name	Winter Apple
Scientific Name	*Wahlenbergia gracilis*	Common Name	Australian Bluebell
Scientific Name	*Hardenbergia violacea*	Common Name	Native Sarsaparilla
Scientific Name	*Xanthorrhoees johnsonii*	Common Name	Grass Tree
Scientific Name	*Dillwynia retorta*	Common Name	Eggs and Bacon
Scientific Name	*Pandorea pandorana*	Common Name	Wonga Wonga Vine
Scientific Name		Common Name	Small Purple pea
Scientific Name	*Goodenia rotundifolia*	Common Name	Goodeniia
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Opuntia tomentosa*	Common Name	Prickly Pear
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	456.00		
1	9.50	26	
2	3.60	27	
3	0.50	28	
4	0.80	29	
5	0.90	30	
6	3.10	31	
7	0.60	32	
8	4.10	33	
9	1.40	34	
10	1.10	35	
11	7.40	36	
12	0.80	37	
13	2.80	38	
14	3.40	39	
15	5.60	40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	90%	55%	80%	60%	95%	76%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	5%	15%	5%	5%	0%	6%
Native shrubs	0%	0%	0%	15%	0%	3%
Non-native grass	5%	5%	0%	5%	5%	4%
Non native forbs and shrubs	0%	0%	0%	0%	0%	
Litter	0%	15%	15%	15%	0%	9%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	10%	0%	0%	0%	2%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380mm	Number of large eucalypt trees:	*Corymbia citriodora = 480mm, 460mm, 500mm, 520mm, 540mm, 420mm, 470mm, 450mm; Eucalyptus crebra = 400mm, 350mm, 400mm. (Total = 11)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	22		

Median Tree Canopy Height Measurements	Canopy:	22	Sub-canopy:	11	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	66.7

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	53.8%	Sub-canopy:	4.00%	Emergent:	
Shrub canopy cover %	6.80%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	12.2	12.2	**T2** *Corymbia citridora*	20.7	21.2	0.5
T1 *Corymbia citriodora*	29.8	35.4	5.6	**T2** *Corymbia citridora*	72.1	74.2	2.1
T1 *Eucalyptus crebra*	35.6	42.7	7.1	**T2** *Corymbia citridora*	98.6	100.0	1.4
T1 *Corymbia citriodora*	45.6	53.2	7.6	**T2**			0.0
T1 *Corymbia citriodora*	63.0	71.9	8.9	**T2**			0.0
T1 *Eucalyptus crebra*	71.9	77.5	5.6	**T2**			0.0
T1 *Corymbia citriodora*	79.0	85.8	6.8	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus crebra*	4.0	4.9	0.9	**Shrub** *Eucalyptus crebra*	98.2	98.7	0.5
Shrub *Grewia latifolia*	10.7	11.6	0.9	**Shrub**			0.0
Shrub *Corymbia citridora*	32.6	33.1	0.5	**Shrub**			0.0
Shrub *Acacia melanoxylon*	46.2	46.8	0.6	**Shrub**			0.0
Shrub *Eucalyptus crebra*	66.1	66.7	0.6	**Shrub**			0.0
Shrub *Ficus coronata*	73.7	74.9	1.2	**Shrub**			0.0

Shrub *Corymbia citridora*	89.0	89.4	0.4	**Shrub**			0.0
Shrub *Corymbia citridora*	93.1	93.8	0.7	**Shrub**			0.0
Shrub *Corymbia citridora*	94.6	95.1	0.5	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	15
Eucalyptus crebra	5
Total Recorded	20
Total Per hectare	100

Part J: SAT Survey Results

SAT Survey ID	5			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	460	Nil
2	*Corymbia citriodora*	Spotted Gum	200	Nil
3	*Corymbia citriodora*	Spotted Gum	490	Nil
4	*Corymbia citriodora*	Spotted Gum	230	Nil
5	*Corymbia citriodora*	Spotted Gum	220	Nil
6	*Corymbia tesselaris*	Moreton Bay Ash	160	Nil
7	*Corymbia citriodora*	Spotted Gum	270	Nil
8	*Corymbia citriodora*	Spotted Gum	150	Nil
9	*Corymbia citriodora*	Spotted Gum	180	Nil
10	*Eucalyptus crebra*	Narrow Leaf Ironbark	310	Scats
11	*Corymbia citriodora*	Spotted Gum	220	Nil
12	*Corymbia citriodora*	Spotted Gum	220	Nil
13	*Corymbia citriodora*	Spotted Gum	200	Nil
14	*Corymbia citriodora*	Spotted Gum	300	Nil
15	*Corymbia citriodora*	Spotted Gum	240	Nil
16	*Corymbia citriodora*	Spotted Gum	230	Nil
17	*Corymbia citriodora*	Spotted Gum	190	Nil
18	*Corymbia intermedia*	Pink Bloodwood	130	Nil
19	*Corymbia citriodora*	Spotted Gum	170	Nil
20	*Corymbia citriodora*	Spotted Gum	150	Nil
21	*Eucalyptus crebra*	Narrow Leaf Ironbark	350	Nil
22	*Corymbia citriodora*	Spotted Gum	260	Nil
23	*Corymbia citriodora*	Spotted Gum	270	Nil
24	*Corymbia citriodora*	Spotted Gum	260	Nil
25	*Corymbia citriodora*	Spotted Gum	430	Nil
26	*Corymbia citriodora*	Spotted Gum	280	Nil
27	*Corymbia citriodora*	Spotted Gum	360	Scats
28	*Corymbia citriodora*	Spotted Gum	320	Nil
29	*Corymbia citriodora*	Spotted Gum	300	Nil
30	*Corymbia citriodora*	Spotted Gum	240	Nil
Total Recorded				2
Total Percenatge Recorded				7%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	6	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	Date	26.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1	89.57 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing remnant Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. The transect is lcoated towards the upper north east facing slope. Transect alignmnet is 208°SW. The average tree height within T1 canopy is 20.6m with the average tree height of T2 subcanopy being 8.35m. The average trunk diameter of trees searches within the SAT surevy is 154mm.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL / R
Scientific Name	*Corymbia tesselaris*	Common Name	Moreton Bay Ash	EDL / R
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaf Ironbark	EDL / R
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	EDL
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	6		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaf Ironbark
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Grewia latifolia*	Common Name	Dogs Balls
Scientific Name	*Corymbia tesselaris*	Common Name	Moreton Bay Ash
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Capillipedium spicigerum*	Common Name	Scented Top
Scientific Name	*Aristida vagans*	Common Name	Threeawn Speargrass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Lomandra longifolia*	Common Name	Mat Rush
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Glossocardia bidens*	Common Name	Native Cobbler's Pegs
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	70.00%		
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Oxalis stricta*	Common Name	Yellow Woddsorrel
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	72.00		
1	1.30	26	
2	0.80	27	
3	1.40	28	
4	2.10	29	
5	1.60	30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	25%	35%	30%	5%	30%	25%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	10%	10%	5%	10%	10%	9%
Native shrubs	0%	5%	0%	0%	0%	1%
Non-native grass	40%	30%	25%	15%	15%	25%
Non native forbs and shrubs	25%	20%	20%	15%	30%	22%
Litter	0%	0%	5%	35%	15%	11%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	15%	20%	0%	7%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*Corymbia citridora = 400mm, 445mm, 410mm; Eucalyptus crebra = 460mm.*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	8		

Median Tree Canopy Height Measurements	Canopy:	22	Sub-canopy:	10	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	31.5%	Sub-canopy:	33.00%	Emergent:	
Shrub canopy cover %	4.70%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	1.0	11.2	10.2	**T2** *Corymbia citriodra*	0.0	1.8	1.8
T1 *Eucalyptus crebra*	43.2	52.1	8.9	**T2** *Corymbia citriodra*	11.4	12.8	1.4
T1 *Corymbia citriodora*	53.6	59.2	5.6	**T2** *Corymbia tesselaris*	21.2	23.1	1.9
T1 *Corymbia citriodora*	60.0	64.8	4.8	**T2** *Corymbia citriodra*	26.4	28.2	1.8
T1 *Eucalyptus crebra*	98.0	100.0	2.0	**T2** *Corymbia tesselaris*	30.2	31.7	1.5
T1			0.0	**T2** *Corymbia tesselaris*	33.0	38.6	5.6
T1			0.0	**T2** *Eucalyptus crebra*	39.3	43.2	3.9
T1			0.0	**T2** *Eucalyptus crebra*	55.2	57.2	2.0
T1			0.0	**T2** *Corymbia citriodra*	71.2	76.0	4.8
T1			0.0	**T2** *Eucalyptus crebra*	84.7	87.3	2.6
T1			0.0	**T2** *Eucalyptus crebra*	87.3	88.6	1.3
T1			0.0	**T2** *Corymbia citriodra*	91.8	94.4	2.6
T1			0.0	**T2** *Corymbia citriodra*	96.8	98.6	1.8
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval

Shrub *Corymbia citridora*	7.8	8.4	0.6	**Shrub**			0.0
Shrub *Corymbia citridora*	10.3	11.1	0.8	**Shrub**			0.0
Shrub *Corymbia tesselaris*	23.8	24.2	0.4	**Shrub**			0.0
Shrub *Corymbia tesselaris*	38.6	39.1	0.5	**Shrub**			0.0
Shrub *Eucalyptus crebra*	46.8	47.5	0.7	**Shrub**			0.0
Shrub *Alphitonia excelsa*	47.5	48.6	1.1	**Shrub**			0.0
Shrub *Eucalyptus crebra*	94.5	95.1	0.6	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

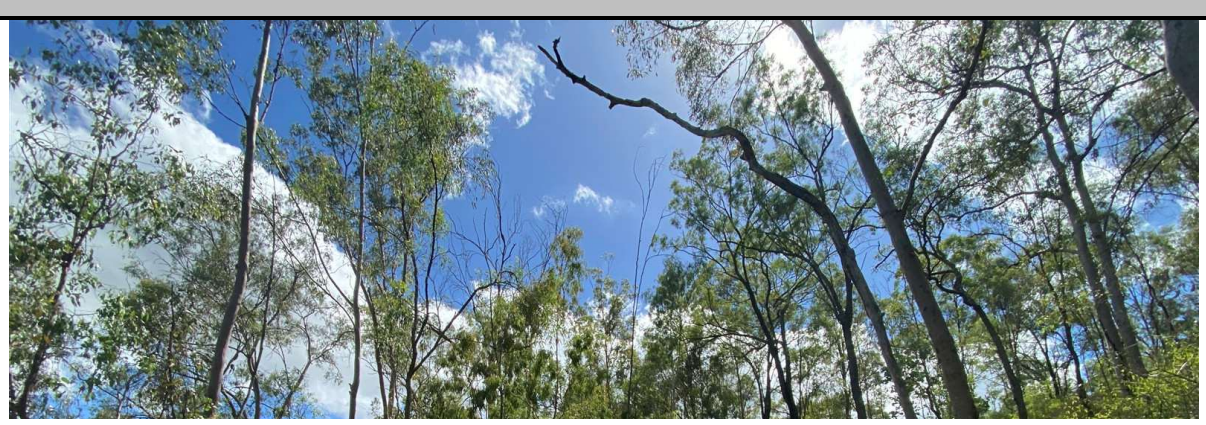
Species Name	Stem Count
Corymbia citriodora	41
Eucalyptus crebra	18
Corymbia intermedia	1
Corymbia tesselaris	9
Eucalyptus melanophloia	1
Total Recorded	70
Total Per hectare	350

Part J: SAT Survey Results

SAT Survey ID	6			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	330	Nil
2	*Corymbia citriodora*	Spotted Gum	420	Nil
3	*Eucalyptus crebra*	Narrow Leaf Ironbark	130	Nil
4	*Eucalyptus crebra*	Narrow Leaf Ironbark	480	Nil
5	*Corymbia citriodora*	Spotted Gum	140	Nil
6	*Corymbia citriodora*	Spotted Gum	100	Nil
7	*Corymbia citriodora*	Spotted Gum	210	Nil
8	*Corymbia citriodora*	Spotted Gum	120	Nil
9	*Corymbia citriodora*	Spotted Gum	150	Scats
10	*Corymbia citriodora*	Spotted Gum	265	Nil
11	*Corymbia citriodora*	Spotted Gum	130	Nil
12	*Eucalyptus crebra*	Narrow Leaf Ironbark	190	Nil
13	*Corymbia citriodora*	Spotted Gum	200	Nil
14	*Corymbia citriodora*	Spotted Gum	140	Nil
15	*Eucalyptus crebra*	Narrow Leaf Ironbark	160	Nil
16	*Eucalyptus crebra*	Narrow Leaf Ironbark	220	Nil
17	*Eucalyptus crebra*	Narrow Leaf Ironbark	110	Nil
18	*Eucalyptus crebra*	Narrow Leaf Ironbark	180	Nil
19	*Corymbia citriodora*	Spotted Gum	325	Nil
20	*Eucalyptus crebra*	Narrow Leaf Ironbark	260	Nil
21	*Eucalyptus melanophloia*	Silver Leaf Ironbark	160	Nil
22	*Eucalyptus crebra*	Narrow Leaf Ironbark	210	Nil
23	*Eucalyptus crebra*	Narrow Leaf Ironbark	150	Nil
24	*Eucalyptus crebra*	Narrow Leaf Ironbark	160	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	200	Nil
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	140	Nil
27	*Eucalyptus melanophloia*	Silver Leaf Ironbark	200	Nil
28	*Eucalyptus melanophloia*	Silver Leaf Ironbark	260	Nil
29	*Eucalyptus crebra*	Narrow Leaf Ironbark	240	Nil
30	*Eucalyptus crebra*	Narrow Leaf Ironbark	260	Nil
Total Recorded				1
Total Percenatge Recorded				3%
Total Use (Based on East Coast Medium-high)				Low

Attach Landscape Photos Here

North





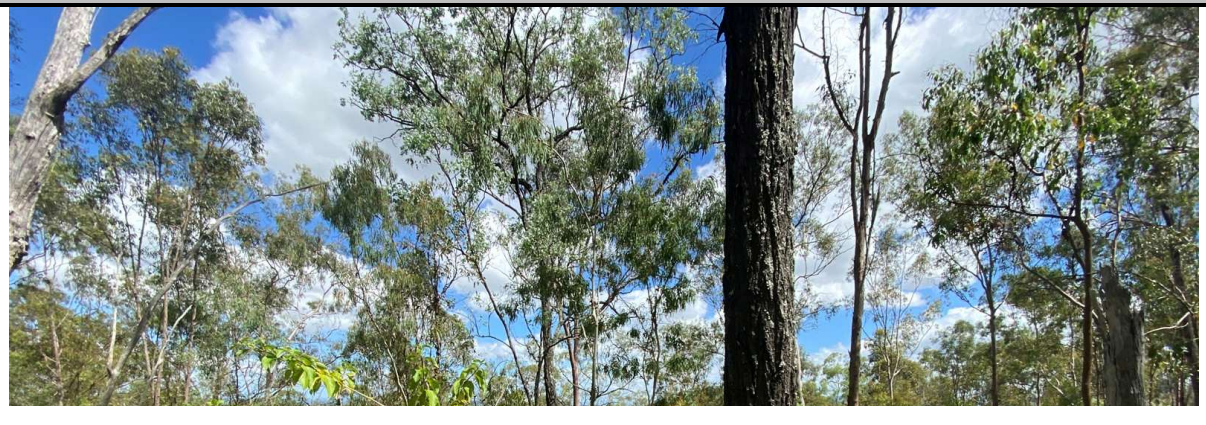
South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	7	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	Date	26.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	157.12 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing Least Concern Regional Ecosystem 12.12.5 described as *Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks.* Area contains patchy nativie trees with open paddock areas. Transect alignment is 190°S.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	EDL
Scientific Name	*Eucalyptus melaophloia*	Common Name	Silver Leaf Ironbark	EDL
Scientific Name	*Acacia concurrens*	Common Name	Black Wattle	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Acacia disparrima*	Common Name	Hickory Wattle
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	2		
Scientific Name	*Fimbristylis dichotoma*	Common Name	Common Fringe Rush
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	20.00%		
Scientific Name	*Lantana camarra*	Common Name	Lantana
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Verbena aristigera*	Common Name	Mayne's Pest
Scientific Name	*Verbena bonariensis*	Common Name	Purpleetop Vervain
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Sida rhombifolia*	Common Name	Arrowleaf Sida
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs

Scientific Name	*Melinis repens*	**Common Name**	Red Natal Grass
Scientific Name	*Sporobolus pyramidalis*	**Common Name**	Rats Tail Grass
Scientific Name	*Desmodium uncinatum*	**Common Name**	Silverleaf Desmodium
Scientific Name	*Ageratum houstoonianum*	**Common Name**	Blue Billygoat Weed
Scientific Name	*Cyperus polystachyos*	**Common Name**	Bunchy Sedge
Scientific Name	*Sporobolus africanus*	**Common Name**	Paramatta Grass

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**34.00**		
1	2.10	**26**	
2	0.60	**27**	
3	0.70	**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	95%	70%	75%	65%	40%	69%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	2%	5%	0%	0%	0%	1%
Native shrubs	0%	5%	0%	10%	10%	5%
Non-native grass	0%	10%	20%	5%	0%	7%
Non native forbs and shrubs	3%	10%	0%	0%	5%	4%
Litter	0%	0%	5%	20%	45%	14%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Eucalyptus tereticornis = 180mm Total = 1*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	2		

Median Tree Canopy Height Measurements	**Canopy:**	19	**Sub-canopy:**	9	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	24.1%	**Sub-canopy:**	10.90%	**Emergent:**	
Shrub canopy cover %	0.40%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	7.3	7.3	**T2** *Corymbia citridora*	12.4	16.0	3.6
T1 *Corymbia citriodora*	14.2	16.0	1.8	**T2** *Corymbia citridora*	44.7	48.1	3.4
T1 *Corymbia citriodora*	25.5	32.1	6.6	**T2** *Eucalyptus tereticornis*	92.7	96.6	3.9
T1 *Corymbia citriodora*	45.6	54.0	8.4	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citridora*	19.6	20.0	0.4	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus tereticornis	4
Corymbia citriodora	20
Corymbia tessellaris	1
Eucalyptus melanophloia	1
Total Recorded	26
Total Per hectare	130

Part J: SAT Survey Results

SAT Survey ID	At Transect 7			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	270	Nil
2	*Corymbia citriodora*	Spotted Gum	160	Nil
3	*Corymbia citriodora*	Spotted Gum	320	Nil
4	*Corymbia citriodora*	Spotted Gum	280	Nil
5	*Eucalyptus tereticornis*	Forest Red Gum	110	Scats
6	*Corymbia citriodora*	Spotted Gum	210	Scats
7	*Corymbia citriodora*	Spotted Gum	140	Nil
8	*Corymbia citriodora*	Spotted Gum	245	Nil
9	*Corymbia citriodora*	Spotted Gum	220	Nil
10	*Corymbia citriodora*	Spotted Gum	100	Nil
11	*Eucalyptus melanophloia*	Silver Leaf Ironbark	160	Nil
12	*Corymbia citriodora*	Spotted Gum	180	Nil
13	*Corymbia citriodora*	Spotted Gum	190	Nil
14	*Corymbia citriodora*	Spotted Gum	230	Nil
15	*Corymbia citriodora*	Spotted Gum	180	Nil
16	*Corymbia citriodora*	Spotted Gum	170	Nil
17	*Corymbia citriodora*	Spotted Gum	300	Scats
18	*Corymbia citriodora*	Spotted Gum	180	Nil
19	*Corymbia citriodora*	Spotted Gum	150	Nil
20	*Corymbia citriodora*	Spotted Gum	290	Nil
21	*Corymbia citriodora*	Spotted Gum	300	Nil
22	*Eucalyptus tereticornis*	Forest Red Gum	140	Scats
23	*Corymbia citriodora*	Spotted Gum	245	Nil
24	*Corymbia citriodora*	Spotted Gum	120	Nil
25	*Corymbia citriodora*	Spotted Gum	210	Nil
26	*Corymbia citriodora*	Spotted Gum	300	Nil
27	*Corymbia citriodora*	Spotted Gum	210	Nil
28	*Corymbia citriodora*	Spotted Gum	390	Nil
29	*Corymbia citriodora*	Spotted Gum	140	Nil
30	*Eucalyptus tereticornis*	Forest Red Gum	240	Nil
Total Recorded				4
Total Percenatge Recorded				13%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	8	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	Date	26.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
11	7.68	12.11.5 / 12.11.3	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing a composite regional ecosystem contaiing RE12.11.5 and RE12.11.3. Least Concern Regional Ecosystem 12.11.5 described as *Corymbia citriodora wooland to open forest +/- Eucalyptus siderophloia/Eucalyptus crebra, Eucalyptus carnea, Eucalyptus acmenoides, Eucalyptus propinqua on metamorphics +/- interbedded volcanics. Regional ecosystem 12.11.3 is described as Eucalyptus siderophloia, Eucalyptus propinqua open forest +/- Eucalyptus microcorys, Lophostemon confertus, Corymbia intermedia, Eucalyptus acmenoides open forest on metamorphics +/- interbedded volcanics. transect area* is located towards the lower slopes. Transect alignment is approximately 148°SE.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	3			EDL / Dom / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL
Scientific Name	*Melia azedarach*	Common Name	White Cedar	
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon coontortus*	Common Name	Black Spear Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	35.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Urochloa decumbens*	Common Name	Signal Grass
Scientific Name	*Cirsium vulgare*	Common Name	Spear Thsitle
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Bidens pilosa*	Common Name	Cobblers Pegs

Scientific Name	*Sporobolus pyramidalis*	**Common Name**	Rats Tail Grass
Scientific Name	*Sida cordifolia*	**Common Name**	Flannel Weed
Scientific Name	*Sida rhombifolia*	**Common Name**	Arrowleaf Sida
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	**26**	
2		**27**	
3		**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	2%	2%	50%	85%	45%	37%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	15%	5%	50%	14%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	98%	95%	0%	0%	0%	39%
Non native forbs and shrubs	0%	3%	35%	10%	5%	11%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450	**Number of large eucalypt trees:**	*Eucalyptus tereticornis - 1050mm; Total = 1*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	*Melia azedarach* - 260mm; Total = 1
Total Number Large Trees: per ha	4		

Median Tree Canopy Height Measurements	**Canopy:**	23	**Sub-canopy:**	6	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**100.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	15.4%	**Sub-canopy:**	10.10%	**Emergent:**	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Eucalyptus tereticornis*	0.0	15.4	15.4	**T2** *Melia azedarach*	5.3	15.4	10.1
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus tereticornis	1
Melia azedarach	1
Total Recorded	2
Total Per hectare	10 (note that no other trees are in the paddock area)

Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				
Total Percenatge Recorded				
Total Use (Based on East Coast Low)				Jan-00

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	9	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	Date	26.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
11	7.68	12.11.5 / 12.11.3	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing a composite regional ecosystem contaiing RE12.11.5 and RE12.11.3. Least Concern Regional Ecosystem 12.11.5 described as *Corymbia citriodora wooland to open forest +/- Eucalyptus siderophloia/Eucalyptus crebra, Eucalyptus carnea, Eucalyptus acmenoides, Eucalyptus propinqua on metamorphics +/- interbedded volcanics. Regional ecosystem 12.11.3 is described as Eucalyptus siderophloia, Eucalyptus propinqua open forest +/- Eucalyptus microcorys, Lophostemon confertus, Corymbia intermedia, Eucalyptus acmenoides open forest on metamorphics +/- interbedded volcanics. transect area* is located towards the lower slopes however there is limiited space for teh transcet outside of road reserve. This has resulted in a portion of teh trasnect incorporating parts of the creek line vegetatino which has some minor and lineal elements of landzone 3. Transect alignment is approximately 120ºSE.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	7			EDL / Dom / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL
Scientific Name	*Acacia melanoxylon*	Common Name	Australian Blackwood	
Scientific Name	*Grevillea robusta*	Common Name	Silky Oak	EDL
Scientific Name	*Aacia disparrima*	Common Name	Hickory Wattle	
Scientific Name	*Angophora subvelutina*	Common Name	Broad Leaved Apple	EDL
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	EDL
Scientific Name	*Casuarina cunninghamii*	Common Name	River She Oak	EDL
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Melia azedarach*	Common Name	White Cedar
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	7		
Scientific Name	*Heteropogon coontortus*	Common Name	Black Spear Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Imperata cylindrica*	Common Name	*Blady Grass*
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Alloteropsis semialata*	Common Name	Cockatoo Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	65.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Solanum mauritianum*	Common Name	Wild Tobacco
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Cirsium vulgare*	Common Name	Spear Thsitle
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs
Scientific Name	*Solanum torvum*	Common Name	Devils Fig

Scientific Name	*Macroptilium lathyroides*	**Common Name**	Phasey Bean
Scientific Name	*Verbena boonariensis*	**Common Name**	Purpletop Vervain
Scientific Name	*Tagetes minta*	**Common Name**	Stinking Roger
Scientific Name	*Sida cordifolia*	**Common Name**	Sida cordifolia
Scientific Name	*Sporobolus pyramidalis*	**Common Name**	Rats Tail Grass
Scientific Name	*Gomphrena celosioides*	**Common Name**	Goomphrena Weed
Scientific Name	*Gladularia aristigera*	**Common Name**	Mayne's Pest
Scientific Name	*Chamaecriosta rotundifolia*	**Common Name**	Round Leaf Cassia
Scientific Name	*Crotalaria beddomeana*	**Common Name**	Rattlepod
Scientific Name	*Melinis repens*	**Common Name**	Red Natal Grass

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**40.00**		
1	0.50	**26**	
2	2.10	**27**	
3	1.40	**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	**Quadrat 1**	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	60%	55%	55%	35%	40%	49%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	10%	10%	5%	0%	10%	7%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	10%	10%	0%	0%	15%	7%
Non native forbs and shrubs	20%	25%	40%	65%	30%	36%
Litter	0%	0%	0%	0%	5%	1%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450	**Number of large eucalypt trees:**	*Eucalyptus tereticornis = 945mm, (600/710mm), 1130mm, 820mm; Total = 4*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	Casuarina cunninghamiana = 330mm, 320mm Total = 2
Total Number Large Trees: per ha	12		

Median Tree Canopy Height Measurements	**Canopy:**	23	**Sub-canopy:**	10	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	20.2%	**Sub-canopy:**	6.10%	**Emergent:**	
Shrub canopy cover %	1.70%					

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
T1 *Eucalyptus tereticornis*	0.0	10.1	10.1	**T2** *Acacia melanoxylon*	59.6	65.7	6.1
T1 *Eucalyptus tereticornis*	10.1	20.2	10.1	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**

Shrub *Corymbia tesselaris*	74.4	74.7	0.3	**Shrub**			0.0
Shrub *Corymbia tesselaris*	77.3	78.2	0.9	**Shrub**			0.0
Shrub *Corymbia tesselaris*	81.1	81.6	0.5	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia tessellaris	4
Grevillea robusta	1
Eucalyptus tereticornis	5
Casuarina cunninghamii	1
Total Recorded	11
Total Per hectare	55 (note that some trees are loctaed along the edge of a creek which has landzone 3 characteristics)

Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				
Total Percenatge Recorded				
Total Use (Based on East Coast Low)				

Attach Landscape Photos Here

North





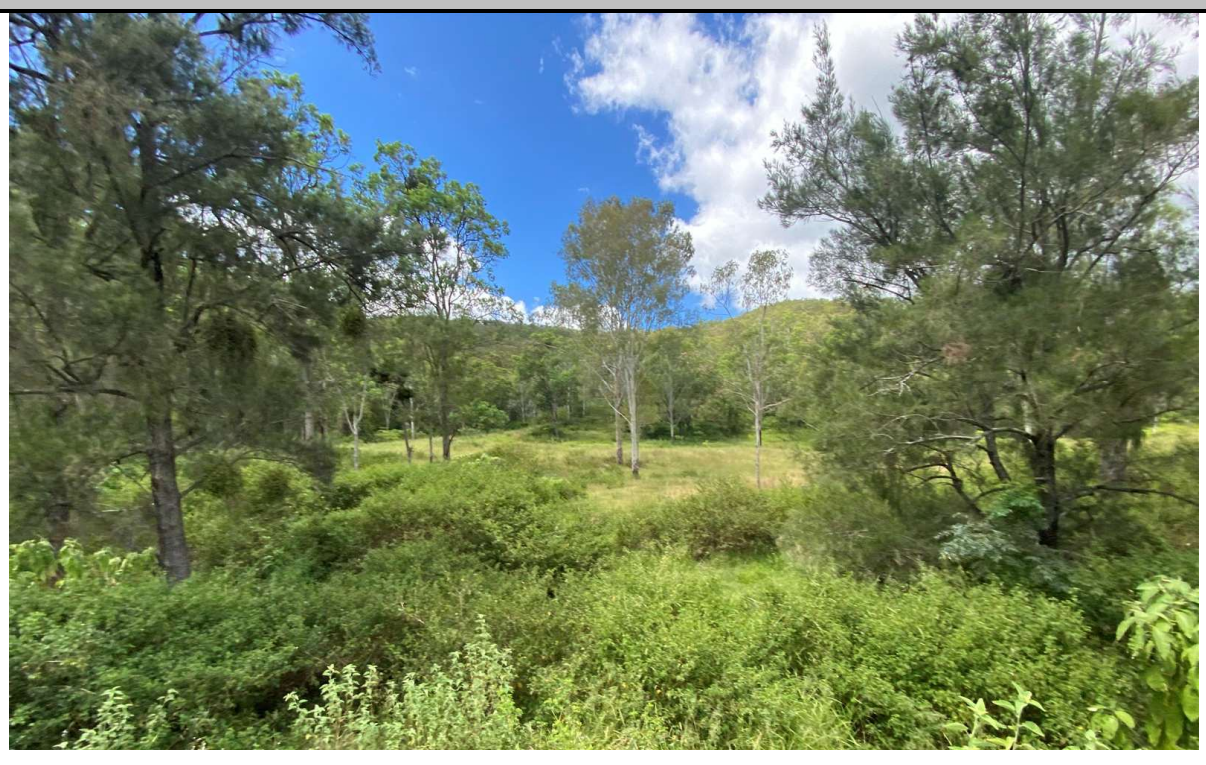
South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	10	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	Date	25.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
9	51.53 ha	12.9-10.2	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrowth vegetation conatining Least Concern Regional Ecosystem 12.9-10.2 described as*Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks.* This open forest community is a mid-dense community structuure with a canopy denisty of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The average tree height in the transect is 19.8 meters with the subcanopy being 7 meters. The plot alignment is 196°S. Some exxposed surface rocks were noted, typical of landzone 9-10 with teh area containing some evidnece of cattle and old logging evidence.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	4			EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	EDL / R
Scientific Name	*Corymbia tessellaris*	Common Name	Moretone Bay Ash	EDL / R
Scientific Name	*Eucalyptus mollucana*	Common Name	Gum Topped Box	EDL / R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	4		
Scientific Name		Common Name	
Scientific Name	*Chryrocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Wahlenbergia queenslandica*	Common Name	Bluebell
Scientific Name	*Eremophila debilis*	Common Name	Winter Apple
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	12.00%		
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Ageratum houstonianum*	Common Name	Blue Billygoat Weed
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	56.00		
1	0.80	26	
2	1.30	27	
3	2.00	28	
4	1.50	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	95%	85%	90%	45%	95%	82%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	5%	10%	0%	10%	0%	5%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	5%	5%	10%	0%	4%
Non native forbs and shrubs	0%	0%	5%	35%	0%	8%
Litter	0%	0%	0%	0%	2%	0%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	3%	1%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380mm	Number of large eucalypt trees:	*Eucalyptus crebra = 665mm, 560mm, 435mm, 520mm, 455mm. (Total = 5)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	10		

Median Tree Canopy Height Measurements	Canopy:	22	Sub-canopy:	8	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	35.7%	Sub-canopy:	4.70%	Emergent:	
Shrub canopy cover %	6.60%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Eucalyptus crebra*	5.5	17.9	12.4	**T2** *Corymbia citriodora*	86.3	89.0	2.7
T1 *Eucalyptus crebra*	31.7	40.8	9.1	**T2** *Corymbia citriodora*	92.5	93.4	0.9
T1 *Eucalyptus crebra*	50.0	64.2	14.2	**T2** *Corymbia citriodora*	94.3	95.4	1.1
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia tessellaris*	24.3	24.8	0.5	**Shrub**			0.0
Shrub *Corymbia tessellaris*	26.7	27.6	0.9	**Shrub**			0.0
Shrub *Alphitonia excelsa*	39.6	40.1	0.5	**Shrub**			0.0
Shrub *Corymbia tessellaris*	42.0	42.6	0.6	**Shrub**			0.0
Shrub *Eucalyptus crebra*	68.4	69.3	0.9	**Shrub**			0.0
Shrub *Corymbia citriodora*	69.8	70.1	0.3	**Shrub**			0.0
Shrub *Corymbia citriodora*	77.5	79.0	1.5	**Shrub**			0.0

Shrub *Corymbia citriodora*	97.3	97.8	0.5	**Shrub**			0.0
Shrub *Corymbia tessellaris*	99.1	100.0	0.9	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus crebra	4
Corymbia citridora	3
Total Recorded	7
Total Per hectare	35

Part J: SAT Survey Results

SAT Survey ID	Transect 10			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	665	Nil
2	*Eucalyptus crebra*	Narrow Leaf Ironbark	520	Nil
3	*Corymbia citriodora*	Spotted Gum	270	Nil
4	*Eucalyptus crebra*	Narrow Leaf Ironbark	560	Nil
5	*Eucalyptus crebra*	Narrow Leaf Ironbark	620	Nil
6	*Corymbia citriodora*	Spotted Gum	240	Nil
7	*Corymbia citriodora*	Spotted Gum	310	Nil
8	*Eucalyptus crebra*	Narrow Leaf Ironbark	455	Nil
9	*Eucalyptus crebra*	Narrow Leaf Ironbark	435	Nil
10	*Corymbia citriodora*	Spotted Gum	230	Nil
11	*Eucalyptus crebra*	Narrow Leaf Ironbark	130	Nil
12	*Corymbia citriodora*	Spotted Gum	200	Nil
13	*Corymbia citriodora*	Spotted Gum	320	Nil
14	*Corymbia citriodora*	Spotted Gum	410	Nil
15	*Eucalyptus crebra*	Narrow Leaf Ironbark	180	Nil
16	*Corymbia citriodora*	Spotted Gum	200	Nil
17	*Corymbia citriodora*	Spotted Gum	310	Nil
18	*Corymbia citriodora*	Spotted Gum	270	Scats
19	*Eucalyptus crebra*	Narrow Leaf Ironbark	140	Nil
20	*Eucalyptus crebra*	Narrow Leaf Ironbark	420	Nil
21	*Corymbia citriodora*	Spotted Gum	180	Nil
22	*Corymbia citriodora*	Spotted Gum	120	Nil
23	*Eucalyptus molluccana*	Gum Topped Box	620	Scats
24	*Corymbia citriodora*	Spotted Gum	130	Scats
25	*Corymbia citriodora*	Spotted Gum	100	Nil
26	*Corymbia citriodora*	Spotted Gum	270	Scats
27	*Corymbia citriodora*	Spotted Gum	140	Nil
28	*Corymbia citriodora*	Spotted Gum	130	Nil
29	*Corymbia citriodora*	Spotted Gum	100	Nil
30	*Corymbia citriodora*	Spotted Gum	140	Nil
Total Recorded				4
Total Percenatge Recorded				13.3%
Total Use (Based on East Coast Medium-high)				low

Attach Landscape Photos Here

North





South

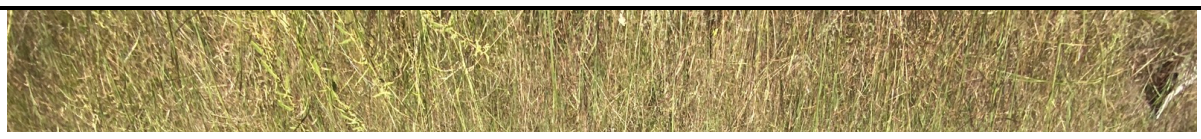


East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	11	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
4	19.39 ha	12.9-10.2	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation once containing Least Concern Regional Ecosystem 12.9-10.2 described as*Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks.* This is an open forest community is a mid-dense community structuure with a canopy denisty of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The canbopy is absent and the subcanopy recorded one tree being 8 meters in height. The plot alignment is 158SW. Area has been cleared for grazing purposes with scattered Corymbia tessellaris and Eucalyptus crebra regrowth, but outside of transect area.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	2			EDL / Dom / R
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaf Ironbark	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Ficus coronata*	Common Name	Snad Paper Fig
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Wahlenbergia stricta*	Common Name	Blue Mist
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	40.00%		
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Melinis repens*	Common Name	Red Natal
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Crotalaria lanceolata*	Common Name	Lance-leaved Rattlepod
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Sida rhombifolia*	Common Name	Arrowleaf Sida

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	63.00		
1	4.00	26	
2	2.30	27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	70%	70%	50%	85%	60%	67%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	30%	30%	40%	15%	40%	31%
Non native forbs and shrubs	0%	0%	10%	0%	0%	2%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

Median Tree Canopy Height Measurements	Canopy:	0	Sub-canopy:	11	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	66.7

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	0.0%	Sub-canopy:	6.40%	Emergent:	
Shrub canopy cover %	3.20%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1			0.0	T2 *Corymbia tessellaris*	83.6	90.0	6.4
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Ficus coronata*	43.3	44.9	1.6	Shrub			0.0
Shrub *Corymbia tessellaris*	93.3	94.9	1.6	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia tessellaris	7
Eucalyptus melanophloia	3
Total Recorded	10
Total Per hectare	50

Part J: SAT Survey Results

SAT Survey ID	Completed in Adjacent Veg			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus crebra*	Narrow Leaf Ironbark	410	Nil
2	*Corymbia citriodora*	Spotted Gum	200	Nil
3	*Corymbia citriodora*	Spotted Gum	290	Nil
4	*Corymbia citriodora*	Spotted Gum	285	Nil
5	*Corymbia citriodora*	Spotted Gum	170	Nil
6	*Corymbia citriodora*	Spotted Gum	190	Nil
7	*Corymbia citriodora*	Spotted Gum	225	Nil
8	*Eucalyptus crebra*	Narrow Leaf Ironbark	125	Nil
9	*Eucalyptus crebra*	Narrow Leaf Ironbark	110	Nil
10	*Corymbia citriodora*	Spotted Gum	100	Nil
11	*Corymbia citriodora*	Spotted Gum	190	Nil
12	*Corymbia citriodora*	Spotted Gum	190	Nil
13	*Corymbia citriodora*	Spotted Gum	210	Nil
14	*Corymbia citriodora*	Spotted Gum	130	Nil
15	*Eucalyptus crebra*	Narrow Leaf Ironbark	320	Nil
16	*Corymbia citriodora*	Spotted Gum	250	Nil
17	*Corymbia citriodora*	Spotted Gum	270	Nil
18	*Corymbia citriodora*	Spotted Gum	160	Nil
19	*Eucalyptus crebra*	Narrow Leaf Ironbark	320	Nil
20	*Corymbia citriodora*	Spotted Gum	120	Nil
21	*Eucalyptus crebra*	Narrow Leaf Ironbark	340	Nil
22	*Eucalyptus crebra*	Narrow Leaf Ironbark	320	Nil
23	*Eucalyptus crebra*	Narrow Leaf Ironbark	420	Nil
24	*Corymbia citriodora*	Spotted Gum	110	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	320	Nil
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	220	Nil
27	*Corymbia citriodora*	Spotted Gum	240	Nil
28	*Corymbia citriodora*	Spotted Gum	230	Scats
29	*Corymbia citriodora*	Spotted Gum	170	Nil
30	*Corymbia citriodora*	Spotted Gum	220	Scats
Total Recorded				2
Total Percenatge Recorded				6.7%
Total Use (Based on East Coast Medium-High)				low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	12	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
4	19.39 ha	12.9-10.2	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation once containing Least Concern Regional Ecosystem 12.9-10.2 described as*Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks.* This is an open forest community is a mid-dense community structuure with a canopy denisty of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The canbopy is absent and the subcanopy recorded one tree being 8 meters in height. The plot alignment is 158SW. Area has been cleared for grazing purposes with scattered*Corymbia tessellaris* and *Eucalyptus crebra* regrowth, but outside of transect area.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	2			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	9		
Scientific Name	*Desmodium rhytidophyllum*	Common Name	Hairy Trefoil
Scientific Name	*Glycine tabacina*	Common Name	Glycine
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Fimbristylis ferruginea*	Common Name	A Fringe Rush
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Murdannia graminea*	Common Name	Slug Herb
Scientific Name	*Juncus usitatus*	Common Name	Common Juncus
Scientific Name	*Wahlenbergis stricta*	Common Name	Blue Mist
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	55.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Sporobolus pyramidalis*	Common Name	Giant Rat's Tail Grass
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Sida rhombifolia*	Common Name	Arrowleaf Sida
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain

Scientific Name	*Macroptilium atropurpureum*	**Common Name**	Siratro
Scientific Name	*Emilia sonchifolia*	**Common Name**	Emilia
Scientific Name	*Bidens pilosa*	**Common Name**	Cobbler's Pegs
Scientific Name	*Centella asiatia*	**Common Name**	Pennywort
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**170.00**		
1	2.10	**26**	
2	2.20	**27**	
3	1.40	**28**	
4	2.00	**29**	
5	11.0.	**30**	
6	7.10	**31**	
7	2.20	**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	30%	40%	80%	10%	45%	41%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	70%	40%	0%	30%	45%	37%
Non native forbs and shrubs	0%	20%	20%	60%	10%	22%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380mm	**Number of large eucalypt trees:**	*Corymbia citriodora - 480mm, 610mm, 390mm (Total = 3)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	6		

Median Tree Canopy Height Measurements	**Canopy:**	18	**Sub-canopy:**	9	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	27.9%	**Sub-canopy:**	12.40%	**Emergent:**	
Shrub canopy cover %	4.30%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	4.2	17.3	13.1	**T2** *Corymbia tessellaris*	0.0	2.1	2.1
T1 Corymbia citriodora	24.8	39.6	14.8	**T2** *Corymbia tessellaris*	7.4	10.0	2.6
T1			0.0	**T2** *Corymbia citridora*	15.5	23.2	7.7
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia tessellaris*	7.8	9.1	1.3	**Shrub**			0.0
Shrub *Corymbia citridora*	16.6	17.5	0.9	**Shrub**			0.0
Shrub *Corymbia citridora*	19.3	21.4	2.1	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

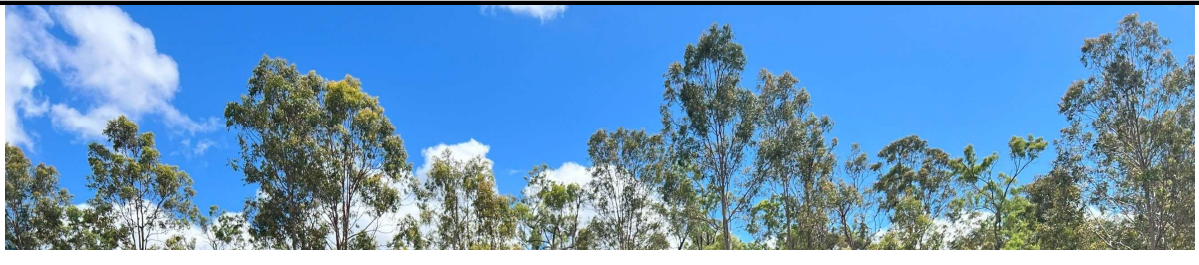
Species Name	Stem Count
Corymbia citridora	9
Corymbia tessellaris	2
Total Recorded	11
Total Per hectare	55

Part J: SAT Survey Results

SAT Survey ID	Completed in Adjacent Veg			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	610	Nil
2	*Corymbia citriodora*	Spotted Gum	380	Nil
3	*Corymbia citriodora*	Spotted Gum	210	Nil
4	*Corymbia citriodora*	Spotted Gum	400	Nil
5	*Corymbia citriodora*	Spotted Gum	300	Nil
6	*Corymbia citriodora*	Spotted Gum	430	Nil
7	*Corymbia citriodora*	Spotted Gum	420	Nil
8	*Corymbia citriodora*	Spotted Gum	260	Nil
9	*Corymbia citriodora*	Spotted Gum	270	Nil
10	*Eucalyptus cerbra*	Narrow Leaf Ironbark	260	Nil
11	*Eucalyptus cerbra*	Narrow Leaf Ironbark	460	Nil
12	*Corymbia citriodora*	Spotted Gum	220	Nil
13	*Eucalyptus cerbra*	Narrow Leaf Ironbark	430	Nil
14	*Corymbia citriodora*	Spotted Gum	210	Nil
15	*Corymbia tessellaris*	Moreton Bay Ash	200	Nil
16	*Corymbia citriodora*	Spotted Gum	310	Nil
17	*Corymbia citriodora*	Spotted Gum	200	Nil
18	*Corymbia tessellaris*	Moreton Bay Ash	380	Nil
19	*Corymbia tessellaris*	Moreton Bay Ash	345	Nil
20	*Corymbia tessellaris*	Moreton Bay Ash	170	Nil
21	*Corymbia citriodora*	Spotted Gum	415	Scats
22	*Corymbia citriodora*	Spotted Gum	210	Nil
23	*Corymbia citriodora*	Spotted Gum	270	Nil
24	*Corymbia citriodora*	Spotted Gum	210	Nil
25	*Corymbia citriodora*	Spotted Gum	300	Nil
26	*Corymbia tessellaris*	Moreton Bay Ash	720	Nil
27	*Eucalyptus cerbra*	Narrow Leaf Ironbark	365	Nil
28	*Corymbia citriodora*	Spotted Gum	300	Nil
29	*Corymbia citriodora*	Spotted Gum	330	Nil
30	*Corymbia citriodora*	Spotted Gum	320	Nil
Total Recorded				1
Total Percenatge Recorded				3.3%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





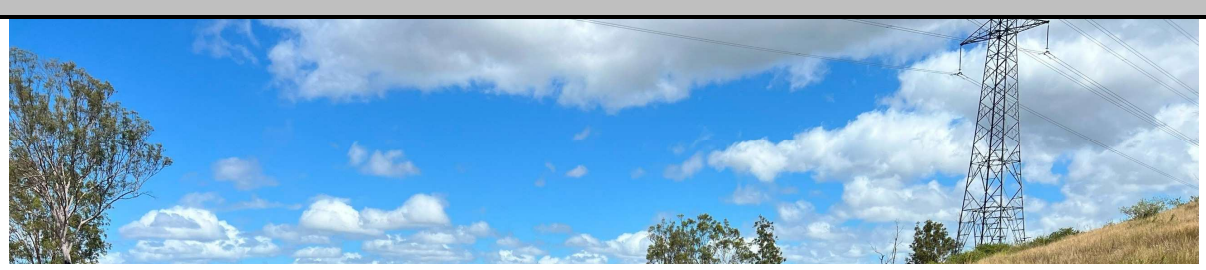
South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	13	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
8	150.38 hectares	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrotwh vegetation containing Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Corymbia citriodora is teh dominant species with scattered Corymbia tessellaris. Lantana camara observed throughout the center of the transect.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	4			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	Dom
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	7		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Acacia melanoxylon*	Common Name	Australian Black Wattle
Scientific Name	*Brachychiton rupestris*	Common Name	Queensland Bottle Tree
Scientific Name	*Acacia maidenii*	Common Name	Maiden's Wattle
Scientific Name	*Grewia latifolia*	Common Name	Dogs Balls
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	10		
Scientific Name	*Clycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Cyperus gracilis*	Common Name	Slender Sedge
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Juncus usitatus*	Common Name	Common Rush
Scientific Name	*Geitonoplesium cymosum*	Common Name	Scrambling Lily
Scientific Name	*Pteridium esculentum*	Common Name	Bracken
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Ozothamnus diosmifolius*	Common Name	Rice Flower
Scientific Name	*Lobelia purpurascens*	Common Name	White Root
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	35.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**34.00**		
1	3.40	**26**	
2		**27**	
3		**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	**Quadrat 1**	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	80%	60%	50%	30%	75%	59%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	10%	10%	0%	15%	7%
Native shrubs	0%	0%	0%	15%	5%	4%
Non-native grass	10%	20%	0%	15%	0%	9%
Non native forbs and shrubs	10%	0%	0%	40%	0%	10%
Litter	0%	10%	40%	0%	5%	11%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Corymbia citriodora - 450mm, 440mm (Total = 2)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	4		

Median Tree Canopy Height Measurements	**Canopy:**	18	**Sub-canopy:**	9	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**100.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	26.8%	**Sub-canopy:**	28.00%	**Emergent:**	
Shrub canopy cover %	11.00%					

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
T1 *Corymbia citriodora*	0.0	13.4	13.4	**T2** *Corymbia citridora*	6.2	12.0	5.8
T1 *Corymbia citriodora*	13.4	17.9	4.5	**T2** *Corymbia tessellaris*	12.6	14.8	2.2
T1 *Corymbia citriodora*	35.7	42.8	7.1	**T2** *Corymbia citridora*	23.6	27.4	3.8
T1 *Corymbia citriodora*	44.3	46.1	1.8	**T2** *Corymbia citridora*	37.9	41.2	3.3
T1			0.0	**T2** *Corymbia tessellaris*	50.4	52.4	2.0
T1			0.0	**T2** *Corymbia citridora*	62.3	69.8	7.5
T1			0.0	**T2** *Corymbia tessellaris*	79.6	83.0	3.4
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
Shrub *Corymbia citriodora*	4.3	5.8	1.5	**Shrub**			0.0
Shrub *Corymbia tessellaris*	21.1	21.8	0.7	**Shrub**			0.0
Shrub *Corymbia tessellaris*	25.3	26.7	1.4	**Shrub**			0.0

Shrub *Corymbia tessellaris*	58.4	59.9	1.5	**Shrub**			0.0
Shrub *Corymbia tessellaris*	61.6	63.3	1.7	**Shrub**			0.0
Shrub *Corymbia citriodora*	65.2	67.3	2.1	**Shrub**			0.0
Shrub *Corymbia citriodora*	79.3	81.4	2.1	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citridora	32
Corymbia tessellaris	8
Eucalyptus crebra	4
Alphitonia excelsa	1
Total Recorded	45
Total Per hectare	225

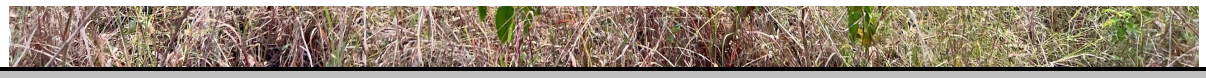
Part J: SAT Survey Results

SAT Survey ID	1			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia tessellaris*	Moreton Bay Ash	110	Nil
2	*Corymbia citriodora*	Spotted Gum	235	Nil
3	*Corymbia citriodora*	Spotted Gum	130	Nil
4	*Corymbia citriodora*	Spotted Gum	240	Nil
5	*Corymbia citriodora*	Spotted Gum	180	Nil
6	*Corymbia citriodora*	Spotted Gum	300	Nil
7	*Corymbia citriodora*	Spotted Gum	170	Nil
8	*Corymbia citriodora*	Spotted Gum	125	Nil
9	*Corymbia citriodora*	Spotted Gum	335	Nil
10	*Corymbia citriodora*	Spotted Gum	265	Nil
11	*Corymbia citriodora*	Spotted Gum	110	Nil
12	*Corymbia citriodora*	Spotted Gum	140	Nil
13	*Corymbia citriodora*	Spotted Gum	150	Nil
14	*Corymbia tessellaris*	Moreton Bay Ash	220	Nil
15	*Corymbia citriodora*	Spotted Gum	400	Nil
16	*Corymbia citriodora*	Spotted Gum	240	Nil
17	*Corymbia tessellaris*	Moreton Bay Ash	120	Nil
18	*Corymbia citriodora*	Spotted Gum	120	Nil
19	*Corymbia citriodora*	Spotted Gum	180	Nil
20	*Corymbia citriodora*	Spotted Gum	170	Nil
21	*Corymbia citriodora*	Spotted Gum	160	Nil
22	*Corymbia citriodora*	Spotted Gum	220	Nil
23	*Corymbia citriodora*	Spotted Gum	140	Nil
24	*Corymbia tessellaris*	Moreton Bay Ash	160	Nil
25	*Corymbia citriodora*	Spotted Gum	180	Nil
26	*Corymbia citriodora*	Spotted Gum	240	Nil
27	*Corymbia citriodora*	Spotted Gum	160	Nil
28	*Corymbia tessellaris*	Moreton Bay Ash	170	Nil
29	*Corymbia tessellaris*	Moreton Bay Ash	140	Nil
30	*Corymbia citriodora*	Spotted Gum	200	Nil
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast Low)				NIl

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	14	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	157.12 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing Least Concern Regional Ecosystem 12.12.5 described as *Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks.* Area contains patchy nativie trees with open paddock areas. Transect alignment is 2°North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	3			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Eragrostis brownii*	Common Name	Browns Love Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	Heteropogon contortus	Common Name	Black Spear Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Clycine clandesctina*	Common Name	Twining Glycine
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Juncus usitatus*	Common Name	Common Juncus
Scientific Name	*Fimbristylis dichotoma*	Common Name	Common Fringe Rush
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Goodenia rotundifolia*	Common Name	Star Goodenia
Scientific Name	*Wahlenbergia stricta*	Common Name	Blue Mist
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Verbena bonariensis*	Common Name	Purple Top Vervain
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	30%	70%	80%	85%	95%	72%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	15%	0%	3%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	60%	30%	20%	0%	5%	23%
Litter	10%	0%	0%	0%	0%	2%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*Corymbia citridora - 440mm. (Total = 1)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	2		

Median Tree Canopy Height Measurements	Canopy:	18	Sub-canopy:	12	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	17.6%	Sub-canopy:	16.40%	Emergent:	
Shrub canopy cover %	1.80%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citridora*	0.0	6.2	6.2	**T2** *Corymbia citridora*	0.0	3.4	3.4
T1 Corymbia citridora	13.1	24.5	11.4	**T2** *Eucalyptus crebra*	4.2	10.5	6.3
T1			0.0	**T2** *Corymbia citridora*	16.1	20.4	4.3
T1			0.0	**T2** *Corymbia citridora*	60.7	63.1	2.4
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citridora*	16.8	17.8	1.0	**Shrub**			0.0
Shrub *Corymbia tessellaris*	51.6	52.4	0.8	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	28
Eucalyptus crebra	1
Corymbia tessellaris	2
Total Recorded	31
Total Per hectare	155

Part J: SAT Survey Results

SAT Survey ID	At Transect 7			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citridora*	Spotted Gum	125	Nil
2	*Corymbia citridora*	Spotted Gum	160	Nil
3	*Corymbia citridora*	Spotted Gum	130	Nil
4	*Corymbia tessellaris*	Moreton Bay Ash	110	Nil
5	*Corymbia citridora*	Spotted Gum	125	Nil
6	*Corymbia citridora*	Spotted Gum	850	Nil
7	*Corymbia tessellaris*	Moreton Bay Ash	110	Nil
8	*Corymbia citridora*	Spotted Gum	300	Nil
9	*Corymbia citridora*	Spotted Gum	300	Nil
10	*Corymbia citridora*	Spotted Gum	240	Scats
11	*Corymbia citridora*	Spotted Gum	150	Nil
12	*Corymbia citridora*	Spotted Gum	200	Scats
13	*Corymbia citridora*	Spotted Gum	150	Scats
14	*Corymbia citridora*	Spotted Gum	300	Nil
15	*Corymbia citridora*	Spotted Gum	150	Nil
16	*Corymbia citridora*	Spotted Gum	140	Nil
17	*Corymbia citridora*	Spotted Gum	150	Nil
18	*Corymbia tessellaris*	Moreton Bay Ash	130	Nil
19	*Corymbia citridora*	Spotted Gum	130	Nil
20	*Corymbia citridora*	Spotted Gum	120	Nil
21	*Corymbia tessellaris*	Moreton Bay Ash	210	Nil
22	*Corymbia tessellaris*	Moreton Bay Ash	230	Nil
23	*Corymbia citridora*	Spotted Gum	160	Nil
24	*Corymbia citridora*	Spotted Gum	230	Nil
25	*Corymbia citridora*	Spotted Gum	350	Nil
26	*Corymbia citridora*	Spotted Gum	200	Nil
27	*Corymbia citridora*	Spotted Gum	220	Nil
28	*Corymbia citridora*	Spotted Gum	290	Nil
29	*Corymbia tessellaris*	Moreton Bay Ash	200	Nil
30	*Corymbia citridora*	Spotted Gum	160	Nil
Total Recorded				3
Total Percenatge Recorded				10%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





South

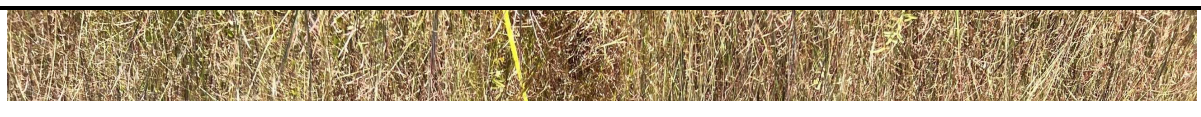


East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	15	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	157.12 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing Least Concern Regional Ecosystem 12.12.5 described as *Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks.* Area mostly open paddock area utilised for grazing purposes. Transect alignment is 358°North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	0			EDL / Dom / R
Scientific Name		Common Name		EDL / Dom / R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Capillipedium spicigerum*	Common Name	Scented Top
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	1		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	15.00%		
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sporobolus africanus*	Common Name	Paramatta Grass
Scientific Name	*Sporobolus pyramidalis*	Common Name	Giant Rats Tail Grass
Scientific Name	*Cirsium vulgare*	Common Name	Spear Thistle
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Verbena bonariensis*	Common Name	Purple Top Vervain
Scientific Name	*Sida rhombifolia*	Common Name	Common Sida

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	70%	70%	90%	75%	90%	79%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	10%	10%	0%	0%	0%	4%
Non native forbs and shrubs	20%	20%	10%	25%	10%	17%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

Median Tree Canopy Height Measurements	Canopy:	Absent	Sub-canopy:	Absent	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	0.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	0.0%	Sub-canopy:	0.00%	Emergent:	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
	No trees
Total Recorded	
Total Per hectare	

Part J: SAT Survey Results

SAT Survey ID	No Trees - No SAT			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				N/A
Total Percenatge Recorded				N/A
Total Use (Based on East Coast Low)				N/A

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	16	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley & Jack Yang	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
8	150.38 hectares	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrotwh vegetation containing Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Corymbia citriodora is the dominant species with scattered Eucalyptus crebra. Lantana camara dense in some areas. Transect alignment is 1°North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	4			EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	EDL /Dom / R
Scientific Name	*Eucalyptus cerbra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Lophostemon confertus*	Common Name	Brush Box	
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	6		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Acacia disparrima*	Common Name	Hickory Wattle
Scientific Name	*Lophostemon confertus*	Common Name	Brush Box
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	7		
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Eragrostis bronwii*	Common Name	Browns Love Grass
Scientific Name	*Arastida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Aristida calycina*	Common Name	Dark Wire-grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Fimbristylis dichotoma*	Common Name	Common Fringe Rush
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Clycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	80.00%		
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sporobolus pyramidalis*	Common Name	Giant Rat's Tail Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Verbena bonariensis*	Common Name	Purple Top Vervain
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Ageratum houstonianum*	Common Name	Blue Billygoat Weed
Scientific Name		Common Name	

Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**233.00**		
1	6.00	**26**	
2	8.00	**27**	
3	9.30	**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	80%	40%	0%	20%	50%	38%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	10%	0%	20%	0%	6%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	10%	0%	0%	0%	0%	2%
Non native forbs and shrubs	10%	10%	70%	40%	20%	30%
Litter	0%	40%	30%	20%	30%	24%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Lophostemon confertus 480mm, 430mm; Corymbia citriodora 460mm, 540mm, 460mm, 5401mm; (Total = 6)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	12		

Median Tree Canopy Height Measurements	**Canopy:**	19	**Sub-canopy:**	9	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**100.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	53.2%	**Sub-canopy:**	28.40%	**Emergent:**	
Shrub canopy cover %	9.70%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	3.7	8.8	5.1	**T2** *Eucalyptus crebra*	0.0	1.3	1.3
T1 *Corymbia citriodora*	13.0	18.8	5.8	**T2** *Corymbia citridora*	6.2	9.9	3.7
T1 *Corymbia citriodora*	19.8	22.9	3.1	**T2** *Eucalyptus crebra*	12.0	13.4	1.4
T1 *Corymbia citriodora*	25.6	34.1	8.5	**T2** *Eucalyptus crebra*	26.6	28.1	1.5
T1 *Eucalyptus crebra*	34.8	40.8	6.0	**T2** *Lophostemon confertus*	49.9	54.4	4.5
T1 *Corymbia citriodora*	53.4	58.7	5.3	**T2** *Eucalyptus melanophloia*	54.6	58.1	3.5
T1 *Corymbia citriodora*	79.0	87.3	8.3	**T2** ***Corymbia citridora***	64.4	69.7	5.3
T1 *Corymbia citriodora*	88.9	100.0	11.1	**T2** *Lophostemon confertus*	71.1	74.0	2.9
T1			0.0	**T2** *Corymbia citridora*	74.0	76.7	2.7
T1			0.0	**T2** *Corymbia citridora*	90.1	91.7	1.6
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Acacia disparrima*	7.9	8.6	0.7	**Shrub**			0.0

Shrub *Corymbia tessellaris*	12.4	13.1	0.7	**Shrub**			0.0
Shrub *Corymbia citriodora*	22.1	23.0	0.9	**Shrub**			0.0
Shrub *Eucalyptus crebra*	39.4	41.0	1.6	**Shrub**			0.0
Shrub *Lophostemon confertus*	58.2	60.9	2.7	**Shrub**			0.0
Shrub *Alphitonia excelsa*	82.4	84.0	1.6	**Shrub**			0.0
Shrub *Corymbia tessellaris*	86.4	87.9	1.5	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	42
Euclayptus crebra	3
Eucalyptus melanophloia	1
Lophostemon confertus	4
Total Recorded	50
Total Per hectare	250

Part J: SAT Survey Results

SAT Survey ID	1			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citridora*	Spotted Gum	215	Nil
2	*Corymbia citridora*	Spotted Gum	355	Nil
3	*Corymbia citridora*	Spotted Gum	260	Nil
4	*Corymbia citridora*	Spotted Gum	250	Nil
5	*Corymbia citridora*	Spotted Gum	285	Nil
6	*Corymbia citridora*	Spotted Gum	165	Nil
7	*Eucalyptus melanophloia*	Silver Leaved Ironbark	140	Nil
8	*Corymbia citridora*	Spotted Gum	120	Nil
9	*Corymbia citridora*	Spotted Gum	245	Nil
10	*Corymbia citridora*	Spotted Gum	150	Nil
11	*Corymbia citridora*	Spotted Gum	200	Nil
12	*Corymbia citridora*	Spotted Gum	230	Nil
13	*Corymbia citridora*	Spotted Gum	130	Nil
14	*Corymbia citridora*	Spotted Gum	170	Nil
15	*Corymbia citridora*	Spotted Gum	200	Nil
16	*Corymbia citridora*	Spotted Gum	220	Nil
17	*Corymbia citridora*	Spotted Gum	150	Nil
18	*Corymbia citridora*	Spotted Gum	240	Nil
19	*Corymbia citridora*	Spotted Gum	420	Scats
20	*Corymbia citridora*	Spotted Gum	210	Nil
21	*Corymbia citridora*	Spotted Gum	270	Nil
22	*Corymbia citridora*	Spotted Gum	130	Nil
23	*Corymbia citridora*	Spotted Gum	170	Nil
24	*Corymbia citridora*	Spotted Gum	170	Nil
25	*Corymbia citridora*	Spotted Gum	190	Nil
26	*Corymbia citridora*	Spotted Gum	190	Nil
27	*Corymbia citridora*	Spotted Gum	190	Nil
28	*Corymbia citridora*	Spotted Gum	220	Nil
29	*Corymbia citridora*	Spotted Gum	170	Nil
30	*Corymbia citridora*	Spotted Gum	190	Nil
Total Recorded				1
Total Percenatge Recorded				3%
Total Use (Based on East Coast medium-high)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	17	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley	Date	27.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	157.12 ha	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetation with preclaer mapping the area as once containing Least Concern Regional Ecosystem 12.12.5 described as *Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. Area mostly open paddock area utilised for grazing purposes. Transect alignment is 0° North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	0			EDL / Dom / R
Scientific Name		Common Name		EDL / Dom / R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Capillipedium spicigerum*	Common Name	Scented Top
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wire Grass
Scientific Name	*Aristida calycina*	Common Name	Dark Wiregrass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	20.00%		
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Verbena bonariensis*	Common Name	Purple Top Vervain
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Cirsium vulgare*	Common Name	Spear Thistle
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	70%	40%	80%	60%	70%	64%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	10%	0%	10%	20%	8%
Non native forbs and shrubs	30%	50%	20%	30%	10%	28%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

Median Tree Canopy Height Measurements	Canopy:	Absent	Sub-canopy:	Absent	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	0.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	0.0%	Sub-canopy:	0.00%	Emergent:	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0

Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
	No trees
Total Recorded	
Total Per hectare	

Part J: SAT Survey Results

SAT Survey ID	No Trees - No SAT			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast Low)				Nil

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	18	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley	Date	28.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
8	150.38 hectares	12.12.5	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrotwh vegetation containing Least Concern Regional Ecosystem 12.12.5 described as*Corymbia citriodora, Eucalyptus crebra woodland on Mesozoic to Proterozoic igneous rocks*. This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. Corymbia citriodora is the dominant species with scattered Eucalyptus crebra. Lantana camara dense in some areas. Transect alignment is 357°North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name	*Lophostemon confertus*	Common Name	Brush Box	
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Eragrostis brownii*	Common Name	Browns Love Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	9		
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Fimbristylis dichotoma*	Common Name	Common Fringe Rush
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Goodenia rotundifolia*	Common Name	Goodenia
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Vittadinia dissecta*	Common Name	Fuzz Weed
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	15.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Passiflora suberosa*	Common Name	Corky Passion Vine
Scientific Name	*Opuntia tomentosa*	Common Name	Prickly Pear
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**254.00**		
1	4.20	**26**	
2	0.60	**27**	
3	17.50	**28**	
4	1.40	**29**	
5	1.70	**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	**Quadrat 1**	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	30%	40%	50%	70%	70%	52%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	10%	0%	0%	2%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	30%	20%	10%	20%	20%	20%
Non native forbs and shrubs	30%	15%	0%	0%	0%	9%
Litter	10%	25%	30%	10%	10%	17%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	410mm	**Number of large eucalypt trees:**	*Corymbai citriodora - 440mm; Eucalyptus crebra - 480mm (Total = 2)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	4		

Median Tree Canopy Height Measurements	**Canopy:**	19	**Sub-canopy:**	10	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**33.3**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	44.9%	**Sub-canopy:**	25.00%	**Emergent:**	
Shrub canopy cover %	3.20%					

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
T1 *Corymbia citriodora*	0.0	2.3	2.3	**T2** *Corymbia citridora*	1.0	1.7	0.7
T1 *Corymbia citriodora*	10.1	23.4	13.3	**T2** *Corymbia tessellaris*	23.6	26.5	2.9
T1 *Corymbia citriodora*	38.6	50.3	11.7	**T2** *Corymbia citridora*	36.3	42.1	5.8
T1 *Corymbia citriodora*	75.0	86.6	11.6	**T2** *Corymbia citridora*	47.6	50.0	2.4
T1 *Corymbia citriodora*	94.0	100.0	6.0	**T2** *Corymbia citridora*	51.2	53.8	2.6
T1			0.0	**T2** *Corymbia intermedia*	76.4	81.7	5.3
T1			0.0	**T2** *Corymbia tessellaris*	81.3	85.2	3.9
T1			0.0	**T2** *Corymbia intermedia*	96.0	97.4	1.4
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
Shrub *Corymbia citriodora*	8.5	8.9	0.4	**Shrub**			0.0
Shrub *Eucalyptus crebra*	46.0	48.0	2.0	**Shrub**			0.0

Shrub *Corymbia intermedia*	80.6	81.4	0.8	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	37
Eucalyptsu crebra	8
Corymbia tessellaris	8
Corymbia intermedia	5
Total Recorded	58
Total Per hectare	290

Part J: SAT Survey Results

SAT Survey ID	1			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	215	Nil
2	*Corymbia citriodora*	Spotted Gum	195	Nil
3	*Corymbia citriodora*	Spotted Gum	200	Nil
4	*Corymbia citriodora*	Spotted Gum	160	Nil
5	*Corymbia citriodora*	Spotted Gum	145	Nil
6	*Corymbia citriodora*	Spotted Gum	330	Nil
7	*Eucalyptus crebra*	Narrow Leaf Ironbark	210	Nil
8	*Corymbia citriodora*	Spotted Gum	100	Nil
9	*Corymbia citriodora*	Spotted Gum	250	Nil
10	*Corymbia citriodora*	Spotted Gum	370	Nil
11	*Corymbia citriodora*	Spotted Gum	125	Nil
12	*Corymbia citriodora*	Spotted Gum	265	Nil
13	*Corymbia citriodora*	Spotted Gum	345	Nil
14	*Corymbia citriodora*	Spotted Gum	310	Nil
15	*Corymbia citriodora*	Spotted Gum	220	Nil
16	*Corymbia citriodora*	Spotted Gum	230	Nil
17	*Corymbia citriodora*	Spotted Gum	150	Nil
18	*Corymbia citriodora*	Spotted Gum	190	Nil
19	*Corymbia citriodora*	Spotted Gum	180	Nil
20	*Corymbia citriodora*	Spotted Gum	200	Nil
21	*Corymbia citriodora*	Spotted Gum	200	Nil
22	*Corymbia citriodora*	Spotted Gum	100	Nil
23	*Corymbia citriodora*	Spotted Gum	240	Nil
24	*Corymbia citriodora*	Spotted Gum	150	Nil
25	*Corymbia citriodora*	Spotted Gum	180	Nil
26	*Corymbia citriodora*	Spotted Gum	300	Nil
27	*Corymbia citriodora*	Spotted Gum	160	Nil
28	*Corymbia citriodora*	Spotted Gum	180	Nil
29	*Corymbia citriodora*	Spotted Gum	200	Nil
30	*Corymbia citriodora*	Spotted Gum	160	Nil
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast Low)				Nil

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	19	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Andrew Ridley	Date	28.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
5	3.28 hectares	12.12.12	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.12.12 described as*Eucalyptus tereticornis, Corymbia intermedia, Eucalyptus crebra +/- Lophostemon suaveolens woodland on MEsozoic to Proterozoic igneous rocks.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a open paddock area utilised for cattel grazing. Some scattered large Eucalyptus tereticornis throughout paddock. Transect alignment is 47°North.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	0			EDL / Dom / R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	1		
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Capillipedium spicigerum*	Common Name	Scented Top
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	1		
Scientific Name	*Atriplex semibaccata*	Common Name	Berry Saltbush
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Seteria sphacelata*	Common Name	South African Pigeon Grass
Scientific Name	*Verbena bonariensis*	Common Name	Purpletop Vervain
Scientific Name	*Sida rhombifolia*	Common Name	Common Sida
Scientific Name	*Conyza sumatrensis*	Common Name	Tall Fleabane
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	80%	40%	100%	45%	60%	65%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	40%	0%	50%	25%	23%
Non native forbs and shrubs	20%	20%	0%	5%	15%	12%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

)

Median Tree Canopy Height Measurements	Canopy:	0	Sub-canopy:	0	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	0.0%	Sub-canopy:	0.00%	Emergent:	
Shrub canopy cover %	0.60%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0
T1			0.0	T2			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus tereticornis*	8.5	9.1	0.6	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0
Shrub			0.0	Shrub			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
	No trees
Total Recorded	
Total Per hectare	

Part J: SAT Survey Results

SAT Survey ID	No Scat Survey			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				
Total Percenatge Recorded				
Total Use (Based on East Coast Low)				

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	20	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Jonny Pickvance	Date	5.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
10	1.86 hectares	12.3.7	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.3.7 described as*Eucalyptus tereticornis, CAsuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a waterway dominated by Casuarina cunninghamiana. Transect alignment is 180°South.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	6			EDL / Dom / R
Scientific Name	*Casuarina cunninghamiana*	Common Name	River She Oak	EDL / Dom / R
Scientific Name	*Ficus coronata*	Common Name	Sand Paper Fig	R
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree	R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Eucalyptus mollucana*	Common Name	Gum Topped Box	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Acacia melanoxylon*	Common Name	Australian Blackwood
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Ficus coronata*	Common Name	Sand Paper Fig
Scientific Name	*Melaleuca viminalis*	Common Name	Weeping Bottlebrush
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Leersia hexandra*	Common Name	Swamp Rice Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name	*Oplismenus aemulus*	Common Name	Creeping Beard Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	2		
Scientific Name	*Fimbristylis dichotoma*	Common Name	Common Fringe Rush
Scientific Name	*Juncus usitatus*	Common Name	Common Rush
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	80.00%		
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Gomphocarpus physocarpus*	Common Name	Balloon Cotton Bush
Scientific Name	*Commelina benghalensis*	Common Name	Hairy Commelina
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Emilia sonchifolia*	Common Name	Emilia
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Tagetes minuta*	Common Name	Stinking Roger

Scientific Name	*Ageratum houstonianum*	**Common Name**	Blue Billygoat Weed
Scientific Name	*Solanum mauritianum*	**Common Name**	Wild Tobacco
Scientific Name	*Cirsium vulgare*	**Common Name**	Spear Thistle
Scientific Name	*Crassocephalum crepidioides*	**Common Name**	Thickhead
Scientific Name	*Solanum seaforthianum*	**Common Name**	Brazilian Nightshade
Scientific Name	*Dolichandra unguis-cati*	**Common Name**	Cats Claw Creeper
Scientific Name	*Hypericum gramineum*	**Common Name**	Small St. Johns Wort
Scientific Name	*Glandularia aristigera*	**Common Name**	Mayne's Pest
Scientific Name	*Xanthium strumarium*	**Common Name**	Noogoora Burr
Scientific Name	*Solanum nigrum*	**Common Name**	Blackberry Nightshade
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**177.00**		
1	0.50	**26**	
2	0.80	**27**	
3	0.60	**28**	
4	2.10	**29**	
5	4.50	**30**	
6	2.50	**31**	
7	2.80	**32**	
8	3.90	**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	**Quadrat 1**	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	0%	9%	30%	0%	0%	8%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	1%	0%	0%	0%	0%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	40%	10%	65%	65%	35%	43%
Non native forbs and shrubs	20%	20%	5%	15%	5%	13%
Litter	40%	50%	0%	20%	30%	28%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	10%	0%	0%	30%	8%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	510 mm	**Number of large eucalypt trees:**	*Corymbia citriodora - 720mm, 520mm (Total = 2)*
Non- Eucalypt Large tree DBH benchmark used:	360 mm	**Number of large non eucalypt trees:**	Casuarina cunninghamii - 410mm, 470mm, (570/480mm), 490mm, 420mm, 600mm, 520mm, (390/360/420mm), 360mm, 440mm, 460mm, 370mm, 420mm. (Total = 13)
Total Number Large Trees: per ha	30		

Median Tree Canopy Height Measurements	**Canopy:**	21	**Sub-canopy:**	12	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**100.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	61.0%	**Sub-canopy:**	22.80%	**Emergent:**	
Shrub canopy cover %	2.10%					

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
T1 *Casuarina cunninghamii*	0.0	5.5	5.5	**T2** *Casuarina cunninghamii*	5.5	10.0	4.5
T1 *Casuarina cunninghamii*	10.0	14.4	4.4	**T2** *Eucalyptus crebra*	48.0	55.3	7.3
T1 *Casuarina cunninghamii*	14.4	17.4	3.0	**T2** *Corymbia citridora*	55.3	62.7	7.4
T1 *Casuarina cunninghamii*	17.4	36.0	18.6	**T2** *Casuarina cunninghamii*	76.6	80.2	3.6
T1 *Casuarina cunninghamii*	36.0	46.3	10.3	**T2**			0.0
T1 *Casuarina cunninghamii*	71.2	76.5	5.3	**T2**			0.0
T1 *Corymbia citriodora*	86.1	100.0	13.9	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Melaleuca viminalis*	95.0	97.1	2.1	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	7
Casuarina cunninghamii	36
Eucalyptus crebra	2
Eucalyptus moluccana	1
Melaleuca viminalis	1
Ficus coronata	1
Total Recorded	48
Total Per hectare	240

Part J: SAT Survey Results

SAT Survey ID	No Scat Survey			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	200	Yes
2	*Corymbia citriodora*	Spotted Gum	260	Nil
3	*Casuarina cunninghamii*	River She Oak	270	Nil
4	*Casuarina cunninghamii*	River She Oak	220	Nil
5	*Casuarina cunninghamii*	River She Oak	200	Nil
6	*Casuarina cunninghamii*	River She Oak	360	Nil
7	*Casuarina cunninghamii*	River She Oak	420	Nil
8	*Casuarina cunninghamii*	River She Oak	320	Nil
9	*Casuarina cunninghamii*	River She Oak	410	Nil
10	*Casuarina cunninghamii*	River She Oak	230	Nil
11	*Casuarina cunninghamii*	River She Oak	460	Nil
12	*Casuarina cunninghamii*	River She Oak	290	Nil
13	*Casuarina cunninghamii*	River She Oak	450	Nil
14	*Casuarina cunninghamii*	River She Oak	230	Nil
15	*Casuarina cunninghamii*	River She Oak	320	Nil
16	*Casuarina cunninghamii*	River She Oak	250	Nil
17	*Casuarina cunninghamii*	River She Oak	260	Nil
18	*Casuarina cunninghamii*	River She Oak	270	Nil
19	*Corymbia citriodora*	Spotted Gum	680	Nil
20	*Acacia melanoxylon*	Australian Blackwood	120	Nil
21	*Eucalyptus molluccana*	Gum Topped Box	110	Nil
22	*Eucalyptus molluccana*	Gum Topped Box	140	Nil
23	*Eucalyptus crebra*	Narrow Leaf Ironbark	230	Nil
24	*Casuarina cunninghamii*	River She Oak	460	Nil
25	*Casuarina cunninghamii*	River She Oak	420	Nil
26	*Casuarina cunninghamii*	River She Oak	250	Nil
27	*Casuarina cunninghamii*	River She Oak	220	Nil
28	*Casuarina cunninghamii*	River She Oak	360	Nil
29	*Casuarina cunninghamii*	River She Oak	420	Nil
30	*Ficus coronata*	Sand Paper Fig	140	Nil
Total Recorded				1
Total Percenatge Recorded				3%
Total Use (Based on East Coast Medium-high)				Low

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	21	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Jonny Pickvance	Date	5.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
9	51.53 ha	12.9-10.2	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as containing High Value Regrowth vegetation conatining Least Concern Regional Ecosystem 12.9-10.2 described as*Corymbia citriodora +/- Eucalyptus crebra open forest on sedimentary rocks.* This open forest community is a mid-dense community structuure with a canopy denisty of between 50-80% with the same tree height as a woodland community being between 10 and 30 meters in height. The average tree height in the transect is 17.9 meters with the subcanopy being 13 meters. The plot alignment is 263°W. Some exxposed surface rocks were noted, typical of landzone 9-10 with the area containing some evidnece of cattle and old logging evidence.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	3			EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL / R
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Eucalyptus molluccana*	Common Name	Gum Toped Box
Scientific Name	*Xanthorrhoea johnsonii*	Common Name	Grass Tree
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	7		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Aristida calycina*	Common Name	Dark Wire Grass
Scientific Name	*Aristida stricta*	Common Name	Dark Wiregrass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Hibbertia stricta*	Common Name	Hibbertia
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Hardenbergia violacea*	Common Name	Native Sarsaparilla
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	50.00		
1	0.50	26	
2	3.10	27	
3	0.50	28	
4	0.90	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	70%	34%	75%	70%	30%	56%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	10%	1%	5%	10%	10%	7%
Native shrubs	0%	0%	5%	0%	0%	1%
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	0%	0%	0%	0%	0%	
Litter	20%	65%	15%	10%	20%	26%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	10%	40%	10%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	380mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

Median Tree Canopy Height Measurements	Canopy:	21	Sub-canopy:	7	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.9%	Sub-canopy:	7.00%	Emergent:	
Shrub canopy cover %	5.70%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	2.8	11.5	8.7	**T2** *Corymbia citriodora*	55.6	62.6	7.0
T1 *Corymbia citriodora*	14.4	22.2	7.8	**T2**			0.0
T1 *Corymbia citriodora*	24.7	31.2	6.5	**T2**			0.0
T1 *Corymbia citriodora*	34.4	41.1	6.7	**T2**			0.0
T1 *Corymbia citriodora*	41.4	50.6	9.2	**T2**			0.0
T1 *Corymbia citriodora*	83.0	87.6	4.6	**T2**			0.0
T1 *Corymbia citriodora*	87.6	94.5	6.9	**T2**			0.0
T1 *Corymbia citriodora*	94.5	100.0	5.5	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus crebra*	5.1	6.1	1.0	**Shrub**			0.0
Shrub *Corymbia citridora*	10.3	10.9	0.6	**Shrub**			0.0
Shrub *Eucalyptus mollucana*	14.2	16.3	2.1	**Shrub**			0.0
Shrub *Corymbia citridora*	20.5	21.4	0.9	**Shrub**			0.0
Shrub *Corymbia citridora*	46.8	47.1	0.3	**Shrub**			0.0
Shrub *Daviesia ulicifolia*	77.2	78.0	0.8	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	28
Total Recorded	28
Total Per hectare	140

Part J: SAT Survey Results

SAT Survey ID	Transect at 21			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	200	Nil
2	*Corymbia citriodora*	Spotted Gum	210	Nil
3	*Eucalyptus crebra*	Narrow Leaf Ironbark	370	Nil
4	*Eucalyptus crebra*	Narrow Leaf Ironbark	320	Nil
5	*Eucalyptus moluccana*	Gum Topped Box	420	Scats
6	*Eucalyptus crebra*	Narrow Leaf Ironbark	160	Nil
7	*Corymbia citriodora*	Spotted Gum	260	Nil
8	*Corymbia citriodora*	Spotted Gum	230	Scats
9	*Corymbia citriodora*	Spotted Gum	200	Nil
10	*Corymbia citriodora*	Spotted Gum	180	Nil
11	*Corymbia citriodora*	Spotted Gum	220	Nil
12	*Corymbia citriodora*	Spotted Gum	420	Nil
13	*Eucalyptus moluccana*	Gum Topped Box	520	Scats
14	*Eucalyptus moluccana*	Gum Topped Box	160	Nil
15	*Corymbia citriodora*	Spotted Gum	310	NIl
16	*Corymbia citriodora*	Spotted Gum	180	Nil
17	*Corymbia citriodora*	Spotted Gum	310	Nil
18	*Corymbia citriodora*	Spotted Gum	140	Nil
19	*Corymbia citriodora*	Spotted Gum	180	Nil
20	*Eucalyptus moluccana*	Gum Topped Box	490	Nil
21	*Corymbia citriodora*	Spotted Gum	290	Nil
22	*Corymbia citriodora*	Spotted Gum	260	Nil
23	*Corymbia citriodora*	Spotted Gum	200	Nil
24	*Corymbia citriodora*	Spotted Gum	180	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	590	Nil
26	*Eucalyptus moluccana*	Gum Topped Box	540	Nil
27	*Corymbia citriodora*	Spotted Gum	480	Nil
28	*Corymbia citriodora*	Spotted Gum	280	Nil
29	*Corymbia citriodora*	Spotted Gum	320	Nil
30	*Eucalyptus moluccana*	Gum Topped Box	480	Nil
Total Recorded				3
Total Percenatge Recorded				10.0%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	22	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Keeley Richardson	Date	7.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
10	1.86 hectares	12.3.7	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.3.7 described as*Eucalyptus tereticornis, CAsuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a waterway dominated by Eucalyptus tereticornis with alimited subcanopy and shrub layer.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL / Dom / R
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	R
Scientific Name	*Eucalyptus moluccana*	Common Name	Gum Topped Box	R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Acacia melanoxlyn*	Common Name	Australian Blackwood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Cymbopogon contortus*	Common Name	Barbed Wire Grass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Aristida vagans*	Common Name	Threeawn Speargrass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name	*Wahlenbergia stricta*	Common Name	Blue Mist
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	15.00%		
Scientific Name	*Cyperus polystachyos*	Common Name	Bunchy Sedge
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Emilia sonchifolia*	Common Name	Emilia
Scientific Name	*Sida cordifolia*	Common Name	Flannel Weed
Scientific Name	*Lantana montevidensis*	Common Name	Creeping Lantana
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sporobolus pyramidalis*	Common Name	Giant Rat's Tail Grass

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	55%	90%	100%	95%	45%	77%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	20%	10%	0%	0%	20%	10%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	5%	0%	0%	5%	25%	7%
Litter	0%	0%	0%	0%	10%	2%
Rock	0%	0%	0%	0%	0%	
Bare Ground	20%	0%	0%	0%	0%	4%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	510 mm	Number of large eucalypt trees:	*Corymbia citriodora - 720mm, 590mm, 530mm; Eucalyptus molluccana - 610mm; Eucalyptus tereticornis - 660mm; (Total = 5)*
Non- Eucalypt Large tree DBH benchmark used:	360 mm	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	10		

Median Tree Canopy Height Measurements	Canopy:	17	Sub-canopy:	10	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	40.2%	Sub-canopy:	23.90%	Emergent:	
Shrub canopy cover %	10.60%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	11.3	24.2	12.9	**T2** *Eucalyptus moluccana*	72.7	85.4	12.7
T1 *Corymbia citriodora*	72.7	90.0	17.3	**T2** *Corymbia citridora*	85.4	86.5	1.1
T1 *Corymbia citriodora*	90.0	100.0	10.0	**T2** *Eucalyptus moluccana*	89.0	99.1	10.1
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citriodora*	18.1	20.0	1.9	**Shrub**			0.0
Shrub *Eucalyptus tereticornis*	45.6	48.6	3.0	**Shrub**			0.0
Shrub *Eucalyptus crebra*	67.2	72.0	4.8	**Shrub**			0.0
Shrub *Alphitonia excelsa*	78.4	79.3	0.9	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	10
Eucalyptus moluccana	2
Eucalyptus tereticornis	3
Total Recorded	15
Total Per hectare	75

Part J: SAT Survey Results

SAT Survey ID	No Scat Survey			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	155	Nil
2	*Corymbia citriodora*	Spotted Gum	360	Nil
3	*Corymbia citriodora*	Spotted Gum	150	Nil
4	*Corymbia citriodora*	Spotted Gum	350	Nil
5	*Corymbia citriodora*	Spotted Gum	340	Nil
6	*Corymbia citriodora*	Spotted Gum	370	Nil
7	*Corymbia citriodora*	Spotted Gum	380	Nil
8	*Corymbia citriodora*	Spotted Gum	350	Nil
9	*Corymbia citriodora*	Spotted Gum	300	Nil
10	*Corymbia citriodora*	Spotted Gum	340	Nil
11	*Corymbia citriodora*	Spotted Gum	195	Scats
12	*Corymbia citriodora*	Spotted Gum	270	Nil
13	*Corymbia citriodora*	Spotted Gum	190	Nil
14	*Corymbia citriodora*	Spotted Gum	340	Scats
15	*Corymbia citriodora*	Spotted Gum	290	Nil
16	*Corymbia citriodora*	Spotted Gum	180	Nil
17	*Corymbia citriodora*	Spotted Gum	360	Nil
18	*Corymbia citriodora*	Spotted Gum	320	Nil
19	*Corymbia citriodora*	Spotted Gum	310	Scats
20	*Corymbia citriodora*	Spotted Gum	240	Scats
21	*Corymbia citriodora*	Spotted Gum	165	Nil
22	*Corymbia citriodora*	Spotted Gum	330	Scats
23	*Corymbia intermedia*	Pink Bloodwood	200	Nil
24	*Corymbia citriodora*	Spotted Gum	500	Nil
25	*Corymbia citriodora*	Spotted Gum	680	Nil
26	*Eucalyptus moluccana*	Gum Topped Box	340	Nil
27	*Eucalyptus moluccana*	Gum Topped Box	310	Nil
28	*Corymbia citriodora*	Spotted Gum	150	Nil
29	*Corymbia citriodora*	Spotted Gum	200	Nil
30	*Corymbia citriodora*	Spotted Gum	500	Nil
Total Recorded				5
Total Percenatge Recorded				16.67%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





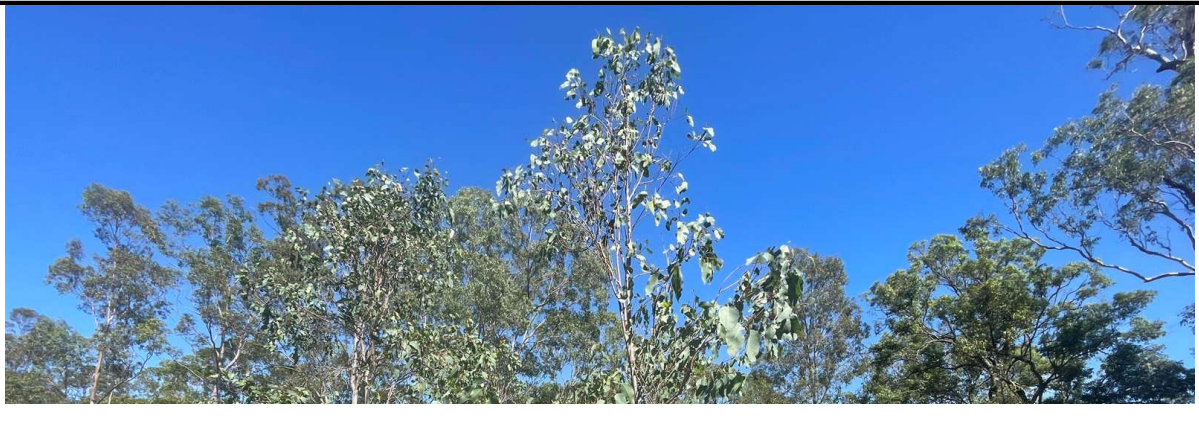
South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	23	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Keeley Richardson	Date	17.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
10	1.86 hectares	12.3.7	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.3.7 described as*Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a waterway dominated by Eucalyptus tereticornis with a limited subcanopy and shrub layer. It is noted tha although the transet is loctaed within an area mapped as landzone 3, these charcateristics are towrad steh lower slopes. This area is more suitabel for the Least Concern RE12.9-10.2.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	6			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Angophora subvelutina*	Common Name	Broad-leaved Apple	
Scientific Name	*Angophora leiocarpa*	Common Name	Smooth Abrk Apple	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Acacia melanoxylon*	Common Name	Australian Blackwood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Imperata cylindrica*	Common Name	Blady Grass
Scientific Name	*Aristida vagans*	Common Name	Threeawn Wiregrass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	9		
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name	*Murdannia graminea*	Common Name	Slug Herb
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Goodenia rotundifolia*	Common Name	Goodenia
Scientific Name	*Wahlenbergia stricta*	Common Name	Blue Mist
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Cylycine clandestina*	Common Name	Twining Glycine
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Cyperus polystachyos*	Common Name	Bunchy Sedge
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Sida rhombifolia*	Common Name	Common Sida
Scientific Name	*Emilia sonchifolia*	Common Name	Emilia
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs
Scientific Name	*Ageratum houstonianum*	Common Name	Blue Billygoat Weed
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
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Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	112.00		
1	3.00	26	
2	1.80	27	
3	2.40	28	
4	1.70	29	
5	1.40	30	
6	0.90	31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	50%	40%	15%	20%	80%	41%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	20%	40%	20%	60%	5%	29%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	5%	0%	0%	0%	10%	3%
Litter	25%	20%	30%	20%	5%	20%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	35%	0%	0%	7%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	510 mm	Number of large eucalypt trees:	*Corymbia citriodora - 540mm, 620mm; Angophora leiocarpa - 575mm (Total = 3)*
Non- Eucalypt Large tree DBH benchmark used:	280 mm	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	6		

Median Tree Canopy Height Measurements	Canopy:	18	Sub-canopy:	12	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	51.5%	Sub-canopy:	3.90%	Emergent:	
Shrub canopy cover %	17.10%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	9.6	9.6	**T2** *Corymbia citriodora*	59.4	63.3	3.9
T1 *Corymbia citriodora*	14.6	23.3	8.7	**T2**			0.0
T1 *Corymbia citriodora*	43.6	59.4	15.8	**T2**			0.0
T1 *Corymbia citriodora*	82.6	100.0	17.4	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Corymbia citriodora*	9.5	11.6	2.1	**Shrub**			0.0
Shrub *Corymbia citriodora*	12.3	16.2	3.9	**Shrub**			0.0
Shrub *Corymbia citriodora*	43.3	45.9	2.6	**Shrub**			0.0
Shrub *Corymbia citriodora*	48.8	50.8	2.0	**Shrub**			0.0
Shrub *Corymbai tessellaris*	72.2	74.1	1.9	**Shrub**			0.0
Shrub *Corymbia citriodora*	85.6	87.4	1.8	**Shrub**			0.0
Shrub *Corymbia citriodora*	89.6	91.1	1.5	**Shrub**			0.0
Shrub *Corymbia citriodora*	94.6	95.9	1.3	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	30
Angophora leiocrapa	1
Eucalyptus tereticornis	2
Eucalyptus crebra	2
Corymbia tessellaris	1
Corymbia intermedia	1
Total Recorded	37
Total Per hectare	185

Part J: SAT Survey Results

SAT Survey ID	At Transect 23			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citridora*	Spotted Gum	390	Nil
2	*Corymbia citridora*	Spotted Gum	420	Nil
3	*Corymbia citridora*	Spotted Gum	120	Nil
4	*Corymbia citridora*	Spotted Gum	300	Nil
5	*Corymbia citridora*	Spotted Gum	390	Nil
6	*Corymbia citridora*	Spotted Gum	295	Nil
7	*Corymbia citridora*	Spotted Gum	305	Nil
8	*Corymbia citridora*	Spotted Gum	170	Nil
9	*Corymbia citridora*	Spotted Gum	320	Nil
10	*Eucalyptus crebra*	Narrow Leaf Ironbark	340	Scats
11	*Corymbia citridora*	Spotted Gum	320	Nil
12	*Corymbia citridora*	Spotted Gum	290	Nil
13	*Corymbia citridora*	Spotted Gum	290	Nil
14	*Corymbia citridora*	Spotted Gum	400	Nil
15	*Corymbia citridora*	Spotted Gum	240	Nil
16	*Corymbia citridora*	Spotted Gum	330	Nil
17	*Eucalyptus crebra*	Narrow Leaf Ironbark	400	Nil
18	*Corymbia citridora*	Spotted Gum	270	Nil
19	*Corymbia citridora*	Spotted Gum	215	Nil
20	*Corymbia citridora*	Spotted Gum	250	Nil
21	*Corymbia citridora*	Spotted Gum	290	Nil
22	*Corymbia citridora*	Spotted Gum	155	Nil
23	*Corymbia citridora*	Spotted Gum	310	Nil
24	*Corymbia citridora*	Spotted Gum	200	Nil
25	*Corymbia citridora*	Spotted Gum	450	Scats
26	*Corymbia citridora*	Spotted Gum	210	Nil
27	*Corymbia citridora*	Spotted Gum	250	Nil
28	*Corymbia citridora*	Spotted Gum	270	Nil
29	*Eucalyptus crebra*	Narrow Leaf Ironbark	100	Nil
30	*Eucalyptus tereticornis*	Forest Red Gum	110	Nil
Total Recorded				2
Total Percenatge Recorded				6.66%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





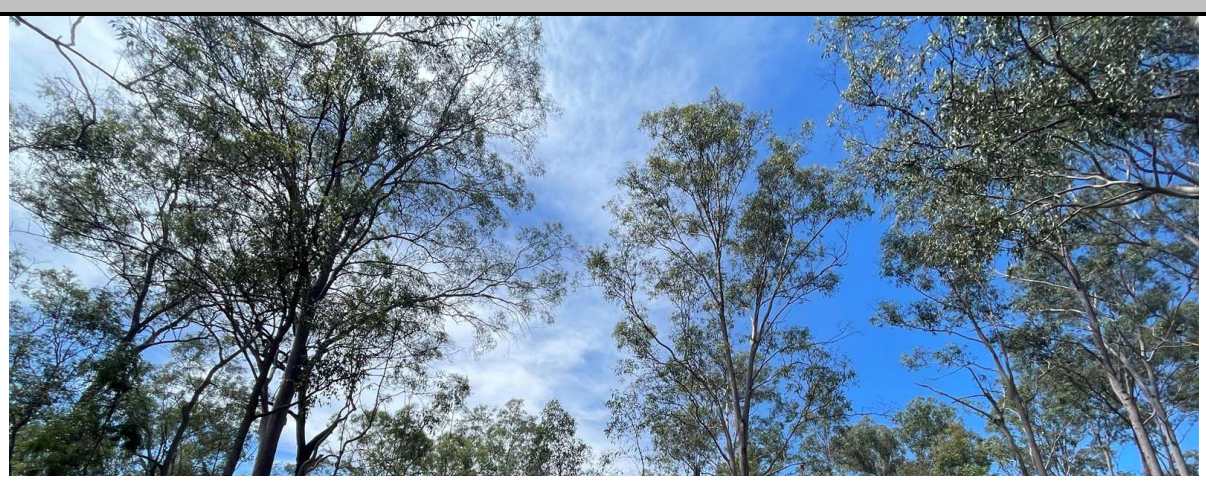
South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	24	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Keeley Richardson	Date	17.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
10	1.86 hectares	12.3.7	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.3.7 described as*Eucalyptus tereticornis, CAsuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a waterway dominated by*Eucalyptus moluccana*.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Eucalyptus moluccana*	Common Name	Gum Topped Box	
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	3		
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Eragrostis brownii*	Common Name	Brown's Love Grass
Scientific Name	*Aristida calycina*	Common Name	Dark-wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	2		
Scientific Name	*Chrysocephalum apiculatum*	Common Name	Yellow Buttons
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Cyperus gracilis*	Common Name	Slender Flat Sedge
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Cyperus polystachyos*	Common Name	Bunchy Sedge
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Sida rhombifolia*	Common Name	Common Sida
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Lantana montevidensis*	Common Name	Creeping Lantana
Scientific Name	*Ageratum houstonianum*	Common Name	Blue Billygoat Weed
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	105.00		
1	5.50	26	
2	5.00	27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	100%	90%	100%	100%	90%	96%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	5%	0%	0%	5%	2%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	0%	5%	0%	0%	0%	1%
Litter	0%	0%	0%	0%	5%	1%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	510 mm	Number of large eucalypt trees:	*0*
Non- Eucalypt Large tree DBH benchmark used:	360 mm	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	0		

Median Tree Canopy Height Measurements	Canopy:	17	Sub-canopy:	6	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	18.7%	Sub-canopy:	4.20%	Emergent:	
Shrub canopy cover %	10.50%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Eucalyptus moluccana*	0.0	4.8	4.8	**T2** *Corymbia citriodora*	82.7	85.4	2.7
T1 *Corymbia citriodora*	86.1	100.0	13.9	**T2** *Corymbia citriodora*	91.6	93.1	1.5
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus tereticornis*	3.0	4.8	1.8	**Shrub**			0.0
Shrub *Eucalyptus crebra*	15.0	16.3	1.3	**Shrub**			0.0
Shrub *Corymbia tessellaris*	32.1	32.8	0.7	**Shrub**			0.0
Shrub *Corymbia citriodora*	77.6	78.2	0.6	**Shrub**			0.0
Shrub *Corymbia citriodora*	88.4	89.3	0.9	**Shrub**			0.0
Shrub *Corymbia citriodora*	94.8	100.0	5.2	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	4
Eucalyptus crebra	3
Corymbia tesellaris	4
Eucalyptus tereticornis	2
Eucalyptus moluccana	2
Total Recorded	15
Total Per hectare	75

Part J: SAT Survey Results

SAT Survey ID	No Scat Survey			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	330	Nil
2	*Corymbia citriodora*	Spotted Gum	370	Nil
3	*Corymbia citriodora*	Spotted Gum	260	Nil
4	*Corymbia citriodora*	Spotted Gum	345	Nil
5	*Corymbia citriodora*	Spotted Gum	390	Nil
6	*Corymbia citriodora*	Spotted Gum	310	Nil
7	*Corymbia citriodora*	Spotted Gum	100	Nil
8	*Corymbia citriodora*	Spotted Gum	130	Nil
9	*Corymbia citriodora*	Spotted Gum	170	Nil
10	*Corymbia citriodora*	Spotted Gum	370	Nil
11	*Corymbia citriodora*	Spotted Gum	290	Nil
12	*Corymbia citriodora*	Spotted Gum	400	Nil
13	*Eucalyptus tereticornis*	Forest Red Gum	170	Nil
14	*Corymbia citriodora*	Spotted Gum	330	Nil
15	*Corymbia citriodora*	Spotted Gum	230	Nil
16	*Corymbia citriodora*	Spotted Gum	260	Nil
17	*Corymbia citriodora*	Spotted Gum	310	Nil
18	*Eucalyptus crebra*	Narrow Leaf Ironbark	470	Nil
19	*Corymbia citriodora*	Spotted Gum	160	Nil
20	*Corymbia citriodora*	Spotted Gum	120	Nil
21	*Corymbia citriodora*	Spotted Gum	200	Nil
22	*Corymbia citriodora*	Spotted Gum	110	Nil
23	*Corymbia citriodora*	Spotted Gum	390	Nil
24	*Corymbia citriodora*	Spotted Gum	360	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	140	Nil
26	*Corymbia tessellaris*	Moreton Bay Ash	120	Nil
27	*Corymbia tessellaris*	Moreton Bay Ash	340	Nil
28	*Angophora leiocarpa*	Smooth Bark Apple	320	Nil
29	*Corymbia citriodora*	Spotted Gum	160	Nil
30	*Corymbia citriodora*	Spotted Gum	210	Nil
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast medium-high)				Nil

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	25	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones & Keeley Richardson	Date	17.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
5	3.28 hectares	12.12.12	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as non-remnant vegetion once containing Of Concern Regional Ecosystem 12.12.12 described as*Eucalyptus tereticornis, Corymbia intermedia, Eucalyptus crebra +/- Lophostemon suaveolens woodland on MEsozoic to Proterozoic igneous rocks.* This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a open paddock area utilised for cattel grazing. Some scattered large Eucalyptus tereticornis throughout paddock.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	2			EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	6		
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Aristida stricta*	Common Name	Threeawn Wiregrass
Scientific Name	*Eragrostis brownii*	Common Name	Browns Love Grass
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name	*Aristida calycina*	Common Name	Dark Wire Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*Enchylaena tomentosa*	Common Name	Ruby Salt Bush
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	65.00%		
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sida rhombifolia*	Common Name	Common Sida
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Cirsium vulgare*	Common Name	Spear Thsitle
Scientific Name	*Heliotropium amplexicaule*	Common Name	Blue Heliotrope
Scientific Name	*Verbena bonariensis*	Common Name	Purple Top Vervain
Scientific Name	*Chloris gayana*	Common Name	Rhodes Grass
Scientific Name	*Centella asiatica*	Common Name	Pennywort

Scientific Name	*Gomphocarpus physocarpus*	**Common Name**	Balloon Cotton Bush
Scientific Name	*Sporobolus africanus*	**Common Name**	Paramatta Grass
Scientific Name	*Conyza sumatrensis*	**Common Name**	Tall Fleabane

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)			
1	0.00	**26**	
2		**27**	
3		**28**	
4		**29**	
5		**30**	
6		**31**	
7		**32**	
8		**33**	
9		**34**	
10		**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	65%	40%	85%	40%	70%	60%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	0%	0%	
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	20%	0%	0%	0%	0%	4%
Non native forbs and shrubs	15%	60%	5%	20%	30%	26%
Litter	0%	0%	10%	40%	0%	10%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	450mm	**Number of large eucalypt trees:**	*Eucalyptus tereticornis = 1060mm (Total = 1)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	0
Total Number Large Trees: per ha	2		

Median Tree Canopy Height Measurements	**Canopy:**		**Sub-canopy:**		**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	0.0%	**Sub-canopy:**	0.00%	**Emergent:**	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
	No trees
Total Recorded	
Total Per hectare	

Part J: SAT Survey Results

SAT Survey ID	No Scat Survey			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
Total Recorded				
Total Percenatge Recorded				
Total Use (Based on East Coast Low)				

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	26	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Jonny Pickvance	Date	25.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
11	7.68	12.11.5 / 12.11.3	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as remnant vegetation containing a composite Least Concern regional ecosystem contaiing RE12.11.5 and RE12.11.3. Least Concern Regional Ecosystem 12.11.5 described as *Corymbia citriodora wooland to open forest +/- Eucalyptus siderophloia/Eucalyptus crebra, Eucalyptus carnea, Eucalyptus acmenoides, Eucalyptus propinqua on metamorphics +/- interbedded volcanics.* Regional ecosystem 12.11.3 is described as *Eucalyptus siderophloia, Eucalyptus propinqua open forest +/- Eucalyptus microcorys, Lophostemon confertus, Corymbia intermedia, Eucalyptus acmenoides open forest on metamorphics +/- interbedded volcanics.* Weed densities increased towrads the lwoer sloeps and steep gully lines.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	7			EDL / Dom / R
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL / R
Scientific Name	*Eucalyptus acmenoides*	Common Name	White Mahogany	EDL / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL / R
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash	EDL / R
Scientific Name	*Allocasuarina torulosa*	Common Name	Forest She Oak	R
Scientific Name	*Erythrina vespertilio*	Common Name	Bat Wing Coral Tree	
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	5		
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Allocasuarina torulosa*	Common Name	Foest She Oak
Scientific Name	*Alphitonia excelsa*	Common Name	Soap Tree
Scientific Name	*Corymbia tessellaris*	Common Name	Moreton Bay Ash
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name	*Heteropogon contortus*	Common Name	Black spear Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Glycine clandestina*	Common Name	Twining Glycine
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Lobelia purpurascens*	Common Name	White Root
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	11.00%		
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Melinis repens*	Common Name	Red Natal Grass
Scientific Name	*Chamaecriosta rotundifolia*	Common Name	Round Leaf Cassia
Scientific Name	*Sporobolus africanus*	Common Name	Paramatta Grass
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Crotalaria lanceolata*	Common Name	Lance-leaved Rattlepod
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	392.00		
1	0.80	26	
2	2.20	27	
3	1.30	28	
4	2.10	29	
5	3.00	30	
6	1.20	31	
7	7.20	32	
8	0.50	33	
9	6.10	34	
10	13.00	35	
11	1.80	36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	60%	30%	50%	45%	25%	42%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	25%	15%	20%	15%	50%	25%
Native shrubs	0%	10%	0%	5%	0%	3%
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	5%	0%	0%	0%	0%	1%
Litter	10%	45%	30%	40%	25%	30%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	105%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Number of large eucalypt trees:	*Corymbia citridora - 450mm, 460mm, 430mm; Eucalyptus crebra - 710mm. (Total = 4)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	8		

Median Tree Canopy Height Measurements	Canopy:	23	Sub-canopy:	15	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	65.5%	Sub-canopy:	23.60%	Emergent:	
Shrub canopy cover %	6.50%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	1.3	1.3	**T2** *Eucalyptus crebra*	3.0	8.8	5.8
T1 *Corymbia citriodora*	2.2	15.5	13.3	**T2** *Eucalyptus acmenoides*	8.8	11.1	2.3
T1 *Corymbia citriodora*	15.5	23.0	7.5	**T2** *Eucalyptus crebra*	18.6	20.8	2.2
T1 *Corymbia citriodora*	42.8	48.1	5.3	**T2** *Eucalyptus crebra*	26.6	29.2	2.6
T1 *Corymbia citriodora*	53.1	67.3	14.2	**T2** *Eucalyptus acmenoides*	30.5	34.0	3.5
T1 *Corymbia citriodora*	72.6	80.8	8.2	**T2** *Eucalyptus crebra*	53.9	61.1	7.2
T1 *Corymbia citriodora*	84.3	89.3	5.0	**T2**			0.0
T1 *Eucalyptus crebra*	89.3	97.6	8.3	**T2**			0.0
T1 *Corymbia citriodora*	97.6	100.0	2.4	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus crebra*	4.2	5.1	0.9	**Shrub**			0.0
Shrub *Corymbia citridora*	16.4	17.7	1.3	**Shrub**			0.0
Shrub *Alphitonia excelsa*	18.8	19.6	0.8	**Shrub**			0.0
Shrub *Corymbia citridora*	21.1	22.0	0.9	**Shrub**			0.0
Shrub *Corymbia tessellaris*	35.6	36.6	1.0	**Shrub**			0.0
Shrub *Eucalyptus crebra*	63.9	64.8	0.9	**Shrub**			0.0
Shrub *Alphitonia excelsa*	74.7	75.4	0.7	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

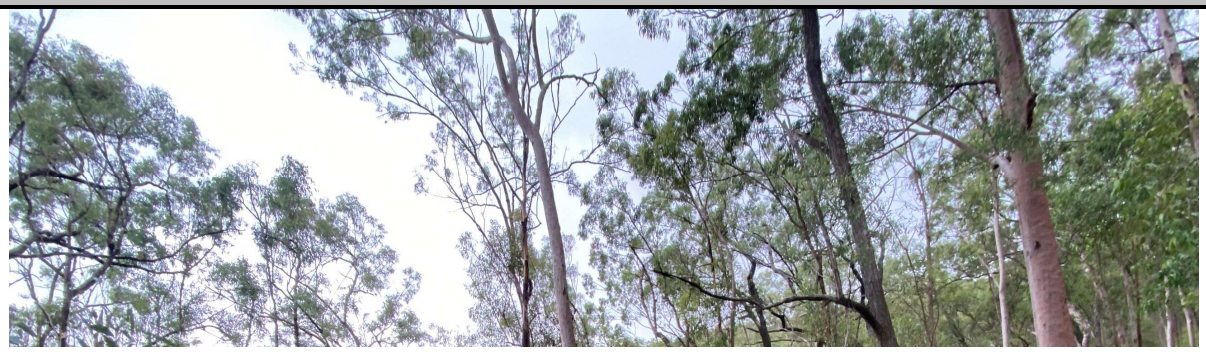
Species Name	Stem Count
Corymbia citriodora	30
Eucalyptus crebra	21
Eucalyptus acmenoides	2
Erythrina vespertilio	1
Corymbia tessellaris	2
Corymbia intermedia	1
Total Recorded	57
Total Per hectare	285

Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	180	Nil
2	*Eucalyptus crebra*	Narrow Leaf Ironbark	630	Nil
3	*Corymbia intermedia*	Pink Bloodwood	265	Nil
4	*Corymbia citriodora*	Spotted Gum	310	Nil
5	*Eucalyptus crebra*	Narrow Leaf Ironbark	180	Nil
6	*Corymbia citriodora*	Spotted Gum	230	Nil
7	*Eucalyptus crebra*	Narrow Leaf Ironbark	220	Nil
8	*Eucalyptus crebra*	Narrow Leaf Ironbark	260	Nil
9	*Corymbia citriodora*	Spotted Gum	190	Nil
10	*Corymbia citriodora*	Spotted Gum	230	Nil
11	*Corymbia citriodora*	Spotted Gum	290	Nil
12	*Corymbia citriodora*	Spotted Gum	360	Nil
13	*Corymbia citriodora*	Spotted Gum	250	Nil
14	*Corymbia citriodora*	Spotted Gum	320	Nil
15	*Eucalyptus crebra*	Narrow Leaf Ironbark	180	Nil
16	*Eucalyptus acmenoides*	White Mahogany	300	Nil
17	*Corymbia citriodora*	Spotted Gum	160	Nil
18	*Corymbia citriodora*	Spotted Gum	320	Nil
19	*Erythrina vespertilio*	Bat Wing Coral Tree	150	Nil
20	*Eucalyptus acmenoides*	White Mahogany	190	Nil
21	*Eucalyptus acmenoides*	White Mahogany	180	Nil
22	*Corymbia citriodora*	Spotted Gum	500	Nil
23	*Eucalyptus crebra*	Narrow Leaf Ironbark	450	Nil
24	*Eucalyptus acmenoides*	White Mahogany	440	Nil
25	*Corymbia citriodora*	Spotted Gum	280	Nil
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	360	Scats
27	*Corymbia citriodora*	Spotted Gum	250	Nil
28	*Eucalyptus crebra*	Narrow Leaf Ironbark	340	Nil
29	*Eucalyptus crebra*	Narrow Leaf Ironbark	240	Nil
30	*Eucalyptus crebra*	Narrow Leaf Ironbark	260	Nil
Total Recorded				1
Total Percenatge Recorded				3.33%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





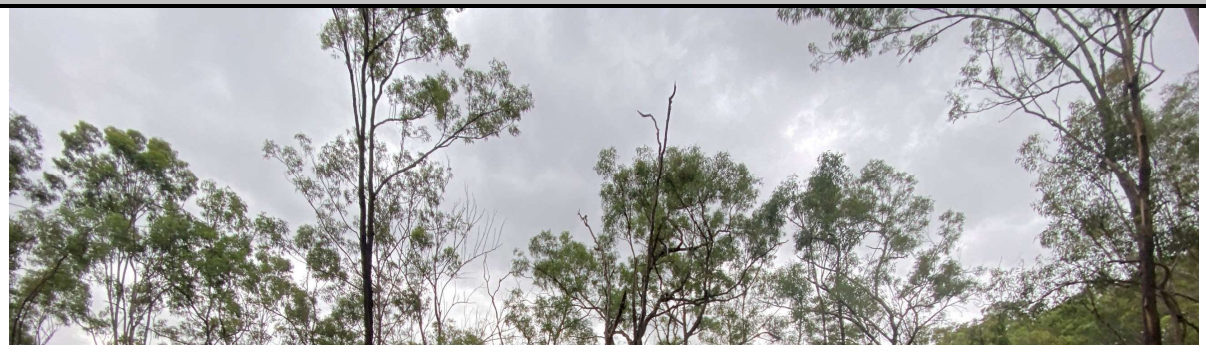
South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	27	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Jonny Pickvance	Date	25.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
11	7.68	12.11.5 / 12.11.3	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as remnant vegetation containing a composite Least Concern regional ecosystem contaiing RE12.11.5 and RE12.11.3. Least Concern Regional Ecosystem 12.11.5 described as *Corymbia citriodora wooland to open forest +/- Eucalyptus siderophloia/Eucalyptus crebra, Eucalyptus carnea, Eucalyptus acmenoides, Eucalyptus propinqua on metamorphics +/- interbedded volcanics.* Regional ecosystem 12.11.3 is described as *Eucalyptus siderophloia, Eucalyptus propinqua open forest +/- Eucalyptus microcorys, Lophostemon confertus, Corymbia intermedia, Eucalyptus acmenoides open forest on metamorphics +/- interbedded volcanics.* Weed densities increased towards the lower slopes and steep gully lines. Transect alignment is 356ºN.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	5			EDL / Dom / R
Scientific Name	*Corymbia citriodora*	Common Name	Spotted Gum	EDL / Dom / R
Scientific Name	*Eucalyptus crebra*	Common Name	Narrow Leaf Ironbark	EDL / R
Scientific Name	*Eucalyptus acmenoides*	Common Name	White Mahogany	EDL / R
Scientific Name	*Eucalyptus melanophloia*	Common Name	Silver Leaved Ironbark	EDL / R
Scientific Name	*Corymbia intermedia*	Common Name	Pink Bloodwood	EDL
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Corymbia citridora*	Common Name	Spotted Gum
Scientific Name	*Eucalyptsu crebra*	Common Name	Narrow Leaf Ironbark
Scientific Name	*Acacia falcata*	Common Name	Sickle Wattle
Scientific Name	*Acaci amelanoxylon*	Common Name	Australian Black Wood
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	5		
Scientific Name	*Aristida calycina*	Common Name	Dark Wire Grass
Scientific Name	*Themeda triandra*	Common Name	Kangaroo Grass
Scientific Name	*Heteropogon contortus*	Common Name	Black Spear Grass
Scientific Name	*Cymbopogon refractus*	Common Name	Barbed Wire Grass
Scientific Name	*Panicum decompositum*	Common Name	Native Millet
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	10		
Scientific Name	*Glycine clandesctina*	Common Name	Twining Glycine
Scientific Name	*Glycine tabacina*	Common Name	Variable Glycine
Scientific Name	*Eremophila debilis*	Common Name	Winter Apple
Scientific Name	*Lomandra multiflora*	Common Name	Many Flowered Mat Rush
Scientific Name	*Dianella caerulea*	Common Name	Blue Flax Lily
Scientific Name	*Hybanthus stellarioides*	Common Name	Spade Flower
Scientific Name	*Eustrephus latifolius*	Common Name	Wombat Berry
Scientific Name	*Plectranthus parviflorus*	Common Name	Plectranthus
Scientific Name	*Cheilanthes distans*	Common Name	Bristle Cloak Fern
Scientific Name	*Glossocardia bidens*	Common Name	Native Cobbler's Pegs
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	15.00%		
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Oxalis stricta*	Common Name	Yellow Woodsorrel
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
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Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	100.00		
1	0.50	26	
2	7.80	27	
3	0.70	28	
4	1.00	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	15%	75%	10%	5%	50%	31%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	15%	5%	80%	60%	30%	38%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs and shrubs	0%	0%	1%	1%	0%	0%
Litter	70%	20%	9%	34%	10%	29%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	10%	2%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Number of large eucalypt trees:	*Corymbia citriodora - 450mm, 450mm, 430mm, 570mm; Eucalyptus acmenoides - 430mm (Total = 5)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	0
Total Number Large Trees: per ha	10		

Median Tree Canopy Height Measurements	Canopy:	23	Sub-canopy:	12	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	20.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	67.1%	Sub-canopy:	21.10%	Emergent:	
Shrub canopy cover %	6.30%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	8.4	8.4	**T2** *Corymbia citriodora*	3.5	5.4	1.9
T1 *Corymbia citriodora*	8.4	12.7	4.3	**T2** *Corymbia citriodora*	17.3	24.2	6.9
T1 *Corymbia citriodora*	12.7	15.9	3.2	**T2** *Corymbia citriodora*	27.3	29.1	1.8
T1 *Corymbia citriodora*	24.7	35.3	10.6	**T2** *Eucalyptus acmenoides*	50.6	56.2	5.6
T1 *Corymbia citriodora*	35.6	41.0	5.4	**T2** *Corymbia citriodora*	65.4	68.3	2.9
T1 *Eucalyptus crebra*	62.3	64.2	1.9	**T2** *Eucalyptus crebra*	83.2	85.2	2.0
T1 *Corymbia citriodora*	64.4	69.6	5.2	**T2**			0.0
T1 *Eucalyptus crebra*	70.5	73.0	2.5	**T2**			0.0
T1 *Eucalyptus acmenoides*	73.0	76.3	3.3	**T2**			0.0
T1 *Corymbia citriodora*	77.0	82.0	5.0	**T2**			0.0
T1 *Corymbia citriodora*	82.0	89.3	7.3	**T2**			0.0
T1 *Corymbia citriodora*	90.0	100.0	10.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Eucalyptus melanophloia*	35.9	37.7	1.8	**Shrub**			0.0
Shrub *Corymbia citriodora*	73.5	74.0	0.5	**Shrub**			0.0
Shrub *Corymbia citriodora*	77.1	78.9	1.8	**Shrub**			0.0
Shrub *Eucalyptus crebra*	89.7	90.4	0.7	**Shrub**			0.0
Shrub *Eucalyptus crebra*	92.0	93.5	1.5	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

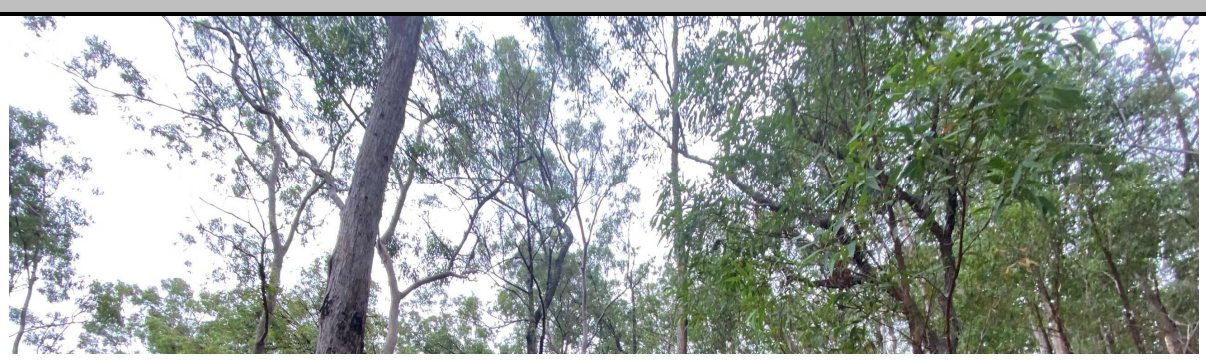
Species Name	Stem Count
Corymbia citriodora	30
Eucalyptus cerbra	5
Eucalyptus acmenoides	13
Corymbia intermedia	1
Total Recorded	49
Total Per hectare	245

Part J: SAT Survey Results

SAT Survey ID	At Transect 27			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus acmenoides*	White Mahogany	180	Nil
2	*Corymbia citridora*	Spotted Gum	190	Nil
3	*Corymbia citridora*	Spotted Gum	190	Nil
4	*Eucalyptus crebra*	Narrow Leaf Ironbark	390	Nil
5	*Corymbia citridora*	Spotted Gum	190	Nil
6	*Eucalyptus acmenoides*	White Mahogany	340	Nil
7	*Eucalyptus acmenoides*	White Mahogany	360	Nil
8	*Corymbia citridora*	Spotted Gum	430	Nil
9	*Corymbia citridora*	Spotted Gum	320	Nil
10	*Eucalyptus acmenoides*	White Mahogany	230	Nil
11	*Corymbia citridora*	Spotted Gum	120	Nil
12	*Eucalyptus acmenoides*	White Mahogany	160	Nil
13	*Corymbia citridora*	Spotted Gum	260	Nil
14	*Eucalyptus crebra*	Narrow Leaf Ironbark	310	Nil
15	*Corymbia citridora*	Spotted Gum	350	Scats
16	*Eucalyptus acmenoides*	White Mahogany	310	Nil
17	*Eucalyptus crebra*	Narrow Leaf Ironbark	350	Nil
18	*Eucalyptus acmenoides*	White Mahogany	280	Nil
19	*Corymbia citridora*	Spotted Gum	200	Nil
20	*Corymbia citridora*	Spotted Gum	140	Nil
21	*Eucalyptus acmenoides*	White Mahogany	320	Nil
22	*Corymbia citridora*	Spotted Gum	220	Nil
23	*Eucalyptus acmenoides*	White Mahogany	180	Nil
24	*Eucalyptus crebra*	Narrow Leaf Ironbark	340	Nil
25	*Eucalyptus crebra*	Narrow Leaf Ironbark	330	Nil
26	*Corymbia citridora*	Spotted Gum	200	Nil
27	*Corymbia citridora*	Spotted Gum	120	Nil
28	*Corymbia citridora*	Spotted Gum	240	Nil
29	*Eucalyptus acmenoides*	White Mahogany	260	Nil
30	*Eucalyptus acmenoides*	White Mahogany	250	Nil
Total Recorded				1
Total Percenatge Recorded				3.33%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet			

Part A - Administrative

Transect ID	28	Job Number / Property	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Jonny Pickvance	Date	25.03.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
10	1.86 hectares	12.3.7	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as High Value Regrowth containing Least Concern RE12.11.5/12.11.3 however landzone 3 is identified throughout the waterway containing Of Concern Regional Ecosystem 12.3.7 described as *Eucalyptus tereticornis, Casuarina cunninghamiana subsp. cunninghamiana +/- Melaleuca spp. fringing woodland.*This community is a sparse structure category which generally has a crown cover of between 20-50% with trees between 10 and 30 meters in height. This transect is within a waterway dominated by Casuarina cunninghamiana. Transect alignment is 129°SE.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	4			EDL / Dom / R
Scientific Name	*Eucalyptus tereticornis*	Common Name	Forest Red Gum	EDL / Dom
Scientific Name	*Casuarina cunninghamii*	Common Name	River She Oak	R
Scientific Name	*Angophora subvelutina*	Common Name	Broad-leaved Apple	
Scientific Name	*Grevillea robusta*	Common Name	Silky Oak	R
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

Shrub species richness:			
Total number of species	4		
Scientific Name	*Grevillea robusta*	Common Name	Silky Oak
Scientific Name	*Casuarina cunninghamii*	Common Name	River She Oak
Scientific Name	*Melia azedarach*	Common Name	White Cedar
Scientific Name	*Hibiscus heterophyllus*	Common Name	Native Rosella
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	1		
Scientific Name	*Cynondon dactylon*	Common Name	Green Couch
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*Calochlaena dubia*	Common Name	Soft Bracken
Scientific Name	*Lobelia purpurascens*	Common Name	White Root
Scientific Name	*Platycerium bifurcatum*	Common Name	Staghorn
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	95.00%		
Scientific Name	*Lantana camara*	Common Name	Lantana
Scientific Name	*Tradescantia fluminensis*	Common Name	Wandering Jew
Scientific Name	*Ambrosia artemisiifolia*	Common Name	Annual Ragweed
Scientific Name	*Megathyrsus maximus*	Common Name	Guinea Grass
Scientific Name	*Crassocephalum crepidioides*	Common Name	Thickhead
Scientific Name	*Solanum mauritianum*	Common Name	Wild Tobacco
Scientific Name	*Desmodium intortum*	Common Name	Greenleaf Desmodium
Scientific Name	*Bidens pilosa*	Common Name	Cobbler's Pegs

Scientific Name	*Solanum torvum*	**Common Name**	Devil's Fig
Scientific Name	*Ageratum houstonianum*	**Common Name**	Blue Billygoat Weed
Scientific Name	*Conyza sumatrensis*	**Common Name**	Tall Fleabane
Scientific Name	*Verbena bonariensis*	**Common Name**	Purple Top Vervain
Scientific Name	*Solanum seaforthianum*	**Common Name**	Brazilian Night Shade
Scientific Name	*Cirsium vulgare*	**Common Name**	Spear Thistle
Scientific Name	*Tagetes minuta*	**Common Name**	Stinking Roger
Scientific Name	*Macroptilium lathyroides*	**Common Name**	Phasey Bean
Scientific Name	*Gomphocarpus physocarpus*	**Common Name**	Balloon Cotton Bush
Scientific Name	*Asclepias curassavica*	**Common Name**	Red-head Cotton Bush
Scientific Name	*Sida cordifolia*	**Common Name**	Flannel Weed
Scientific Name	*Senna septemtrionalis*	**Common Name**	Arsenic Bush
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**188.00**		
1	3.60	**26**	
2	5.20	**27**	
3	1.40	**28**	
4	0.60	**29**	
5	0.50	**30**	
6	0.50	**31**	
7	2.30	**32**	
8	1.40	**33**	
9	1.50	**34**	
10	1.80	**35**	
11		**36**	
12		**37**	
13		**38**	
14		**39**	
15		**40**	
16		**41**	
17		**42**	
18		**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	**Quadrat 1**	**Quadrat 2**	**Quadrat 3**	**Quadrat 4**	**Quadrat 5**	**Average**
Native perennial grass cover	20%	0%	10%	0%	0%	6%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	5%	15%	20%	0%	0%	8%
Native shrubs	15%	0%	0%	0%	0%	3%
Non-native grass	0%	0%	0%	100%	0%	20%
Non native forbs and shrubs	0%	0%	0%	0%	90%	18%
Litter	0%	0%	0%	0%	0%	
Rock	0%	0%	0%	0%	0%	
Bare Ground	60%	85%	70%	0%	10%	45%
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	510 mm	**Number of large eucalypt trees:**	*Eucalyptus tereticornis - 580mm, 710mm, 480mm, 760mm; (Total = 4)*
Non- Eucalypt Large tree DBH benchmark used:	360 mm	**Number of large non eucalypt trees:**	Casuarina cunninghamii - 420mm, (250/160mm), 360mm, 490mm, 470mm, 570mm, 260mm, 260mm, 470mm, 230mm, 310mm; Mallotus philippensis - 310mm, (240, 220, 200mm), Glochidion ferdinandi - 430mm. (Total = 14)
Total Number Large Trees: per ha	36		

Median Tree Canopy Height Measurements	**Canopy:**	19	**Sub-canopy:**	11	**Emergent:**	NA

Percentage of ecologically dominant layer species regenerating:	**0.0**

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	**Canopy:**	67.1%	**Sub-canopy:**	7.00%	**Emergent:**	
Shrub canopy cover %	2.80%					

Layer	**Start**	**End**	**Interval**	**Layer**	**Start**	**End**	**Interval**
T1 *Casuarina cunninghamii*	0.0	7.3	7.3	**T2** *Mallotus philippensis*	93.0	100.0	7.0
T1 *Casuarina cunninghamii*	8.2	15.5	7.3	**T2**			0.0
T1 *Eucalyptus tereticornis*	41.3	52.3	11.0	**T2**			0.0
T1 *Casuarina cunninghamii*	52.9	66.4	13.5	**T2**			0.0
T1 *Casuarina cunninghamii*	67.6	77.8	10.2	**T2**			0.0
T1 *Eucalyptus tereticornis*	77.8	87.7	9.9	**T2**			0.0
T1 *Casuarina cunninghamii*	87.7	95.6	7.9	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub *Casuarina cunninghamii*	20.3	20.7	0.4	**Shrub**			0.0
Shrub *Casuarina cunninghamii*	22.5	22.9	0.4	**Shrub**			0.0
Shrub *Casuarina cunninghamii*	29.4	30.3	0.9	**Shrub**			0.0
Shrub *Casuarina cunninghamii*	31.7	32.2	0.5	**Shrub**			0.0
Shrub *Casuarina cunninghamii*	34.6	34.8	0.2	**Shrub**			0.0
Shrub *Casuarina cunninghamii*	42.9	43.3	0.4	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Casuarina cunninghamii	14
Eucalyptus tereticornis	6
Mallotus philippensis	2
Glochidion ferdinandi	1
Total Recorded	23
Total Per hectare	115

Part J: SAT Survey Results

SAT Survey ID	At Transect 27			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Casuarina cunnighamii*	River She Oak	300	Nil
2	*Casuarina cunnighamii*	River She Oak	280	Nil
3	*Casuarina cunnighamii*	River She Oak	260	Nil
4	*Casuarina cunnighamii*	River She Oak	300	Nil
5	*Casuarina cunnighamii*	River She Oak	360	Nil
6	*Casuarina cunnighamii*	River She Oak	420	Nil
7	*Glochidion ferdinandi*	Cheese Tree	480	Nil
8	*Casuarina cunnighamii*	River She Oak	460	Nil
9	*Casuarina cunnighamii*	River She Oak	380	Nil
10	*Casuarina cunnighamii*	River She Oak	270	Nil
11	*Casuarina cunnighamii*	River She Oak	260	Nil
12	*Casuarina cunnighamii*	River She Oak	420	Nil
13	*Eucalyptus tereticornis*	Forest Red Gum	370	Nil
14	*Eucalyptus tereticornis*	Forest Red Gum	640	Nil
15	*Eucalyptus tereticornis*	Forest Red Gum	590	Nil
16	*Angophora subvelutina*	Broad Leaved Apple	370	Nil
17	*Eucalyptus tereticornis*	Forest Red Gum	460	Nil
18	*Casuarina cunnighamii*	River She Oak	300	Nil
19	*Casuarina cunnighamii*	River She Oak	410	Nil
20	*Casuarina cunnighamii*	River She Oak	360	Nil
21	*Casuarina cunnighamii*	River She Oak	380	Nil
22	*Eucalyptus tereticornis*	Forest Red Gum	320	Nil
23	*Eucalyptus tereticornis*	Forest Red Gum	260	Nil
24	*Eucalyptus tereticornis*	Forest Red Gum	340	Nil
25	*Eucalyptus tereticornis*	Forest Red Gum	330	Nil
26	*Eucalyptus tereticornis*	Forest Red Gum	260	Nil
27	*Angophora subvelutina*	Broad Leaved Apple	240	Nil
28	*Angophora subvelutina*	Broad Leaved Apple	480	Nil
29	*Mallotus philippensis*	Red Kamala	320	Nil
30	*Casuarina cunnighamii*	River She Oak	240	Nil
Total Recorded				0
Total Percenatge Recorded				0%
Total Use (Based on East Coast high-medium)				Nil

Attach Landscape Photos Here

North



South



East



West



Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	29	**Job Number / Property**	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	David Havill & Xander Gwynn-Jones	**Date**	26.02.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
11	**7.68**	**12.11.5 / 12.11.3**	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as high-value regrowth of the composite regional ecosystem containing the Least Concern RE 12.11.5 and RE 12.11.3. RE 12.11.5 is described as a *Corymbia citriodora* open forest woodland on metamorphics and interbedded volcanics (Landzone 11), usually with *Eucalyptus siderophloia/E. crebra* , *E. propinqua* , *E. acmenoides* or *E. carnea* . The subcanopy often consists of *Lophostemon confertus* in gullies and understory a mixture of grasses, shrubs and ferns. RE 12.11.3 is described as a *Eucalyptus siderophloia* and *E. propinqua* open forest on Landzone 11, with *E. microcorys* , *Lophostemon confertus* , *Corymbia intermedia* or *E. acmenoides* . In gullies, wine thicket species and *E. grandis* or *E. saligna* are present. Develops dense vine thicket in absence of fire, prone to invasion to *Lantana camara* . The vegetation in this transect mostly closely represents RE 12.11.5 as it is dominated by *C. citriodora* . Some species present, such as *C. tessellaris,* are not characteristic of either RE, although *M. azedarach* is often associated with dry rainforest ecosystems. The understory is largely consisted of dense invasion of Lantana throughout the site, evidencing disturbance.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	6			**EDL / Dom / R**
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum	Dom / R
Scientific Name	*Eucalyptus crebra*	**Common Name**	Narrow Leaf Ironbark	
Scientific Name	*Corymbia intermedia*	**Common Name**	Pink Bloodwood	
Scientific Name	*Eucalyptus melanophloia*	**Common Name**	Silver Leaved Ironbark	
Scientific Name	*Corymbia tessellaris*	**Common Name**	Moreton Bay Ash	
Scientific Name	*Lophostemon confertus*	**Common Name**	Brush Box	
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		

Shrub species richness:			
Total number of species	6		
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum
Scientific Name	*Acacia disparrima*	**Common Name**	Hickory Wattle
Scientific Name	*Acacia melanoxylon*	**Common Name**	Australian Blackwood
Scientific Name	*Melia azedarach*	**Common Name**	White Cedar
Scientific Name	*Eucalyptus crebra*	**Common Name**	Narrow Leaf Ironbark
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	**Common Name**	Black Spear Grass
Scientific Name	*Panicum decompositum*	**Common Name**	Native Millet
Scientific Name	*Cymbopogon refractus*	**Common Name**	Barbed Wire Grass
Scientific Name	*Ottochloa gracillima*	**Common Name**	Graceful Grass
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Glycine clandestina*	**Common Name**	Twining Glycine
Scientific Name	*Lobelia purpurescens*	**Common Name**	White Root
Scientific Name	*Chrysocephalum apiculatum*	**Common Name**	Yellow Buttons
Scientific Name	*Lomandra longifolia*	**Common Name**	Long Leaved Matrush
Scientific Name	*Goodenia rotundifolia*	**Common Name**	Star Goodenia
Scientific Name	*Desmodium rhytidophyllum*	**Common Name**	Hairy Trefoil
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	45.00%		
Scientific Name	*Sida cordifolia*	**Common Name**	Flannel Weed
Scientific Name	*Lantana camara*	**Common Name**	Lantana
Scientific Name	*Gomphocarpus physocarpus*	**Common Name**	Balloon Cotton Bush
Scientific Name	*Calyptocarpus vialis*	**Common Name**	Creeping Cinderella Weed
Scientific Name	*Macroptilium atropurpureum*	**Common Name**	Siratro
Scientific Name	*Melinis repens*	**Common Name**	Red Natal Grass
Scientific Name	*Ageratum houstanianum*	**Common Name**	Blue Billygoat Weed
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	360.00		
1	6.00	26	
2	10.00	27	
3	7.00	28	
4	3.00	29	
5	2.00	30	
6	1.00	31	
7	3.00	32	
8	4.00	33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	0%	40%	20%	10%	15%	17%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	0%	0%	0%	5%	30%	7%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	5%	40%	40%	10%	50%	29%
Non native forbs and shrubs	90%	15%	35%	55%	0%	39%
Litter	5%	5%	5%	20%	5%	8%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Number of large eucalypt trees:	*Total = 4 : Eucalyptus crebra (610, 480, 450, 430mm)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	
Total Number Large Trees: per ha	12		

Median Tree Canopy Height Measurements	Canopy:	19	Sub-canopy:	9	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	39.1%	Sub-canopy:	15.30%	Emergent:	
Shrub canopy cover %	1.20%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	12.7	19.3	6.6	**T2** *Eucalyptus melanophloia*	3.3	4.8	1.5
T1 *Corymbia citriodora*	21.7	34.4	12.7	**T2** *Eucalyptus crebra*	12.1	13.6	1.5
T1 *Eucalyptus crebra*	57.1	60.4	3.3	**T2** *Corymbia citriodora*	17.6	21.4	3.8
T1 *Corymbia citriodora*	63.4	73.0	9.6	**T2** *Corymbia tessellaris*	37.3	38.1	0.8
T1 *Corymbia citriodora*	87.1	94.0	6.9	**T2** *Eucalyptus crebra*	54.1	55.6	1.5
T1			0.0	**T2** *Eucalyptus crebra*	56.1	57.8	1.7
T1			0.0	**T2** *Corymbia citriodora*	76.4	80.0	3.6
T1			0.0	**T2** *Eucalyptus crebra*	83.9	84.8	0.9
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval

Shrub *Eucalyptus crebra*	28.2	28.4	0.2	**Shrub**			0.0
Shrub *Eucalyptus crebra*	62.0	63.0	1.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Corymbia citriodora	24
Eucalyptus crebra	4
Corymbia intermedia	1
Corymbia tessellaris	1
Eucalyptus melanophloia	1
Total Recorded	31
Total Per hectare	155

Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	120	N
2	*Corymbia citriodora*	Spotted Gum	172.0465053	N
3	*Corymbia citriodora*	Spotted Gum	140	N
4	*Corymbia citriodora*	Spotted Gum	130	N
5	*Corymbia citriodora*	Spotted Gum	100	N
6	*Corymbia citriodora*	Spotted Gum	200	N
7	*Eucalyptus crebra*	Narrow Leaf Ironbark	100	N
8	*Corymbia citriodora*	Spotted Gum	200	N
9	*Corymbia citriodora*	Spotted Gum	200	N
10	*Corymbia citriodora*	Spotted Gum	190	N
11	*Corymbia citriodora*	Spotted Gum	150	N
12	*Lophostemon suaveolens*	Swamp Box	140	N
13	*Corymbia citriodora*	Spotted Gum	110	N
14	*Corymbia citriodora*	Spotted Gum	148.6606875	N
15	*Corymbia citriodora*	Spotted Gum	130	N
16	*Corymbia citriodora*	Spotted Gum	120	N
17	*Corymbia citriodora*	Spotted Gum	120	N
18	*Eucalyptus crebra*	Narrow Leaf Ironbark	210	N
19	*Eucalyptus crebra*	Narrow Leaf Ironbark	380	N
20	*Corymbia citriodora*	Spotted Gum	180	N
21	*Corymbia citriodora*	Spotted Gum	100	N
22	*Lophostemon suaveolens*	Swamp Box	100	N
23	*Corymbia citriodora*	Spotted Gum	140	N
24	*Corymbia citriodora*	Spotted Gum	110	N
25	*Corymbia citriodora*	Spotted Gum	180	N
26	*Eucalyptus crebra*	Narrow Leaf Ironbark	260	Y
27	*Corymbia citriodora*	Spotted Gum	170	N
28	*Corymbia citriodora*	Spotted Gum	160	N
29	*Corymbia citriodora*	Spotted Gum	150	N
30	*Corymbia citriodora*	Spotted Gum	140	Y
Total Recorded				2
Total Percenatge Recorded				7%
Total Use (Based on East Coast medium-high)				Low

Attach Landscape Photos Here

North





South



East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	30	**Job Number / Property**	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Liam Brzezinski, Tylah Mills	**Date**	02.04.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
7	**13.51**	**12.11.5 / 12.11.3**	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as high-value regrowth of the composite regional ecosystem containing the Least Concern RE 12.11.5 and RE 12.11.3. RE 12.11.5 is described as a *Corymbia citriodora* open forest woodland on metamorphics and interbedded volcanics (Landzone 11), usually with *Eucalyptus siderophloia/E. crebra* , *E. propinqua* , *E. acmenoides* or *E. carnea* . The subcanopy often consists of *Lophostemon confertus* in gullies and understory a mixture of grasses, shrubs and ferns. RE 12.11.3 is described as a *Eucalyptus siderophloia* and *E. propinqua* open forest on Landzone 11, with *E. microcorys* , *Lophostemon confertus* , *Corymbia intermedia* or *E. acmenoides* . In gullies, wine thicket species and *E. grandis* or *E. saligna* are present. Develops dense vine thicket in absence of fire, prone to invasion to *Lantana camara* . The vegetation in this transect mostly closely represents RE 12.11.5 as it is dominated by *C. citriodora* and *E. crebra* . Some species present, such as *C. tessellaris,* are not characteristic of either RE. The understory is largely consisted of dense invasion of Lantana throughout the site, evidencing disturbance.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	6			**EDL / Dom / R**
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum	Dom / R
Scientific Name	*Eucalyptus crebra*	**Common Name**	Narrow Leaf Ironbark	Dom / R
Scientific Name	*Eucalyptus melanophloia*	**Common Name**	Silver Leaved Ironbark	
Scientific Name	*Corymbia tessellaris*	**Common Name**	Moreton Bay Ash	
Scientific Name	*Corymbia intermedia*	**Common Name**	Pink Bloodwood	
Scientific Name	*Brachychiton populneus*	**Common Name**	Kurrajong	
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		

Shrub species richness:			
Total number of species	2		
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum
Scientific Name	*Acacia disparrima*	**Common Name**	Hickory Wattle
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Grass species richness:			
Total number of species	4		
Scientific Name	*Heteropogon contortus*	**Common Name**	Black Spear Grass
Scientific Name	*Panicum decompositum*	**Common Name**	Native Millet
Scientific Name	*Entolasia stricta*	**Common Name**	Wiry Panic
Scientific Name	*Cymbopogon refractus*	**Common Name**	Barded Wire Grass
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	*Chrysocephalum apiculatum*	**Common Name**	Yellow Buttons
Scientific Name	*Lobelia purpurescens*	**Common Name**	White Root
Scientific Name	*Glycine clandestina*	**Common Name**	Twining Glycine
Scientific Name	*Fimbristylis velata*	**Common Name**	Veiled Fringe-Rush
Scientific Name	*Desmodium rhytidophyllum*	**Common Name**	Hairy Trefoil
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	55.00%		
Scientific Name	*Lantana camara*	**Common Name**	Lantana
Scientific Name	*Bidens pilosa*	**Common Name**	Cobbler's Peg
Scientific Name	*Melinis repens*	**Common Name**	Red Natal Grass
Scientific Name	*Macroptilium atropurpureum*	**Common Name**	Siratro
Scientific Name	*Opuntia tomentosa*	**Common Name**	Velvet Tree Pear
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	100.00		
1	3.00	26	
2	2.00	27	
3	4.00	28	
4	1.00	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	10%	10%	10%	10%	15%	11%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and other species	25%	10%	15%	5%	30%	17%
Native shrubs	0%	0%	0%	0%	0%	
Non-native grass	15%	25%	25%	10%	50%	25%
Non native forbs and shrubs	40%	50%	50%	55%	0%	39%
Litter	10%	5%	0%	20%	5%	8%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	Number of large eucalypt trees:	*Total = 1 : Corymbia citriodora (500mm)*
Non- Eucalypt Large tree DBH benchmark used:	na	Number of large non eucalypt trees:	
Total Number Large Trees: per ha	2		

Median Tree Canopy Height Measurements	Canopy:	20	Sub-canopy:	9	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	46.0%	Sub-canopy:	21.90%	Emergent:	
Shrub canopy cover %	0.00%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	1.7	1.7	**T2** *Eucalyptus crebra*	22.0	24.8	2.8
T1 *Corymbia citriodora*	9.2	25.4	16.2	**T2** *Eucalyptus crebra*	27.1	30.0	2.9
T1 *Corymbia citriodora*	32.1	39.0	6.9	**T2** *Eucalyptus crebra*	32.7	34.4	1.7
T1 *Eucalyptus crebra*	42.8	55.6	12.8	**T2** *Eucalyptus crebra*	38.7	40.5	1.8
T1 *Eucalyptus crebra*	78.6	85.0	6.4	**T2** *Eucalyptus crebra*	51.6	52.3	0.7
T1 *Eucalyptus crebra*	98.0	100.0	2.0	**T2** *Eucalyptus melanophloia*	58.3	63.7	5.4
T1			0.0	**T2** *Eucalyptus crebra*	67.0	68.5	1.5
T1			0.0	**T2** *Eucalyptus crebra*	73.5	77.2	3.7
T1			0.0	**T2** *Eucalyptus crebra*	91.1	92.5	1.4
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0
Shrub			0.0	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus crebra	22
Corymbia intermedia	5
Eucalyptus melanophloia	3
Corymbia tessellaris	1
Corymbia citriodora	12
Total Recorded	43
Total Per hectare	215

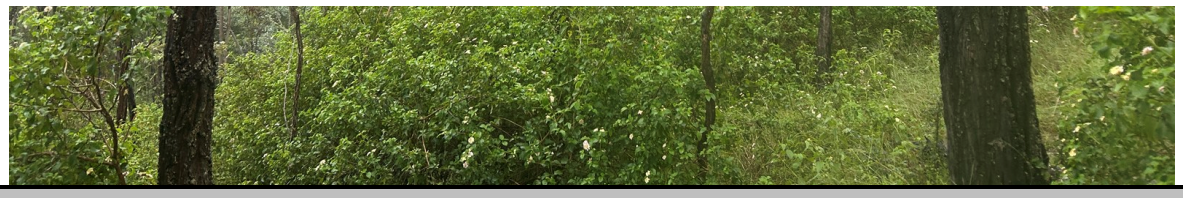
Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Corymbia citriodora*	Spotted Gum	332.8663395	N
2	*Eucalyptus siderophloia*	Grey Ironbark	100	N
3	*Corymbia citriodora*	Spotted Gum	100	N
4	*Corymbia citriodora*	Spotted Gum	220	N
5	*Corymbia citriodora*	Spotted Gum	110	N
6	*Corymbia citriodora*	Spotted Gum	130	N
7	*Corymbia citriodora*	Spotted Gum	150	Y
8	*Corymbia citriodora*	Spotted Gum	140	Y
9	*Eucalyptus crebra*	Narrow Leaved Ironbark	120	Y
10	*Corymbia citriodora*	Spotted Gum	140	N
11	*Corymbia citriodora*	Spotted Gum	100	N
12	*Corymbia citriodora*	Spotted Gum	130	N
13	*Corymbia citriodora*	Spotted Gum	150	N
14	*Corymbia citriodora*	Spotted Gum	200	N
15	*Corymbia citriodora*	Spotted Gum	500	Y
16	*Corymbia citriodora*	Spotted Gum	140	N
17	*Corymbia citriodora*	Spotted Gum	160	N
18	*Eucalyptus crebra*	Narrow Leaved Ironbark	130	N
19	*Corymbia citriodora*	Spotted Gum	260	N
20	*Corymbia citriodora*	Spotted Gum	100	Y
21	*Corymbia citriodora*	Spotted Gum	170	N
22	*Corymbia citriodora*	Spotted Gum	120	Y
23	*Eucalyptus crebra*	Narrow Leaved Ironbark	160	N
24	*Corymbia citriodora*	Spotted Gum	150	N
25	*Corymbia citriodora*	Spotted Gum	180	N
26	*Corymbia citriodora*	Spotted Gum	100	N
27	*Corymbia citriodora*	Spotted Gum	110	N
28	*Corymbia citriodora*	Spotted Gum	130	N
29	*Corymbia citriodora*	Spotted Gum	120	N
30	*Corymbia citriodora*	Spotted Gum	160	N
Total Recorded				6
Total Percenatge Recorded				20%
Total Use (Based on East Coast medium-high)				Low

Attach Landscape Photos Here

North





South

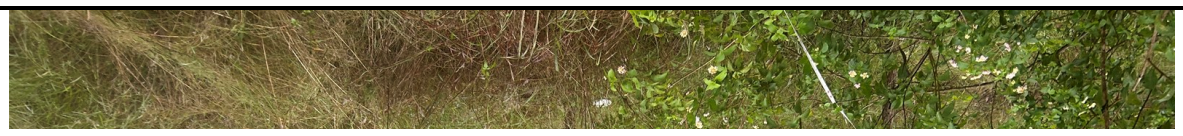


East



West





Habitat Quality Assessment Unit Score Sheet

Part A - Administrative

Transect ID	31	**Job Number / Property**	9383 (KFF Offset) - Tooloorum Road.

Part B - Site Data

Recorders	Xander Gwynn-Jones, Harrison Cormack	**Date**	09.04.2025

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
2	**50.14**	**12.11.5**	12

Site description and Location (including details of discrete polygons within the assessment unit)
Site is mapped as remant Least Concern RE 12.11.5 *Eucalyptus siderophloia/E. crebra* , *E. propinqua* , *E. acmenoides* or *E. carnea* . The subcanopy often consists of *Lophostemon confertus* in gullies and understory a mixture of grasses, shrubs and ferns. Lantana camara (Lantana) is relatively sparse throughout teh shrub layer.

Part C - Native Species Richness: (*list species below)

Tree species richness:				
Total number of species	8			**EDL / Dom / R**
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum	Dom
Scientific Name	*Eucalyptus crebra*	**Common Name**	Narrow Leaf Ironbark	
Scientific Name	*Eucalyptus acmenoides*	**Common Name**	White Mahogany	
Scientific Name	*Eucalyptus propinqua*	**Common Name**	Small Fruited Grey Gum	
Scientific Name	*Eucalyptus carnea*	**Common Name**	Thick-leaved Mahogany	
Scientific Name	*Corymbia intermedia*	**Common Name**	Pink Bloodwood	
Scientific Name	*Lophostomon confertus*	**Common Name**	Brush Box	
Scientific Name	*Allocasuarina torulosa*	**Common Name**	Forest She Oak	
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		
Scientific Name		**Common Name**		

Shrub species richness:			
Total number of species	9		
Scientific Name	*Corymbia citriodora*	**Common Name**	Spotted Gum
Scientific Name	*Eucalyptus crebra*	**Common Name**	Narrow Leaf Ironbark
Scientific Name	*Eucalyptus acmenoides*	**Common Name**	White Mahogany
Scientific Name	*Acacia disaparrima*	**Common Name**	Hickory Wattle
Scientific Name	*Acacia falcata*	**Common Name**	Sickle Leaf Wattle
Scientific Name	*Lophostomon confertus*	**Common Name**	Brush Box
Scientific Name	*Jacksonia scoparia*	**Common Name**	Dogwood
Scientific Name	*Alphitonia excelsa*	**Common Name**	Soap Tree
Scientific Name	*Brachychiton populneus*	**Common Name**	Kurrajong
Scientific Name		**Common Name**	

Grass species richness:			
Total number of species	9		
Scientific Name	*Heteropogon contortus*	**Common Name**	Black Spear Grass
Scientific Name	*Panicum decompositum*	**Common Name**	Native Millet
Scientific Name	*Entolasia stricta*	**Common Name**	Wiry Panic
Scientific Name	*Cymbopogon refractus*	**Common Name**	Barbed Wire Grass
Scientific Name	*Panicum effusum*	**Common Name**	Hairy Panic
Scientific Name	*Eragrostis brownii*	**Common Name**	Brown's Love Grass
Scientific Name	*Imperata cylindrica*	**Common Name**	Bladey Grass
Scientific Name	*Ottochloa gracillima*	**Common Name**	Graceful Grass
Scientific Name	*Rytidosperma geniculatum*	**Common Name**	Kneed Wallaby Grass
Scientific Name		**Common Name**	

Forbs and others (non grass ground) species richness:			
Total number of species	14		
Scientific Name	*Chrysocephalum apiculatum*	**Common Name**	Yellow Buttons
Scientific Name	*Geitonoplesium cymosum*	**Common Name**	Scrambling Lily
Scientific Name	*Glycine clandestina*	**Common Name**	Twining Glycine
Scientific Name	*Dianella brevipedunculata*	**Common Name**	Blue Flax Lily
Scientific Name	*Desmodium rhytidophyllum*	**Common Name**	Hairy Trefoil
Scientific Name	*Hypericum gramineum*	**Common Name**	Small St. John's wort
Scientific Name	*Gahnia insignis*	**Common Name**	Small Sawsedge
Scientific Name	*Eustrephus latifolius*	**Common Name**	Wombat Berry
Scientific Name	*Daviesia ulicifolia*	**Common Name**	Native Gorse
Scientific Name	*Hybanthus stellarioides*	**Common Name**	Spade Flower
Scientific Name	*Acacia falcata*	**Common Name**	Sickle Leaf Wattle
Scientific Name	*Lomandra longifolia*	**Common Name**	Long Leaved Mat Rush

Scientific Name	*Cheilanthes distans*	**Common Name**	Bristle Cloak Fern
Scientific Name	*Juncus usitatus*	**Common Name**	Common Rush
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part D - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Lantana camara*	**Common Name**	Lantana
Scientific Name	*Melia azedarach*	**Common Name**	China Berry
Scientific Name	*Melinis repens*	**Common Name**	Red Natal Grass
Scientific Name	*Urochloa decumbens*	**Common Name**	Signal Grass
Scientific Name	*Opuntia tomentosa*	**Common Name**	Velvet Tree Pear
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	
Scientific Name		**Common Name**	

Part E - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters per hectare)	**561.00**		
1	1.00	**26**	
2	2.60	**27**	
3	0.70	**28**	
4	5.30	**29**	
5	6.00	**30**	
6	1.80	**31**	
7	7.70	**32**	
8	0.50	**33**	
9	2.10	**34**	
10	1.10	**35**	
11	0.80	**36**	
12	2.30	**37**	
13	0.70	**38**	
14	4.70	**39**	
15	10.20	**40**	
16	2.10	**41**	
17	2.10	**42**	
18	4.40	**43**	
19		**44**	
20		**45**	
21		**46**	
22		**47**	
23		**48**	
24		**49**	
25		**50**	

Part F - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average

Ground Cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial gra	30%	10%	30%	35%	15%	24%
Native other grass	0%	0%	0%	0%	0%	
Native forbs and otl	5%	5%	0%	5%	0%	3%
Native shrubs	0%	0%	10%	0%	10%	4%
Non-native grass	0%	0%	0%	0%	0%	
Non native forbs an	5%	0%	20%	0%	0%	5%
Litter	60%	85%	40%	60%	75%	64%
Rock	0%	0%	0%	0%	0%	
Bare Ground	0%	0%	0%	0%	0%	
Cryptogram	0%	0%	0%	0%	0%	
Total	100%	100%	100%	100%	100%	100%

Part G- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	430	**Number of large eucalypt trees:**	*Total = 5 : Corymbia citriodora (470mm, 960mm) Eucalyptus carnea (520mm, 450mm) Eucalyptus propinqua (480mm)*
Non- Eucalypt Large tree DBH benchmark used:	na	**Number of large non eucalypt trees:**	na
Total Number Large Trees: per ha	10		

Median Tree Canopy Height Measurements	Canopy:	18	Sub-canopy:	15	Emergent:	NA

Percentage of ecologically dominant layer species regenerating:	100.0

Part H - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	71.7%	Sub-canopy:	38.20%	Emergent:	
Shrub canopy cover %	23.90%					

Layer	Start	End	Interval	Layer	Start	End	Interval
T1 *Corymbia citriodora*	0.0	2.8	2.8	**T2** *Eucalyptus crebra*	0.0	2.2	2.2
T1 *Corymbia citriodora*	5.4	11.6	6.2	**T2** *Allocasuarina torulosa + Corymbia citriodoria*	11.0	15.8	4.8
T1 *Corymbia citriodora*	15.3	26.5	11.2	**T2** *Eucalyptus acmenoides*	31.3	33.6	2.3
T1 *Corymbia citriodora*	33.5	45.1	11.6	**T2** *Eucalyptus acmenoides*	37.5	39.3	1.8
T1 *Corymbia citriodora*	49.2	54.6	5.4	**T2** *Corymbia citriodora*	41.4	44.9	3.5
T1 *Corymbia citriodora*	63.1	76.8	13.7	**T2** *Eucalyptus crebra*	45.3	52.8	7.5
T1Corymbia citriodora + *Eucalyptus carnea*	78.5	92.9	14.4	**T2** *Eucalyptus acmenoides*	52.8	55.4	2.6
T1 *Eucalyptus carnea*	93.6	100.0	6.4	**T2** *Corymbia citriodora*	62.2	69.1	6.9
T1			0.0	**T2** *Eucalyptus carnea*	70.6	74.5	3.9
T1			0.0	**T2** *Eucalyptus crebra*	85.9	88.6	2.7
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0
T1			0.0	**T2**			0.0

Layer	Start	End	Interval	Layer	Start	End	Interval
Shrub	0.0	1.3	1.3	**Shrub**	74.4	75.2	0.8
Shrub	14.6	19.9	5.3	**Shrub**	82.8	83.4	0.6
Shrub	20.0	23.1	3.1	**Shrub**			0.0
Shrub	24.9	25.6	0.7	**Shrub**			0.0
Shrub	27.6	30.9	3.3	**Shrub**			0.0
Shrub	59.0	60.9	1.9	**Shrub**			0.0
Shrub	63.8	65.0	1.2	**Shrub**			0.0
Shrub	65.3	67.7	2.4	**Shrub**			0.0
Shrub	70.1	73.4	3.3	**Shrub**			0.0

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present. If trees are in the same layer and continuous along the transect you can group them.

Part I: GHFF Stem Count

Species Name	Stem Count
Eucalyptus crebra	5
Corymbia intermedia	1
Eucalyptus carnea	16
Eyclayptus acmenoides	12
Corymbia citriodora	56
Eucalyptus propinqua	6
Total Recorded	96
Total Per hectare	480

Part J: SAT Survey Results

SAT Survey ID	No SAT Survey (Open paddock)			
Tree Number	**Scientific Name**	**Common Name**	**DBH**	**Scat (Y/N)**
1	*Eucalyptus carnea*	Broad Leaved Mahogany	250	Y
2	*Corymbia citriodora*	Spotted Gum	270	N
3	*Corymbia citriodora*	Spotted Gum	240	N
4	*Euclayptus crebra*	Narrow-leaved Ironbark	140	N
5	*Corymbia citriodora*	Spotted Gum	280	N
6	*Corymbia citriodora*	Spotted Gum	230	N
7	*Corymbia citriodora*	Spotted Gum	150	N

8	*Corymbia citriodora*	Spotted Gum	255	N
9	*Eucalyptus carnea*	Broad Leaved Mahogany	190	N
10	*Euclayptus crebra*	Narrow-leaved Ironbark	300	N
11	*Corymbia citriodora*	Spotted Gum	240	N
12	*Corymbia citriodora*	Spotted Gum	200	N
13	*Corymbia citriodora*	Spotted Gum	190	N
14	*Corymbia citriodora*	Spotted Gum	280	N
15	*Eucalyptus acmenoides*	White Mahogany	330	N
16	*Corymbia citriodora*	Spotted Gum	150	N
17	*Corymbia citriodora*	Spotted Gum	260	N
18	*Corymbia citriodora*	Spotted Gum	100	N
19	*Corymbia citriodora*	Spotted Gum	310	N
20	*Corymbia citriodora*	Spotted Gum	290	N
21	*Eucalyptus propinqua*	Grey gum	400	N
22	*Corymbia citriodora*	Spotted Gum	125	N
23	*Corymbia citriodora*	Spotted Gum	340	N
24	*Eucalyptus carnea*	Broad Leaved Mahogany	160	N
25	*Corymbia citriodora*	Spotted Gum	150	N
26	*Corymbia citriodora*	Spotted Gum	300	N
27	*Corymbia citriodora*	Spotted Gum	440	N
28	*Corymbia citriodora*	Spotted Gum	230	N
29	*Corymbia citriodora*	Spotted Gum	340	N
30	*Corymbia citriodora*	Spotted Gum	175	N
Total Recorded				1
Total Percenatge Recorded				3%
Total Use (Based on East Coast Medium-High)				Low

Attach Landscape Photos Here

North



South





East



West



Appendix C

GHFF FHA Tables

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T3									
Corymbia citriodora	0.65	x	x					1	
Eucalyptus crebra	0.65	x	x					1	
Eucalyptus melanophloia	0.49	x	x	x	x	x	x		
Alphitonia excelsa	0.0								
Lophostemon suaveolens	0.4				x		x		
Average	**0.4380**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**2**	
Total Species:	5								
GHFF Species:	4								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T6									
Corymbia citriodora	0.65	x	x					**1**	
Eucalyptus crebra	0.65	x	x					**1**	
Corymbia intermedia	0.86			x	x		x	**1**	
Corymbia tesselaris	0.4			x	x		x		
Eucalyptus melanophloia	0.49	x	x	x	x	x	x		
Average	**0.610**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**3**	
Total Species:	5								
GHFF Species:	5								
Important Species:	3								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		7
T2									
Lophostemon confertus	0.46				x		x		
Corymbia citriodora	0.65	x	x					1	
Eucalyptus crebra	0.65	x	x					1	
Average	**0.587**	**Yes**	**Yes**	**No**	**Yes**	**No**	**Yes**	**2**	
Total Species:	3								
GHFF Species:	3								
Important Species:	2								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.12.5	Density:	**680**
Score	**Lower**	**Upper**
2	0	85
4	86	368
6	369	623
8	624	666
10	667	694
8	695	737
6	738	992
4	993	1275
2	>1276	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T26									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Eucalyptus acmenoides	0.65			**x**			**x**	**1**	
Erythrina vespertilio	0.00								
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Corymbia intermedia	0.86			**x**	**x**		**x**	**1**	
Average	**0.5350**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**4**	
Total Species:	6								
GHFF Species:	5								
Important Species:	4								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T27									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus cerbra	0.65	**x**	**x**					**1**	
Eucalyptus acmenoides	0.65			**x**			**x**	**1**	
Corymbia intermedia	0.86			**x**	**x**		**x**	**1**	
Average	**0.703**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**4**	
Total Species:	4								
GHFF Species:	4								
Important Species:	4								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T31									
Eucalyptus crebra	0.65	x	x					1	
Corymbia intermedia	0.86			x	x		x	1	
Eucalyptus carnea	0.53		x	x		x	x		
Eyclayptus acmenoides	0.65			x			x	1	
Corymbia citriodora	0.65	x	x					1	
Eucalyptus propinqua	0.34			x	x		x		
Average	**0.613**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**4**	
Total Species:	6								
GHFF Species:	6								
Important Species:	4								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.11.5e (No 12.11.5 technical descriptio	Density:	733
Score	**Lower**	**Upper**
2	0	92
4	93	397
6	398	672
8	673	718
10	719	748
8	749	794
6	795	1069
4	1070	1374
2	>1375.375	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T22									
Corymbia citriodora	0.65	x	x					1	
Eucalyptus moluccana	0.50			x				1	
Eucalyptus tereticornis	0.63	x	x	x		x	x	1	
Average	**0.5933**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**3**	
Total Species:	3								
GHFF Species:	3								
Important Species:	3								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T28									
Casuarina cunninghamii	0.00								
Eucalyptus tereticornis	0.63	x	x	x		x	x	1	
Mallotus philippensis	0.00								
Glochidion ferdinandi	0.00								
Average	**0.158**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**1**	
Total Species:	4								
GHFF Species:	1								
Important Species:	1								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.3.7	Density:	427
Score	**Lower**	**Upper**
2	0	53
4	54	231
6	232	391
8	392	418
10	419	436
8	437	463
6	464	623
4	624	801
2	>801.625	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T11									
Corymbia tessellaris	0.40			x	x		x		
Eucalyptus melanophloia	0.49	x	x	x	x	x	x		
Average	**0.4450**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**0**	
Total Species:	2								
GHFF Species:	2								
Important Species:	0								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T12									
Corymbia citridora	0.65	x	x					**1**	
Corymbia tessellaris	0.40			x	x		x		
Average	**0.525**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**1**	
Total Species:	2								
GHFF Species:	2								
Important Species:	1								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.9-10.2	Density:	240
Score	**Lower**	**Upper**
2	0	30
4	31	130
6	131	220
8	221	235
10	236	245
8	246	260
6	261	350
4	351	450
2	>451	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		0
T19									
No Trees	0.0								
Average	**0.0000**	**No**	**No**	**No**	**No**	**No**	**No**	**0**	
Total Species:	0								
GHFF Species:	0								
Important Species:	0								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		0
T25									
No Trees	0.0								
Average	**0.000**	**No**	**No**	**No**	**No**	**No**	**No**	**0**	
Total Species:	0								
GHFF Species:	0								
Important Species:	0								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.12.5 (No Tech descrip for12.12.12)	Density:	680
Score	**Lower**	**Upper**
2	0	85
4	86	368
6	369	623
8	624	666
10	667	694
8	695	737
6	738	992
4	993	1275
2	>1276	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T4									
Eucalyptus tereticornis	0.63	**x**	**x**	**x**		**x**	**x**	**1**	
Lophostemon suaveolens	0.40				**x**		**x**		
Average	**0.5150**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**1**	
Total Species:	2								
GHFF Species:	2								
Important Species:	1								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T7									
Eucalyptus tereticornis	0.63	**x**	**x**	**x**		**x**	**x**	**1**	
Corymbia citriodora	0.65	**x**	**x**					**1**	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Eucalyptus melanophloia	0.49	**x**	**x**	**x**	**x**	**x**	**x**		
Average	**0.543**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**2**	
Total Species:	4								
GHFF Species:	4								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T14									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	x	x					1	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Average	**0.567**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**2**	
Total Species:	3								
GHFF Species:	3								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		0
T15									
No Trees	0								
Average	**0.000**	**No**	**No**	**No**	**No**	**No**	**No**	**0**	
Total Species:	0								
GHFF Species:	0								
Important Species:	0								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		0
T15									
No Trees	0								
Average	**0.000**	**No**	**No**	**No**	**No**	**No**	**No**	**0**	
Total Species:	0								
GHFF Species:	0								
Important Species:	0								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.12.5	Density:	**680**
Score	**Lower**	**Upper**
2	0	85
4	86	368
6	369	623
8	624	666
10	667	694
8	695	737
6	738	992
4	993	1275
2	>1276	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T29									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Corymbia intermedia	0.86			**x**	**x**		**x**	**1**	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Eucalyptus melanophloia	0.49	**x**	**x**	**x**	**x**	**x**	**x**		
Average	**0.6100**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**3**	
Total Species:	5								
GHFF Species:	5								
Important Species:	3								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T30									
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Corymbia intermedia	0.86			**x**	**x**		**x**	**1**	
Eucalyptus melanophloia	0.49	**x**	**x**	**x**	**x**	**x**	**x**		
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Corymbia citriodora	0.65	**x**	**x**					**1**	
Average	**0.610**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**3**	
Total Species:	5								
GHFF Species:	5								
Important Species:	3								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.11.5e (No 12.11.5 technical descriptio	Density:	733
Score	**Lower**	**Upper**
2	0	92
4	93	397
6	398	672
8	673	718
10	719	748
8	749	794
6	795	1069
4	1070	1374
2	>1375.375	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T1									
Eucalyptus tereticornis	0.63	**x**	**x**	**x**		**x**	**x**	**1**	
Corymbia citriodora	0.65	**x**	**x**					**1**	
Average	**0.6400**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**2**	
Total Species:	2								
GHFF Species:	2								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T13									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Alphitonia excelsa	0.00								
Average	**0.425**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**2**	
Total Species:	4								
GHFF Species:	3								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T16									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Eucalyptus melanophloia	0.49	**x**	**x**	**x**	**x**	**x**	**x**		
Lophostemon confertus	0.46				x		x		
Average	**0.563**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**2**	
Total Species:	4								
GHFF Species:	4								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T18									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Corymbia intermedia	0.86			**x**	**x**		**x**	**1**	
Average	**0.640**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**3**	
Total Species:	4								
GHFF Species:	4								
Important Species:	3								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.12.5	Density:	**680**
Score	**Lower**	**Upper**
2	0	85
4	86	368
6	369	623
8	624	666
10	667	694
8	695	737
6	738	992
4	993	1275
2	>1276	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		4
T5									
Corymbia citriodora	0.65	x	x					1	
Eucalyptus crebra	0.65	x	x					1	
Average	**0.6500**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**2**	
Total Species:	2								
GHFF Species:	2								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		4
T10									
Corymbia citriodora	0.65	x	x					1	
Eucalyptus crebra	0.65	x	x					1	
Average	**0.650**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**2**	
Total Species:	2								
GHFF Species:	2								
Important Species:	2								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		4
T21									
Corymbia citriodora	0.65	x	x					1	
Average	**0.650**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**1**	
Total Species:	1								
GHFF Species:	1								
Important Species:	1								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T23									
Corymbia citriodora	0.65	x	x					1	
Angophora leiocrapa	0.35			x			x		
Eucalyptus tereticornis	0.63	x	x	x		x	x	1	
Eucalyptus crebra	0.65	x	x					1	
Corymbia tessellaris	0.40			x	x		x		
Corymbia intermedia	0.86			x	x		x	1	
Average	**0.590**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**4**	
Total Species:	6								
GHFF Species:	6								
Important Species:	4								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.9-10.2	Density:	240
Score	**Lower**	**Upper**
2	0	30
4	31	130
6	131	220
8	221	235
10	236	245
8	246	260
6	261	350
4	351	450
2	>451	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		5.5
T20									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Casuarina cunninghamii	0.0								
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Eucalyptus moluccana	0.5			**x**				**1**	
Melaleuca viminalis	0.0								
Ficus coronata	0.0	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**3**	
Average	**0.3000**								
Total Species:	6								
GHFF Species:	3								
Important Species:	3								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T24									
Corymbia citriodora	0.65	**x**	**x**					**1**	
Eucalyptus crebra	0.65	**x**	**x**					**1**	
Corymbia tessellaris	0.40			**x**	**x**		**x**		
Eucalyptus tereticornis	0.63	**x**	**x**	**x**		**x**	**x**	**1**	
Eucalyptus moluccana	0.5			**x**				**1**	
Average	**0.566**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**4**	
Total Species:	5								
GHFF Species:	5								
Important Species:	4								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

Stem Density Scoring

RE: 12.3.7	Density:	**427**
Score	**Lower**	**Upper**
2	0	53
4	54	231
6	232	391
8	392	418
10	419	436
8	437	463
6	464	623
4	624	801
2	>801.625	

Site Condition

Vegetation Description	Score
Cat X	5
Cat C	10
Cat B	20

Canopy Species Richness	Score
0 GHFF Foraging Species	0
1 - 3 GHFF Foraging Species	5
4 - 6 GHFF Foraging Species	10
> 6 GHFF Foraging Species	20

Quality of Foraging Species	Score
0 Significant Foraging Species	0
1 - 3 Significant Foraging Species	5
4 - 6 Significant Foraging Species	10
> 6 Significant Foraging Species	20

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		8.5
T8									
Eucalyptus tereticornis	0.63	x	x	x		x	x	1	
Melia azedarach	0.0								
Average	**0.3150**	**Yes**	**Yes**	**Yes**		**Yes**	**Yes**	**1**	
Total Species:	2								
GHFF Species:	1								
Important Species:	1								

Flower Scores	Wt p*r	Food shortages Jul-Sep	Pregnancy Jul-Nov	Lactation Oct-Mar	Mating & conception Dec-May	Migration paths All year	Fruit industries Aug-Mar	Quality of foraging habitat (1 = Wt p*r ≥0.65)	
		2.5	1.5	1.5	1.5	1.5	1.5		10
T9									
Corymbia tessellaris	0.40			x	x		x		
Grevillea robusta	1.0							1	
Eucalyptus tereticornis	0.63	x	x	x		x	x	1	
Casuarina cunninghamii	0.0								
Average	**0.508**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**2**	
Total Species:	4								
GHFF Species:	3								
Important Species:	2								

Site Context

Size of Patch	
< 5 hectares	0
5-25 hectares	2
26-100 hectares	5
101-200 hectares	7
> 200 hectares	10

Connectedness	
Active GHFF camps within 20 km	
<1 camps	0
1 - 3 camps	3
4 - 6 camps	6
> 6 camps	10

Context	
% GHFF Foraging habitat within 20km	
<10%	0
10 - 30%	3
31 - 75%	6
> 75%	10

Ecological Corridors	
Not within ecological corridor	0
Sharing a common boundary	6
Within an ecological corridor	10

Threats to species	
High level threat	1
Moderate Level Threat	5
Low Level Threat	10

Role of site location to overall population	
Active Lvl 3 GHFF Camp within 20km	
1 - 2 camps	1
3 - 4 camps	6
> 5 camps	10

Species Stocking Rate

Stem Density Scoring

RE: 12.11.5e (No 12.11.5 technical descriptio	Density:	733
Score	**Lower**	**Upper**
2	0	92
4	93	397
6	398	672
8	673	718
10	719	748
8	749	794
6	795	1069
4	1070	1374
2	>1375.375	

Appendix D

Greater Glider MHQA Tables

Assessment Unit - Regional Ecosystem	AU 1 - Cat B RE12.12.5						
Greater Glider	**RE12.12.5 Benchmark**	**Transect 3**	**Transect 6**	**Transect 2**	**Average of Transect(s)**	**% Benchmark**	**Score**
SITE CONDITION							
Recruitment of woody perennial species in EDL	**100**	75	100	80	**85.00**	85.00	**5**
Native plant species richness - trees	**5**	6	5	5	**5.33**	106.67	**5**
Native plant species richness - shrubs	**9**	4	6	3	**4.33**	48.15	**2.5**
Native plant species richness - grasses	**11**	5	6	8	**6.33**	57.58	**2.5**
Native plant species richness - forbs	**17**	8	6	11	**8.33**	49.02	**2.5**
Tree canopy height (Canopy)*	**22**	21	22	22	**21.67**	98.48	5
Tree canopy height (Sub-canopy)*	**9**	11	10	9	**10.00**	111.11	5
						***Average tree canopy height**	**5**
Tree canopy cover (Canopy)**	**41**	44.1	34.5	64.5	**47.70**	116.34	5
Tree canopy cover (Sub-canopy)**	**10**	22.9	33	31.3	**29.07**	290.67	3
						****Average tree canopy cover**	**4**
Shrub canopy cover	**3**	7	4.7	4.5	**5.40**	180.00	**5**
Native grass cover*	**35**	19	25	34	**26.00**	74.29	**3**
Organic litter*	**35**	22	11	19	**17.33**	49.52	**3**
Large trees (euc plus non-euc) (per ha)	**29**	14	8	6	**9.33**	32.18	**5**
Coarse woody debris (per ha)	**578**	142	72	689	**301.00**	52.08	**5**
Non-native plant cover	**0**	45	70	9	**41.33**	41.33	**3**
Quality and availability of food and foraging habitat	**NA**	10	10	10	**10**	-	**10**
Quality and availability of shelter	**NA**	5	5	5	**5**	-	**5**
						Site Condition Score (/100)	**65.25**
						Overall Site Condition Score - out of 3	**1.96**
SITE CONTEXT							
Size of patch		10	10	10	10		**10**
Connectedness		4	4	4	4		**4**
Context		4	4	4	4		**4**
Ecological Corridors		6	6	6	6		**6**
Role of site location to species overall population in the state		5	5	5	5		**5**
Threats to the species		7	7	7	7		**7**
Species mobility capacity		7	7	7	7		**7**
						Site Context Score (/56)	**43**
						Overall Site Context Score - out of 3	**2.30**
SPECIES STOCKING RATE							
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	15	15	15	15		**15**
						Species Stocking Rate Score (/70)	**0.21**
						Overall Species Stocking Rate Score - out of 4	**0.86**
Overall Assessment Unit Score							**5.12**

5									
5									
2.5									
2.5									
2.5									
5									
4									
5									
3									
3									
5									
5									
3									25.25
10								116.34	20
5								1.83	20
65.5									65.25

Species Stocking Rate (SSR)								
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		5	Adjacent
		No	Yes - adjacent		Yes - on site			
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		5	Dispersal
		Not habitat	Dispersal	Foraging	Breeding			
Approximate density (per ha)	Score	0	10	20	30		0	No usage
		0%	low	med	high			
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15	5	See below table
		0	5 - 15	20 - 35		40 - 45		
Total SRR score (out of 70)		15						
SRR Score (out of 4)	**0.857142857**							

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 2 - Cat B RE12.11.5/12.11.3						
Greater Glider	**RE12.11.5 Benchmark**	**Transect 26**	**Transect 27**	**Transect 31**	**Average of Transect(s)**	**% Benchmark**	**Score**
SITE CONDITION							
Recruitment of woody perennial species in EDL	**100**	100	20	100	**73.33**	73.33	**3**
Native plant species richness - trees	**7**	7	5	8	**6.67**	95.24	**5**
Native plant species richness - shrubs	**11**	5	4	9	**6.00**	54.55	**2.5**
Native plant species richness - grasses	**8**	4	5	9	**6.00**	75.00	**2.5**
Native plant species richness - forbs	**17**	6	10	14	**10.00**	58.82	**2.5**
Tree canopy height (Canopy)*	**24**	23	23	18	**21.33**	88.89	5
Tree canopy height (Sub-canopy)*	**10**	15	12	15	**14.00**	140.00	5
						***Average tree canopy height**	**5**
Tree canopy cover (Canopy)**	**60**	65.5	67.1	71.7	**68.10**	113.50	5
Tree canopy cover (Sub-canopy)**	**14**	23.6	21.1	38.2	**27.63**	197.38	5
						****Average tree canopy cover**	**5**
Shrub canopy cover	**14**	6.5	6.3	23.9	**12.23**	87.38	**5**
Native grass cover*	**30**	42	31	24	**32.33**	107.78	**5**
Organic litter*	**50**	30	29	64	**41.00**	82.00	**5**
Large trees (euc plus non-euc) (per ha)	**26**	8	10	10	**9.33**	35.90	**5**
Coarse woody debris (per ha)	**457**	392	100	561	**351.00**	76.81	**5**
Non-native plant cover	**0**	11	15	5	**10.33**	10.33	**5**
Quality and availability of food and foraging habitat	**N/A**	10	10	10	**10**	-	**10**
Quality and availability of shelter	**N/A**	10	10	10	**10**	-	**10**
						Site Condition Score (/100)	**87.75**
						Overall Site Condition Score - out of 3	**2.63**
SITE CONTEXT							
Size of patch		10	10	10	10		**10**
Connectedness		4	4	4	4		**4**
Context		4	4	4	4		**4**
Ecological Corridors		6	6	6	6		**6**
Role of site location to species overall population in the state		5	5	5	5		**5**
Threats to the species		7	7	7	7		**7**
Species mobility capacity		7	7	7	7		**7**
						Site Context Score (/56)	**43**
						Overall Site Context Score - out of 3	**2.30**
SPECIES STOCKING RATE							
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	15	15	15	15		**15**
						Species Stocking Rate Score (/70)	**0.21**
						Overall Species Stocking Rate Score - out of 4	**0.86**
Overall Assessment Unit Score							**5.79**

3									
5									
2.5									
2.5									
2.5									
5									
5									
5									
5									
5									
5									
5									27.75
10								113.50	20
10								2.63	40
75.5									87.75

Species Stocking Rate (SSR)								
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		5	Adjacent
		No	Yes - adjacent		Yes - on site			
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		5	Dispersal
		Not habitat	Dispersal	Foraging	Breeding			
Approximate density (per ha)	Score	0	10	20	30		0	No usage
		0%	low	med	high			
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5	See below table
		0	5 - 15	20 - 35		40 - 45		
Total SRR score (out of 70)		15						
SRR Score (out of 4)	**0.857142857**							

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 3 - Cat C RE 12.3.7 - mapped as 12.11.5/12.11.3 but not characteristic					
Greater Glider	**RE12.3.7 Benchmark**	**Transect 22**	**Transect 28**	**Average of Transect(s)**	**% Benchmark**	**Score**
SITE CONDITION						
Recruitment of woody perennial species in EDL	**100**	100	0	**50.00**	50.00	**3**
Native plant species richness - trees	**6**	5	4	**4.50**	75.00	**2.5**
Native plant species richness - shrubs	**8**	4	4	**4.00**	50.00	**2.5**
Native plant species richness - grasses	**6**	6	1	**3.50**	58.33	**2.5**
Native plant species richness - forbs	**17**	5	3	**4.00**	23.53	**0**
Tree canopy height (Canopy)*	**22**	17	19	**18.00**	81.82	5
Tree canopy height (Sub-canopy)*	**12**	10	11	**10.50**	87.50	5
					***Average tree canopy height**	**5**
Tree canopy cover (Canopy)**	**31**	40.2	67.1	**53.65**	173.06	5
Tree canopy cover (Sub-canopy)**	**23**	23.9	7	**15.45**	67.17	5
					****Average tree canopy cover**	**5**
Shrub canopy cover	**22**	10.6	2.8	**6.70**	30.45	**3**
Native grass cover*	**8**	77	6	**41.50**	518.75	**5**
Organic litter*	**27**	2	0	**1.00**	3.70	**0**
Large trees (euc plus non-euc) (per ha)	**60**	10	36	**23.00**	38.33	**5**
Coarse woody debris (per ha)	**667**	0	188	**94.00**	14.09	**2**
Non-native plant cover	**0**	15	95	**55.00**	55.00	**0**
Quality and availability of food and foraging habitat	**N/A**	10	10	**10**	-	**10**
Quality and availability of shelter	**N/A**	10	10	**10**	-	**10**
					Site Condition Score (/100)	**77.75**
					Overall Site Condition Score - out of 3	**2.33**
SITE CONTEXT						
Size of patch		10	10	10		**10**
Connectedness		4	4	4		**4**
Context		4	4	4		**4**
Ecological Corridors		6	6	6		**6**
Role of site location to species overall population in the state		5	5	5		**5**
Threats to the species		7	7	7		**7**
Species mobility capacity		7	7	7		**7**
					Site Context Score (/56)	**43**
					Overall Site Context Score - out of 3	**2.30**
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	15	15	15		**15**
					Species Stocking Rate Score (/70)	**0.21**
					Overall Species Stocking Rate Score - out of 4	**0.86**
Overall Assessment Unit Score						**5.49**

3							
2.5							
2.5							
2.5							
0							
5							
5							
3							
5							
0							
5							
2							
0						17.75	
10		173.06		20			
10		3.93		40			
55.5				77.75			

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15	
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		15					
SRR Score (out of 4)	**0.857142857**						

5	Adjacent
5	Dispersal
0	No usage
5	See below table

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton f
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 4 - Cat X RE12.9-10.2					
Greater Glider	RE12.9-10.2 Benchmark	Transect 11	Transect 12	Average of Transect(s)	% Benchmark	Score
SITE CONDITION						
Recruitment of woody perennial species in EDL	100	0	100	50.00	50.00	3
Native plant species richness - trees	6	2	2	2.00	33.33	2.5
Native plant species richness - shrubs	7	2	2	2.00	28.57	2.5
Native plant species richness - grasses	7	4	4	4.00	57.14	2.5
Native plant species richness - forbs	13	3	9	6.00	46.15	2.5
Tree canopy height (Canopy)*	21	0	18	9.00	42.86	3
Tree canopy height (Sub-canopy)*	12	11	9	10.00	83.33	5
					*Average tree canopy height	4
Tree canopy cover (Canopy)**	64	0	27.9	13.95	21.80	2
Tree canopy cover (Sub-canopy)**	20	6.4	12.4	9.40	47.00	2
					**Average tree canopy cover	2
Shrub canopy cover	6	3.2	4.3	3.75	62.50	5
Native grass cover*	21	67	41	54.00	257.14	5
Organic litter*	48	0	0	0.00	0.00	0
Large trees (euc plus non-euc) (per ha)	38	0	6	3.00	7.89	5
Coarse woody debris (per ha)	506	63	170	116.50	23.02	2
Non-native plant cover	0	40	55	47.50	47.50	3
Quality and availability of food and foraging habitat	NA	1	1	1	-	1
Quality and availability of shelter	NA	5	5	5	-	5
					Site Condition Score (/100)	41.5
					Overall Site Condition Score - out of 3	1.25
SITE CONTEXT						
Size of patch		10	10	10		10
Connectedness		4	4	4		4
Context		4	4	4		4
Ecological Corridors		6	6	6		6
Role of site location to species overall population in the state		5	5	5		5
Threats to the species		7	7	7		7
Species mobility capacity		4	4	4		4
					Site Context Score (/56)	40
					Overall Site Context Score - out of 3	2.14
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	10	10	10		10
					Species Stocking Rate Score (/70)	0.14
					Overall Species Stocking Rate Score - out of 4	0.57
Overall Assessment Unit Score						3.96

3							
2.5							
2.5							
2.5							
2.5							
2.5							
3							
5							
4							
2							
2							
5							
5							
0							
5							
2							
3							19.5
1						21.80	2
5						1.93	20
45							41.5

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		10				
SRR Score (out of 4)	**0.571428571**					

5	Adjacent	
0	Not habitat	
0	No usage	
5	See below table	

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 5 - Cat X RE12.12.12					
Greater Glider	RE12.12.12 Benchmark	Transect 19	Transect 25	Average of Transect(s)	% Benchmark	Score
SITE CONDITION						
Recruitment of woody perennial species in EDL	100	0	0	0.00	0.00	0
Native plant species richness - trees	4	0	2	1.00	25.00	2.5
Native plant species richness - shrubs	3	1	0	0.50	16.67	0
Native plant species richness - grasses	9	4	6	5.00	55.56	2.5
Native plant species richness - forbs	28	1	3	2.00	7.14	0
Tree canopy height (Canopy)*	22	0	0	0.00	0.00	0
Tree canopy height (Sub-canopy)*	11	0	0	0.00	0.00	0
					*Average tree canopy height	0
Tree canopy cover (Canopy)**	31	0	0	0.00	0.00	0
Tree canopy cover (Sub-canopy)**	12	0	0	0.00	0.00	0
					**Average tree canopy cover	0
Shrub canopy cover	5	0.6	0	0.30	6.00	0
Native grass cover*	40	65	60	62.50	156.25	5
Organic litter*	35	0	10	5.00	14.29	3
Large trees (euc plus non-euc) (per ha)	60	0	2	1.00	1.67	5
Coarse woody debris (per ha)	500	0	0	0.00	0.00	0
Non-native plant cover	0	5	65	35.00	35.00	3
Quality and availability of food and foraging habitat	N/A	1	1	1	-	1
Quality and availability of shelter	N/A	10	10	10	-	10
					Site Condition Score (/100)	52.5
					Overall Site Condition Score - out of 3	1.58
SITE CONTEXT						
Size of patch		10	10	10		10
Connectedness		4	4	4		4
Context		4	4	4		4
Ecological Corridors		6	6	6		6
Role of site location to species overall population in the state		5	5	5		5
Threats to the species		7	7	7		7
Species mobility capacity		4	4	4		4
					Site Context Score (/56)	40
					Overall Site Context Score - out of 3	2.14
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	10	10	10		10
					Species Stocking Rate Score (/70)	0.14
					Overall Species Stocking Rate Score - out of 4	0.57
Overall Assessment Unit Score						4.29

0							
2.5							
0							
2.5							
0							
0							
0							
0							
5							
3							
5							
0							
3							10.5
1						0.00	2
10						2.43	40
32							52.5

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		10				
SRR Score (out of 4)	**0.571428571**					

5	Adjacent	
0	Not habitat	
0	No usage	
5	See below table	

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 6 - Cat X RE12.12.5								
Greater Glider	RE12.12.5 Benchmark	Transect 4	Transect 7	Transect 14	Transect 15	Transect 17	Average of Transect(s)	% Benchmark	Score
SITE CONDITION									
Recruitment of woody perennial species in EDL	100	0	0	100	0	0	20.00	20.00	3
Native plant species richness - trees	5	2	5	3	0	0	2.00	40.00	2.5
Native plant species richness - shrubs	9	0	2	2	0	0	0.80	8.89	0
Native plant species richness - grasses	11	5	4	6	4	6	5.00	45.45	2.5
Native plant species richness - forbs	17	1	2	8	1	0	2.40	14.12	0
Tree canopy height (Canopy)*	22	23	19	18	0	0	12.00	54.55	3
Tree canopy height (Sub-canopy)*	9	12	9	12	0	0	6.60	73.33	5
							*Average tree canopy height		4
Tree canopy cover (Canopy)**	41	14.2	24.1	17.6	0	0	11.18	27.27	2
Tree canopy cover (Sub-canopy)**	10	0	10.9	16.4	0	0	5.46	54.60	5
							**Average tree canopy cover		3.5
Shrub canopy cover	3	0	0.4	1.8	0	0	0.44	14.67	3
Native grass cover*	35	85	69	72	79	64	73.80	210.86	5
Organic litter*	35	0	14	2	0	0	3.20	9.14	0
Large trees (euc plus non-euc) (per ha)	29	4	2	2	0	0	1.60	5.52	5
Coarse woody debris (per ha)	578	0	34	0	0	0	6.80	1.18	0
Non-native plant cover	0	18	20	10	15	20	16.60	16.60	5
Quality and availability of food and foraging habitat	NA	1	1	1	1	1	1	-	1
Quality and availability of shelter	NA	1	1	1	1	1	1	-	1
							Site Condition Score (/100)		22.75
							Overall Site Condition Score - out of 3		0.68
SITE CONTEXT									
Size of patch		10	10	10	10	10	10		10
Connectedness		4	4	4	4	4	4		4
Context		4	4	4	4	4	4		4
Ecological Corridors		6	6	6	6	6	6		6
Role of site location to species overall population in the state		5	5	5	5	5	5		5
Threats to the species		7	7	7	7	7	7		7
Species mobility capacity		4	4	4	4	4	4		4
							Site Context Score (/56)		40
							Overall Site Context Score - out of 3		2.14
SPECIES STOCKING RATE									
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	10	10	10	10	10	10		10
							Species Stocking Rate Score (/70)		0.14
							Overall Species Stocking Rate Score - out of 4		0.57
Overall Assessment Unit Score									3.40

3										
2.5										
0										
2.5										
0										
4										
3.5										
3										
5										
0										
5										
0										
5										16.75
1									27.27	2
1									0.69	4
35.5										22.75

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		10				
SRR Score (out of 4)	**0.571428571**					

5	Adjacent	
0	Not habitat	
0	No usage	
5	See below table	

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 7 - Cat C RE1211.5/12.11.3					
Greater Glider	**RE12.11.5 Benchmark**	**Transect 29**	**Transect 30**	**Average of Transect(s)**	**% Benchmark**	**Score**
SITE CONDITION						
Recruitment of woody perennial species in EDL	**100**	100	100	**100.00**	100.00	**5**
Native plant species richness - trees	**7**	6	6	**6.00**	85.71	**2.5**
Native plant species richness - shrubs	**11**	6	2	**4.00**	36.36	**2.5**
Native plant species richness - grasses	**8**	4	4	**4.00**	50.00	**2.5**
Native plant species richness - forbs	**17**	6	5	**5.50**	32.35	**2.5**
Tree canopy height (Canopy)*	**24**	19	20	**19.50**	81.25	5
Tree canopy height (Sub-canopy)*	**10**	9	9	**9.00**	90.00	5
					***Average tree canopy height**	**5**
Tree canopy cover (Canopy)**	**60**	39.1	46	**42.55**	70.92	5
Tree canopy cover (Sub-canopy)**	**14**	15.3	21.9	**18.60**	132.86	5
					****Average tree canopy cover**	**5**
Shrub canopy cover	**14**	1.2	0	**0.60**	4.29	**0**
Native grass cover*	**30**	17	11	**14.00**	46.67	**1**
Organic litter*	**50**	8	8	**8.00**	16.00	**3**
Large trees (euc plus non-euc) (per ha)	**26**	12	2	**7.00**	26.92	**5**
Coarse woody debris (per ha)	**457**	360	100	**230.00**	50.33	**5**
Non-native plant cover	**0**	45	55	**50.00**	50.00	**3**
Quality and availability of food and foraging habitat	**N/A**	10	10	**10**	-	**10**
Quality and availability of shelter	**N/A**	1	1	**1**	-	**1**
					Site Condition Score (/100)	**45**
					Overall Site Condition Score - out of 3	**1.35**
SITE CONTEXT						
Size of patch		10	10	10		**10**
Connectedness		4	4	4		**4**
Context		4	4	4		**4**
Ecological Corridors		6	6	6		**6**
Role of site location to species overall population in the state		5	5	5		**5**
Threats to the species		7	7	7		**7**
Species mobility capacity		7	7	7		**7**
					Site Context Score (/56)	**43**
					Overall Site Context Score - out of 3	**2.30**
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	15	15	15		**15**
					Species Stocking Rate Score (/70)	**0.21**
					Overall Species Stocking Rate Score - out of 4	**0.86**
Overall Assessment Unit Score						**4.51**

5						
2.5						
2.5						
2.5						
2.5						
5						
5						
5						
0						
1						
3						
5						
5						
3						21
10					70.92	20
1					0.15	4
53						45

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		15					
SRR Score (out of 4)	**0.857142857**						

5	Adjacent
5	Dispersal
0	No usage
5	See below table

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 8 - Cat C RE12.12.5							
Greater Glider	**RE12.12.5 Benchmark**	**Transect 1**	**Transect 13**	**Transect 16**	**Transect18**	**Average of Transect(s)**	**% Benchmark**	**Score**
SITE CONDITION								
Recruitment of woody perennial species in EDL	**100**	100	100	100	33.3	**83.33**	83.33	**5**
Native plant species richness - trees	**5**	3	4	4	5	**4.00**	80.00	**2.5**
Native plant species richness - shrubs	**9**	1	7	6	4	**4.50**	50.00	**2.5**
Native plant species richness - grasses	**11**	6	4	7	5	**5.50**	50.00	**2.5**
Native plant species richness - forbs	**17**	1	10	7	9	**6.75**	39.71	**2.5**
Tree canopy height (Canopy)*	**22**	22	18	19	19	**19.50**	88.64	5
Tree canopy height (Sub-canopy)*	**9**	8	9	9	10	**9.00**	100.00	5
							***Average tree canopy height**	**5**
Tree canopy cover (Canopy)**	**41**	49.4	26.8	53.2	44.9	**43.58**	106.28	5
Tree canopy cover (Sub-canopy)**	**10**	0	28	28.4	25	**20.35**	203.50	3
							****Average tree canopy cover**	**4**
Shrub canopy cover	**3**	0.6	11	9.7	3.2	**6.13**	204.17	**3**
Native grass cover*	**35**	66	59	38	52	**53.75**	153.57	**5**
Organic litter*	**35**	1	11	24	17	**13.25**	37.86	**3**
Large trees (euc plus non-euc) (per ha)	**29**	6	4	12	4	**6.50**	22.41	**5**
Coarse woody debris (per ha)	**578**	18	34	233	254	**134.75**	23.31	**2**
Non-native plant cover	**0**	15	35	80	15	**36.25**	36.25	**3**
Quality and availability of food and foraging habitat	**NA**	10	10	10	10	**10**	-	**10**
Quality and availability of shelter	**NA**	5	5	5	5	**5**	-	**5**
							Site Condition Score (/100)	**62.5**
							Overall Site Condition Score - out of 3	**1.88**
SITE CONTEXT								
Size of patch		10	10	10	10	10		**10**
Connectedness		4	4	4	4	4		**4**
Context		4	4	4	4	4		**4**
Ecological Corridors		6	6	6	6	6		**6**
Role of site location to species overall population in the state		5	5	5	5	5		**5**
Threats to the species		7	7	7	7	7		**7**
Species mobility capacity		7	7	7	7	7		**7**
							Site Context Score (/56)	**43**
							Overall Site Context Score - out of 3	**2.30**
SPECIES STOCKING RATE								
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	**70**	15	15	15	15	15		**15**
							Species Stocking Rate Score (/70)	**0.21**
							Overall Species Stocking Rate Score - out of 4	**0.86**
Overall Assessment Unit Score								**5.04**

Species Stocking Rate (SSR)								
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		5	Adjacent
		No	Yes - adjacent		Yes - on site			
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		5	Dispersal
		Not habitat	Dispersal	Foraging	Breeding			
Approximate density (per ha)	Score	0	10	20	30		0	No usage
		0%	low	med	high			
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5	See below table
		0	5 - 15	20 - 35		40 - 45		
Total SRR score (out of 70)		15						
SRR Score (out of 4)	**0.857142857**							

***SSR Supplementary Table**					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 9 - Cat C RE12.9-10.2							
Greater Glider	RE12.9-10.2 Benchmark	Transect 5	Transect 10	Transect 21	Transect 23	Average of Transect(s)	% Benchmark	Score
SITE CONDITION								
Recruitment of woody perennial species in EDL	100	66.7	100	100	100	91.68	91.68	5
Native plant species richness - trees	6	3	4	3	6	4.00	66.67	2.5
Native plant species richness - shrubs	7	7	4	4	4	4.75	67.86	2.5
Native plant species richness - grasses	7	5	4	2	6	4.25	60.71	2.5
Native plant species richness - forbs	13	11	4	7	5	6.75	51.92	2.5
Tree canopy height (Canopy)*	21	22	22	21	18	20.75	98.81	5
Tree canopy height (Sub-canopy)*	12	11	8	7	12	9.50	79.17	5
							*Average tree canopy height	5
Tree canopy cover (Canopy)**	64	53.8	35.7	55.9	51.5	49.23	76.91	5
Tree canopy cover (Sub-canopy)**	20	4	4.7	7	3.9	4.90	24.50	2
							**Average tree canopy cover	3.5
Shrub canopy cover	6	6.8	6.6	5.7	17.1	9.05	150.83	5
Native grass cover*	21	76	82	56	41	63.75	303.57	5
Organic litter*	48	9	0	26	20	13.75	28.65	3
Large trees (euc plus non-euc) (per ha)	38	22	10	0	6	9.50	25.00	5
Coarse woody debris (per ha)	506	456	56	50	112	168.50	33.30	2
Non-native plant cover	0	10	12	2	5	7.25	7.25	5
Quality and availability of food and foraging habitat	NA	10	10	10	10	10	-	10
Quality and availability of shelter	NA	5	5	5	5	5	-	5
							Site Condition Score (/100)	64.25
							Overall Site Condition Score - out of 3	1.93
SITE CONTEXT								
Size of patch		10	10	10	10	10		10
Connectedness		4	4	4	4	4		4
Context		4	4	4	4	4		4
Ecological Corridors		6	6	6	6	6		6
Role of site location to species overall population in the state		5	5	5	5	5		5
Threats to the species		7	7	7	7	7		7
Species mobility capacity		7	7	7	7	7		7
							Site Context Score (/56)	43
							Overall Site Context Score - out of 3	2.30
SPECIES STOCKING RATE								
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	15	15	15	15	15		15
							Species Stocking Rate Score (/70)	0.21
							Overall Species Stocking Rate Score - out of 4	0.86
Overall Assessment Unit Score								5.09

5									
2.5									
2.5									
2.5									
2.5									
5									
3.5									
5									
5									
3									
5									
2									
5									24.25
10							76.91		20
5							1.69		20
63.5									64.25

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - adjacent		Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	
		0%	low	med	high	
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15
		0	5 - 15	20 - 35		40 - 45
Total SRR score (out of 70)		15				
SRR Score (out of 4)	**0.857142857**					

5	Adjacent
5	Dispersal
0	No usage
5	See below table

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton for breeding
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 10 - Cat X RE12.3.7					
Greater Glider	RE12.3.7 Benchmark	Transect 20	Transect 24	Average of Transect(s)	% Benchmark	Score
SITE CONDITION						
Recruitment of woody perennial species in EDL	100	100	100	100.00	100.00	5
Native plant species richness - trees	6	6	5	5.50	91.67	5
Native plant species richness - shrubs	8	4	3	3.50	43.75	2.5
Native plant species richness - grasses	6	4	6	5.00	83.33	2.5
Native plant species richness - forbs	17	2	2	2.00	11.76	0
Tree canopy height (Canopy)*	22	21	17	19.00	86.36	5
Tree canopy height (Sub-canopy)*	12	12	6	9.00	75.00	5
					*Average tree canopy height	5
Tree canopy cover (Canopy)**	23	61	18.7	39.85	173.26	5
Tree canopy cover (Sub-canopy)**	51	22.8	4.2	13.50	26.47	2
					**Average tree canopy cover	3.5
Shrub canopy cover	22	2.1	10.5	6.30	28.64	3
Native grass cover*	8	8	96	52.00	650.00	5
Organic litter*	27	28	1	14.50	53.70	5
Large trees (euc plus non-euc) (per ha)	60	30	0	15.00	25.00	5
Coarse woody debris (per ha)	667	177	105	141.00	21.14	2
Non-native plant cover	0	80	5	42.50	42.50	3
Quality and availability of food and foraging habitat	N/A	10	10	10	-	10
Quality and availability of shelter	N/A	10	10	10	-	10
					Site Condition Score (/100)	83.25
					Overall Site Condition Score - out of 3	2.50
SITE CONTEXT						
Size of patch		10	10	10		10
Connectedness		4	4	4		4
Context		4	4	4		4
Ecological Corridors		6	6	6		6
Role of site location to species overall population in the state		5	5	5		5
Threats to the species		7	7	7		7
Species mobility capacity		7	7	7		7
					Site Context Score (/56)	43
					Overall Site Context Score - out of 3	2.30
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	15	15	15		15
					Species Stocking Rate Score (/70)	0.21
					Overall Species Stocking Rate Score - out of 4	0.86
Overall Assessment Unit Score						5.66

5							
5							
2.5							
2.5							
0							
5							
3.5							
3							
5							
5							
5							
2							
3						23.25	
10		173.26		20			
10		2.68		40			
66.5				83.25			

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		15					
SRR Score (out of 4)	**0.857142857**						

5	Adjacent
5	Dispersal
0	No usage
5	See below table

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Assessment Unit - Regional Ecosystem	AU 11 - Cat X RE12.11.5/12.11.3					
Greater Glider	RE12.11.5 Benchmark	Transect 8	Transect 9	Average of Transect(s)	% Benchmark	Score
SITE CONDITION						
Recruitment of woody perennial species in EDL	100	100	0	50.00	50.00	3
Native plant species richness - trees	7	3	7	5.00	71.43	2.5
Native plant species richness - shrubs	11	0	2	1.00	9.09	0
Native plant species richness - grasses	8	4	7	5.50	68.75	2.5
Native plant species richness - forbs	17	0	0	0.00	0.00	0
Tree canopy height (Canopy)*	24	23	23	23.00	95.83	5
Tree canopy height (Sub-canopy)*	10	6	10	8.00	80.00	5
					*Average tree canopy height	5
Tree canopy cover (Canopy)**	60	15.4	20.2	17.80	29.67	2
Tree canopy cover (Sub-canopy)**	14	10.1	6.1	8.10	57.86	5
					**Average tree canopy cover	3.5
Shrub canopy cover	14	0	1.7	0.85	6.07	0
Native grass cover*	30	37	49	43.00	143.33	5
Organic litter*	50	0	1	0.50	1.00	0
Large trees (euc plus non-euc) (per ha)	26	4	12	8.00	30.77	5
Coarse woody debris (per ha)	457	0	40	20.00	4.38	0
Non-native plant cover	0	35	65	50.00	50.00	3
Quality and availability of food and foraging habitat	N/A	1	1	1	-	1
Quality and availability of shelter	N/A	1	1	1	-	1
					Site Condition Score (/100)	20.75
					Overall Site Condition Score - out of 3	0.62
SITE CONTEXT						
Size of patch		10	10	10		10
Connectedness		4	4	4		4
Context		4	4	4		4
Ecological Corridors		6	6	6		6
Role of site location to species overall population in the state		5	5	5		5
Threats to the species		7	7	7		7
Species mobility capacity		4	4	4		4
					Site Context Score (/56)	40
					Overall Site Context Score - out of 3	2.14
SPECIES STOCKING RATE						
Greater Glider Stocking Rate (utilising SSR & SSR Supplementary Table(s)	70	10	10	10		10
					Species Stocking Rate Score (/70)	0.14
					Overall Species Stocking Rate Score - out of 4	0.57
Overall Assessment Unit Score						3.34

3							
2.5							
0							
2.5							
0							
5							
3.5							
0							
5							
0							
5							
0							
3							14.75
1						29.67	2
1						0	4
31.5							20.75

Species Stocking Rate (SSR)							
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		5 Adjacent
		No	Yes - adjacent		Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		0 Not habitat
		Not habitat	Dispersal	Foraging	Breeding		
Approximate density (per ha)	Score	0	10	20	30		0 No usage
		0%	low	med	high		
Role/importance of species population on site*	Score (*Total from supplementary table below)*	0	5	10		15	5 See below table
		0	5 - 15	20 - 35		40 - 45	
Total SRR score (out of 70)		10					
SRR Score (out of 4)	**0.571428571**						

*SSR Supplementary Table					
*Key source population for breeding	Score	0	10	0	Given the low usage and lack of evidence of breeding occurring on site it is not considered to be a key populaiton
		No	Yes/ Possibly		
*Key source population for dispersal	Score	0	5	5	Unknown but using the precautionary principle it is considered possible.
		No	Yes/ Possibly		
*Necessary for maintaining genetic diversity	Score	0	15	0	The site is highly unlikely to be necessary for maintaining genetic diversity given the low density
		No	Yes/ Possibly		
*Near the limit of the species range	Score	0	15	0	The site is not near the limit of greater gliders range
		No	Yes		

Appendix E

Milestone Framework

Koala Environmental Outcomes – AU1

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 85% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at >100% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	2.5	5	20 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 48.15% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	2.5	5	20 years	All of the expected grass species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	Grass species richness is currently at 57.14% of the benchmark. If the grass species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.55	2.5	5	20 years	All of the expected forb species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 49.02% of the benchmark. If the forb species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**..	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	4	4	5	5	5	10 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not reach 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Canopy cover to be maintained between 50% and 200% of the benchmark as a	Baseline Site Condition attributes are established. Habitat quality transects to be	Shrub canopy cover is currently at >100% of the benchmark. If the shrub canopy cover

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							result of specific management actions 1 to 6 outlined in **Table 60.**	completed by suitably qualified professionals at 5, 10, 15 and 20 years.	is not maintained then remedial actions to improve the prospect of achieving will be applied. These include remedial plantings.
Native perennial grass cover	3	3	3	5	5	15 years	Native grass cover to achieve at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover does not achieve at greater than 90% in 15 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter has not achieved greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris to be maintained greater than 50% and less than 200% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 52.08% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Weed cover is currently 41.33% of the benchmark. If improvement toward below 5% has not been achieved by the

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score	**60.5**	**62.5**	**68.5**	**72.5**	**90**				
Overall Site Condition Score out of 3	**1.82**	**1.88**	**2.06**	**2.18**	**2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and WONS will be reduced to low levels by specific management actions 1 to 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.46**	**6.52**	**6.70**	**6.82**	**7.51**				

Koala Environmental Outcomes – AU2

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 73.33% of the benchmark. If recruitment does not achieve 75% post weed removal in 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 95.24% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.
Native plant species richness - Shrubs	2.5	2.5	2.5	2.5	5	20 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 54.55% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	2.5	5	20 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 75% of the benchmark. If the grass species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	2.5	5	20 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**..	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 58.82% of the benchmark. If the forb species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Tree canopy cover greater than 50% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree canopy cover is not maintained above 50% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 50% of the tree canopy cover benchmark.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If shrub canopy cover is not maintained above 50% at 15 years, then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native perennial grass cover greater than 90% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the native perennial grass cover will be maintained over 90%. Remedial actions are not anticipated.
Organic litter	5	5	5	5	5	Immediate	Organic litter between 50% and 200% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the organic litter will be maintained between 50% and 200% by year 20. If monitoring indicates that litter cover is not maintained between 50 and 200% then remedial actions will be applied. These include reviewing fire management controls and weed cover achievements.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	If monitoring indicates that coarse woody debris is not maintained to between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track	Weed cover is currently 10.33% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								progress to the Year 5 milestone objective.	include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	10	10	10	10	10	Immediate	Quality and availability of shelter will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of shelter is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score	**75.5**	**75.5**	**80.5**	**82.5**	**90**				
Overall Site Condition Score out of 3	**2.27**	**2.27**	**2.42**	**2.48**	**2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
SSR Score (out of 70	40	40	40	40	40				
SSR Score out of 4	2.29	2.29	2.29	2.29	2.29				
Total Habitat Quality Scores	6.91	6.91	7.06	7.12	7.51				

Koala Environmental Outcomes – AU3

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 50% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 75% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 50% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 58.33% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	Native forb species richness between greater than 90% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness will achieve above 90% of the benchmark. If the forb species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover is not maintained above 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub canopy cover is currently at 30.45% of the benchmark. If the shrub canopy cover has not improved to greater than 50% at 15 years then remedial actions to improve the prospect of

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 11 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90 then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	It is anticipated that the number of large trees will be maintained between 0% and 50%.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							result of management actions 1 to 6 outlined in **Table 60**.	suitably qualified professionals at 5, 10, 15 and 20 years.	Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 14.09% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at Year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	0	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								Year 3 to track progress to the Year 5 milestone objective.	applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**45.5** **1.37**	**50.5** **1.52**	**61** **1.83**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.01**	**6.16**	**6.48**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU4

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 50% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 33.33% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 28.57% of the benchmark. If the shrub species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 57.14% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 46.15% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	4	4	4	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not achieved above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	2	2	2	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the benchmark will be	Baseline Site Condition attributes are established. Habitat quality	If shrub canopy cover is not maintained above 50% at 15 years,

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 23.02% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at Year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	Weed cover is currently 47.5% of the benchmark. If improvement toward below 5% has not been

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							actions 3, 4 & 5 outlined in **Table 60**.	suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score	**49**	**51**	**59**	**80**	**90**				
Overall Site Condition Score out of 3	**1.47**	**1.53**	**1.77**	**2.40**	**2.70**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								professionals at 5, 10, 15 and 20 years.	criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									relative to potential external factors impacting on Koala usage.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
SSR Score out of 4	2.29	2.29	2.29	2.29	2.29				
Total Habitat Quality Scores	6.11	6.18	6.42	7.05	7.51				

Koala Environmental Outcomes – AU5

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	0	3	5	5	5	10 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 0% of the benchmark. If recruitment does not achieve 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 25% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 16.67% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 55.56% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 7.14% of the benchmark. If the forb species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	0	0	3	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height above 70% is not achieved at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	0	0	2	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy above 50% is not achieved at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy above 50% is not achieved at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings of advanced stock.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							management actions 1 to 6 outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 0% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track	Weed cover is currently 35% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								progress to the Year 5 milestone objective.	include refining weed control methods.
Quality and availability of food and foraging habitat	1	1	1	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently low. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	1	1	1	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 11 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently low. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**23** **0.69**	**28** **0.84**	**50** **1.50**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	5	5	5	5	5	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently highly restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**41**	**41**	**41**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.20**	**2.20**	**2.20**	**2.36**	**2.52**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	0	0	0	10	10	15 years	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be achieved.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If low density levels are not achieved at the 15 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**30**	**30**	**30**	**40**	**40**				
SSR Score out of 4	**1.71**	**1.71**	**1.71**	**2.29**	**2.29**				
Total Habitat Quality Scores	**4.60**	**4.75**	**5.41**	**7.04**	**8.51**				

Koala Environmental Outcomes – AU6

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 20% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 40% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 18.89% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 45.5% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 14.2% of the benchmark. If the forb species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	4	4	4	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not achieved above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a	Baseline Site Condition attributes are established. Habitat quality	Shrub canopy cover is currently at 14.67% of the benchmark. If the

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							result of specific management actions 1 to 6 outlined in **Table 60.**	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	shrub canopy cover has not improved to greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 1.18% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 16.6% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	achieving a high rating.
Site Condition Score	**43.5**	**43.5**	**58.5**	**80**	**90**				
Overall Site Condition Score out of 3	**1.31**	**1.31**	**1.76**	**2.40**	**2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**5.95**	**5.95**	**6.40**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU7

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 100% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 85.71% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 36.36% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 32.35% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover is not maintained above 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and 200% of the	Baseline Site Condition attributes are established. Habitat quality	If canopy above 50% is not achieved at 15 years then remedial

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Native perennial grass cover	1	1	3	5	5	15 years	Native grass cover to achieve at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover does not achieve greater than 90% in 15 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	If monitoring indicates that coarse woody debris is not maintained to between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at	Weed cover is currently 50% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								Year 3 to track progress to the Year 5 milestone objective.	applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**52** **1.56**	**54** **1.62**	**64** **1.92**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.20**	**6.27**	**6.57**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU8

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 83.33% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 80% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 39.71% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	4	4	4	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the	Baseline Site Condition attributes are established.	Shrub canopy cover is currently at 204.17% of the

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	benchmark. If the shrub canopy cover has not improved to less than 200% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 23.31% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 36.25% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	achieving a high rating.
Site Condition Score	**55**	**57**	**62**	**80**	**90**				
Overall Site Condition Score out of 3	**1.65**	**1.71**	**1.86**	**2.40**	**2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.29**	**6.36**	**6.51**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU9

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 91.68% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 66.67% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 67.86% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 60.71% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 51.92% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the	Baseline Site Condition attributes are established.	If shrub canopy cover is not maintained above

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	50% at 15 years, then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 33.3% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 7.25% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**58.5** **1.76**	**58.5** **1.76**	**63.5** **1.91**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60.**	management program.	not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.40**	**6.40**	**6.55**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU10

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 100% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 91.67% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 43.75% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 83.33% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 11.76% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	Shrub canopy cover is currently at 28.64% of the benchmark. If the shrub canopy cover has not improved to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							actions 1 to 6 outlined in **Table 60.**	suitably qualified professionals at 5, 10, 15 and 20 years.	more than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	5	5	5	5	5	Immediate	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not maintained to greater than 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include refining weed and fire control methods to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 21.14% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 42.5% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								professionals at 5, 10, 15 and 20years.	
Site Condition Score **Overall Site Condition Score out of 3**	**56.5** **1.70**	**58.5** **1.76**	**66** **1.98**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the absence of habitat and presence of weeds and pests. All site condition remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**44**	**44**	**44**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.36**	**2.36**	**2.36**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors impacting on Koala usage.
Approximate Density	10	10	10	10	10	Immediate	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If density levels are not maintained at low level at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**40**	**40**	**40**	**40**	**40**				
SSR Score out of 4	**2.29**	**2.29**	**2.29**	**2.29**	**2.29**				
Total Habitat Quality Scores	**6.34**	**6.40**	**6.63**	**7.05**	**7.51**				

Koala Environmental Outcomes – AU11

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 30% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 71.43% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 9.09% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 68.75% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 0% of the benchmark. If the forb species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and	Baseline Site Condition attributes are established.	If canopy above 50% is not achieved at 15

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 4.38% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by	Baseline Site Condition attributes are established. Habitat quality	Weed cover is currently 50% of the benchmark. If improvement

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							specific management actions 3, 4 & 5 outlined in **Table 60**.	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	5	5	5	5	10	20 Years	Quality and availability of food and foraging habitat will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	5	5	5	10	20 Years	Quality and availability of shelter will be improved to high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Quality and availability of shelter is currently moderate. All site condition remedial actions also apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Condition Score **Overall Site Condition Score out of 3**	**39.5** **1.19**	**41.5** **1.25**	**59.5** **1.79**	**80** **2.40**	**90** **2.70**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	5	5	5	5	5	NA	NA	NA	NA
Context	5	5	5	5	5	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	7	7	7	7	Immediate	Threats to species including barbed wire fencing, non-native predators and weeds will be reduced to low levels by specific management actions 2 and 3 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the suppression and control of pest species and weeds. Pest monitoring will be evaluated as per the pest management program.	The control of pest species will provide an immediate and large reduction in threats. If monitoring as per the pest management program indicates pest species are not reduced then the management plan will require amendment and improved control demonstrated.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality	Species mobility is currently highly restricted by the absence of habitat and presence of weeds and pests. All site condition

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	remedial actions, as well as threat reductions also apply to this criterium achieving a high rating.
Site Context Score	**41**	**41**	**41**	**44**	**47**				
Overall Site Context Score (out of 3)	**2.20**	**2.20**	**2.20**	**2.36**	**2.52**				
Presence	10	10	10	10	10	Immediate	NA - Not anticipated to change	Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	NA - Not anticipated to change
Usage	15	15	15	15	15	Immediate	It is anticipated that under the management actions specified under management actions 1 to 6 outlined in **Table 60** Koala usage of the site will be maintained.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If usage levels are not maintained at the 10 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala usage has not improved to breeding level by 15 years then the management period may be extended and further remedial actions applied in consideration of other scoring improvements

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									relative to potential external factors impacting on Koala usage.
Approximate Density	0	0	0	10	10	15 years	It is anticipated that under the management actions specified in management actions 1 to 6 outlined in **Table 60** at least low level Koala activity (<22.52% scats recorded using the East Coast med-high population category) will be achieved.	Baseline SAT attributes are established. Koala SAT surveys will be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If low density levels are not achieved at the 15 year mark, then broader Koala population surveys will be undertaken to ascertain potential external causes and the management actions re-visited accordingly. If Koala activity has not improved to low level by Year 15 then the management period may be extended and further remedial actions applied in consideration of other scoring improvements relative to potential external factors

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									impacting on Koala activity.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**30**	**30**	**30**	**40**	**40**				
SSR Score out of 4	**1.71**	**1.71**	**1.71**	**2.29**	**2.29**				
Total Habitat Quality Scores	**5.10**	**5.16**	**5.70**	**7.04**	**7.51**				

GHFF Environmental Outcomes – AU1

Assessment Unit - Regional Ecosystem	AU 1 Remnant (Cat B) RE12.12.5											
Site Reference	**Transect 3**	**Transect 6**	**Transect 2**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	20	20	20	**20**	**20**	**20**	**20**	**20**	**20**	Remnant status will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be maintained. Remedial actions not required.
Species Richness	4	5	3	**4**	**10**	**10**	**10**	**10**	**10**	Tree species richness will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will be maintained. Remedial actions not required.
Flower Score	0.4380	0.6100	0.5870	**0.55**	**8**	**8**	**8**	**8**	**8**	Flower score will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will be maintained. Remedial actions not required.

Timing of Biological Shortages	10	10	7	**9**	**9**	**9**	**9**	**10**	**10**	Timing of biological shortages will improve to 10 as per transects 3 and 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	2	3	2	**2.33**	**5**	**5**	**5**	**5**	**5**	Quality of foraging habitat will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that quality of foraging habitat will be maintained. Remedial actions not required.
Non-native Plant Cover	0.00	45.00	70.00	**18.00**	**10**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 41.33% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score					**62.00**	**62.00**	**72.00**	**73.00**	**73.00**			
MAX Site Condition Score					***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4					**2.48**	**2.48**	**2.88**	**2.92**	**2.92**			
Size of patch	>200ha	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA

Threats to the species	5	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score					**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score					***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3					**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	50	70	52									
GHFF Foraging Tree Density - per hectare	250	350	260	**286.67**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score					***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score					***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3					**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total					**5.43**	**5.68**	**6.08**	**6.72**	**6.72**			

GHFF Environmental Outcomes – AU2

Assessment Unit - Regional Ecosystem	AU 2 Remnant (Cat B) RE12.11.5/12.11.3											
Site Reference	**Transect 26**	**Transect 27**	**Transect 31**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	20	20	20	**20**	**20**	**20**	**20**	**20**	**20**	Remnant status will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be maintained. Remedial actions not required.
Species Richness	5	4	6	**5**	**10**	**10**	**10**	**10**	**10**	Tree species richness will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will be maintained. Remedial actions not required.
Flower Score	0.5350	0.7030	0.6130	**0.6170**	**8**	**8**	**8**	**8**	**8**	Flower score will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will be maintained. Remedial actions not required.

Timing of Biological Shortages	8.5	8.5	10	**9**	**9**	**9**	**9**	**10**	**10**	Timing of biological shortages will improve to 10 as per transect 31 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	4	4	4	**4**	**10**	**10**	**10**	**10**	**10**	Quality of foraging habitat will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that quality of foraging habitat will be maintained. Remedial actions not required.
Non-native Plant Cover	11.00	15.00	5.00	**10.33**	**10**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 10.33% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score					**67.00**	**67.00**	**77.00**	**78.00**	**78.00**			
MAX Site Condition Score					***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4					**2.68**	**2.68**	**3.08**	**3.12**	**3.12**			
Size of patch	>200ha	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA

Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score					**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score					***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3					**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	57	49	96									
GHFF Foraging Tree Density - per hectare	285	245	480	**336.667**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score					***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score					***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3					**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total					**5.63**	**5.88**	**6.28**	**6.92**	**6.92**			

GHFF Environmental Outcomes – AU3

Assessment Unit - Regional Ecosystem	AU 3 Regrowth (Cat C) RE12.3.7										
Site Reference	**Transect 22**	**Transect 28**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	10	10	**10**	**10**	**10**	**10**	**20**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 15 years. If remnant status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	3	1	**2**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.5933	0.1580	**0.3757**	**5**	**5**	**5**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	8.5	8.5	**8.5**	**8.5**	**8.5**	**8.5**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	3	1	**2**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	15.00	95.00	**55.00**	**1**	**5**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**34.50**	**38.50**	**53.50**	**80.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**1.38**	**1.54**	**2.14**	**3.20**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	15	23									

GHFF Foraging Tree Density - per hectare	75	115	**95**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score				***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3				**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total				**4.33**	**4.74**	**5.34**	**7.00**	**7.00**			

GHFF Environmental Outcomes – AU4

Assessment Unit - Regional Ecosystem	AU 4 Non-Remnant (Cat X) RE12.9-10.2										
Site Reference	**Transect 11**	**Transect 12**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	5	5	**5**	**5**	**5**	**5**	**10**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 20 years. If regrowth status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	2	2	**2**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.4450	0.5250	**0.4850**	**5**	**5**	**5**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	10	8.5	**9.25**	**9.25**	**9.25**	**9.25**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	0	1	**0.5**	**0**	**0**	**0**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	40.00	55.00	**47.50**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**29.25**	**34.25**	**44.25**	**70.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**1.17**	**1.37**	**1.77**	**2.80**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	10	11									

GHFF Foraging Tree Density - per hectare	50	55	**52.5**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score				***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3				**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total				**4.12**	**4.57**	**4.97**	**6.60**	**7.00**			

GHFF Environmental Outcomes – AU5

Assessment Unit - Regional Ecosystem	AU 5 Non-Remnant (Cat X) RE12.12.12										
Site Reference	**Transect 19**	**Transect 25**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	5	5	**5**	**5**	**5**	**5**	**10**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 20 years. If regrowth status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension if the offset period of required.
Species Richness	0	0	**0**	**0**	**0**	**0**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.0000	0.0000	**0.0000**	**2**	**2**	**2**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	0	0	**0**	**0**	**0**	**0**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	0	0	**0**	**0**	**0**	**0**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	5.00	65.00	**35.00**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**12.00**	**17.00**	**27.00**	**70.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**0.48**	**0.68**	**1.08**	**2.80**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	0	0									

GHFF Foraging Tree Density - per hectare	0	0	**0**	**0**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				*0*	*4*	*4*	*6*	*6*			
MAX Species Stocking Rate Score				*10*	*10*	*10*	*10*	*10*			
Species Stocking Rate Score - out of 3				0.00	1.20	1.20	1.80	1.80			
Total				2.23	3.88	4.28	6.60	7.00			

GHFF Environmental Outcomes – AU6

Assessment Unit - Regional Ecosystem	AU 6 Non-Remnant (Cat X) RE12.12.5												
Site Reference	**Transect 4**	**Transect 7**	**Transect 14**	**Transect 15**	**Transect 17**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	5	5	5	5	5	**5**	**5**	**5**	**5**	**10**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 20 years. If regrowth status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	2	4	3	0	0	**1.8**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.515	0.5430	0.5670	0.0000	0.0000	**0.2775**	**5**	**5**	**5**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	10	10	8.5	0	0	**5.7**	**5.7**	**5.7**	**5.7**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	1	2	2	0	0	**1**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	18.00	20.00	10.00	15.00	20.00	**16.60**	**10**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score							**35.70**	**35.70**	**45.70**	**70.00**	**80.00**			
MAX Site Condition Score							***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4							**1.43**	**1.43**	**1.83**	**2.80**	**3.20**			
Size of patch	>200ha	>200ha	>200ha	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	49.6%	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	Within	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	5	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score							**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score							***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3							**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	2	26	31	0	0									

GHFF Foraging Tree Density - per hectare	10	130	155	0	0	**59**	**2**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score							***2***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score							***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3							**0.60**	**1.20**	**1.20**	**1.80**	**1.80**			
Total							**3.78**	**4.63**	**5.03**	**6.60**	**7.00**			

GHFF Environmental Outcomes – AU7

Assessment Unit - Regional Ecosystem	AU 7 Regrowth (Cat C) RE12.11.5/12.11.3										
Site Reference	**Transect 29**	**Transect 30**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	10	10	**10**	**10**	**10**	**10**	**20**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 15 years. If remnant status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	5	5	**5**	**10**	**10**	**10**	**10**	**10**	Tree species richness will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will be maintained. If the species richness is not maintained by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Flower Score	0.6100	0.6100	**0.6100**	**8**	**8**	**8**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Timing of Biological Shortages	10	10	**10**	**10**	**10**	**10**	**10**	**10**	Timing of biological shortages will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not be maintained by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	3	3	**3**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Non-native Plant Cover	45.00	55.00	**50.00**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**48.00**	**53.00**	**63.00**	**80.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**1.92**	**2.12**	**2.52**	**3.20**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA

Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	31	43									
GHFF Foraging Tree Density - per hectare	155	215	**185**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score				***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3				**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total				**4.87**	**5.32**	**5.72**	**7.00**	**7.00**			

GHFF Environmental Outcomes – AU8

Assessment Unit - Regional Ecosystem	AU 8 Regrowth (Cat C) RE12.12.5												
Site Reference	**Transect 1**	**Transect 13**	**Transect 16**	**Transect 18**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	10	10	10	10	**10**	**10**	**10**	**10**	**20**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 15 years. If remnant status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	2	3	4	4	**3.25**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.6400	0.4250	0.5630	0.6400	**0.5670**	**8**	**8**	**8**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	8.5	8.5	10	8.5	**8.875**	**8.875**	**8.875**	**8.875**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	2	2	2	3	**2.25**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	15.00	35.00	80.00	15.00	**36.25**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score						**41.88**	**46.88**	**56.88**	**80.00**	**80.00**			
MAX Site Condition Score						***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4						**1.68**	**1.88**	**2.28**	**3.20**	**3.20**			
Size of patch	>200ha	>200ha	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score						**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score						***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3						**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	17	45	50	58									

GHFF Foraging Tree Density - per hectare	85	225	250	290	**212.5**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score						***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score						***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3						**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total						**4.63**	**5.08**	**5.48**	**7.00**	**7.00**			

GHFF Environmental Outcomes – AU9

Assessment Unit - Regional Ecosystem	AU 9 Regrowth (Cat C) RE12.9-10.2												
Site Reference	**Transect 5**	**Transect 10**	**Transect 21**	**Transect 23**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	10	10	10	10	**10**	**10**	**10**	**10**	**20**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 15 years. If remnant status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	2	2	1	6	**2.75**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.6500	0.6500	0.6500	0.5900	**0.6350**	**8**	**8**	**8**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	4	4	4	10	**5.5**	**5.5**	**5.5**	**5.5**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	2	2	1	4	**2.25**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	10.00	12.00	2.00	5.00	**7.25**	**10**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score						**43.50**	**43.50**	**53.50**	**80.00**	**80.00**			
MAX Site Condition Score						***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4						**1.74**	**1.74**	**2.14**	**3.20**	**3.20**			
Size of patch	>200ha	>200ha	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score						**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score						***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3						**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	20	7	28	37									

GHFF Foraging Tree Density - per hectare	100	35	140	185	**115**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score						***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score						***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3						**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total						**4.69**	**4.94**	**5.34**	**7.00**	**7.00**			

GHFF Environmental Outcomes – AU10

Assessment Unit - Regional Ecosystem	AU 10 Non-Remnant (Cat X) RE12.3.7										
Site Reference	**Transect 20**	**Transect 24**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	5	5	**5**	**5**	**5**	**5**	**10**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 20 years. If regrowth status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	3	5	**4**	**10**	**10**	**10**	**10**	**10**	Tree species richness will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will be maintained. If the species richness is not maintained by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Flower Score	0.3000	0.5660	**0.4330**	**5**	**5**	**5**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Timing of Biological Shortages	10	5.5	**7.75**	**7.75**	**7.75**	**7.75**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	3	4	**3.5**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Non-native Plant Cover	80.00	5.00	**42.50**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**37.75**	**42.75**	**52.75**	**70.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**1.51**	**1.71**	**2.11**	**2.80**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA

Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	48	15									
GHFF Foraging Tree Density - per hectare	240	75	**157.5**	**4**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				***4***	***4***	***4***	***6***	***6***			
MAX Species Stocking Rate Score				***10***	***10***	***10***	***10***	***10***			
Species Stocking Rate Score - out of 3				**1.20**	**1.20**	**1.20**	**1.80**	**1.80**			
Total				**4.46**	**4.91**	**5.31**	**6.60**	**7.00**			

GHFF Environmental Outcomes – AU11

Assessment Unit - Regional Ecosystem	AU 11 Non-Remnant (Cat X) RE12.11.5/12.11.3										
Site Reference	**Transect 8**	**Transect 9**	**Average Score**	**AU Score**	**5 years**	**10 years**	**15 years**	**20 years**	**Justification / management Actions / Timing**	**Monitoring**	**KPIs and Adaptive Management**
Vegetation Condition	5	5	**5**	**5**	**5**	**5**	**10**	**20**	Remnant status will be achieved as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that remnant status will be achieved by 20 years. If regrowth status is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings and extension of the offset period if required.
Species Richness	1	3	**2**	**5**	**5**	**5**	**10**	**10**	Tree species richness will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Flower Score	0.3150	0.5080	**0.4115**	**5**	**5**	**5**	**10**	**10**	Flower score will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that flower score will improve to average 0.76 by 15 years. If the target flower score is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.
Timing of Biological Shortages	8.5	10	**9.25**	**9.25**	**9.25**	**9.25**	**10**	**10**	Timing of biological shortages will improve to 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should timing of biological shortages not improve to 10 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Quality of Foraging Habitat	1	2	**1.5**	**5**	**5**	**5**	**10**	**10**	Quality of foraging habitat will improve to a score of 10 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that foraging tree species richness will improve to 4 species by 15 years. If the target species richness is not achieved by 15 years, then remedial actions will be required. These will include advanced stock plantings.

Non-native Plant Cover	35.00	65.00	**50.00**	**5**	**10**	**20**	**20**	**20**	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Site Condition Score				**34.25**	**39.25**	**49.25**	**70.00**	**80.00**			
MAX Site Condition Score				***100***	***100***	***100***	***100***	***100***			
Site Condition Score - out of 4				**1.37**	**1.57**	**1.97**	**2.80**	**3.20**			
Size of patch	>200ha	>200ha	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Connectedness	1 active camps within 20km	1 active camps within 20km	**3**	**3**	**3**	**3**	**3**	**3**	NA	NA	NA
Context	49.6%	49.6%	**6**	**6**	**6**	**6**	**6**	**6**	NA	NA	NA
Ecological Corridors	Within	Within	**10**	**10**	**10**	**10**	**10**	**10**	NA	NA	NA
Role of site location to species overall population in the state	1 active level 3 camp	1 active level 3 camp	**1**	**1**	**1**	**1**	**1**	**1**	NA	NA	NA
Threats to the species	5	5	**5**	**5**	**10**	**10**	**10**	**10**	Threats to species including barbed wire fencing will be removed by specific management action 6 outlined in **Table 60**.	Baseline attributes are established. This criterium is reliant upon removal of barbed wire threats.	The removal of barbed wire threats will provide an immediate reduction in threat levels.
Site Context Score				**35**	**40**	**40**	**40**	**40**			
MAX Site Context Score				***60***	***60***	***60***	***60***	***60***			
Site Context Score - out of 3				**1.75**	**2.00**	**2.00**	**2.00**	**2.00**			
GHFF Foraging Tree Density - Recorded	2	11									

GHFF Foraging Tree Density - per hectare	10	55	**32.5**	**2**	**4**	**4**	**6**	**6**	Foraging tree density will improve to score 6 as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Should foraging tree density not improve to score 6 by 15 years, then remedial actions will be required. These include remedial plantings of advanced stock.
Species Stocking Rate Score				*2*	*4*	*4*	*6*	*6*			
MAX Species Stocking Rate Score				*10*	*10*	*10*	*10*	*10*			
Species Stocking Rate Score - out of 3				0.60	1.20	1.20	1.80	1.80			
Total				3.72	4.77	5.17	6.60	7.00			

Greater Glider Environmental Outcomes – AU1

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 85% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at >100% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.
Native plant species richness - Shrubs	2.5	2.5	2.5	2.5	5	20 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 48.15% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	2.5	5	20 years	All of the expected grass species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	Grass species richness is currently at 57.14% of the benchmark. If the grass species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.55	2.5	5	20 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**..	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 49.02% of the benchmark. If the forb species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	4	4	5	5	5	10 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not reach 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Canopy cover to be maintained between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub canopy cover is currently at >100% of the benchmark. If the shrub canopy cover is not maintained then remedial actions to improve the prospect of achieving will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Native perennial grass cover	3	3	3	5	5	15 years	Native grass cover to achieve at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover does not achieve at greater than 90% in 15 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter has not achieved greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							actions 1 to 6 outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris to be maintained greater than 50% and less than 200% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 52.08% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year	Weed cover is currently 41.33% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								5 milestone objective.	weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	10	10	10	10	5 Years	Quality and availability of shelter will be improved to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**65.25** **1.96**	**86.25** **2.12**	**89.25** **2.18**	**91.25** **2.48**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall	5	5	5	5	5	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
population in the state									
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score	**43**	**46**	**46**	**46**	**49**				
Overall Site Context Score (out of 3)	**2.30**	**2.46**	**2.46**	**2.46**	**2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	**0.86**	**0.86**	**0.86**	**0.86**	**0.86**				
Total Habitat Quality Scores	**5.12**	**5.91**	**6.00**	**6.06**	**6.33**				

Greater Glider Environmental Outcomes – AU2

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 73.33% of the benchmark. If recruitment does not achieve 75% post weed removal in 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 95.24% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.
Native plant species richness - Shrubs	2.5	2.5	2.5	2.5	5	20 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 54.55% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	2.5	5	20 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 75% of the benchmark. If the grass species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	2.5	5	20 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**..	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 58.82% of the benchmark. If the forb species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Tree canopy cover greater than 50% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree canopy cover is not maintained above 50% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 50% of the tree canopy cover benchmark.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If shrub canopy cover is not maintained above 50% at 15 years, then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native perennial grass cover greater than 90% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the native perennial grass cover will be maintained over 90%. Remedial actions are not anticipated.
Organic litter	5	5	5	5	5	Immediate	Organic litter between 50% and 200% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the organic litter will be maintained between 50% and 200% by year 20. If monitoring indicates that litter cover is not maintained between 50 and 200% then remedial actions will be applied. These include reviewing fire management controls and weed cover achievements.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	If monitoring indicates that coarse woody debris is not maintained to between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track	Weed cover is currently 10.33% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								progress to the Year 5 milestone objective.	include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	10	10	10	10	10	Immediate	Quality and availability of shelter will be maintained at high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently high. The HMMP remedial actions apply to this criterium maintaining a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**87.75** **2.63**	**87.75** **2.63**	**90.25** **2.71**	**91.25** **2.74**	**90** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**43** **2.30**	**46** **2.46**	**46** **2.46**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.

Attribute	Current Score	Year 5 Score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	**0.86**	**0.86**	**0.86**	**0.86**	**0.86**				
Total Habitat Quality Scores	**5.79**	**5.95**	**6.03**	**6.06**	**6.33**				

Greater Glider Environmental Outcomes – AU3

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 50% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 75% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 50% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 58.33% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	Native forb species richness between greater than 90% of the benchmark will be maintained as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness will achieve above 90% of the benchmark. If the forb species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover is not maintained above 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub canopy cover is currently at 30.45% of the benchmark. If the shrub canopy cover has not improved to greater than 50% at 15 years then remedial actions to improve the prospect of

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 11 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90 then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	It is anticipated that the number of large trees will be maintained between 0% and 50%.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							result of management actions 1 to 6 outlined in **Table 60**.	suitably qualified professionals at 5, 10, 15 and 20 years.	Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 14.09% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	0	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at	Weed cover is currently 55% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								Year 3 to track progress to the Year 5 milestone objective.	applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	10	10	10	10	10	Immediate	Quality and availability of shelter will be maintained at high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently high. The HMMP remedial actions apply to this criterium maintaining a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**77.75** **2.33**	**80.25** **2.41**	**85.5** **2.57**	**95** **2.85**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**43** **2.30**	**46** **2.46**	**46** **2.46**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	**0.86**	**0.86**	**0.86**	**0.86**	**0.86**				
Total Habitat Quality Scores	**5.49**	**5.73**	**5.89**	**6.17**	**6.33**				

Greater Glider Environmental Outcomes – AU4

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 50% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 33.33% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 28.57% of the benchmark. If the shrub species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 57.14% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 46.15% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	4	4	4	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not achieved above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	2	2	2	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the benchmark will be	Baseline Site Condition attributes are established. Habitat quality	If shrub canopy cover is not maintained above 50% at 15 years,

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 23.02% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	Weed cover is currently 47.5% of the benchmark. If improvement toward below 5% has not been

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							actions 3, 4 & 5 outlined in **Table 60**.	suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	1	1	1	5	10	20 Years	Quality and availability of food and foraging habitat will improve to high due to specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**41.5** **1.25**	**62.5** **1.88**	**66.5** **2.00**	**85** **2.55**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**40** **2.14**	**43** **2.30**	**43** **2.30**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Usage	0	0	0	0	5	20 years	Habitat will reach at least dispersal value as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Dispersal quality will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**10**	**10**	**10**	**10**	**15**				
SSR Score out of 4	**0.57**	**0.57**	**0.57**	**0.57**	**0.86**				
Total Habitat Quality Scores	**3.96**	**4.75**	**4.87**	**5.87**	**6.33**				

Greater Glider Environmental Outcomes – AU5

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	0	3	5	5	5	10 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 0% of the benchmark. If recruitment does not achieve 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 25% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 16.67% of the benchmark. If the shrub species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 55.56% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 7.14% of the benchmark. If the forb species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	0	0	3	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height above 70% is not achieved at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	0	0	2	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy above 50% is not achieved at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy above 50% is not achieved at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings of advanced stock.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							management actions 1 to 6 outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 0% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track	Weed cover is currently 35% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								progress to the Year 5 milestone objective.	include refining weed control methods.
Quality and availability of food and foraging habitat	1	1	1	5	10	20 Years	Quality and availability of food and foraging habitat will improve to high due to specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	10	10	10	10	10	Immediate	Quality and availability of shelter will be maintained at high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently high. The HMMP remedial actions apply to this criterium maintaining a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**52.5** **1.58**	**55** **1.65**	**66** **1.98**	**85** **2.55**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**40** **2.14**	**43** **2.30**	**43** **2.30**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Usage	0	0	0	0	5	20 years	Habitat will reach at least dispersal value as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Dispersal quality will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**10**	**10**	**10**	**10**	**15**				
SSR Score out of 4	**0.57**	**0.57**	**0.57**	**0.57**	**0.86**				
Total Habitat Quality Scores	**4.29**	**4.53**	**4.86**	**5.87**	**6.33**				

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Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 20% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 40% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 18.89% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 45.5% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 14.2% of the benchmark. If the forb species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	4	4	4	5	5	15 years	A median tree height greater than 70% of the benchmark will be achieved as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not achieved above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a	Baseline Site Condition attributes are established. Habitat quality	Shrub canopy cover is currently at 14.67% of the benchmark. If the

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							result of specific management actions 1 to 6 outlined in **Table 60.**	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	shrub canopy cover has not improved to greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 1.18% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 16.6% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	1	1	1	5	10	20 Years	Quality and availability of food and foraging habitat will improve to high due to specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	1	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							7 outlined in **Table 60**.		criterium achieving a high rating.
Site Condition Score **Overall Site Condition Score out of 3**	**22.75** **0.68**	**58.75** **1.76**	**66.25** **1.99**	**85** **2.55**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								completed by suitably qualified professionals at 5, 10, 15 and 20 years.	criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**40** **2.14**	**43** **2.30**	**43** **2.30**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	0	0	0	0	5	20 years	Habitat will reach at least dispersal value as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Dispersal quality will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change..
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70 **SSR Score out of 4**	**10** **0.57**	**10** **0.57**	**10** **0.57**	**10** **0.57**	**15** **0.86**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Total Habitat Quality Scores	**3.40**	**4.64**	**4.89**	**5.59**	**6.33**				

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Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 100% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 85.71% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 36.36% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 32.35% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	5	5	5	5	5	Immediate	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover is not maintained above 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and 200% of the	Baseline Site Condition attributes are established. Habitat quality	If canopy above 50% is not achieved at 15 years then remedial

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Native perennial grass cover	1	1	3	5	5	15 years	Native grass cover to achieve at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover does not achieve greater than 90% in 15 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	5	5	5	5	5	Immediate	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	If monitoring indicates that coarse woody debris is not maintained to between 50 and 200% then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at	Weed cover is currently 50% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								Year 3 to track progress to the Year 5 milestone objective.	applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	1	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.
Site Condition Score	**45**	**82**	**87**	**95**	**95**				
Overall Site Condition Score out of 3	**1.35**	**2.46**	**2.61**	**2.85**	**2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**43** **2.30**	**46** **2.46**	**46** **2.46**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	**0.86**	**0.86**	**0.86**	**0.86**	**0.86**				
Total Habitat Quality Scores	**4.51**	**5.78**	**5.93**	**6.17**	**6.33**				

Greater Glider Environmental Outcomes – AU8

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 83.33% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 80% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 50% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 39.71% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	4	4	4	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the	Baseline Site Condition attributes are established.	Shrub canopy cover is currently at 204.17% of the

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	benchmark. If the shrub canopy cover has not improved to less than 200% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									weed and fire control methods to ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 23.31% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 36.25% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Condition Score **Overall Site Condition Score out of 3**	**62.5** **1.88**	**83.5** **2.51**	**86** **2.58**	**95** **2.85**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
								completed by suitably qualified professionals at 5, 10, 15 and 20 years.	criterium achieving a high rating.
Site Context Score	**43**	**46**	**46**	**46**	**49**				
Overall Site Context Score (out of 3)	**2.30**	**2.46**	**2.46**	**2.46**	**2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	10	10	10	10	10	NA	NA	NA	NA
Total Habitat Quality Scores	**5.04**	**5.83**	**5.90**	**6.17**	**6.33**				

Greater Glider Environmental Outcomes – AU9

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 91.68% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 66.67% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Shrub species richness is currently at 67.86% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 60.71% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	2.5	2.5	2.5	5	5	15 years	Forb species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 51.92% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	5	5	5	5	5	Immediate	Shrub canopy cover greater than 50% of the	Baseline Site Condition attributes are established.	If shrub canopy cover is not maintained above

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							benchmark will be maintained as a result of specific management actions 1 to 6 outlined in **Table 60**.	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	50% at 15 years, then remedial plantings are to be applies. By Year 20 species plantings to be a minimum of 50% of the shrub canopy cover benchmark.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	3	3	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 33.3% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	5	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific	Baseline Site Condition attributes are established. Habitat quality transects to be	Weed cover is currently 7.25% of the benchmark. If improvement toward below 5%

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							management actions 3, 4 & 5 outlined in **Table 60**.	completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	5	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.
Site Condition Score	**64.25**	**84.25**	**86.75**	**95**	**95**				
Overall Site Condition Score out of 3	**1.93**	**2.53**	**2.60**	**2.85**	**2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score **Overall Site Context Score (out of 3)**	**43** **2.30**	**46** **2.46**	**46** **2.46**	**46** **2.46**	**49** **2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	10	10	10	10	10	NA	NA	NA	NA
Total Habitat Quality Scores	**5.09**	**5.85**	**5.92**	**6.17**	**6.33**				

Greater Glider Environmental Outcomes – AU10

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	5	5	5	5	5	Immediate	Recruitment of EDL dominant species will be maintained >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years .	Recruitment is currently 100% of the benchmark. If recruitment falls to less than 75% then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	5	5	5	5	5	Immediate	All of the expected tree species will be maintained by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 91.67% of the benchmark. Recruitment of tree species is to be maintained. If tree species richness falls below 75% then remedial actions to improve will be applied. These include remedial plantings of advanced stock.
Native plant species richness - Shrubs	2.5	2.5	2.5	5	5	15 years	Shrub species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Shrub species richness is currently at 43.75% of the benchmark. If the grass species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10 15, and 20 years.	than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 83.33% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Forb species richness is currently at 11.76% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	3	3	3	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management	Baseline Site Condition attributes are established. Habitat quality transects to be completed by	Shrub canopy cover is currently at 28.64% of the benchmark. If the shrub canopy cover has not improved to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							actions 1 to 6 outlined in **Table 60.**	suitably qualified professionals at 5, 10, 15 and 20 years.	more than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	5	5	5	5	5	Immediate	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not maintained to greater than 50% at 10 years then remedial actions to improve the prospect of achieving between 50% and 200% in 15 years will be applied. These include refining weed and fire control methods to

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
									ensure organic litter is maintained.
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	2	2	2	5	5	15 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 21.14% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (40% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by specific management actions 3, 4 & 5 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	Weed cover is currently 42.5% of the benchmark. If improvement toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	10	10	10	10	10	Immediate	Quality and availability of food and foraging habitat will be maintained at high by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat is currently high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	10	10	10	10	10	Immediate	Quality and availability of shelter will be maintained at high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently high. The HMMP remedial actions apply to this criterium maintaining a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Condition Score **Overall Site Condition Score out of 3**	**83.25** **2.50**	**84.25** **2.53**	**88** **2.64**	**95** **2.85**	**95** **2.85**				
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	7	7	7	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Site Context Score	**43**	**46**	**46**	**46**	**49**				
Overall Site Context Score (out of 3)	**2.30**	**2.46**	**2.46**	**2.46**	**2.63**				
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	5	5	5	5	5	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change.
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**15**	**15**	**15**	**15**	**15**				
SSR Score out of 4	**0.86**	**0.86**	**0.86**	**0.86**	**0.86**				
Total Habitat Quality Scores	**5.66**	**5.85**	**5.96**	**6.17**	**6.33**				

Greater Glider Environmental Outcomes – AU11

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Recruitment of woody perennial species	3	3	3	5	5	15 years	Recruitment of EDL dominant species will achieve >75% as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Establish photo monitoring points where remedial tree planting occurs at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Recruitment is currently 30% of the benchmark. If recruitment dos not achieve 75% by 15 years then remedial actions to improve recruitment will be applied. These include refining weed and fire control methods and increasing remedial plantings.
Native plant species richness – Trees	2.5	2.5	2.5	5	5	15 years	All of the expected tree species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Tree species richness is currently at 71.43% of the benchmark. If the tree species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Native plant species richness - Shrubs	0	0	2.5	5	5	15 years	All of the expected shrub species to be present as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Shrub species richness is currently at 9.09% of the benchmark. If the shrub species richness has not improved to greater than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Grasses	2.5	2.5	2.5	5	5	15 years	Native grasses species richness greater than 90% of the benchmark will be achieved as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10 15, and 20 years.	Grass species richness is currently at 68.75% of the benchmark. If the grass species richness has not improved to greater than 90% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Native plant species richness - Forbs	0	0	2.5	5	5	15 years	All of the expected forb species to be present as a result of specific management actions 1 to 6	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified	Forb species richness is currently at 0% of the benchmark. If the forb species richness has not improved to greater

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							outlined in **Table 60**.	professionals at 5, 10, 15 and 20 years.	than 75% at 15 years then remedial actions to improve the prospect of achieving 90% in 20 years will be applied. These include remedial plantings.
Tree canopy height	5	5	5	5	5	Immediate	A median tree height greater than 70% of the benchmark will be maintained as a result of 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If tree height is not maintained above 70% at 15 years, then the prospect of extending the management period may be investigated. By Year 15 species plantings to be a minimum of 70% of the tree canopy height benchmark.
Tree canopy cover	3.5	3.5	3.5	5	5	15 years	Canopy cover to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If canopy cover does not achieve above 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Shrub canopy cover	0	0	3	5	5	15 years	Shrub canopy cover to be between 50% and	Baseline Site Condition attributes are established.	If canopy above 50% is not achieved at 15

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60.**	Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include remedial plantings of advanced stock.
Native perennial grass cover	5	5	5	5	5	Immediate	Native grass cover to maintained at least 90% of the benchmark by specific management actions 1 to 6 outlined in **Table 60.**	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years..	If the native perennial grass cover is not maintained at greater than 90% in 10 years then remedial actions will be applied. These include refining weed and fire control methods to ensure native grass cover is maintained.
Organic litter	0	0	3	5	5	15 years	Organic litter to be between 50% and 200% of the benchmark as a result of specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	If organic litter is not greater than 50% at 15 years then remedial actions to improve the prospect of achieving between 50% and 200% in 20 years will be applied. These include refining weed and fire control methods to ensure organic litter is maintained.

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Large trees	5	5	5	5	5	Immediate	The number of large trees will be maintained between 0% and 50% of the benchmark as a result of management actions 11 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	It is anticipated that the number of large trees will be maintained between 0% and 50%. Remedial actions are not anticipated.
Coarse woody debris	0	0	0	2	5	20 years	Course woody debris greater than 50% and less than 200% of the benchmark will be achieved by specific management actions 1 to 6 outlined in **Table 60**.	Baseline Site Condition attributes are established. Habitat quality transects to be completed by suitably qualified professionals at 5, 10, 15 and 20years.	Coarse woody debris is currently 4.38% of the benchmark due to current and historical land uses. If monitoring indicates that coarse woody debris is not transitioning to between 50 and 200% (8% at year 10) then remedial actions will be applied. These include a review of actions that impact on coarse woody debris such as fire regimes and importing native tree debris if necessary.
Weed cover	3	5	10	10	10	10 Years	Weed coverage will reduce to less than 5% over the course of 10 years by	Baseline Site Condition attributes are established. Habitat quality	Weed cover is currently 50% of the benchmark. If improvement

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
							specific management actions 3, 4 & 5 outlined in **Table 60**.	transects to be completed by suitably qualified professionals at 5, 10, 15 and 20 years. An additional survey is recommended at Year 3 to track progress to the Year 5 milestone objective.	toward below 5% has not been achieved by the end of Year 5 then then remedial actions to reduce weed cover will be applied. These include refining weed control methods.
Quality and availability of food and foraging habitat	1	1	1	5	10	20 Years	Quality and availability of food and foraging habitat will improve to high due to specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Quality and availability of food and foraging habitat will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Quality and availability of shelter	1	10	10	10	10	5 Years	Quality and availability of shelter will improve to high by specific management action 7 outlined in **Table 60**.	Baseline attributes are established. The HMMP outlines monitoring procedures.	Quality and availability of shelter is currently moderate. The HMMP remedial actions apply to this criterium achieving a high rating.
Site Condition Score	**20.75**	**57.75**	**66.75**	**85**	**95**				
Overall Site Condition Score out of 3	**0.62**	**1.73**	**2.00**	**2.55**	**2.85**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Size of patch	10	10	10	10	10	NA	NA	NA	NA
Connectedness	4	4	4	4	4	NA	NA	NA	NA
Context	4	4	4	4	4	NA	NA	NA	NA
Ecological Corridors	6	6	6	6	6	NA	NA	NA	NA
Role of site location to species overall population in the state	5	5	5	5	5	NA	NA	NA	NA
Threats to the species	7	10	10	10	10	5 years	Threats to species including barbed wire fencing will be removed to reduce threats to low levels by specific management action 6 outlined in **Table 60.**	Baseline attributes are established. This criterium is reliant upon the removal of barbed wire threats and supported by the suppression and control of pest species and weeds.	The removal of barbed wire threats will provide an immediate and large reduction in threat score.
Species mobility capacity	4	4	4	7	10	20 Years	Species mobility capacity will be improved to minor restriction (<25%) by specific management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Species mobility is currently moderately restricted by the poor canopy cover. All site condition remedial actions apply to this criterium achieving a high rating.
Site Context Score	**40**	**43**	**43**	**46**	**49**				
Overall Site Context Score (out of 3)	**2.14**	**2.30**	**2.30**	**2.46**	**2.63**				

Attribute	Current Score	Year 5 score	Year 10 score	Year 15 score	Year 20 score	Time Until Measured Benefit	Justifications / Management Actions	Monitoring	KPIs and Adaptive Management
Presence	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
Usage	0	0	0	0	5	20 years	Habitat will reach at least dispersal value as a result of management actions 1 to 6 outlined in **Table 60**.	Baseline attributes are established. Establish strategic photo monitoring points at commencement of offset. Habitat quality transects and photo monitoring to be completed by suitably qualified professionals at 5, 10, 15 and 20 years.	Dispersal quality will improve to high. All site condition remedial actions also apply to this criterium achieving a high rating.
Approximate Density	0	0	0	0	0	Immediate	NA – Not reliant on change.	NA – Not reliant on change.	NA – Not reliant on change..
Role of the population	5	5	5	5	5	Immediate	NA - Not anticipated to change	NA - Not anticipated to change	NA - Not anticipated to change
SSR Score (out of 70	**10**	**10**	**10**	**10**	**15**				
SSR Score out of 4	**0.57**	**0.57**	**0.57**	**0.57**	**0.86**				
Total Habitat Quality Scores	**3.34**	**4.61**	**4.88**	**5.87**	**6.33**				

Swift Parrot Features													
Year 2	**Justification / Actions**	**Year 3**	**Justification / Actions**	**Year 4**	**Justification / Actions**	**Year 5**	**Justification / Actions**	**Year 10**	**Justification / Actions**	**Year 15**	**Justification / Actions**	**Year 20**	**Justification / Actions**
Plant at least 9,162 features (E. tereticornis and C. citriodora at proportions reflective of regional ecosyetsm expectations in Table 52) to achieve 130% of the OAG requirement.	Monitor quarterly for first 12 months to ensure a 90% survival rate (at least 8,246 stems surviving). If survival rate falls below 90% on a monitoring occasion, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 8,246 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 8,246 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 8,246 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of advanced stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 8,246 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of mature stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 8,246 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of large mature stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 8,246 stems surviving). NB: minimum OAG requirement on Marrambi is 7,051 stems to achieve 100% offset acquittal.	If survival rate falls below 90% on monitoring, conduct remedial plantings of large mature stock within 3 months and manage as new plantings. Consider extending the management period to ensure OAG requirement is met.

Regent Honeyeater Features													
Year 2	**Justification / Actions**	**Year 3**	**Justification / Actions**	**Year 4**	**Justification / Actions**	**Year 5**	**Justification / Actions**	**Year 10**	**Justification / Actions**	**Year 15**	**Justification / Actions**	**Year 20**	**Justification / Actions**
Plant at least 4,969 features (C. citriodora at proportions reflective of regional ecosyetsm expectations in Table 54) to achieve 130% of the OAG requirement.	Monitor quarterly for first 12 months to ensure a 90% survival rate (at least 4,472 stems surviving). If survival rate falls below 90% on a monitoring occasion, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 4,472 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 4,472 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial tube stock plantings within 3 months and manage as new plantings.	Monitor to ensure a 90% survival rate (at least 4,472 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of advanced stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 4,472 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of mature stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 4,472 stems surviving).	If survival rate falls below 90% on monitoring, conduct remedial plantings of large mature stock within 3 months and manage as new plantings.	Monitor to ensure at least a 90% survival rate (at least 4,472 stems surviving). NB: minimum OAG requirement for Marrambi is 3,825 stems to achieve 100% offset acquittal.	If survival rate falls below 90% on monitoring, conduct remedial plantings of large mature stock within 3 months and manage as new plantings. Consider extending the management period to ensure OAG requirement is met.

Appendix F

Hollow Monitoring and Management Plan

KFF2 MARRAMBI OFFSET SITE

Hollow Monitoring and Management Plan

DWG NO.	DRAWING TITLE	ISSUE	DATE
9383 E 01 Marrambi HMMP	COVER SHEET	B	13/02/2026
9383 E 02 Marrambi HMMP	INTRODUCTION AND NOTES	B	13/02/2026
9383 E 03 Marrambi HMMP	OFFSET SITE ARTIFICIAL HOLLOW SUITABILITY	B	13/02/2026
9383 E 04 Marrambi HMMP	MAINTENANCE AND MONITORING	B	13/02/2026
9383 E A01 Marrambi HMMP	APPENDIX A - ARTIFICIAL HOLLOW OPPORTUNITY ASSESSMENT	B	13/02/2026



Saunders Havill

PATHWAYS TO SUCCESS

MARRAMBI OFFSET SITE

Hollow Monitoring and Management Plan - *Introduction and Notes*

INTRODUCTION & OBJECTIVES

This Hollow Monitoring and Management Plan (HMMP) has been prepared by **Saunders Havill (SH)** for **Frasers Property New Beith Pty Ltd** for the proposed KFF2 Marrambi offset site located at Bryden on Lot 83 on S311739, lots 90 and 91 on S311776, lot 169 on S312673 and lot 4 on SP165393.

The primary objective of this HMMP is to monitor the utility of existing site hollows and outline creation of new hollows via Arborist carving in trees over 500 mm DBH for the Greater Glider over the 20 year management period.

Hollow creation is to occur at densities of at least 1.5 hollows per hectare to reflect the hollows removed at the impact site. Created hollows will be mapped and subsequently monitored and maintained over the 20 year management period.

BACKGROUND

Natural tree hollows form an important part of many South East Queensland (SEQ) ecosystems, and are recognised as critical for Greater Glider denning habitat. Natural hollows can take between 80 to 350+ years to develop and form a range of sizes and shapes over time that suit the requirements of different fauna species. In circumstances where clearing of hollow-bearing trees cannot be avoided, hollow carving or creation can provide a functional alternative to natural tree hollows.

Hollow installation is highly specialised to suit individual fauna species requirements, and requires prior knowledge of hollow-dependent fauna at the development and receiving areas and hollow specifications for target fauna species. Ongoing monitoring and maintenance is also essential to ensure hollows are achieving beneficial outcomes for fauna, particularly threatened species such as the Greater Glider.

There are currently no regulatory guidelines in Queensland for the implementation, monitoring and maintenance of hollows. The information is intended as a guide and is subject to alteration by the qualified hollow carver working on site. Notably, the suitability of site trees to host carved hollows is currently under assessment by Arborists.

METHODOLOGY – ARTIFICIAL HOLLOW CARVING

Hollows are to be installed and monitored by AQF Level 5 Arborist (or equivalent). There are five types of artificial hollow carving (summarised below) further details are provided in Appendix A.

Artificial Hollow Types	
Branch End Hollows	
Description	Branch End Hollows are carved at the end of a large branch, imitating where a branch has snapped off naturally. The entrance is often on the branch's cut or broken face, leading inward into a cavity denning chamber.
Suitable Trees	• 900+mm DBH • Mature Tree • Wide spread crown
Branch Middle Hollows	
Description	Branch Middle Hollows are carved in the middle section of a branch, imitating hollows formed when decay enters through side cracks or wounds. The Entrance hole on the side of the branch.
Suitable Trees	• 900+mm DBH • Mature Trees • Wide spread crown with large diameter (400+mm) lateral branches
Branch Stub Hollows	
Description	Branch Stub Hollows are carved where a branch has broken but left behind a short stub sticking out of the trunk, imitating hollows that form when fungi and decay invade at the break point. The entrance is often at the stub or broken branch entrance.
Suitable Trees	• 600+mm DBH • Early Mature Tree • 400+mm branch diameter at or above minimum installation height
Trunk Middle Hollows	
Description	Trunk Middle Hollows are carved directly into the trunk of the tree, below the crown of the tree, imitating hollows formed when old wounds, lightning strikes, or decay in the trunk create cavities. The entrance hole is on the side of the trunk with the denning chamber below the entrance.
Suitable Trees	• 600+mm DBH • Early Mature Tree • 400+mm branch diameter at or above minimum installation height
Trunk Top Hollows	
Description	Trunk Top Hollows are carved at the top of a trunk often just below the crown or where the main stem ends, imitating hollows with vertical shafts caused by crown failure. The entrance is downward facing, leading to a denning chamber directly below.
Suitable Trees	• 600+mm DBH • Early Mature Tree • 300+mm branch diameter at minimum installation height

Arbor Australis Consulting was engaged to provide assessment and advice on the potential of artificial hollows for Greater Gliders on the offset site.

General guidelines for Greater Glider suitable Artificial Hollow Carving from Arbor Australis Consulting are summarised below. Installation is to follow the full specifications listed in Appendix A.

Greater Glider Artificial Hollow Requirements Summary	
Location in Tree	Branch-end hollows are preferred. Vertical trunk hollows and Brank stub hollows where installation opportunities are limited by tree size and form.
Orientation	North facing hollows are the most preferred. Followed by east, south, and west. Vertical hollows least are the least utilised.
Height Above Ground	Minimum of 8m. Hollows higher in the crown of show more use than lower ones.
Thermal Qualities	Dead trees (stags) are not to be used due to their limited thermal qualities. Seasonal variation may mean multiple hollows are used by Greater Gliders for thermoregulation.
Structure	For branch end hollows the denning chamber within the branch needs to be a minimum of 300mm in branch diameter where there is no load or branch weight beyond the Artificial Hollow site. For branch stub hollows the entrance chamber needs to be carved into the branch stub, requiring a minimum size of 180mm in diameter. Artificial hollows must not create structural weakness or excessive risk of tree failure.
Crown Pruning Limits	Pruning should not exceed 5% of live foliage by volume. Minimise loss of photosynthetic material; tree health/vigour must be considered before cutting.
Existing Hollow Modifications	Existing hollows can be adapted if undersized or too deep (e.g. installing a floor, enlarging). However the benefit must be weighed against current use by other species.
Risk & Safety	Hollows must not significantly compromise structural integrity. Minimum part sizes and chamber/entrance specifications (Appendix A) have been specified to ensure tree strength is retained.

The specific details of installation specifications for each type of artificial hollow including Hollow Location, Opening, Branch Size & Minimum Wall Thickness, Hollow Chamber Depth and Methodology are provided in Appendix A.

METHODOLOGY – HOLLOW CREATION TOTALS AND LOCATIONS

Arbor Australis Consulting was engaged to provide assessment and advice on the potential of artificial hollows for Greater Gliders on the offset site (Appendix A). It has been estimated that there are 779 suitable trees for greater glider artificial hollow carving alongside existing hollows (refer SHEET 03 and Appendix A for locations and details). Of the 779 trees 49% are suitable for Trunk Middle Hollows, 39% Branch Stub Hollows and 12% Branch End (refer Appendix A for full details).

In order to meet the optimal target at least 1.5 hollows per hectare a in each assessment unit a minimum of 198 are required to be created (alongside existing hollows) across AUs 6, 7 and 8. Where Artificial Hollows are unable to be installed the arborist is to install nest boxes to make up the balance of hollows. Nest Boxes are to follow the specifications listed on this sheet to ensure they are both suitable for greater glider habitat and will act as a replacement until new hollows form within the offset site.

Hollows are to be installed so that there are a minimum of 1.5 hollows per hectare located across each Assessment Units (AUs) as per the table below, with 116 artificial hollows to be installed across 98 suitable trees in AU6, 16 artificial hollows to be installed across 16 suitable trees in AU7, 54 artificial hollows to be installed across 172 suitable trees in AU8, and 10 artificial hollows to be installed across 31 suitable trees in AU8. The qualified Artificial Hollow Installer is to assess the benefits and possibilities of both installing more than one hollow per suitable tree and the modification of existing hollows to meet Greater Glider requirements. Where this is not possible, additional nest boxes should be installed. Assessment unit locations are shown on SHEET 03.

METHODOLOGY – GREATER GLIDER NEST BOXES

Nest boxes are to be installed by a AQF Level 5 Arborist (or equivalent) or a suitably experienced nest box installer. The following specifications for design and installation are recommended for Greater Gliders:

Dimensions and Materials

Standard construction dimensions for nest boxes are H: 535mm, W: 360mm & L: 360mm. An entrance size of 130mm is recommended to reduce non-target intake (Gracanin et al. 2025). Other designs such as the 3 Unit Nest Box from *Habitat Innovation* and Cyplas® Greater Glider from *Hollow Log Homes* have seen success with Greater Glider intake.

Non-degradable plastic is recommended for nest box construction. Double-walled plastic boxes with timber inserts have shown to be effective in thermal buffering and will likely last longer than timber ones, allowing more time for additional natural hollows to form within the offset site during their lifespan (Callan, Johnson, and Watson 2023).

Insulation and Thermoregulation

Insulation such as 20-40mm foilboard wall insulation with air gaps has been shown to support thermoregulation (Howard et al. 2022). Absence of insulation on the wall side of the nest box that is in contact with the tree may help with heat dissipation (Gracanin et al. 2025). Reflective white, fire-retardant paint can be effective to reduce radiant heat absorption (Larson et al. 2018). Internal surfaces should not be painted. Any finishes used be free of Volatile organic compounds (VOCs).

Installation

Nest Boxes are to be installed in healthy trees with a minimum DBH of 300mm. The Height of boxes are best positioned as close to the tree canopy as possible, at a minimum of 8m from the ground. Where possible, place boxes in locations that are least vulnerable to branch fall. Boxes are to be firmly mounted, Franks (2006) recommend the Habisure system to mount boxes. South to Southeast orientation is recommended where possible to reduce solar exposure (Howard et al. 2022).

METHODOLOGY – TIMING OF INSTALLATION

Artificial hollow carving and nest box installation will be completed as soon as possible (anticipated within the first year) subject to site conditions. Where nest boxes are required in areas where habitat is still to be created, the timing of installation must be at the point where canopy approaches closing or at 15 years, whichever comes first.

REFERENCES

Callan, M. N., A. Johnson, and D. M. Watson. 2023. "Influence of Nest Box Design on Internal Microclimate: Comparisons of Plastic Prototypes." Austral Ecology 48: 374–387

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Gracanin, A., Hofman, M., Willson, S., Clough, J. B., Brown, T., and Mikac, K. M. (2025). Rapid Uptake of Nest Boxes by the Endangered Greater Glider (*Petauroides volans*). *Ecological Management & Restoration* **26**(2)

Howard, I., J. C. H. Ridley, W. Blanchard, et al. 2022. "Helping Wildlife Beat the Heat: Testing Strategies to Improve the Thermal Performance of Nest Boxes." Australian Zoologist 42: 534–560

Larson, E.R., Eastwood, J.R., Buchanan, K.L., Bennett, A.T.D. and Berg, M.L. 2018. "Nest box design for a changing climate: The value of improved insulation". Ecological Management & Restoration 19: 39-48

Area (ha)	87.8	50.15	8.91	19.65	3.29	142.49	13.52	145.58	53.93	12.68	6.61	544.61
Number of Existing Hollows (including a +20% margin)	161	132	35	38	8	98	2	164	91	34	0	763
Existing Hollows per ha	1.83	2.63	3.93	1.93	2.43	0.69	0.15	1.13	1.69	2.68	0.00	1.40
Estimated Hollow Carving Opportunities	164	42	37	38	9	161	16	172	58	51	31	779
Hollow Carving Opportunities per ha	3.70	3.47	8.08	3.87	5.17	1.82	1.33	2.31	2.76	6.70	4.69	2.83
Proposed Artificial Hollow Carving	**0**	**0**	**0**	**0**	**0**	**116**	**16**	**54**	**0**	**0**	**10**	**196**
Proposed Nest Box Installation	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**
Final Proposed Hollows per Hectare	**1.8**	**2.6**	**3.9**	**1.9**	**2.4**	**1.5**	**1.5**	**1.5**	**1.7**	**2.7**	**1.5**	**1.8**

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REFERENCES

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AMENDMENTS

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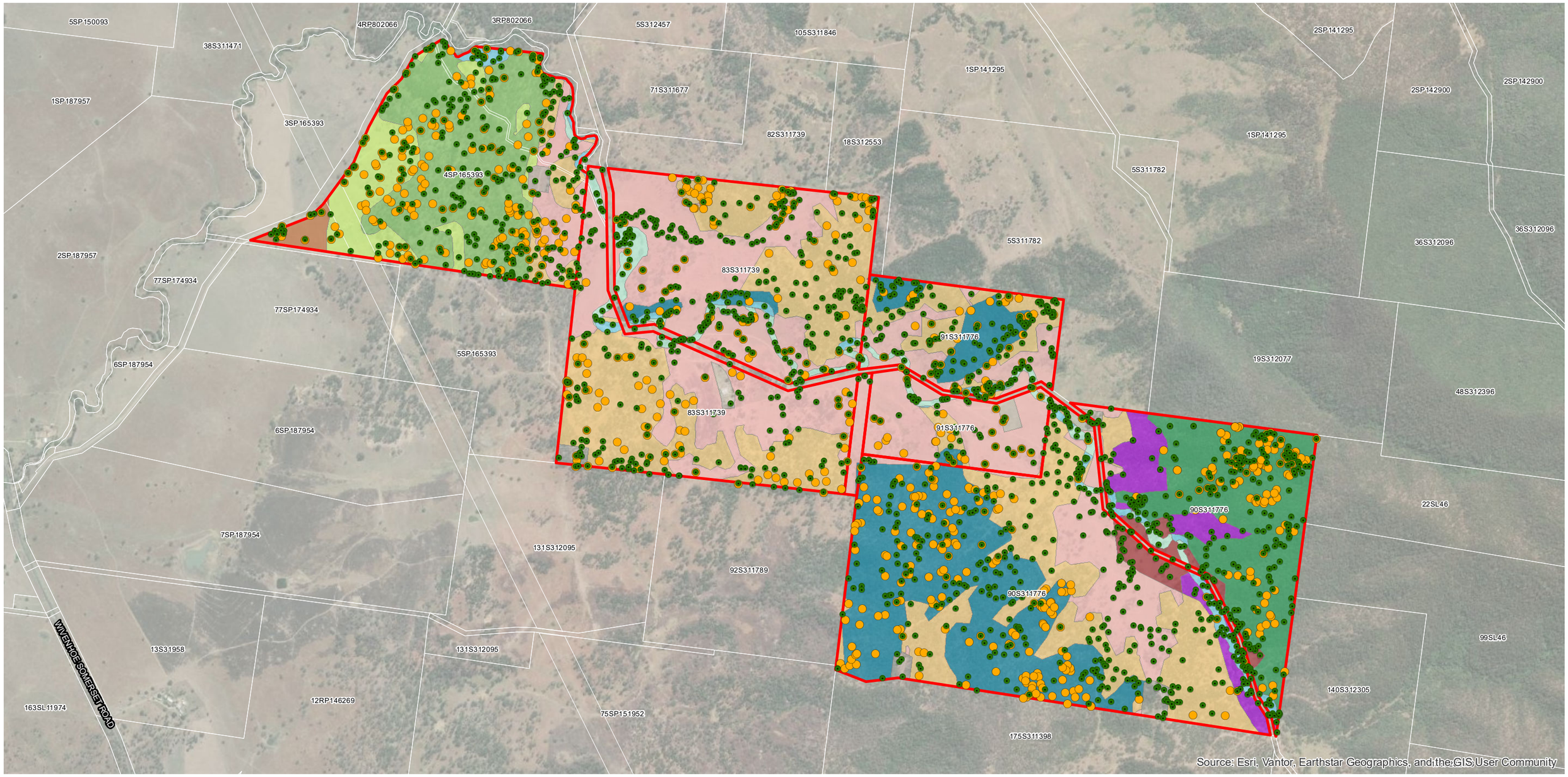
PROJECT
MARRAMBI OFFSET SITE

DRAWING TITLE
HOLLOW MONITORING AND MANAGEMENT PLAN

DRAWING NO.
9383 E 02 Marrambi HMMP B

MARRAMBI OFFSET SITE

Hollow Monitoring and Management Plan - *Offset Site Artificial Hollow Suitability*



LEGEND

- QLD DCDB
- Offset Area
- Trees with DBH >= 500mm
- Trees with existing hollows

Vegetation Assessment Units

- AU-1: Remannt (RE 12.12.5) [87.80 ha]
- AU-2: Remannt (RE 12.11.5/12.11.3) [50.15 ha]
- AU-3: Regrowth (RE 12.3.7) [8.91 ha]
- AU-4: Non-remnant (RE 12.9-10.2) [19.65 ha]
- AU-5: Non-remnant (RE 12.12.12) [3.29 ha]
- AU-6: Non-remnant (RE 12.12.5) [142.49 ha]
- AU-7: Regrowth (RE 12.11.5/12.11.3) [13.52 ha]
- AU-8: Regrowth (RE 12.12.5) [145.58 ha]
- AU-9: Regrowth (RE 12.9-10.2) [53.93 ha]
- AU-10: Non-remnant (RE 12.3.7) [12.68 ha]
- AU-11: Non-remnant (RE 12.11.5/ 12.11.3) [6.61 ha]

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References:

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MARRAMBI OFFSET SITE

Hollow Monitoring and Management Plan - *Maintenance and Monitoring*

MONITORING AND REPORTING

The utility of existing site hollows, creation of new hollow carvings and Nest Boxes (if required) for the Greater Glider will be monitored via Arborist or Ecologist over the 20 year management period.

Following hollow carving or nest box installation, a single page memo or email outlining installed hollows/nest box, host tree particulars and location coordinates with supporting map is to be provided to relevant parties for use in the *Offset Area Annual Report* and *Annual Compliance Report*. A monitoring template should be completed during each inspection. An example template for the monitoring of greater glider nest boxes has been provided on this sheet.

At a minimum the monitoring should include:

- Fauna use including target and/or non-target species.
- Rectification procedures for introduced species.
- The condition of the tree including any damage, dieback, or risk to the hollow.
- Condition of the hollow / nest box host tree noting any health issues such as rot, cracks, splits, fungal infection, wood decay, insect damage.
- Maintenance actions required.

Timing of Monitoring

Artificial hollow carving and nest box installation will be completed as soon as practicable (anticipated within the first year), subject to site conditions.

First 12 months after completion: Monitoring of carved hollows and nest boxes is to occur every three months during the first 12-month period following the completion of hollow carving. Each monitoring event will include a visual assessment of trees where hollow carving has occurred, noting tree condition (e.g. dieback, damage) and, where possible, hollow condition and use.

Annually from Year 2 to Year 20: Following the initial 12-month quarterly monitoring period, annual monitoring is to be undertaken for the remainder of the 20-year Offset Site Maintenance Period. Each annual assessment will include a visual inspection of trees where hollow carving has occurred, noting tree condition (dieback, damage) and, where possible, hollow condition and use.

Spotlighting is to be undertaken as part of milestone monitoring during years 5, 10, 15 and 20. The spotlighting is to identify fauna usage of hollows and nest boxes where possible. Results are to be reported in the milestone monitoring report.

REPORTING

Following each inspection, a report is to be prepared within 14 days by the Arborist or Ecologist and issued to the relevant parties for inclusion in the Offset Area Annual Report and Annual Compliance Report. The report will summarise the inspection results and outline any additional measures recommended to improve the beneficial outcomes of the fauna strategy (e.g. removal of pest species, minor repairs or replacement).

MAINTENANCE

Damaged or lost hollows/nest boxes are to be repaired or replaced within three weeks of monitoring activities and details of all maintenance work should be submitted to relevant parties for use in the *Offset Area Annual Report* and *Annual Compliance Report*. Hollows will be maintained over the 20-year management period.

Nest Box Monitoring Sheet 1

Observer's name:					
Date:				Time:	
Location:				Weather conditions:	
Box No.	Box type	Date installed	External observations	Species observed	Comments

Nest Box Monitoring Sheet 2

Checklist For Nest Box No:		
Annual maintenance	Yes	No
1. Box is not occupied by pest species		
2. Box is not vandalised or missing		
3. Box is securely attached		
4. Box in not damaged or rotten		
5. Entrance hole is free of obstruction and not damaged or worn		
6. Box is aligned away from prevailing winds, rain and excessive heat		
7. Host tree is of a healthy and undamaged		
COMMENTS:		

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REFERENCES
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Franks A & S 2018. "Nest boxes for wildlife: A practical guide."
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Larson, E.R., Eastwood, J.R., Buchanan, K.L., Bennett, A.T.D. and Berg, M.L. 2018. "Nest box design for a changing climate: The value of improved insulation". Ecological Management & Restoration 19: 39-48

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9383 E 04 Marrambi HMMP B

ARBOR AUSTRALIS
CONSULTING



Artificial Hollow Opportunity Assessment

Marrambi, Bryden
October 2025



16th October 2025

Attention: Dr. Andrew Davies
Manager Environmental Division

Saunders Havill Group
9 Thompson Street
Bowen Hills
QLD 4006

Dear Andrew,

Re: Artificial Hollow Opportunity Assessment for Marrambi, Bryden,

I am pleased to submit our assessment and advice on the potential of artificial hollows within the offset site. Hollows have been assessed to meet the requirements for *Petauroides spp,* (Greater Gliders) within the offset site.

I trust that you find this assessment both satisfactory and helpful. Should you wish to discuss any of its recommendations or arrange for them to be implemented, please contact me on 07 3379 7793.

Yours sincerely,

Yours sincerely,

Jeremy Young
Principal Arboricultural Consultant
BSc (Hons) Arboriculture and Urban Forestry, First Class
Cert Arb (UK) | Adv Dip Hort (Arb) | Dip Arb
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Document Control

Document

Project Name: KFF2-Marrambi
Report Title: Artificial Hollow Opportunity Assessment
Report Name: 2025-046_AHOA_SHG_KFF2_Marrambi

Client

Company: Sanders Havill Group
Contact: Andrew Davis
Contact Position: Manager, Environmental Division

Site Owner

Company: Koala Farmland Fund

This document has been prepared by: Arbor Australis Consulting (AAC)
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Revision History:

Version	Date	Details	Author	Reviewed	Authorised
Issue A	16/10/2025	2025-054_AHOA_SHG_KFF2_Marrambi	Jeremy Young	AR	JY

Author Qualification and Experience Summary:

Jeremy Young
BSc (Hons) Arboriculture and Urban Forestry (First Class)
AQF level 6 (Arboriculture).
More than 35 years of industry experience.
Arboriculture Australia, Approved Consultant.
Queensland Arboricultural Association, Approved Consultant.
Brisbane City Council, Panel of Providers, Arboricultural Consultant.

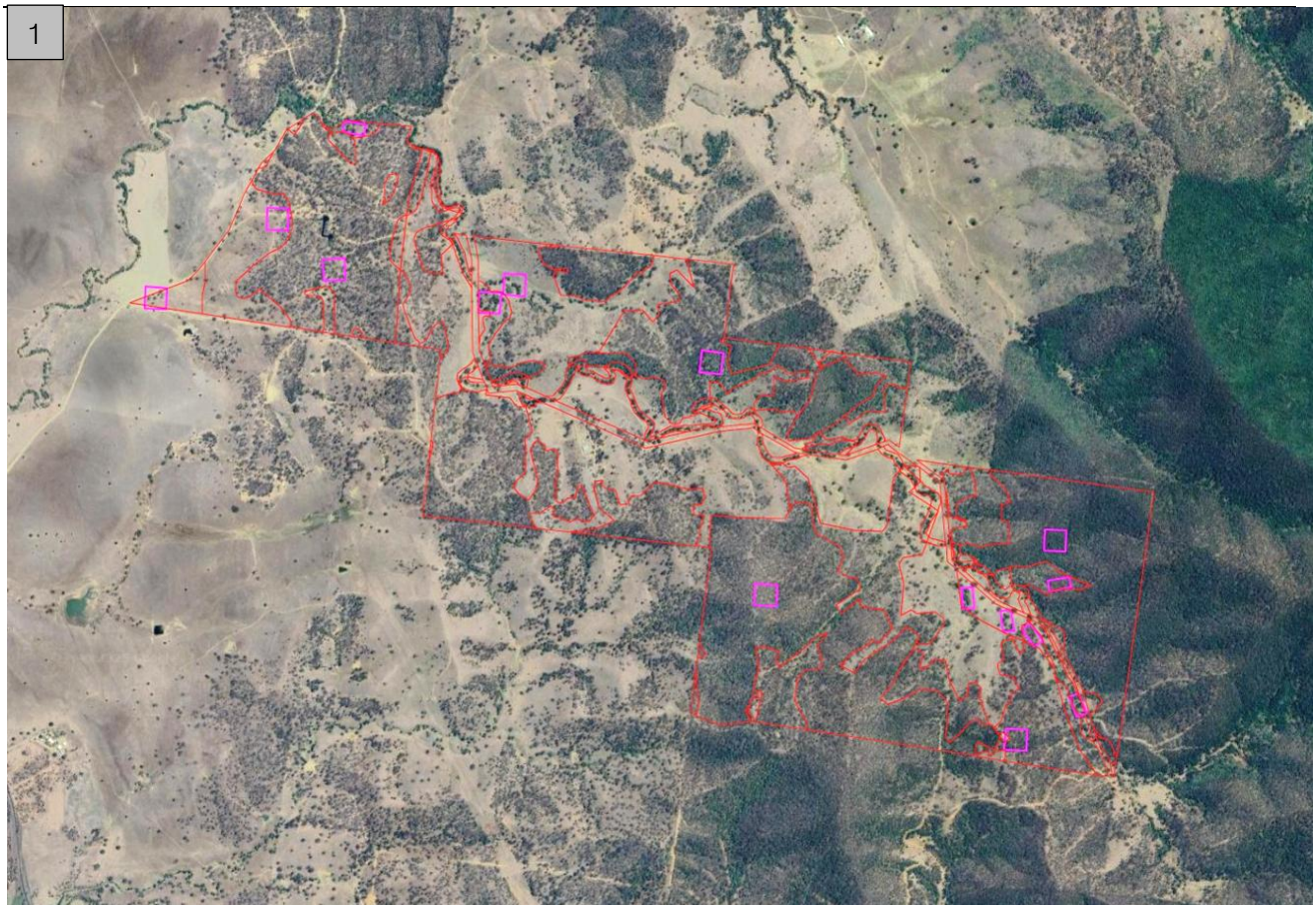
Arboricultural Impact Assessment. Experience in over 1400 projects in the past eight years, ranging from small developments to significant infrastructure development.

Artificial Hollow Opportunity Assessment– Marrambi-KFF2.

Scope:

Assessment of existing trees of the offset site to identify opportunities to develop or introduce habitat hollows artificially. The habitat hollows proposed will be a combination of chainsaw cut and Hollow Hog/Arborgrub carved hollows. The target fauna species for which the hollows are to be developed is the *Petauroides spp*, Greater Glider.

Offset Site and Sample Plot Description: Marrambi, Bryden



Aerial image taken from the Konect app', utilised for the fieldwork.

Image 1: *The offset site extent is indicated by the fine red lines, the magenta polygons indicate the sample plots and areas of assessment.*

It is highly likely that the area was previously cleared of most good (quality) timber trees as part of the immigrant settlement from the 1840's onward. The offset site is a mix of open woodland area and denser vegetation that has been used for pastoral activities and grazed by cattle in the past. This grazing has impeded tree regrowth in the more open low areas of the site. The trees onsite are predominantly of semi-mature to early mature age, with a few older trees present.

The site is a mix of landforms, undulating hills and creek watercourses. The current tree regrowth and vitality suggest growing conditions suitable for further tree establishment in the lower-lying areas, while the upper ridges indicate trees of slower growth and low vitality. Water availability will be the primary limiting factor in tree growth.

The younger age of the current trees and the reduced growth in the denser wooded slope areas in the sample sites is the reason for the limited number of natural hollows present, which was confirmed during the review of the sample sites for Artificial Hollow (AH) suitability.

The trees on site are suitable for AH development for Greater Glider habitat; however, the age of the trees limits the numbers and hollow habitat types that can currently be installed for the target species.



Image 2: Example of young semi-mature trees in the AU-8. Trees are predominantly smaller with limited branch spread and insufficient size of parts above 8m. The area has a scattering of larger trees that can accommodate an Artificial Hollow Installation. Of the trees in the sample plots greater than 500mm DBH, 22% were found to be suitable for Artificial Hollow Installation. (Arbor Australis 2025)



Image 3: Example area of AU-2. Although the trees are older, there is reduced suitability due to the low growth levels in areas with predominantly poor soil and limited water availability. (Arbor Australis, 2025) Of the trees in the sample plots greater than 500mm DBH, 11% were found to be suitable for Artificial Hollow Installation. (Arbor Australis 2025)

Methodology:

Following the initial request for an assessment and advice regarding the creation of artificial hollows to achieve denning opportunities for the Greater Glider species, a tree assessment and data collection were conducted. This assessment aimed to identify opportunities for creating new artificial habitats without compromising existing tree habitat features or tree structure.

Assessment has been carried out through a Random Sample Technique; for each of the Assessment Units, a 1ha random sample plot was applied. Base tree data provided by SHG was sorted and imported into a GIS field system so as to display trees greater than 500mm DBH (trunk diameter). Each of these trees within each plot has been assessed onsite to determine the suitability for artificial hollows and to document the established hollow height, size and depth.

The probability of AH establishment has been determined by the percentage of suitable trees within each of the sample lots. The total number of trees greater than 500mm DBH was then multiplied by the percentage to provide an estimated AH opportunities for each vegetation area.

Tree species not suitable for artificial hollow creation, such as *Casuarina cunninghamiana,* have been excluded from the opportunity assessment and extrapolation numbers.

The electronic collection of data eliminates issues of transcribing errors and is set up to allow for and record the installation and subsequent inspection of the hollows into the future. This Data is available through the Konect App and can be viewed with a Konect User license. Alternatively, the data and photos can be exported to Excel at any stage, for ease of sharing information outside the app.

All measurements have been estimated, and the assessment of hollow opportunities has been conducted from the ground only. Tree location and numbering have been plotted using the GPS coordinates provided by SHG, and all tree numbering has been retained to ensure continuity between reports.

The requirements for the Greater Glider hollows have been based on our previous experience of assessing and implementing AH for Greater Gliders, along with a literature review of the subject.

There is no specific literature that documents the implementation of AH for this species. However, recent research studies have demonstrated positive results.

Due to the limited information available, this advice aims to propose selection criteria and considerations required to determine trees that may be suitable candidates for AH implementation.

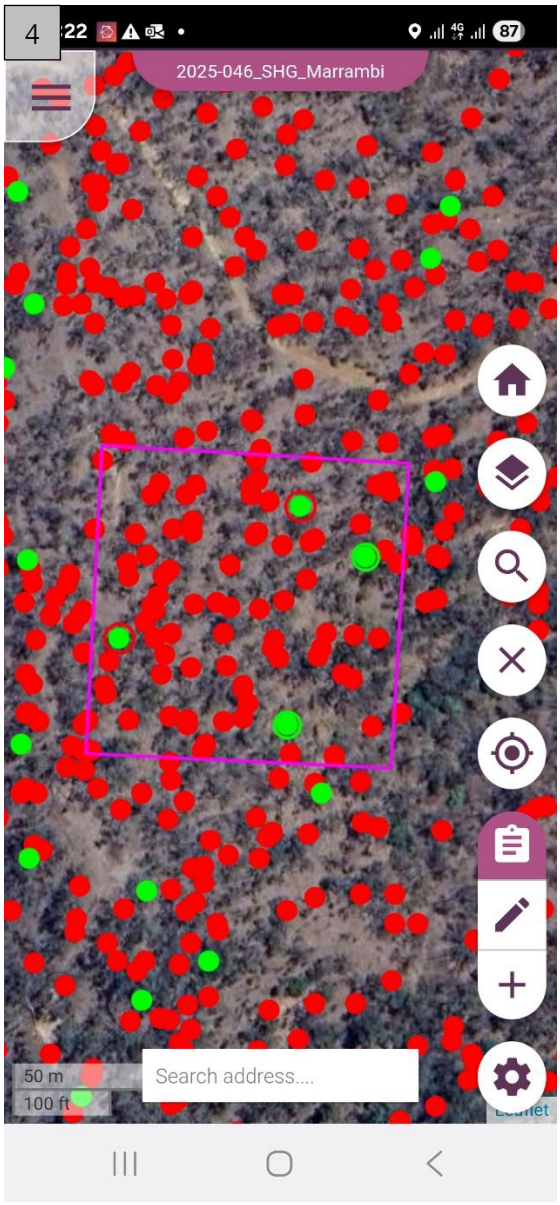


Image 4: Field map display used for site navigation. Trees that are green with circles are greater than 500mm DBH and are suitable for Artificial Hollow installation. (Arbor Australis, 2025)

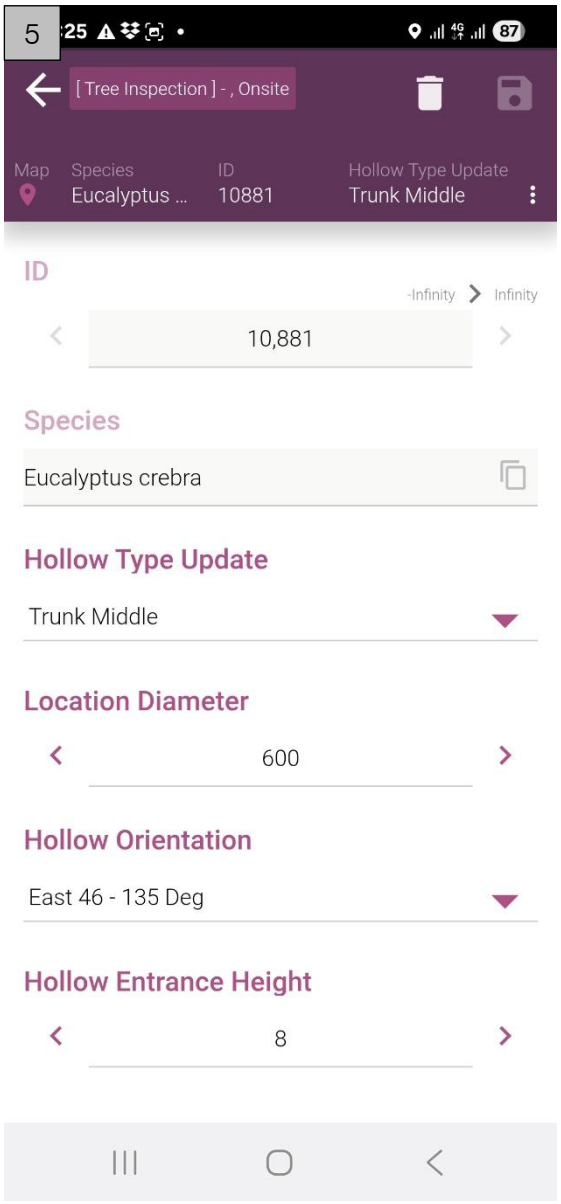


Image 5: The field form that is linked to each of the trees. Data collected in this manner removes the risk of transcription errors. (Arbour Australis 2025)

Natural Hollow Development:

The tree life stage is an essential indicator of the likelihood of natural hollow development, with hollows typically not present until trees reach the late-mature to over-mature stages of life, which can be 100 years or more. Natural hollow development is usually associated with tree veteranisation. Early veteranisation of trees and natural hollow development can occur sooner than this, depending on the severity of previous storm events and tree exposure; however, typically these hollows are too small to support large fauna.

The development of natural hollows of a size suitable for the Greater Glider can take much longer and typically occurs only in trees that are in an over-mature stage with veteran characteristics. This typically refers to trees that are 200 years old or older (Warmington & Lamb, 1999).

An understanding of hollow development and the tree's natural response to wounding and decay is necessary to determine opportunities for imposing AH on trees. A comprehensive understanding of tree physiology and biological function must complement this understanding. Hollow specialisation development needs to ensure that the tree's structure is not compromised, along with maintaining sufficient biological function for carbohydrate production to sustain growth and natural decay defence.

Natural hollow development is primarily a result of heartwood decay in mature to over-mature trees that have experienced branch, branch union or stem failures, often (but not always) initiated as a result of failures in storm events.

These failures expose the dysfunctional heartwood to the air. Decay can enter the tree through fungal spores and microbes colonising the wound site; however, recent research indicates this is less likely or impactful, than latent decay fungi and microbes already present in the wood structure (Boddy & Rayner, 1983; Boddy, 2021). Wounding results in exposure to the air reducing the moisture content and increasing the exchange of gases in the cells, stimulating latent fungal propagules and microbial activity in the wood.

Decay progresses relatively slowly as fugal hyphae exude enzymes that break down cellulose and lignin. At the same time, the tree actively tries to compartmentalise (resist) the decay fungi through chemical alteration of cells to create barrier zones (Schwarze, *et.al.,* 2013).

Compartmentalisation occurs in the living tissue of the trees sapwood (symplast), not the heartwood (apoplast). The basic principle of compartmentalisation is the forming of internal chemical walls or barriers, increasing in effectiveness from 1-4: (Shigo, 1984).

Barrier Zone 1 is the longitudinal zone parallel to tree growth, on a trunk which is above and below the wounding site. At the time of wounding, the border pits are altered through a process called tylosis. Barrier Zone 1 is the weakest of the barrier zones due to the large sap vessels, which limit passive defence and allow fungal hyphae to move.

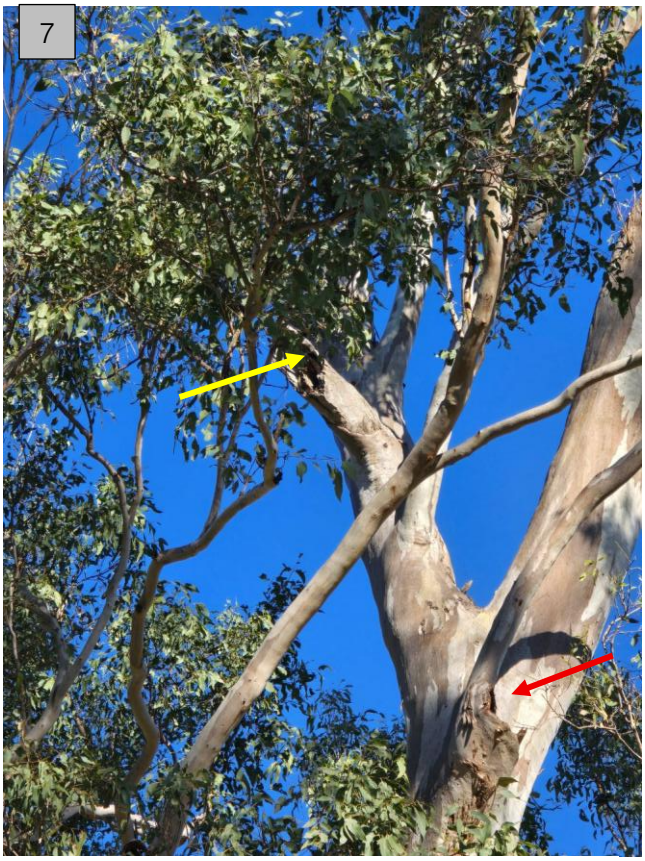
Barrier Zone 2 is the marginal axial parenchyma (growth rings). At the time of wounding, the tree chemically alters the cells and creates a barrier at the current growth ring. The barrier resists the spread of decay inwards from the wounding site.

Barrier Zone 3 is the medullary or parenchyma rays, which radiate like spokes of a bike wheel from the trunk centre. This chemical barrier resists and limits the lateral spread of decay.

Barrier Zone 4 is laid down at the time of wounding by the area of the cambium that is still functioning at the edge of the wound site. This barrier resists the spread of decay into the new wound wood that develops around the wound site and is the most vigorous defence against decay.

The rate of decay and speed of hollow development is highly variable. Tree species, microbial populations, tree physiology, vigour[1], and vitality[2] all play significant roles in the rate of decay that results in hollow development.





Images 6 & 7: Examples of natural formed hollows indicated by the yellow and red arrows. (Arbor Australis, 2025)

Some examples of hollow development variations:

Growing Location, Trunk Size Variation:

A Queensland Blue Gum *(Eucalyptus tereticornis)* growing in an alluvial loam, close to a water supply is unlikely to reach over maturity or veteran status until the age of 250 years. It may be 1.5m+ in trunk diameter before hollows start to develop. Trees in this growing environment typically have higher vitality and energy reserves that can be utilised in defence against decay.

[1] Tree's genetic capacity to resist strain, vigour cannot be increased

[2] Tree growth response to external stimuli in current climatic conditions

Whereas a Queensland Blue Gum *(Eucalyptus tereticornis)* growing in poor soil with limited water supply will age quicker and put on less annual incremental growth, so over-maturity or veteran status may be reached in 100 - 150 years. Trees in this growing environment have reduced vitality and, as a result, have less energy reserves that can be utilised for active defence against decay.

Species, Decay Rate Variation:

A Narrow-leaved Red Ironbark *(Eucalyptus crebra)* has a dense wood structure, a slow growth rate, and produces smaller wood cells with a high lignin content. This provides a physical barrier to the movement of fungal hyphae through the timber, impeding decay and slowing the development of hollows.

A Scribbly Gum (*Eucalyptus racemosa*) has a low timber durability rating due to its faster growth rate with larger wood cell structure and a lower lignin content in the heartwood. This species will typically begin to develop hollows within 30 years.

The examples above are only a snapshot of the variability of hollow development. The tree's trunk diameter/DBH (diameter at breast height) or the tree's height does not guarantee the presence or absence of hollows. The tree's life stage, because of its growing environment, is by far a better indicator (Wormington *et al*., 2003). Typically, we acknowledge that the larger the tree's trunk diameter the more likely the potential for the presence of hollows.



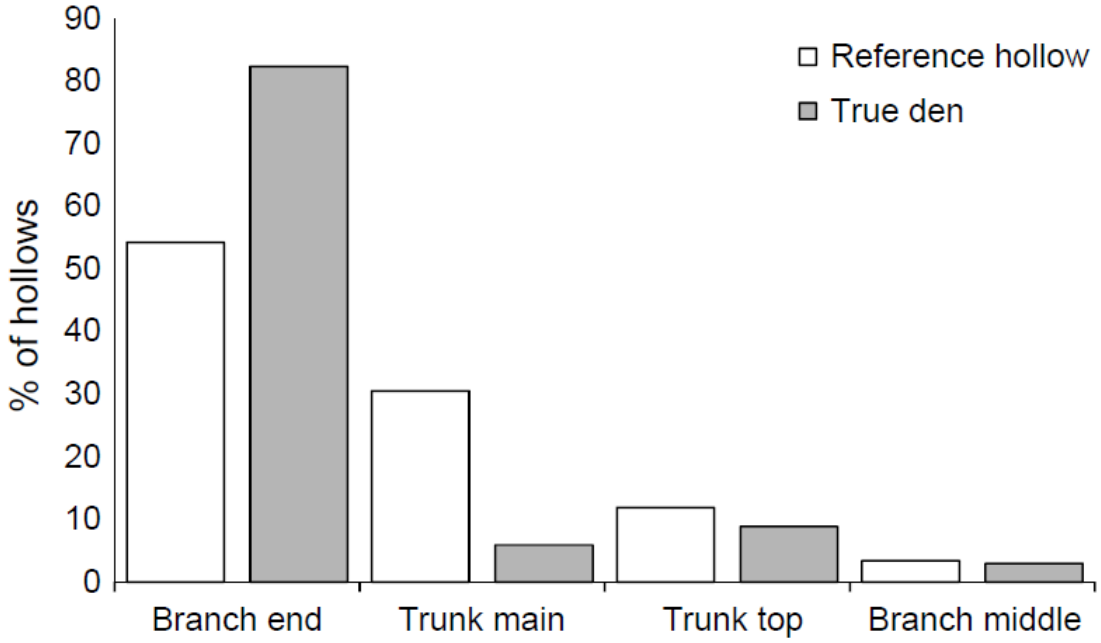
Image 8: *Examples of over-mature trees that are beginning to develop veteran characteristics of hollow development. These trees were most likely spared from the original land clearing due to reduced wood quality. The tree on the right appears to be older, based on the larger hollows and trunk girth. (Arbor Australis, 2025)*

Greater Glider Hollow Requirements:

A review of the literature regarding the Greater Glider's denning and breeding hollow requirements revealed significant variation in the data. It is hypothesised that this variation in data is a result of the variation in climatic zones altering the use of hollows at the time data was collected. This information has been summarised below to inform the AH installation recommendations.

Most hollows occupied by the Greater Glider are typically found in branches, often with dead wood at the entrance (Goldingay 2011; Hofman *et al.,* 2022). Past studies have shown the hollows are generally located in the crown at heights ranging from 6 – 56m (Kehl and Borsboom 1984; Lindenmayer *et al*. 1991; Hofman *et al*. 2022).

Hoffman *et al.* (2022) identify that the most significant utilisation occurs in branch end hollows, with approximately 80% of utilisation in these types. Trunk hollows are utilised at a higher rate when positioned higher in the crown and trunk top; they are used at a considerably greater rate than those in the main stem, and comparable rates in terms of availability to branch middle hollows.



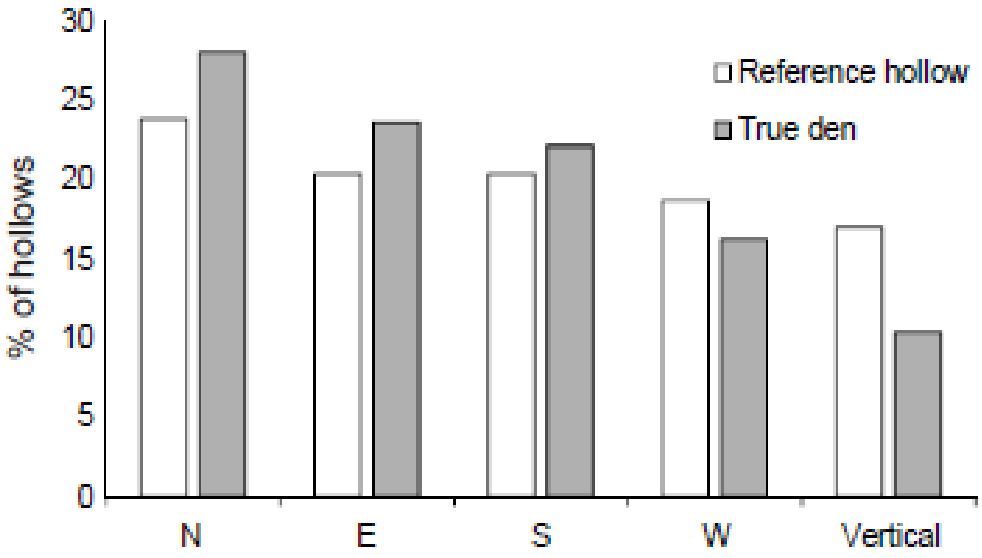
Graph 1: Extract from Hoffman et al (2022) showing utilisation of hollow type.

Hollow Orientation

Hoffman *et al.* (2022) provide some analysis of hollow orientation. Utilisation was highest in hollows with a northerly aspect, followed by east, south, and west, with vertical hollows least utilised (*Extract 2).*

This research was conducted in southern coastal NSW, approximately 250 km south of Sydney (latitude: 34° South). The climate is temperate, with cold, wet winters and warm, dry summers. The preference for entrances facing north may have been to take advantage of the thermal gain, warming aspects of such an orientation, which is likely more critical given the cooler climate of the locality. In the subtropics, a northerly aspect is presumed to be less critical due to higher ambient air temperatures and solar gain, which can lead to potential overheating of hollows.

Greater Glider has relatively narrow thermal tolerance, with temperatures above and below 20^{0}C increasing basal metabolic rate (Rübsamen *et al*. 1984). The thermal properties of hollows are believed to be a significant influence on their selection. Moreover, the need to use different hollows in different seasons may be required for optimal thermoregulation (Hofman *et al*. 2022).



Graph 2: *Proportional orientation of occupied hollows (Hoffman et al., 2022).*

Based on this research and understanding of tree physiology and its response to wounding, along with experience in habitat hollow installation, a set of guidelines and specification sheets has been developed to guide the assessment and installation process.

While branch-end hollows are the preferred hollow type, the tree size is a significant limiting factor in achieving this hollow type. A hollow with the denning chamber within the branch needs to be a minimum of 300mm in branch diameter where there is no load or branch weight beyond the AH site. Typically this is an existing branch stub, broken or pruned branch.

Trees with suitable parts are often limited to being large, mature, or over-mature trees. They are not a common occurrence, and to be suitable, they must not require pruning that removes a significant portion of branch and crown foliage in order to create a hollow. Excessive pruning will have an adverse impact on tree health.

A Branch Stub Hollow has been described as an alternative to achieve the required hollow entrance through an existing branch end, as shown to be desirable in past studies. However, as the denning chamber is cut into the trunk of the tree rather than the branch, the size requirement for the branch is reduced. The entrance chamber needs to be carved into the branch stub, requiring a minimum size of 180mm in diameter.

The development of artificial hollows needs to consider the requirements of the fauna it is intended for, the tree structure, the presence of other habitat features, and the biological function of the tree. The following is a summary of conditions and criteria that collectively need to be met in order to create artificial habitat hollows for Greater Gliders (Best et al., 2022).

Existing Hollows: Trees with existing hollows that do not meet the Greater Glider size criteria can, in some cases, be altered to be suitable for the Greater Glider. This can include installing a floor where hollows are too deep or increasing the size where hollows have started to develop but are not large enough for the Greater Glider.

Any alteration to an existing hollow will need to be weighed against the benefit they currently provide to other species.

Thermal Qualities: Dead trees (stags) have been excluded from the assessment due to their limited thermal qualities, as they are not suitable or preferred by the Greater Gliders. Mimicking natural hollows by carving them into living trees provides better thermal qualities (Griffith et al., 2018).

Hollow Location: Greater Gliders prefer branch-end hollows over vertical trunk hollows. The assessment has focused on the opportunity for branch-end hollow development; however, as described above the opportunities are limited by the tree size and tree form. Opportunities for AH have also been listed where a good opportunity exists to position a habitat hollow in a tree trunk.

The installation height has been set as a minimum of 8m based on previous studies and the observations made in these studies that the hollows higher in the crown are utilised more than the lower hollows.

Structure: Hollows should not create a significant structural weakness or significantly increase the probability of failure of a living tree part at the site of the artificial hollow.

Risk: In considering the Risk of Harm (RoH) artificial hollows may pose, the risk is acceptable for this site as there is a low probability of people (target) being present should a tree failure occur. However, maintaining acceptable levels of structure at the site of hollow generation is essential to avoid failures that would compromise the habitat created. For this reason, minimum part sizes have been specified for each of the hollow types. The required habitat chambers, hollow entrance point and the load above the AH site dictate this size.

Crown Pruning: While the removal of branch structure can provide an opportunity to install branch end hollows, there is an adverse impact on tree health with the removal of photosynthetic material. The pruning to remove a branch needs to be weighed against the tree's ability to tolerate this damage. Tree health, vigour and vitality will influence the pruning decisions. As such, a general guideline has been established that crown pruning should not exceed 5% of live foliage by volume.

General Artificial Hollow Guidelines:

The points below outline the general guidelines used to assess a tree for suitability to install AH. More specific guidelines for each hollow type are outlined in the Hollow Specification Sheets.

Opening

- Between 80mm and 350mm.
- Opening Orientation is east and south preferred but not critical.
- Only one entrance per hollow.

Minimum Wall Thickness

- 50mm for thermal qualities. However, the wall thickness needs to consider the load beyond the hollow for the tree structure.

Hollow Chamber Depth (Bottom of hollow opening to bottom of chamber).

- Between 0.5m (500mm) and 5m (5000mm).

Hollow Entrance Heigh

- Minimum 8m above ground.

Hollow Location

- Branch ends are preferred, but the opportunities will dictate what can be achieved.
- Multiple hollows in one tree are acceptable, however diversity of hollow types is more desirable.
- Avoid situating hollows in positions above one another.

General Amended Hollow Guidelines:

The aim is to alter existing hollows to meet the parameters above. This may range from shortening the hollow chamber depth through a false floor or reducing and reorientating the opening through the installation of a carved/hollow log. The amendment of smaller hollows to increase the entrance size to the chamber follows the same methodologies outlined in the specification sheets.

Where existing hollows are amended, it is desirable to retain the response wood growth as this provides increased structural load capacity around the existing hollow.



Image 9: An example of a larger tree with a DBH >800mm where four artificial hollows suitable for a greater glider have been installed. Thess consist of 1 x Branch End, 2 x Branch Stub and 1 x Trunk Hollow (Arbor Australis, 2025)

Artificial Hollow Types

According to the specification outlined above, five AH types have been documented. Each of these hollow types has a specification sheet in Appendix 1 that also provides installation notes for clarity.

Branch End Hollows:

Branch End Hollows are carved in a branch with the entrance through the end of the branch or a stub on the end of the branch and the denning chamber within the branch. Trees suitable for branch end hollows are typically greater than 900mm in trunk diameter, are mature and have a broad spreading crown. Where possible, existing large stubs from past branch failures are utilised. Pruning of live wood to create the branch end opportunity is acceptable in some situations (refer to installation notes).

Branch Middle Hollows:

Branch Middle Hollows are carved in a branch with the entrance through the side of the branch and the denning chamber within the branch. Trees suitable for Branch Middle Hollows are typically greater than 900mm in trunk diameter, are mature and have a broad spreading crown of lateral large diameter branches (refer to installation notes).

Branch Stub Hollows:

Branch Stub Hollows are carved in a branch stub close to the branch union with the entrance through the end of the cut or broken branch and the denning chamber within the trunk of the tree. Trees suitable for branch stub hollows are typically greater than 600mm in trunk diameter, are early mature, and have a stem diameter of 400mm or greater at or above the minimum installation height (refer to installation notes).

Trunk Middle Hollows:

Trunk Middle Hollows are carved in a vertical trunk with the denning chamber below the entrance in the trunk. Trees suitable for Trunk Middle Hollows are typically greater than 600mm in trunk diameter, are early mature, and have a stem diameter of 400mm or greater at or above the minimum installation height (refer to installation notes).

Trunk Top Hollows:

Trunk Top Hollows are carved in a vertical trunk with the denning chamber below the entrance in the trunk. Trees suitable for Trunk Top Hollows are typically greater than 600mm in trunk diameter and have a history of past crown failure. They are early mature and have a stem diameter of 300mm or greater at the minimum installation height (refer to installation notes).

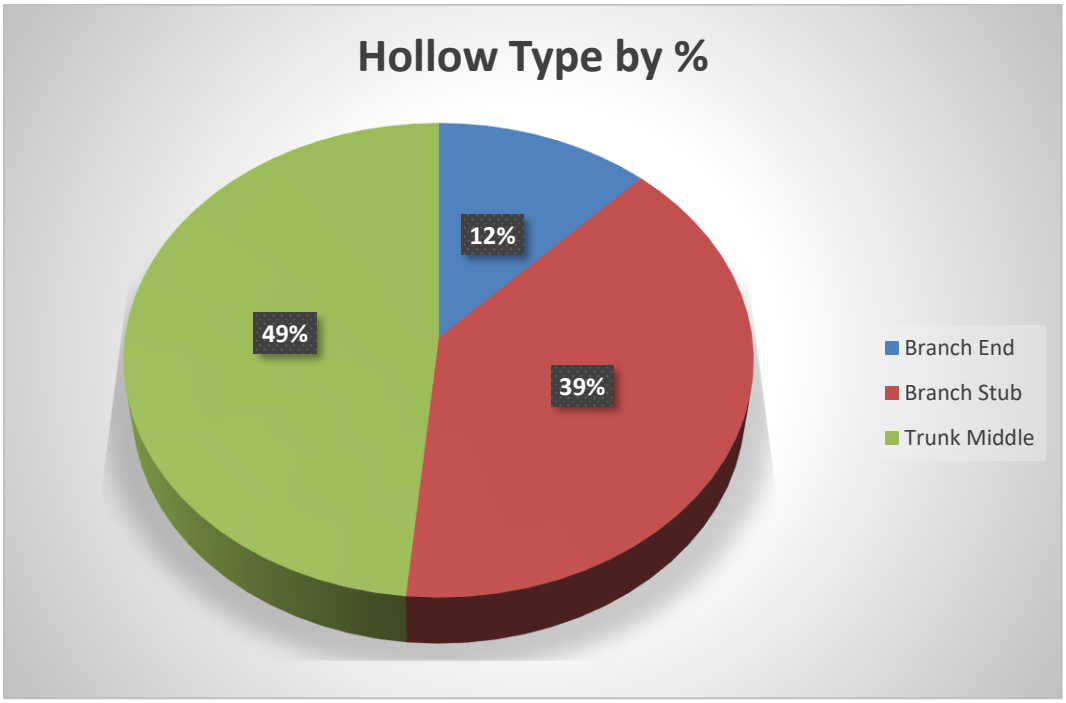
Artificial Hollow Opportunities at the Marrambi site:

Artificial hollow opportunities across the entire site have been extrapolated from the sample plots collected. This has been achieved by determining the number of artificial hollows that can be created in trees of suitable species greater than 500mm DBH in the sample plot of each Assessment Unit. This percentage is extrapolated across the site, with a size modifier for multiple hollows in larger trees to determine the total of AH opportunities.

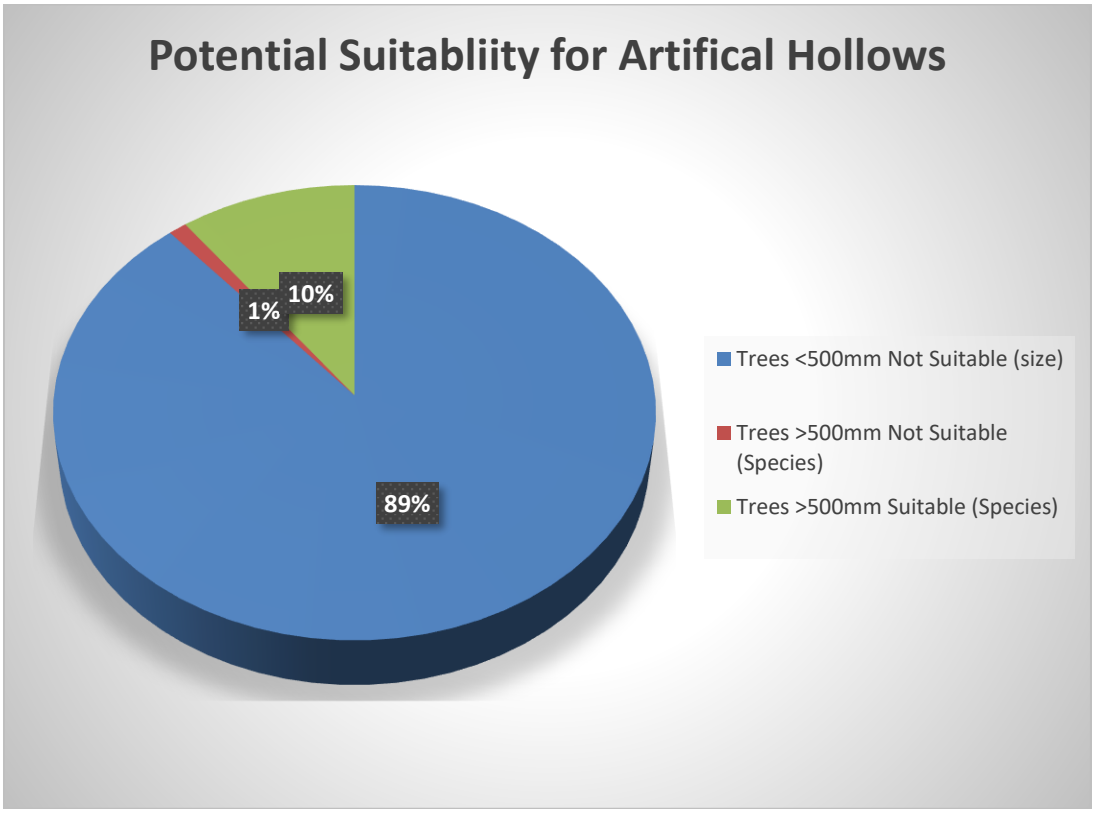
Across the sample sites, only Branch Ends, Branch Stub and Trunk Middle Hollows were identified. The limited variation could be associated with the trees in the sample area. However, a general review of both the data and the trees surrounding the sample plots indicated that the tree in the sample plots was a reasonable representation of the tree across the site.

Hollow	Total Hollows	Hollow Type by %	Average Height (m)	Average Part Size (mm)	Average Hollow Depth (mm)	Average DBH (mm)
Branch End	4	12%	N/A	300	1000	610
Branch Stub	13	39%	N/A	414	1038	747
Branch Middle	0	0%	N/A	N/A	N/A	N/A
Trunk Middle	16	48%	N/A	539	1016	798
Trunk Top	0	0%	N/A	N/A	N/A	N/A

Table 1: Summary of the Artificial Hollows opportunities confirmed within the sample plots and the suitable hollows in relation to the diameter of a tree with a 500mm Diameter at Breast Height.



Graph 3: Division, by percentage, of hollows by hollow type. This represents confirmed hollow opportunities within the sample plots.



Graph 4: Proportional suitability of trees onsite greater than 500mm DBH and Species. Only 10% of the trees on site are considered to have the potential to accommodate Artificial Hollows.

Sample Plots					Extrapolation			
Area (From Data Table)	Area Name	Number of Hollows Opportunities Found	Tree over 500mm in Sampel Area & Suitable Species	Percentage Suitable Species and Size	Total Tree of 500mm Mapped and Suitable Species	Total Tree of >700mm &>900 Mapped and Suitable Species	Total Tree >900mm Mapped and Suitable Species	Extrapolated Hollow Opportunities
AU-1		4	7	57%	250	23	3	**164**
AU-2		1	9	11%	183	20	7	**42**
AU-3		4	12	33%	64	16	3	**37**
AU-4		3	6	50%	51	13	3	**38**
AU-5		2	8	25%	10	5	3	**9**
AU-6		1	4	25%	224	88	43	**161**
AU-7		2	5	40%	31	3	2	**16**
AU-8		5	23	22%	408	83	21	**172**
AU-9		2	9	22%	173	22	2	**58**
AU-10		3	4	75%	46	14	7	**51**
AU-11		6	11	55%	31	10	7	**31**
		33	**98**		**1471**			**778**

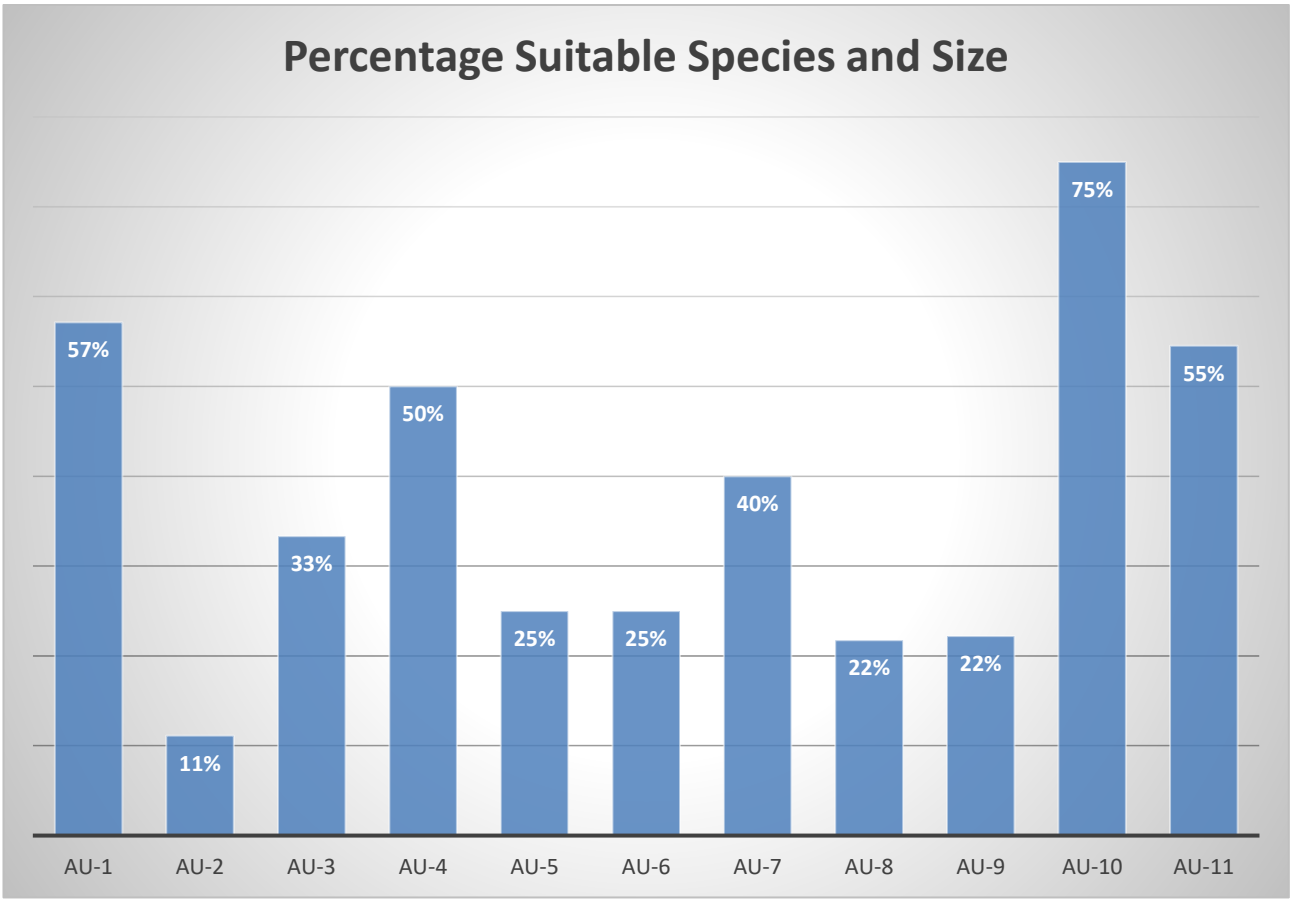
Table 2: Summary of the total number of trees on site and the suitable hollows in relation to the diameter of a tree with a 500mm Diameter at Breast Height and size modifier applied for trees greater than 700mm and 900mm DBH.

Applying the extrapolation of the AH opportunity to the sample plots to the total number of trees greater than 500mm in trunk diameter and of a suitable species in each Assessment Unit results in an estimated 778 Artificial Hollow Opportunities. In conducting the field assessments, the surrounding vegetation was considered to be consistent with the trees within the sample areas. Based on these observations, the extrapolated number can be considered a reasonable estimate of the number of hollows that can be achieved.

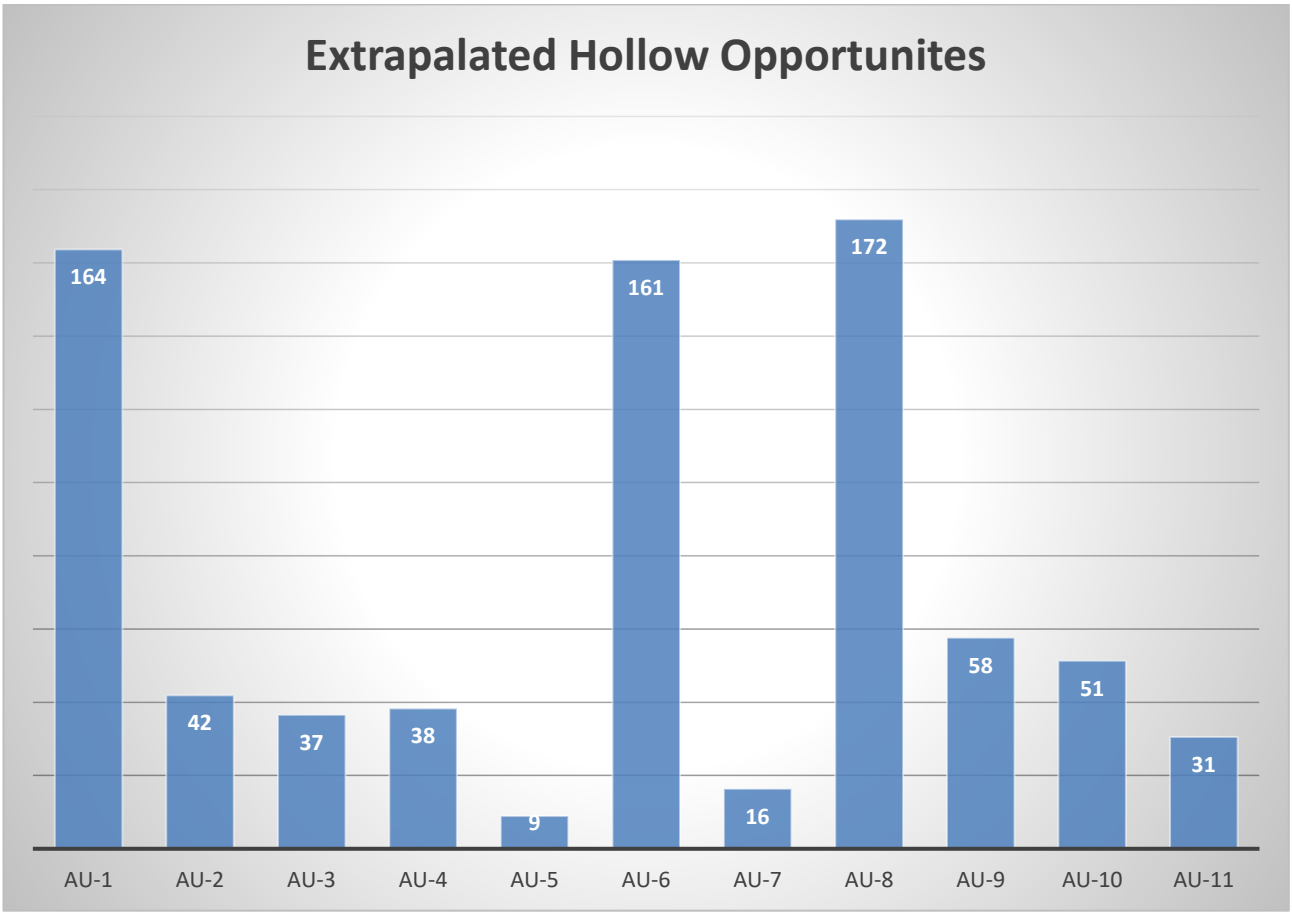
The primary reason for excluding trees from suitability is where the part above the minimum 8m height is insufficient to sustain a chamber meeting the requirements for Greater Gliders. However, in larger trees, multiple hollows can be achieved. A size modifier has been applied in Table 2 for trees greater than 700mm to achieve two hollows per tree and three hollows per tree for trees greater than 900mm DBH.

Extrapolated Hollow Opportunity Formula:
(Total Tree >500mm DBH x Percentage Suitable) + (Total Trees >699mm x 80%) + (Total Trees >899mm x 80%) = Extrapolated Hollow Opportunity

This formula takes into consideration the multiple hollows that can be achieved in larger trees and applies a 20% reduction as a confidence margin.



Graph 5: Artificial Hollow opportunities by percentage for each of the Assessment Units.



Graph 6: Total extrapolated numbers of Artificial Hollows by Assessment Units.

Conclusion:

The most significant opportunity for AH creation is in AU-1, AU-6 and AU-8. Within these areas, the vegetation contains the most significant number of larger trees. Relatively young and semi-mature trees populate the other Assessment Units, and this age has a direct impact on the suitability of the trees for installing artificial hollows suitable for the Greater Glider.

Primarily, the size of the tree structure, at and above the minimum height of 8m from the ground, is not sufficient to achieve a chamber of the required specifications without compromising the tree structure or achieving the habitat thermal qualities required.

It is probable that, within 15–25 years, the number outlined in this report could be significantly increased as the current trees continue to grow and increase in size.



Appendix 1: Data Table–Artificial Hollow Opportunity-Marrambi



HOLLOW DATA AND DESCRIPTORS

Assessment Unit	Hollow Number	Tree ID	Species	DBH	Hollow Type	Location Diameter	Hollow Orientation	Hollow Entrance Height	Hollow Entrance Position	Hollow Depth Estimation	Wood Type	Hollow Opportunity Note
AU-9	20-A	20	Eucalyptus crebra	540	Branch End	300	South 136 -225 Deg	0	25% - 50%	750	Both	End of failed branch
AU-5	567-A	567	Eucalyptus crebra	790	Branch Stub	480	North 316 - 45 Deg	12	25% - 50%	1000	Live	Northern branch off main stem
AU-5	568-A	568	Corymbia tessellaris	700	Trunk Middle	470	East 46 - 135 Deg	10	25% - 50%	1000	Live	Main stem above first union
AU-4	609-A	609	Dead/Stag	640	Branch End	300	North 316 - 45 Deg	9	51% - 75%	1500	Dead	Tree has live tissue strip, remove northern dead branch for entry
AU-3	859-A	859	Corymbia citriodora	894	Branch Stub	480	North 316 - 45 Deg	10	25% - 50%	2000	Live	Through existing branch stub
AU-3	1209-A	1209	Eucalyptus tereticornis	880	Trunk Middle	460	South 136 -225 Deg	12	25% - 50%	100	Both	Main northern stem between first and second unions
AU-4	1552-A	1552	Eucalyptus crebra	800	Trunk Middle	650	East 46 - 135 Deg	0	25% - 50%	1000	Live	Main stem between first and second unions.
AU-4	1754-A	1754	Eucalyptus crebra	570	Branch Stub	400	South 136 -225 Deg	12	51% - 75%	1000	Live	Use dead branch to the south and prune off branch to create branch end.
AU-3	1865-A	1865	Eucalyptus tereticornis	1600	Trunk Middle	700	East 46 - 135 Deg	13	25% - 50%	2000	Live	Above second fist order to the east
AU-9	3587-A	3587	Eucalyptus crebra	660	Branch End	300	East 46 - 135 Deg	15	76% - 90%	750	Dead	Prune off end of dead branch
AU-10	4469-A	4469	Eucalyptus tereticornis	650	Branch Stub	520	West 226 - 315 Deg	13	25% - 50%	1500	Live	Western branch stub
AU-10	4486-A	4486	Eucalyptus tereticornis	1250	Trunk Middle	900	East 46 - 135 Deg	14	25% - 50%	1500	Live	Below main union
AU-10	4502-A	4502	Eucalyptus tereticornis	720	Branch Stub	350	South 136 -225 Deg	11	25% - 50%	1500	Live	Branch stub entry
AU-11	5548-A	5548	Angophora subvelutina	860	Branch Stub	460	South 136 -225 Deg	14	51% - 75%	1200	Live	Branch stub main stem
AU-11	5549-A	5549	Eucalyptus tereticornis	930	Trunk Middle	450	South 136 -225 Deg	13	51% - 75%	1000	Live	Southern stem
AU-11	5551-A	5551	Corymbia tessellaris	820	Branch Stub	450	North 316 - 45 Deg	15	51% - 75%	750	Live	Main stem at triple union
AU-11	5558-A	5558	Corymbia intermedia	510	Trunk Middle	470	East 46 - 135 Deg	11	25% - 50%	1500	Live	Small dead branch entrance opportunity
AU-11	5563-A	5563	Angophora subvelutina	600	Trunk Middle	480	South 136 -225 Deg	12	51% - 75%	1000	Live	Occluded branch stub
AU-6	5564-A	5564	Corymbia intermedia	600	Branch Stub	500	West 226 - 315 Deg	8	25% - 50%	1000	Live	Stub potential entry
AU-8	5810-A	5810	Corymbia citriodora	730	Trunk Middle	480	South 136 -225 Deg	10	25% - 50%	800	Live	Main stem above first southern branch
AU-8	5813-A	5813	Corymbia citriodora	980	Branch Stub	470	West 226 - 315 Deg	13	51% - 75%	1500	Live	Western dead branch with stub above trunk wound
AU-3	5925-A	5925	Eucalyptus tereticornis	870	Trunk Middle	550	South 136 -225 Deg	0	25% - 50%	10	Live	Trunk hollow on main stem below first branch to the south.
AU-8	6318-A	6318	Eucalyptus crebra	750	Branch Stub	15	South 136 -225 Deg	0	25% - 50%	750	Both	Through olde dead branch
AU-8	6519-A	6519	Corymbia citriodora	661	Branch Stub	440	West 226 - 315 Deg	12	25% - 50%	800	Live	Deadwood and stub western stem
AU-11	7272-A	7272	Eucalyptus tereticornis	1100	Trunk Middle	650	West 226 - 315 Deg	12	25% - 50%	1500	Live	Small dead branch entrance potential on northwest stem
AU-7	7417-A	7417	Eucalyptus tereticornis	570	Trunk Middle	470	South 136 -225 Deg	13	51% - 75%	1800	Live	Main trunk below fork
AU-8	9132-A	9132	Corymbia citriodora	600	Branch End	300	East 46 - 135 Deg	14	25% - 50%	1000	Both	Reduce leader on Northern side and create hollow through side branch.
AU-1	10393-A	10393	Eucalyptus crebra	850	Branch Stub	400	South 136 -225 Deg	16	51% - 75%	750	Both	Through branch stub on southern leader
AU-1	10881-A	10881	Eucalyptus crebra	560	Trunk Middle	600	East 46 - 135 Deg	8	25% - 50%	1000	Both	In existing wound below main union on under side
AU-1	10890-A	10890	Eucalyptus crebra	560	Trunk Middle	500	East 46 - 135 Deg	9	25% - 50%	600	Live	Below main union in trunk
AU-1	10905-A	10905	Eucalyptus crebra	560	Branch Stub	420	North 316 - 45 Deg	10	51% - 75%	750	Both	Dead branch stub below main union.
AU-2	12162-A	12162	Eucalyptus tereticornis	580	Trunk Middle	350	South 136 -225 Deg	12	25% - 50%	700	Both	Below crown failure point
AU-7	13163-A	13163	Corymbia citriodora	520	Trunk Middle	450	South 136 -225 Deg	13	51% - 75%	750	Live	Southeast main stem , small dead branch entrance potential

Proposed Artificial Hollows

x	y	Hollow Number	Tree ID	Hollow Type	Location Diameter	Hollow Entrance Height	Hollow Depth Estimation	Hollow Orientation	Hollow Entrance Position	Wood Type	Hollow Opportunity Note	Whole Tree Photo	Hollow Position Photo
Taken from Tree	Taken from tree	Unique ID to be post proposed	Taken from SHG Data	***Trunk Top***	Estimated size of part in diameter where the hollow is proposed (mm)	Estimated distance from the ground to the entrance (m)	Estimated depth from the entrance to the bottom of the proposed hollow (mm)	***North***	***25% - 50%***	***Dead***	Note with further information	Photo of whole tree for future reference and ID	Zoomed in photo marked up with the location of the proposed hollow for future reference
				Trunk Middle				***South***	***51% - 75%***	***Live***			
				Branch End				***East***	***76% - 90%***	***Both***			
				Branch Middle				***West***	***91% - 100%***	Drop down list of wood conditions at the proposed entrance			
				Branch Stub				***Vertical***	Drop Down List of estimates position in relation to the height of the tree				

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Arbor Australis Consulting
2/17 Bluestone Cct
Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW OPPORTUNITY ASSESSMENT	30/09/2025	DL	JY

NOTES: This tree assessment has been done by Arbor Australis Consulting. Verify the location of all services and easements prior to the commencement of works. Any aerial imagery utilised has been provided by nearmap.com.

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PROJECT: KFF2, MARRAMBI HOLLOW ASSESSMENT 2025-046

TITLE: HOLLOW DATA AND DESCRIPTORS

DRAWN	DATE	AUTHORISED FOR ISSUE
DL	30/09/2025	Jeremy Young
DRAWING CHECK	DATE	
JY	30/09/2025	

CLIENT: SUDERS HAVILL GROUP — CONTACT: -

ASSESSED BY	DATE	SCALE	ORG. SIZE
JY	SEP 2025	NTS	A3

PROJECT NUMBER / SHEET: 2025-046 | TD1 — ISSUE: A

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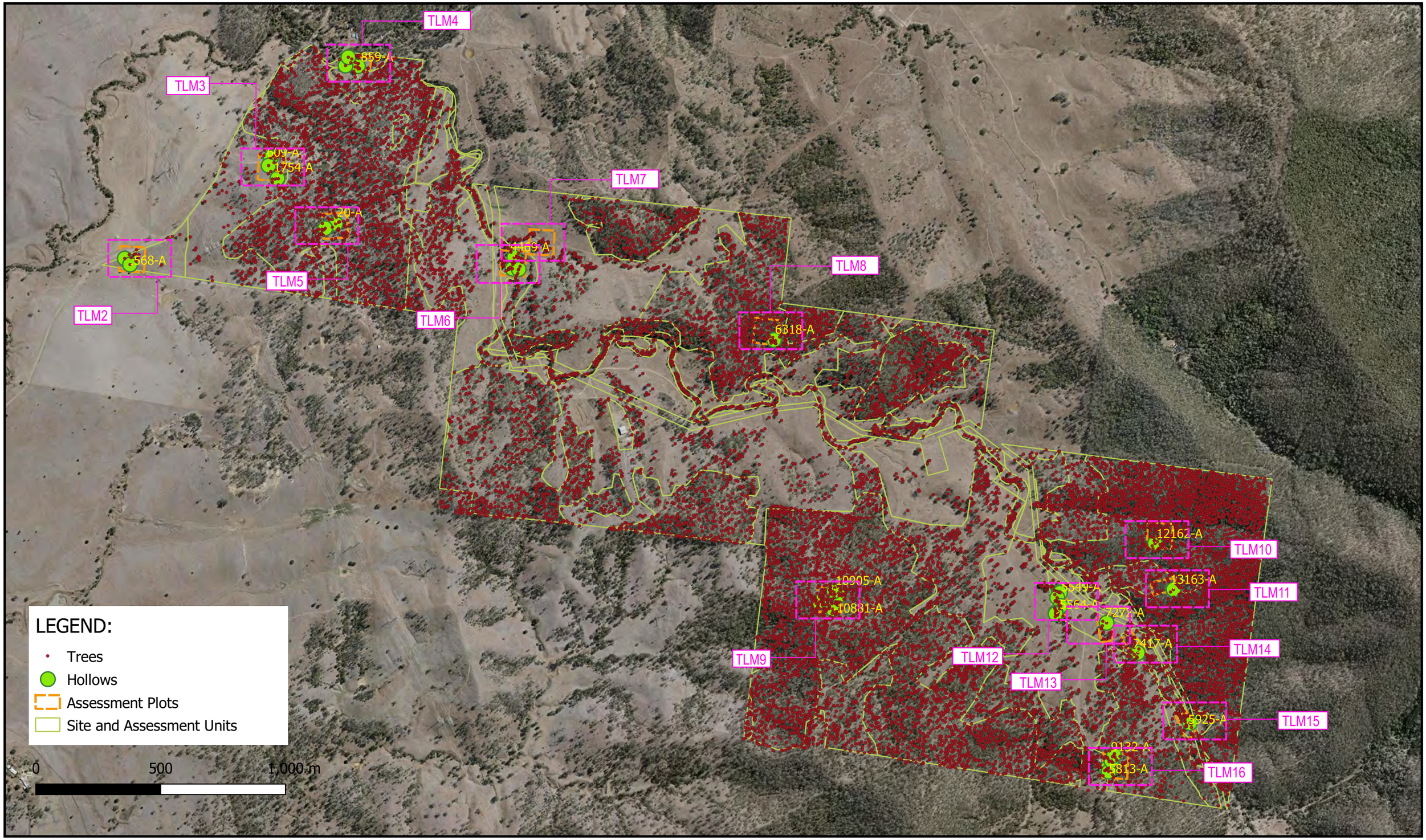
Appendix 2: Tree Location Map





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Background imagery is not to be used for measurments. It is for visualisation only.

TITLE
TREE HOLLOWS LOCATION MAP

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 1



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2/17 Bluestone Cct
Seventeen Mile Rocks
QLD 4073

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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 1

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 2

609-A

1552-A

1754-A

LEGEND:

- Trees
- Hollows
- Assessment Plots
- Site and Assessment Units

0 10 20 m

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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 2

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 3



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP3

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 4



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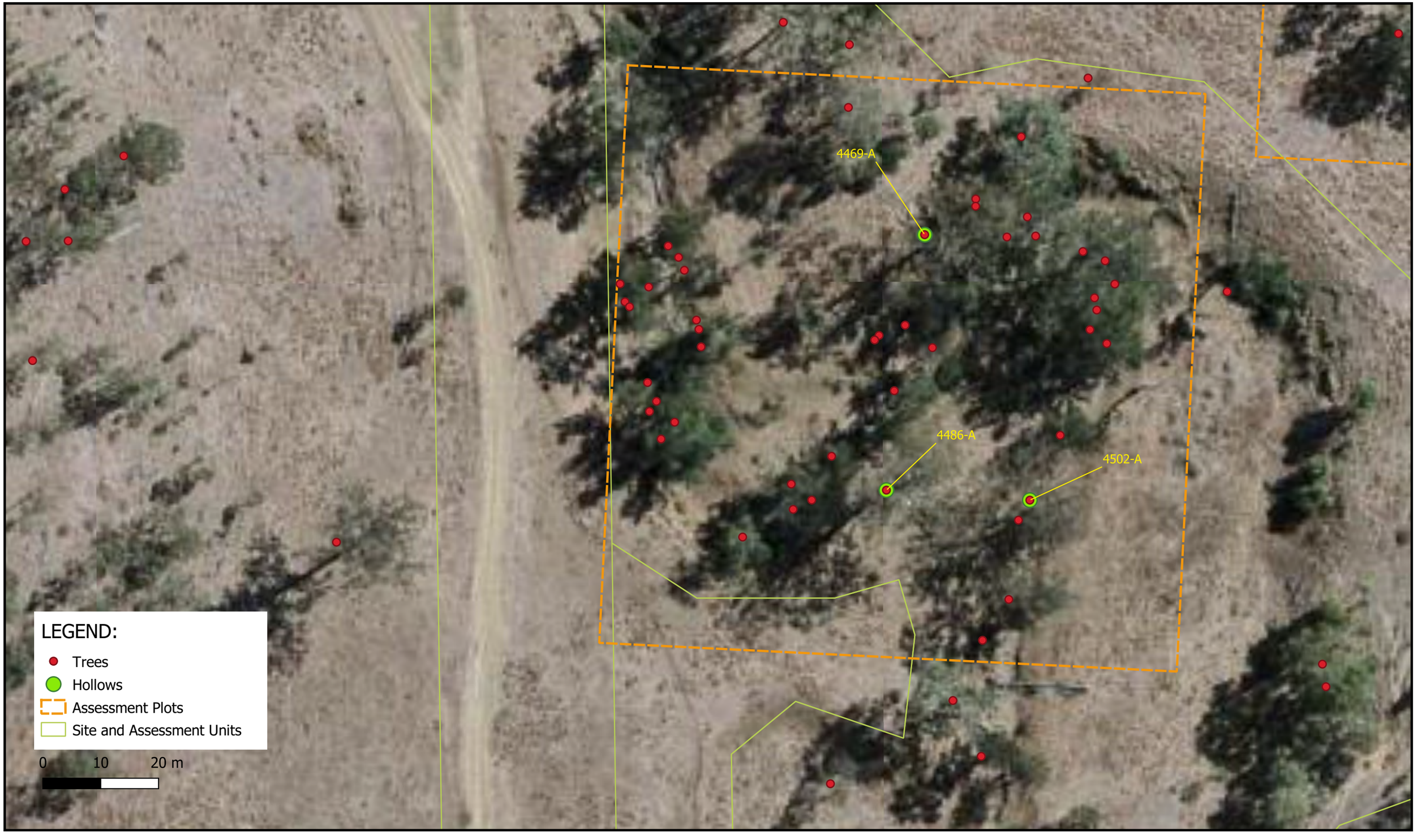
TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 4

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 5



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 5

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 6

LEGEND:

- Trees
- Hollows
- Assessment Plots
- Site and Assessment Units

0 10 20 m

4469-A

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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 6

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 7



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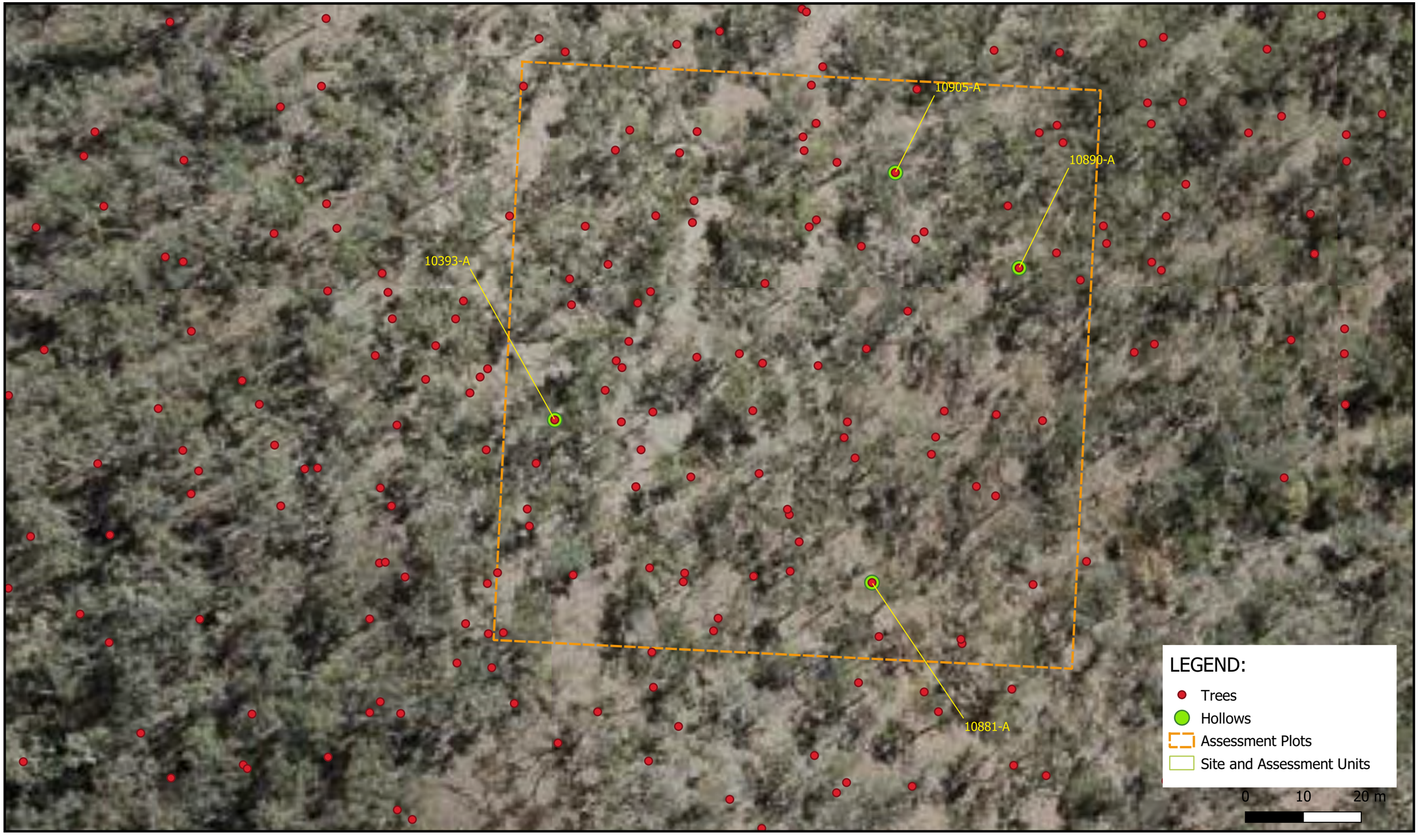
TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 7

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 8



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 8

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 9



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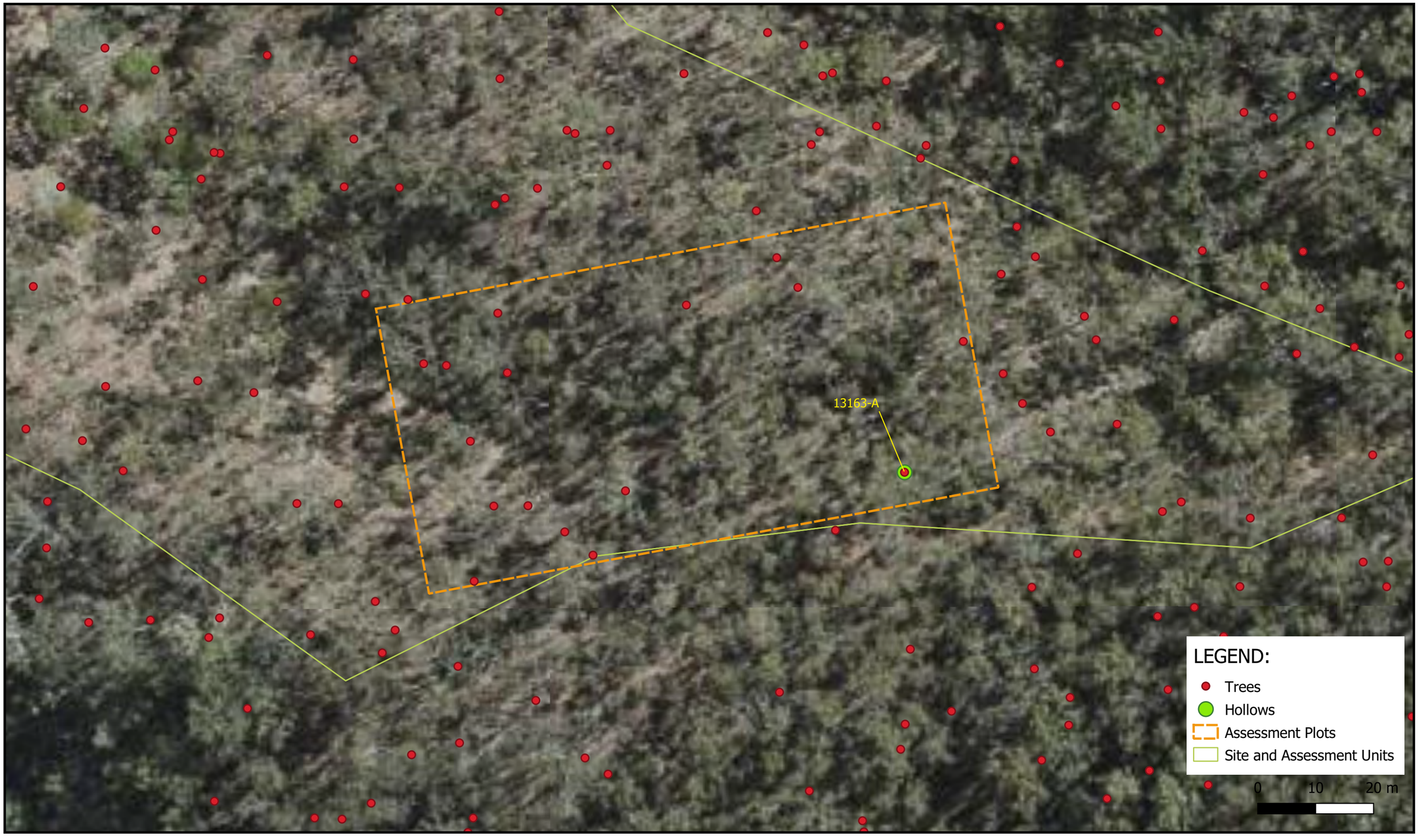
TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 9

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 10



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 10

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 11



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 11

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 12



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 12

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 13



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 13

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 14



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 14

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 15



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TITLE
TREE HOLLOWS BLOW-UP LOCATION MAP 15

SITE:
KFF2, MARRAMBI HOLLOW ASSESSMENT

CLIENT:
SHG

DATE:
SEPTEMBER 30, 2025

SHEET NUMBER:
TLM 16

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CONSULTING



Appendix 3: Artificial Hollow Specification Sheets



HOLLOW SPECIFICATION

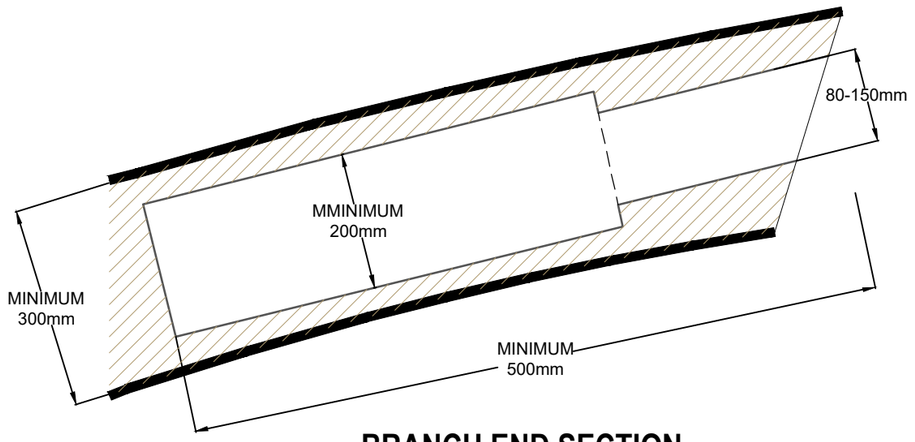
BRANCH END HOLLOWS

DESCRIPTION

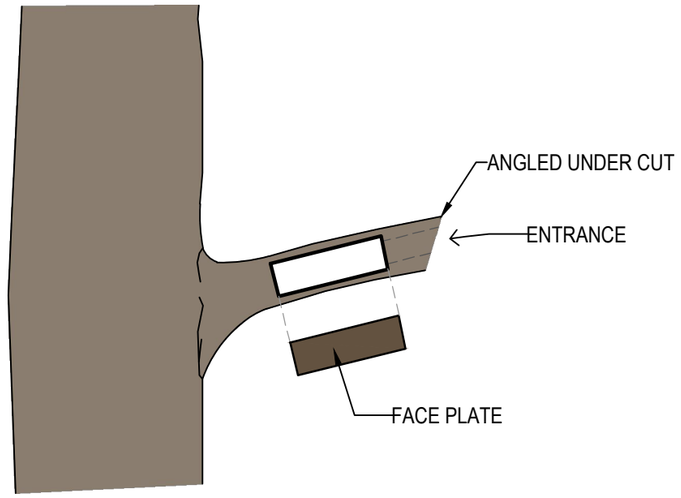
Branch End Hollows are carved in a branch with the entrance through the end of the branch or a stub extending outwards from the branch, and the denning chamber within the branch. Trees suitable for branch end hollows are typically greater than 900mm in trunk diameter, are mature and have a broad spreading crown. Where possible, existing large stubs from past branch failures are utilised. Pruning of live wood to create the branch end opportunity is acceptable in some situations (refer to installation notes).







BRANCH END SECTION



BLOW - UP ELEVATIONS

INSTALLATION NOTES

Hollow Location
- Minimum 8m above ground in a branch that is of greater pith angle than 45° from vertical.
- Old branch failure points to be utilised where possible.
- Pruning to generate a suitable branch end must not remove more than 5% of live crown foliage.

Opening
- Between 80mm and 150mm diameter when carved; however, if amending an existing hollow, the opening can be as large as 350mm diameter.
- **Preferred** hollow opening orientation is **east and south.**
- Hollow entrance should not face upward.
- Only one entrance per hollow.

Branch Size & Minimum Wall Thickness
- Minimum branch size should be 300mm diameter.
- Wood wall thickness of the hollow must not be less than by 50mm depth for thermal qualities. However, the wood wall thickness needs to consider the load above the hollow for the tree structure.
- The hollow creation should aim to remove no more than 55% of the sound wood structure in cross-section unless all load is remove from above the hollows.

Hollow Chamber Depth (Bottom of the hollow opening to the bottom of the chamber)
- Between .5m (500mm) and 5m (5000mm)

Methodology
- To achieve the required hollow depths, surface face plates are to be cut out to provide access to internal wood for the creation of a suitable chamber. The face plate size is to be kept to a minimum.
- Chainsaw bore cuts are made and leveraged to fracture timber and remove bulk material.
- Bore and carve with a 'hollow hog/arborgrub' from the entrance points to form the denning chamber to achieve a connection of minimum suitable size.
- Use the 'hollow hog/arborgrub' to smooth out rough surfaces & shape hollow and entrance.
- Once the hollow dimension has been achieved, replace the face plate with a milled and seasoned hardwood board that is a minimum of 50mm thick, and screw into place with stainless steel crews of sufficient securing length.

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QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

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PROJECT: KFF2, MARRAMBI
HOLLOW ASSESSMENT
2025-046

TITLE: BRANCH END HOLLOW

DRAWN: DL	DATE: 30/09/2025	AUTHORISED FOR ISSUE: Jeremy Young
DRAWING CHECK: JY	DATE: 30/09/2025	
CLIENT: SAUNDERS HAVILL GROUP		CONTACT: -
ASSESSED BY: JY	DATE: SEP 2025	SCALE: NTS / ORIG. SIZE: A3
PROJECT NUMBER / SHEET: 2025-046 | SP1		ISSUE: A

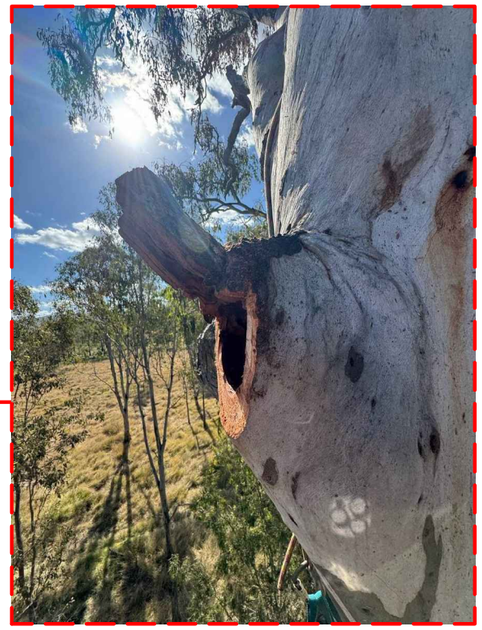
HOLLOW SPECIFICATION

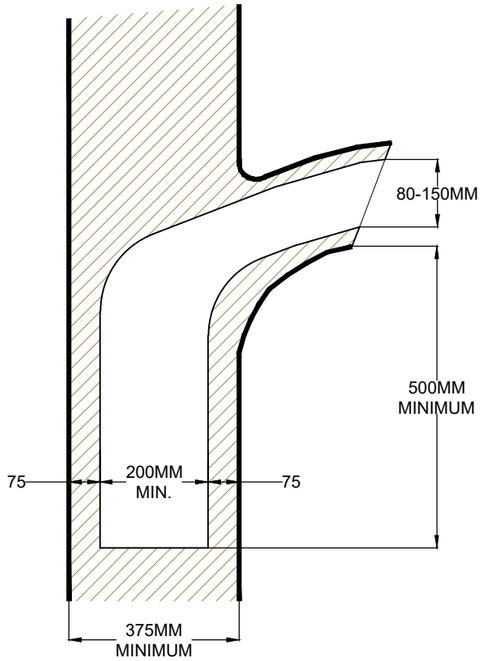
BRANCH STUB HOLLOWS

DESCRIPTION

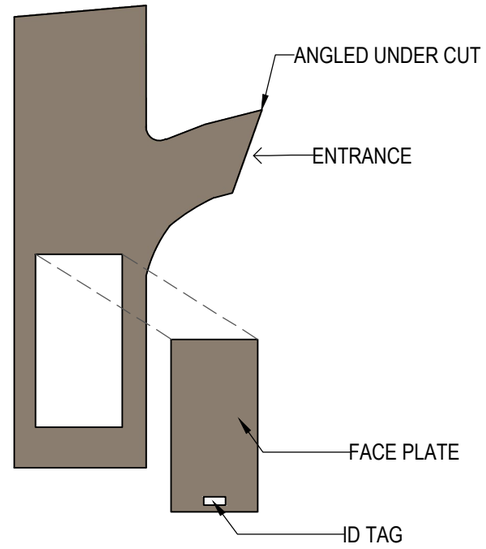
Branch Stub Hollows are carved in a branch stub close to the branch union with the entrance through the end of the cut or broken branch and the denning chamber within the trunk of the tree. Trees suitable for branch stub hollows are typically greater than 600mm in trunk diameter, are early mature, and have a stem diameter of 400mm or greater at or above the minimum installation height (refer to installation notes).







BRANCH STUB SECTION



BLOW - UP ELEVATION

INSTALLATION NOTES

Hollow Location
- Minimum 8m above ground in stub form of a first-order branch.
- Old branch failure points and existing deadwood branches of suitably sized diameter are to be utilised where possible.
- Pruning of live wood to generate a suitable branch end must not remove more than 5% of crown foliage.

Opening
- Between 80mm and 150mm diameter when carved; however, if improving an existing hollow, the opening can be as large as 350mm diameter.
- **Preferred** hollow opening orientation is **east and south.**
- Hollow entrance should not face upward.
- Only one entrance per hollow

Branch Size & Minimum Wall Thickness
- Minimum branch size should be 200mm diameter.
- Wood wall thickness must not be less than 50mm depth for thermal qualities. However, the wall thickness needs to consider the load above the hollow for the tree structure.
- The hollow creation should aim to remove no more than 55% of the sound wood structure in cross-section of the trunk.

Hollow Chamber Depth (Bottom of the hollow opening to the bottom of the chamber)
- Between .5m (500mm) and 5m (5000mm)
- Hollow base plate floors may be required for existing internal cavities that are greater than 5m depth. Base plate floors must be secure and allow drainage.

Methodology
- To achieve the required hollow depths, surface face plates are to be cut out to provide access to internal wood for the creation of a suitable chamber. The face plate size is to be kept to a minimum.
- Chainsaw bore cuts are made and leveraged to fracture timber and remove bulk material.
- Bore and carve with a 'hollow hog/arborgrub' from the entrance points to form the denning chamber to achieve a connection of minimum suitable size.
- Use the 'hollow hog/arborgrub' to smooth out rough surfaces.
- Once the hollow dimension has been achieved, replace the face plate with a milled and seasoned hardwood board that is a minimum of 50mm thick, and screw into place with stainless steel crews of sufficient securing length.

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Arbor Australis Consulting
2/17 Bluestone Cct
Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

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PROJECT: KFF2, MARRAMBI HOLLOW ASSESSMENT 2025-046

TITLE: BRANCH STUB HOLLOW

DRAWN	DATE	AUTHORISED FOR ISSUE
DL	30/09/2025	Jeremy Young
DRAWING CHECK	DATE	
JY	30/09/2025	

CLIENT: SAUNDERS HAVILL GROUP — CONTACT: -

ASSESSED BY	DATE	SCALE	ORG. SIZE
JY	SEP 2025	NTS	A3

PROJECT NUMBER / SHEET: 2025-046 | SP2 — ISSUE: A

HOLLOW SPECIFICATION

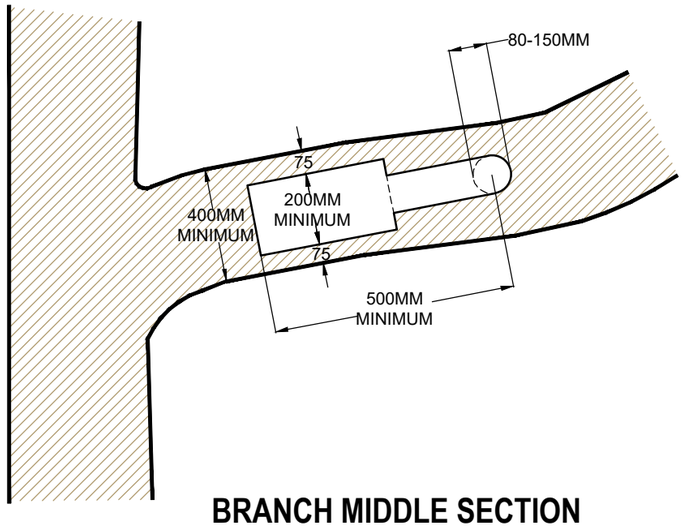
BRANCH MIDDLE HOLLOWS

DESCRIPTION

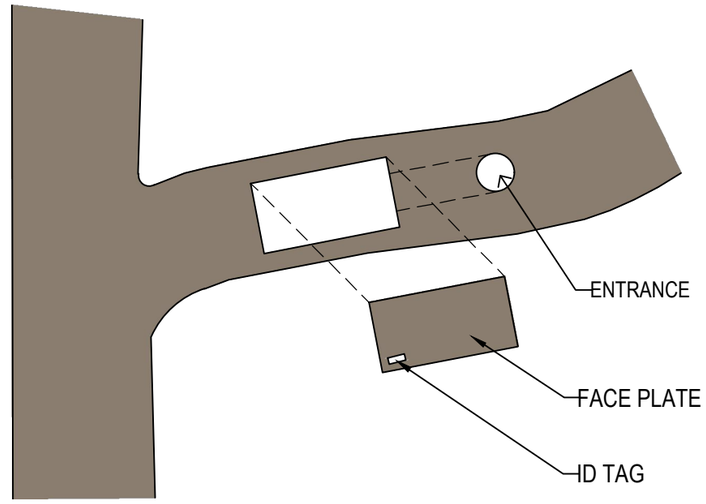
Branch Middle Hollows are carved in a branch with the entrance through the side of the branch and the denning chamber within the branch. Trees suitable for Branch Middle Hollows are typically greater than 900mm in trunk diameter, are mature and have a broad spreading crown of lateral large diameter branches.







BRANCH MIDDLE SECTION



BLOW - UP ELEVATION

INSTALLATION NOTES

Hollow Location
- Minimum 8m above ground in a branch that is of greater pith angle than 45° from vertical.
- No pruning is required to carve a Branch Middle Hollow.

Opening
- Between 80mm and 150mm diameter when carved; however, if improving an existing hollow, the opening can be as large as 350mm diameter.
- **Preferred** hollow opening orientation is **east and south** on the horizontal plane**.**
- Hollow entrance should not face upward.
- Only one entrance per hollow.

Branch Size & Minimum Wall Thickness
- Minimum branch size should be 400mm diameter,
- Wood wall thickness must not be less than 50mm depth for thermal qualities. However, the wall thickness needs to consider the load above the hollow for the tree structure. Greater wood wall thickness is required on the upper side of the branch.
- The hollow creation should aim to remove no more than 55% of the sound wood structure in cross-section.

Hollow Chamber Depth (Bottom of the hollow opening to the bottom of the chamber)
- Between .5m (500mm) and 5m (5000mm).

Methodology
- To achieve the required hollow depths, surface face plates are to be cut out to provide access to internal wood for the creation of a suitable chamber. The face plate size is to be kept to a minimum.
- Chainsaw bore cuts are made and leveraged to fracture timber and remove bulk material.
- Bore and carve with a 'hollow hog/arborgrub' from the entrance points to form the denning chamber to achieve a connection of minimum suitable size.
- Use the 'hollow hog/arborgrub' to smooth out rough surfaces.
- Once the hollow dimension has been achieved, replace the face plate with a milled and seasoned hardwood board that is a minimum of 75mm thick, and screw into place with stainless steel crews of sufficient securing length.

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Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

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PROJECT: KFF2, MARRAMBI HOLLOW ASSESSMENT 2025-046

TITLE: BRANCH MIDDLE HOLLOW

DRAWN	DATE	AUTHORISED FOR ISSUE
DL	30/09/2025	Jeremy Young
DRAWING CHECK	DATE	
JY	30/09/2025	

CLIENT: SAUNDERS HAVILL GROUP
CONTACT: -

ASSESSED BY	DATE	SCALE	ORIG. SIZE
JY	SEP 2025	NTS	A3

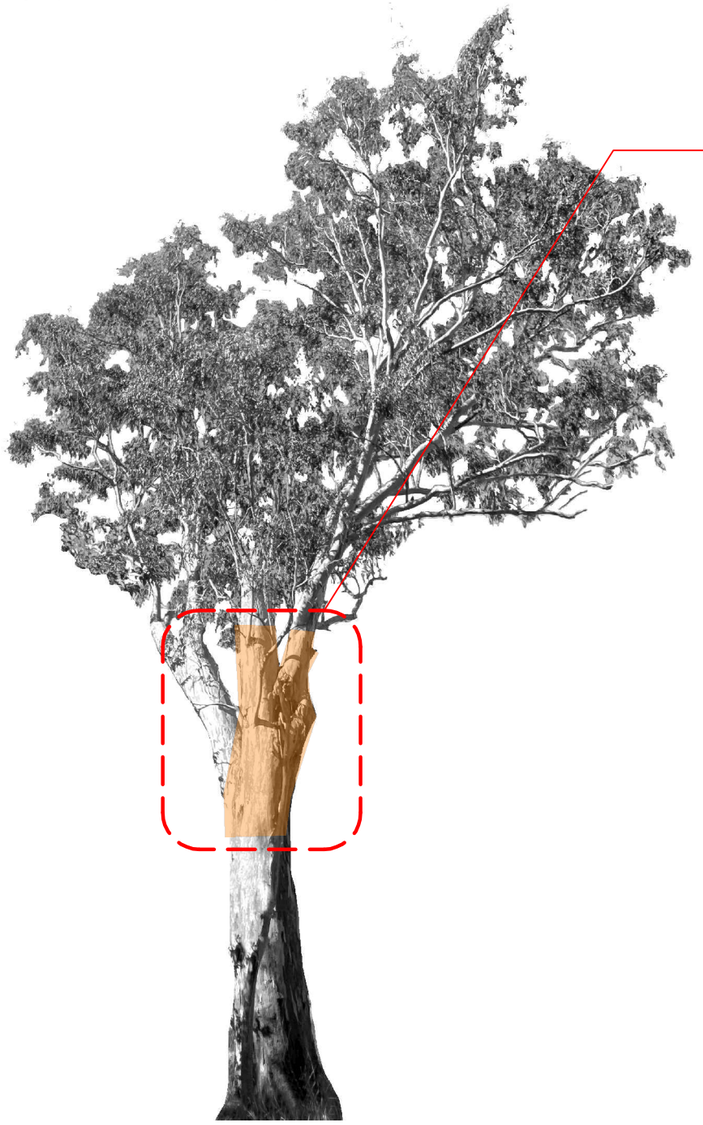
PROJECT NUMBER / SHEET: 2025-046 | SP3
ISSUE: A

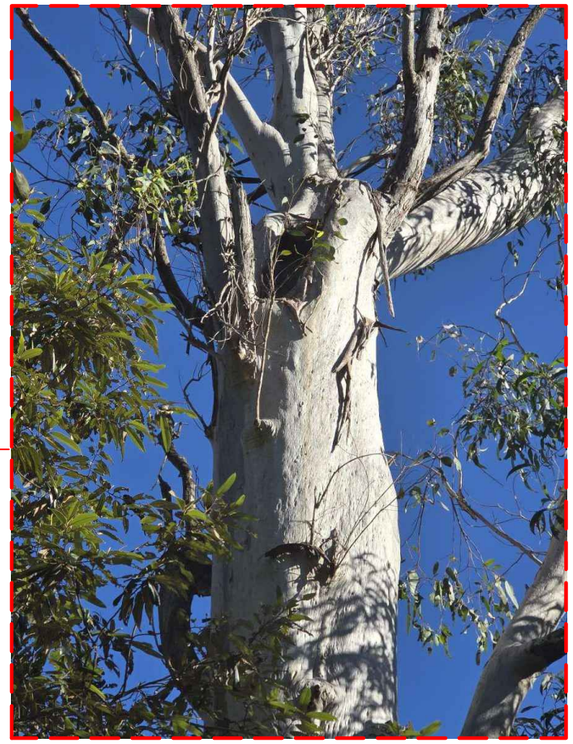
HOLLOW SPECIFICATION

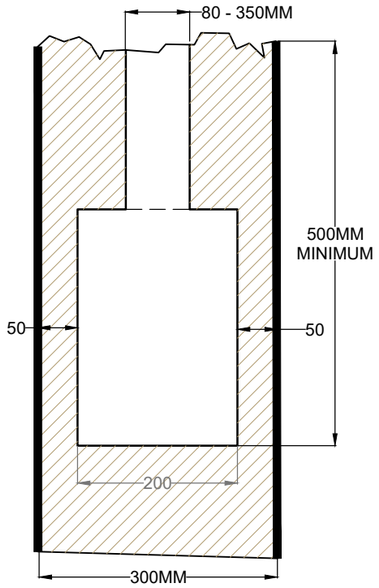
TRUNK TOP HOLLOWS

DESCRIPTION

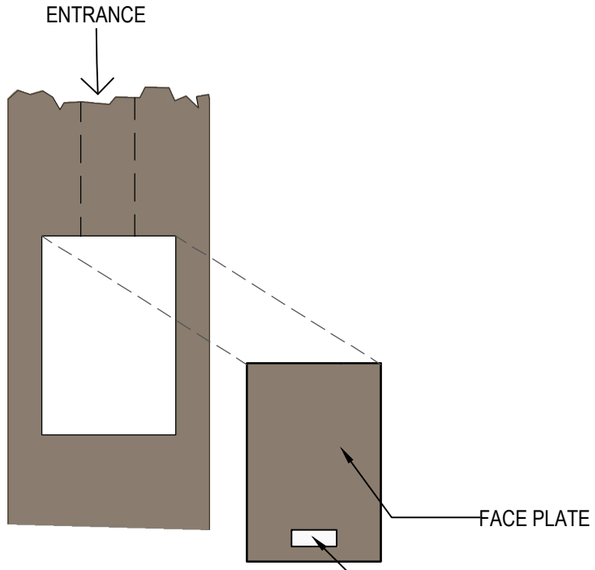
Trunk Top Hollows are carved in a vertical trunk with the denning chamber below the entrance in the trunk. Trees suitable for Trunk Top Hollows are typically greater than 600mm in trunk diameter and have a history of past crown failure. They are early mature and have a stem diameter of 300mm or greater at or above the minimum installation height (refer to installation notes).







TRUNK TOP SECTION



BLOW - UP ELEVATION

INSTALLATION NOTES

Hollow Location
- Minimum 8m above ground in a vertical trunk.
- Typically located where a past crown failure has occurred
- No crown pruning is required to carve a Trunk Top Hollow.

Opening
- Between 80mm and 150mm diameter when carved; however, if improving an existing hollow, the opening can be as large as 350mm diameter.
- **Preferred** hollow opening orientation is **east and south.**
- Only one entrance per hollow

Trunk Size & Minimum Wall Thickness
- Minimum truck size should be 300mm
- Wall thickness must be not less than 50mm for thermal qualities. Trunk Top Hollows do not need to consider the load above the hollow for the tree structure due to their position.
- The installation should aim to remove no more than 60% of the sound wood structure in cross-section.

Hollow Chamber Depth (Bottom of the hollow opening to the bottom of the chamber)
- Between .5m (500mm) and 5m (5000mm)
- Hollow base plate floors may be required for existing internal cavities that are greater than 5m depth. Base plate floors must be secure and allow drainage.

Methodology
- To achieve the required hollow depths, surface face plates are to be cut out to provide access to internal wood for the creation of a suitable chamber. The face plate size is to be kept to a minimum.
- Chainsaw bore cuts are made and leveraged to fracture timber and remove bulk material.
- Bore and carve with a 'hollow hog/arborgrub' from the entrance points to form the denning chamber to achieve a connection of minimum suitable size.
- Use the 'hollow hog/arborgrub' to smooth out rough surfaces.
- Once the hollow dimension has been achieved, replace the face plate with a milled and seasoned hardwood board that is a minimum of 50mm thick, and screw into place with stainless steel crews of sufficient securing length.

ARBOR AUSTRALIS CONSULTING

Arbor Australis Consulting
2/17 Bluestone Cct
Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

NOTES: This tree assessment has been done by Arbor Australis Consulting. Verify the location of all services and easements prior to the commencement of works. Any aerial imagery utilised has been provided by nearmap.com.

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PROJECT: KFF2, MARRAMBI HOLLOW ASSESSMENT 2025-046

TITLE: TRUNK TOP HOLLOW

DRAWN	DATE	AUTHORISED FOR ISSUE
DL	30/09/2025	Jeremy Young
DRAWING CHECK	DATE	
JY	30/09/2025	

CLIENT: SAUNDERS HAVILL GROUP
CONTACT: -

ASSESSED BY	DATE	SCALE	ORG. SIZE
JY	SEP 2025	NTS	A3

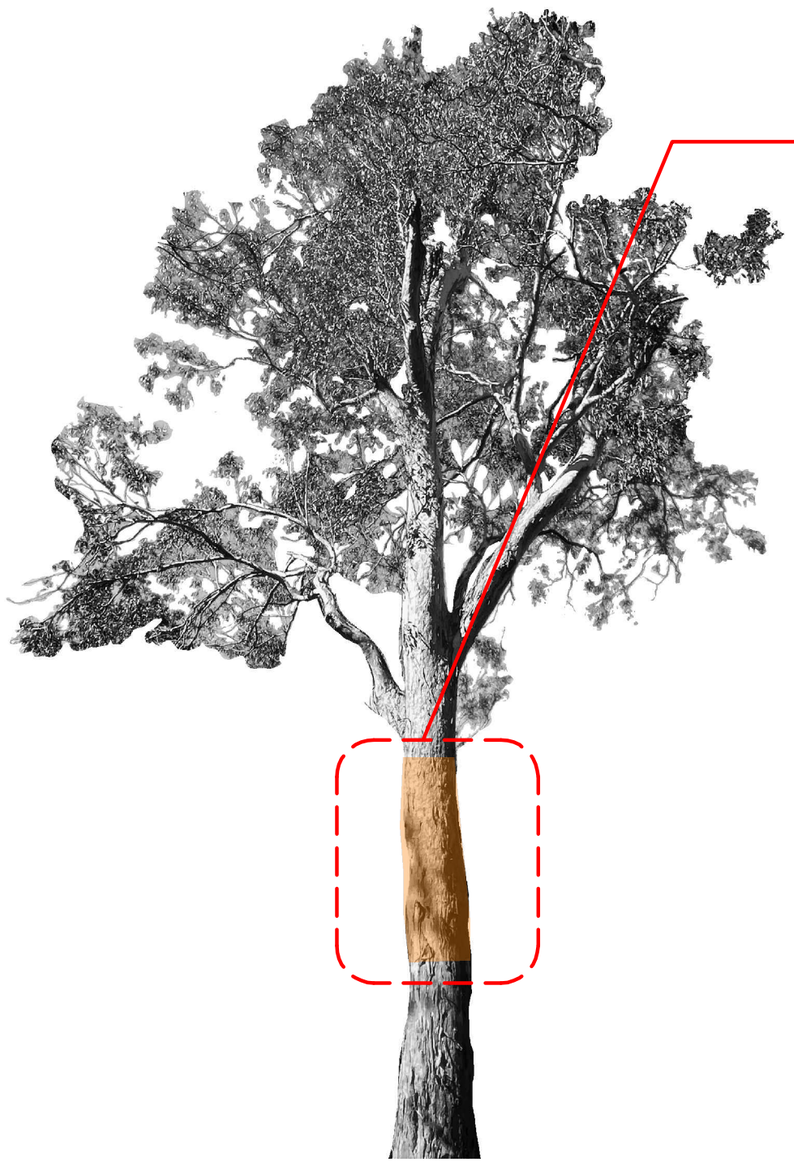
PROJECT NUMBER / SHEET: 2025-046 | SP4
ISSUE: A

HOLLOW SPECIFICATION

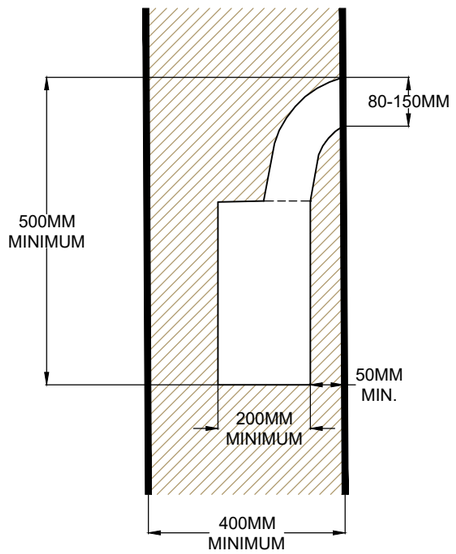
TRUNK MIDDLE HOLLOWS

DESCRIPTION

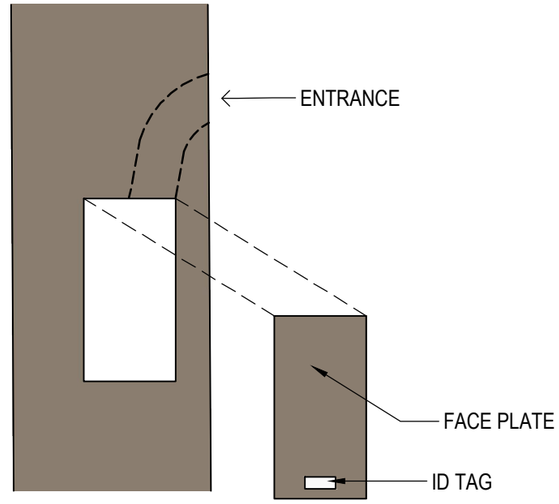
Trunk Middle Hollows are carved in a vertical trunk with the denning chamber below the entrance in the trunk. Trees suitable for Trunk Middle Hollows are typically greater than 600mm in trunk diameter, are early mature, and have a stem diameter of 400mm or greater at or above the minimum installation height (refer to installation notes).







TRUNK MIDDLE SECTION



BLOW - UP ELEVATION

INSTALLATION NOTES

Hollow Location
- Minimum 8m above ground in a vertical trunk.
- No crown pruning is required to carve a Trunk Middle Hollow.

Opening
- Between 80mm and 150mm diameter when carved; however, if improving an existing hollow, the opening can be as large as 350mm diameter.
- **Preferred** hollow opening orientation is **east and south.**
- Only one entrance per hollow

Trunk Size & Minimum Wall Thickness
- Minimum trunk size should be 400mm diameter.
- Wood wall thickness must not be less than 50mm depth for thermal qualities. However, the wall thickness needs to consider the load above the hollow for the tree structure
- The installation should aim to remove no more than 55% of the sound wood structure in cross-section.

Hollow Chamber Depth (Bottom of the hollow opening to the bottom of the chamber)
- Between .5m (500mm) and 5m (5000mm)
- Hollow base plate floors may be required for existing internal cavities that are greater than 5m depth. Base plate floors must be secure and allow drainage.

Methodology
- To achieve the required hollow depths, surface face plates are to be cut out to provide access to internal wood for the creation of a suitable chamber. The face plate size is to be kept to a minimum.
- Chainsaw bore cuts are made and leveraged to fracture timber and remove bulk material.
- Bore and carve with a 'hollow hog/arborgrub' from the entrance points to form the denning chamber to achieve a connection of minimum suitable size.
- Use the 'hollow hog/arborgrub' to smooth out rough surfaces.
- Once the hollow dimension has been achieved, replace the face plate with a milled and seasoned hardwood board that is a minimum of 50mm thick, and screw into place with stainless steel crews of sufficient securing length.

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Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

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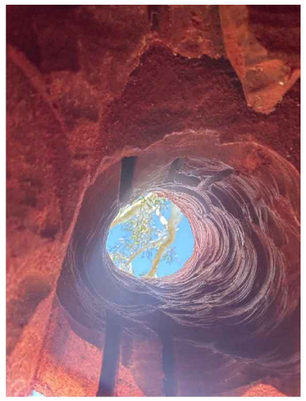
PROJECT: KFF2, MARRAMBI
HOLLOW ASSESSMENT
2025-046

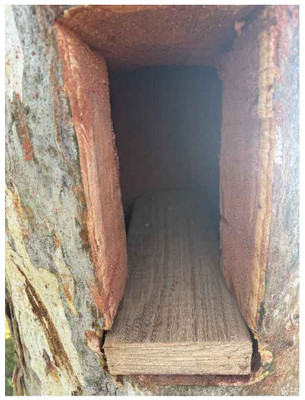
TITLE: TRUNK MIDDLE HOLLOW

DRAWN: DL	DATE: 30/09/2025	AUTHORISED FOR ISSUE: Jeremy Young	
DRAWING CHECK: JY	DATE: 30/09/2025		
CLIENT: SAUNDERS HAVILL GROUP		CONTACT: -	
ASSESSED BY: JY	DATE: SEP 2025	SCALE: NTS	ORG. SIZE: A3
PROJECT NUMBER / SHEET: 2025-046 | SP5			ISSUE: A

EXAMPLE ARTIFICIAL HOLLOWS





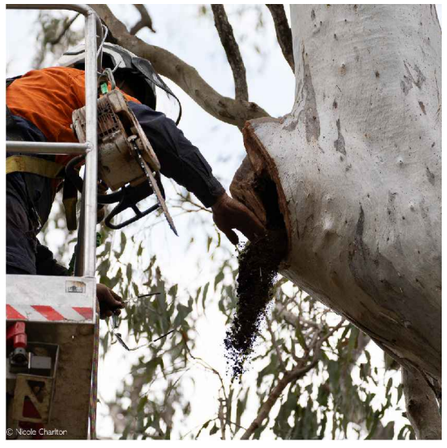


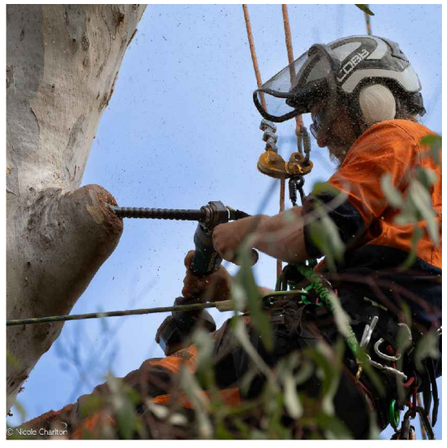














ARBOR AUSTRALIS CONSULTING

Arbor Australis Consulting

2/17 Bluestone Cct
Seventeen Mile Rocks
QLD 4073

ISSUE	DESCRIPTION	DATE	DRAWN	AUTH.
A	HOLLOW SPECIFICATIONS	30/09/2025	DL	JY

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PROJECT: KFF2, MARRAMBI
HOLLOW ASSESSMENT
2025-046

TITLE: EXAMPLE ARTIFICIAL HOLLOWS

DRAWN: DL	DATE: 30/09/2025	AUTHORISED FOR ISSUE: Jeremy Young
DRAWING CHECK: JY	DATE: 30/09/2025	
CLIENT: SAUNDERS HAVILL GROUP		CONTACT: -
ASSESSED BY: JY	DATE: SEP 2025	SCALE: NTS
PROJECT NUMBER / SHEET: 2025-046 | SP6		ISSUE: A

DRG. SIZE: A3

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Author's Statement of Experience

Jeremy Young Principal Consulting Arborist

Experience

With 35+ years of experience in all aspects of the Arboricultural Industry, I can provide a well-rounded, experienced, and educated approach to arboricultural-related issues in most environments. A commitment to continual professional development has ensured I can provide up-to-date information that will add value and resolve tree issues for most sites.

Memberships

Arboriculture Australia (AA)	Approved Consultant
Arboricultural Association UK (AAUK)	Member
Queensland Arboricultural Association (QAA)	Approved Consultant
International Society of Arboriculture (ISA)	Member

Educational History:

2024 BSc. Hons. Arboriculture & Urban Forestry, First Class (AQF Level 8)
2014 Diploma Arboriculture Upgrade (AQF Level 5 ACH 50510)
2004 Certified Arborist AU 0011-A
2004 Diploma Horticulture (Arb) (AQF 5)
2004 Advanced Diploma of Horticulture (Arb) (AQF level 6)
2003 Timber Pest Certificate
2001 Certificate II Pest control
2001 Certificate IV Work Site Assessor
1992 Certificate of Arboriculture Merrist Wood UK
Various OH&S operational tickets
CPD: Ongoing attendance of National Arboricultural Conferences and training courses.

Licences and Certifications

Australian Arborist Industry Licence AL1204
ISA Certified Arborist AU-0011A
Quantified Tree Risk Assessment (QTRA)
Tree Risk Assessment Qualification (TRAQ)
Cert IV in Workplace Trainer
Timber Pest Inspector
Construction Safety Blue / White Card

Appendix G

OAG Feature Reference Tables

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Swift Parrot
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Foraging Trees	2894		Count	Tree Plot
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
					Future area without offset (adjusted hectares)					0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**0**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	2894	Count		20		0		0		14390		14390	75%	10792.50	2895.32	100.05%	Yes		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	2894	2895.32	100.05%	**Yes**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Regent Honeyeater
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Foraging Trees	1570		Count	Tree Plot
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**0**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	1570	Count		20		0		0		7805		7805	75%	5853.75	1570.40	100.03%	Yes		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	1570	1570.40	100.03%	**Yes**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Appendix H

OAG Tables

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	87.8	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	14.34	12.78%	No	
									Future area without offset (adjusted hectares)	87.8	**Future area with offset (adjusted hectares)**	87.8								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	14.34	12.78%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	50.15	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	4.10	3.65%	No	
									Future area without offset (adjusted hectares)	50.2	**Future area with offset (adjusted hectares)**	50.2								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**7**	**Future quality without offset (scale of 0-10)**	**7**	**Future quality with offset (scale of 0-10)**	**8**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	4.10	3.65%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	8.91	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	1.46	1.30%	No	
									Future area without offset (adjusted hectares)	8.9	**Future area with offset (adjusted hectares)**	8.9								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	1.46	1.30%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	19.65	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	2.83	2.52%	No	
									Future area without offset (adjusted hectares)	19.7	**Future area with offset (adjusted hectares)**	19.7								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	75%	1.50	1.44				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	2.83	2.52%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	3.29	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	3.3	**Future area with offset (adjusted hectares)**	3.3	0.00	95%	0.00	0.00	0.71	0.63%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**8**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	0.71	0.63%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	142.29	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	20.51	18.27%	No		
									Future area without offset (adjusted hectares)	142.3	**Future area with offset (adjusted hectares)**	142.3								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	75%	1.50	1.44				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	20.51	18.27%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	13.52	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	2.21	1.97%	No	
									Future area without offset (adjusted hectares)	13.5	**Future area with offset (adjusted hectares)**	13.5								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	2.21	1.97%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	145.58	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	23.78	21.18%	No	
									Future area without offset (adjusted hectares)	145.6	**Future area with offset (adjusted hectares)**	145.6								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	23.78	21.18%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	53.93	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	8.81	7.85%	No	
									Future area without offset (adjusted hectares)	53.9	**Future area with offset (adjusted hectares)**	53.9								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	8.81	7.85%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	12.68	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	1.83	1.63%	No	
									Future area without offset (adjusted hectares)	12.7	**Future area with offset (adjusted hectares)**	12.7								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**8**	2.00	75%	1.50	1.44				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	1.83	1.63%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	6.61	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	1.43	1.27%	No	
									Future area without offset (adjusted hectares)	6.6	**Future area with offset (adjusted hectares)**	6.6								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**8**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	1.43	1.27%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	87.8	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	14.34	12.78%	No	
									Future area without offset (adjusted hectares)	87.8	**Future area with offset (adjusted hectares)**	87.8								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**7**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	14.34	12.78%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	50.15	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	4.10	3.65%	No	
									Future area without offset (adjusted hectares)	50.2	**Future area with offset (adjusted hectares)**	50.2								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**7**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	4.10	3.65%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	8.91	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	8.9	**Future area with offset (adjusted hectares)**	8.9	0.00	95%	0.00	0.00	2.18	1.94%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**7**	3.00	85%	2.55	2.45				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	2.18	1.94%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	19.65	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	19.7	**Future area with offset (adjusted hectares)**	19.7	0.00	95%	0.00	0.00	4.25	3.78%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**7**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	4.25	3.78%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	3.29	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	3.3	**Future area with offset (adjusted hectares)**	3.3	0.00	95%	0.00	0.00	1.19	1.06%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**2**	**Future quality without offset (scale of 0-10)**	**2**	**Future quality with offset (scale of 0-10)**	**7**	5.00	75%	3.75	3.60				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	1.19	1.06%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	142.29	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	142.3	**Future area with offset (adjusted hectares)**	142.3	0.00	95%	0.00	0.00	30.76	27.40%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**7**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	30.76	27.40%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	13.52	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	2.21	1.97%	No	
									Future area without offset (adjusted hectares)	13.5	**Future area with offset (adjusted hectares)**	13.5								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**7**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	2.21	1.97%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	145.58	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	23.78	21.18%	No	
									Future area without offset (adjusted hectares)	145.6	**Future area with offset (adjusted hectares)**	145.6								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**7**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	23.78	21.18%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	53.93	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	8.81	7.85%	No	
									Future area without offset (adjusted hectares)	53.9	**Future area with offset (adjusted hectares)**	53.9								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**7**	2.00	85%	1.70	1.63				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	8.81	7.85%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	12.68	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	12.7	**Future area with offset (adjusted hectares)**	12.7	0.00	95%	0.00	0.00	2.74	2.44%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**7**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	2.74	2.44%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	187.1	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	112.25	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	112.25	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	6.61	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	6.6	**Future area with offset (adjusted hectares)**	6.6	0.00	95%	0.00	0.00	1.43	1.27%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**7**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	112.254	1.43	1.27%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	87.8	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	7.17	7.26%	No		
									Future area without offset (adjusted hectares)	87.8	**Future area with offset (adjusted hectares)**	87.8								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**6**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		161		161		161		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	7.17	7.26%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	50.15	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	0.00%	No		
									Future area without offset (adjusted hectares)	50.2	**Future area with offset (adjusted hectares)**	50.2								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**6**	0.00	85%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		132		132		132		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	0.00	0.00%	**No**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	8.91	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	0.73	0.74%	No		
									Future area without offset (adjusted hectares)	8.9	**Future area with offset (adjusted hectares)**	8.9								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**6**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		35		35		35		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	0.73	0.74%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	19.65	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	2.83	2.87%	No		
									Future area without offset (adjusted hectares)	19.7	**Future area with offset (adjusted hectares)**	19.7								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**6**	2.00	75%	1.50	1.44				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		38		38		38		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	2.83	2.87%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	3.29	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	3.3	**Future area with offset (adjusted hectares)**	3.3	0.00	95%	0.00	0.00	0.47	0.48%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**4**	**Future quality without offset (scale of 0-10)**	**4**	**Future quality with offset (scale of 0-10)**	**6**	2.00	75%	1.50	1.44				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		8		8		8		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	0.47	0.48%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	142.49	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	30.80	31.20%	No		
									Future area without offset (adjusted hectares)	142.5	**Future area with offset (adjusted hectares)**	142.5								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**3**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		98		98		214		116	75%	87.00	83.59	23.22%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	83.59	23.22%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	30.80	31.20%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	13.52	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	1.10	1.12%	No		
									Future area without offset (adjusted hectares)	13.5	**Future area with offset (adjusted hectares)**	13.5								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**6**	1.00	85%	0.85	0.82					
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		2		2		20		18	75%	13.50	12.97	3.60%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	12.97	3.60%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	1.10	1.12%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	145.58	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	11.89	12.04%	No		
									Future area without offset (adjusted hectares)	145.6	**Future area with offset (adjusted hectares)**	145.6								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**6**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		164		164		218		54	75%	40.50	38.91	10.81%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	38.91	10.81%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	11.89	12.04%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	53.93	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	4.40	4.46%	No		
									Future area without offset (adjusted hectares)	53.9	**Future area with offset (adjusted hectares)**	53.9								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**5**	**Future quality without offset (scale of 0-10)**	**5**	**Future quality with offset (scale of 0-10)**	**6**	1.00	85%	0.85	0.82				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		91		91		91		0	75%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	4.40	4.46%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

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2 October 2012

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Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	12.68	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%								
									Future area without offset (adjusted hectares)	12.7	**Future area with offset (adjusted hectares)**	12.7	0.00	95%	0.00	0.00	0.00	0.00%	No	
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**6**	**Future quality without offset (scale of 0-10)**	**6**	**Future quality with offset (scale of 0-10)**	**6**	0.00	75%	0.00	0.00				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		34		34		34		0	100%	0.00	0.00	0.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	0.00	0.00%	**No**	$0.00	N/A	$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	0.00	0.00%	**No**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Greater Glider
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes		**Area**	246.8	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	98.72	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Hollows	360		Count	Field Survey
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	98.72	Adjusted hectares		**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	6.61	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	95%	0.00	0.00	1.43	1.45%	No		
									Future area without offset (adjusted hectares)	6.6	**Future area with offset (adjusted hectares)**	6.6								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	**3**	**Future quality without offset (scale of 0-10)**	**3**	**Future quality with offset (scale of 0-10)**	**6**	3.00	75%	2.25	2.16				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	360	Count		20		0		0		10		10	75%	7.50	7.21	2.00%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	360	7.21	2.00%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	98.72	1.43	1.45%	**No**	$0.00	#DIV/0!	#DIV/0!
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Swift Parrot
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Foraging Trees	2894		Count	Tree Plot
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**0**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	2894	Count		20		7388		7388		16550		9162	75%	6871.50	1843.43	63.70%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	2894	1843.43	63.70%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Regent Honeyeater
EPBC Act status	Critically Endangered
Annual probability of extinction Based on IUCN category definitions	**6.8%**

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	Foraging Trees	1570		Count	Tree Plot
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	No				**Time over which loss is averted (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**	**0**	**Future quality without offset (scale of 0-10)**	**0**	**Future quality with offset (scale of 0-10)**	**0**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	1570	Count		20		6610		6610		11579		4969	75%	3726.75	999.78	63.68%	No		
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	1570	999.78	63.68%	**No**	$0.00	#DIV/0!	#DIV/0!
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Appendix I

Risk Assessment

Risk assessment for offset area

A qualitative risk assessment which considers the risks of achieving the objectives and outcomes for the offset area is presented in the table below. The risk assessment is completed in accordance with the EPBC Act Environmental Management Plan Guidelines (2014) and characterises risk as low, medium, high or severe, as derived from the likelihood (highly likely, likely, possible, unlikely, rare) and consequence (minor, moderate, high, major and critical) risk matrix.

The risk analysis assesses the risk of failure to achieve the OMP management objectives. It is necessary to re-evaluate and modify the risk analysis and contingency measures throughout the period of EPBC Act approval, particularly if any unforeseen risks emerge or any negative outcomes identified are greater than expected.

During the first five (5) years of monitoring and Annual Compliance Reporting, **KFF1 and/or The Proponent** will review management commitments in this Offset Management Framework, and if the review results in the need to revise the framework it will be revised and submitted for approval. It is noted that events are only addressed once in the risk assessment under the most relevant management objective, however, some events are likely to impact on multiple management objectives.

Note, potential impacts from the occurrence of cyclones have been included within the risk analysis table. Cyclones, if to occur proximal to the offset area, are likely to result in indirect impacts only, including increased rainfall and wind events. Whilst the pathway of and occurrence of cyclones can change easily, becoming difficult to determine, an assessment of the potential associated risks has been completed. According to BoM (2019), cyclones have not traversed inland SEQ for at least the last 20 years, with the exception of Cyclone Debbie in 2017. While the risk of cyclones occurring south of 25°S has increased in more recent years, it is unlikely a formed cyclone would occur at the offset area location, nor proximal to them. This is due to a range of factors, including surrounding changes in topography, modified urban environment and lack of warm open water to provide continued energy generation[1].

[1] Bureau of Meteorology 2019, *Past Tropical Cyclones*, BoM, Australian Government, accessed at http://www.bom.gov.au/cyclone/tropical-cyclone-knowledge-centre/history/past-tropical-cyclones/

Risk framework

		Consequence				
		Minor	Moderate	High	Major	Critical
Likelihood	Highly Likely	Medium	High	High	Severe	Severe
	Likely	Low	Medium	High	High	Severe
	Possible	Low	Medium	Medium	High	Severe
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Low	Medium	High

Likelihood and consequence

Qualitative measure of likelihood (how likely is it that this event/circumstances will occur after management actions have been put in place/are being implemented)	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances
Qualitative measure of consequences (what will be the consequence/result if the issue does occur)	
Minor	Minor risk of failure to achieve the plan's objectives. Results in short term delays to achieving plan objectives, implementing low cost, well characterised corrective actions.
Moderate	Moderate risk of failure to achieve the plan's objectives. Results in short term delays to achieving plan objectives, implementing well characterised, high cost/effort corrective actions.
High	High risk of failure to achieve the plan's objectives. Results in medium-long term delays to achieving plan objectives, implementing uncertain, high cost/effort corrective actions.
Major	The plan's objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies.
Critical	The plan's objectives are unable to be achieved, with no evidenced mitigation strategies.

Risk assessment and management

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	C	RL		
To legally secure approved offset properties for conservation.	Failure to legally secure approved offset area. Legislative reform prejudices proposed tenure arrangements for offset properties.	Management action 1: • Legally secure the offset area via a suitable method such as a voluntary declaration under the *Vegetation Management Act 1999* or a covenant under the *Land Act 1994* or *Land Titles Act 1994*.	R	Mod	Low	Clearing of the impact area cannot occur without legally securing the offset area.	N/A
Pest management	Failure to reduce the threat of introduced predators.	Management Action 2: • Conduct baseline surveys and determine relative abundance index. • Implement predator control program. • Conduct follow-up monitoring and implement further control.	U	Mod	Low	Monitoring of the presence of introduced predators through the use of remote motion-activated cameras; Survey the site to record the presence / absence of signs of introduced predator (sightings, killings and/or scats and tracks).	• Should the initial and ongoing introduced predator control measures not result in a reduction of introduced predator numbers (compared to baseline survey), introduced predator program to be expanded/adapted to improve outcomes. • Any incidence of injury/mortality resulting from introduced predator attack will initiate supplementary monitoring and control measures. In the event that an offset species is found injured, transport immediately to a local vet, or suitably qualified and experienced wildlife carer.
Weeds management	Failure to control Weeds.	Management Action 3: • Develop and implement a weed strategy, with a particular focus on weeds	U	Mod	Low	Annual (photo monitoring and mapping of weed infestations) and 5-year Targeted transects and	If weed survey indicates weed cover is not reduced since previous survey, weed control program to be

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	C	RL		
		listed with particularly ability to impact on movement and structural vegetation composition (predominantly *Lantana camara*), and under the *Biosecurity Act 2014*, to reduce weed cover to target thresholds. • Undertake weed management in accordance with the OMP.				MHQA) surveys of non-native plant cover to ensure reduction across offset area. Surveys in-line with weed management strategy. Repeated surveys of baseline data including 5 yearly habitat monitoring data as part of the framework.	expanded/ adapted to improve outcomes.
High intensity fire	A high intensity uncontrolled fire occurs within the offset area/s which causes loss of habitat.	Management Action 4: Actions as directed by the local authority which may include prescribed burning or other techniques undertaken in consultation with the Queensland Rural Fire Brigade and controlled grazing to manage fuel loads.	P	Mod	Med	Annual monitoring requirements to review access tracks, fire breaks, fuel loads and outcomes of controlled burns or other management techniques.	If a wildfire occurs in the offset area, the following actions will be undertaken: • Implement fire control • Repair any fire breaks and access tracks. • Stay informed through the Rural Fire Service. • Assess damage caused by the wild fire and monitor for natural regeneration. • Monitoring to occur 3-6 months post event or after the next wet weather event (whichever is sooner). • Where natural regeneration is failing to thrive, assist natural regeneration through direct seeding and planting

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	C	RL		
Achieve performance targets and completion criteria for habitat	Landowner-approval holder agreements fail to adequately address management commitments in the offset plan.	Management Action 1-5: • The offset area has been legally secured for conservation purposes. The development of this framework outlines specific management actions to achieve performance criteria.	U	Mod	Low	Scheduled monitoring/surveys and Annual Compliance Reports	• Review Offset Management Framework • Implement adaptive management and corrective actions
	The offset area fails to naturally regenerate.	Management Action 3: • Remove incompatible land uses. • WONS management (refer Management Action 3). • Sufficient rest period.	U	Mod	Low	After a sufficient rest period the repeat MHQA will indicate progress towards performance criteria.	• infill planting/ revegetation to be implemented after sufficient rest period.

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	C	RL		
	Failure to increase habitat for offset species.	Management Action 1: • legally secure offset area and remove incompatible land uses. Management Action 3: • Reduce the extent of weed as per criteria; and • Implement infill planting if required.	U	Mod	Low	Annual surveys (photo monitoring & audit of revegetation works) of revegetation area to ensure plant survival. Repeated surveys of baseline data including 5 yearly MHQA habitat monitoring data and annual observational data as part of the OMP.	If MHQA transects indicate habitat less than performance indicators, implement infill planting in weed control areas. Should plant stock fail supplementary planting, direct seeding, weed control, fertiliser, amelioration or other management actions necessary to stimulate tree growth.
	If infill planting is required and there is high plant stock failure.	Management Action 3: • Adhere to planting method and watering schedule.				Plant stock audits (first 3 years). Planting and monitoring event schedules.	If there is a high rate of plant stock failure adaptive management and corrective actions will be implemented and may include, additional supplementary planting, direct seeding, weed control, fertiliser, water spike, mulching, tree guards, etc.

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk			Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	C	RL		
Hollow and nest box installation	Hollow and nest box failure	Management Acton 7: • Install hollows and nest boxes to ensure at least 1.5 hollows per hectare	U	Mod	Low	Hollow Monitoring and Management Plan. Monitoring of installed hollows shows failure	Install replacement hollows and nest boxes in adjoining suitable limbs or trees.