Appendix F

Offset Management Plan

Calvale to Calliope Transmission Line

Offset Management Plan

Final

April 2026

umwelt

Calvale to Calliope Transmission Line

Offset Management Plan

Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Powerlink Queensland

Project Director:	Gavin Elphinstone
Project Manager:	Julius Frias
Technical Director:	Jamie Ernst
Technical Manager:	Daniel Light
Report No.:	32355/R02
Date:	April 2026

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Acknowledgement of Country

Disclaimer

This document has been prepared for the sole use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by Umwelt (Australia) Pty Ltd (Umwelt). No other party should rely on this document without the prior written consent of Umwelt.

Umwelt undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. Umwelt assumes no liability to a third party for any inaccuracies in or omissions to that information. Where this document indicates that information has been provided by third parties, Umwelt has made no independent verification of this information except as expressly stated.

©Umwelt (Australia) Pty Ltd

Document Status

Rev No.	Reviewer Name	Date (delivered to DCCEEW)	Approved for Issue Name
V3	David Gatfield	10/03/2026	David Gatfield
V4	David Gatfield	02/04/2026	David Gatfield

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (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	
Position title	General Manager Environment and Sustainability
Organisation	Powerlink Queensland
Date	01/04/2026

Abbreviations and Definitions

Abbreviation	Description
AU	Assessment Unit
BMP	Bushfire Management Plan
BBOA	Brigalow Belt Offset Area including section of Lone Star and The Cedars properties
CMSMP	*C. megacarpa* Species Management Plan
CPE	Canid Pest Ejectors
CTMP	*C. megacarpa* Translocation Management Plan
DBH	Diameter at breast height, a standard method of measuring the diameter of a tree
DCCEEW	Department of Climate Change, Energy, the Environment and Water
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
Eucalypt Floodplain TEC	Subtropical Eucalypt Floodplain Forest and Woodland of the NSW North Coast and SEQ Bioregions TEC
FFLH	Fire fuel load and hazard
GBO	General biosecurity obligations
GMP	Grazing Management Plan
ha	hectares
HQA	Habitat quality assessment
HQS	Habitat quality scores
IUCN-CMP	International Union for Conservation of Nature - Conservation Measures Partnership
km	kilometres
LIKT	Locally Important Koala Tree as per Youngentob *et al.* (2021)
m	metres
MHQA	Modified Habitat Quality Assessment
MNES	Matters of National Environmental Significance
OAG	Offsets Assessment Guide
OMP	Offset Management Plan
Offset Strategy	See OMS
OMS	Offset Management Strategy
PER	Public Environment Report
Qld Guide	Queensland Guide to determining terrestrial habitat quality (version 1.2)
RE	Regional Ecosystem
RMP	Restoration Management Plan
RoL	Risk of loss
SEQOA	Southeast Queensland Offset Area including a section of the South Kolan property
SIA	Significant Impact Assessment
SMART	Specific, measurable, achievable, relevant and time-bound
SRI	Significant residual impact
SSR	Species stocking rate
TEC	Threatened Ecological Community

Abbreviation	Description
The Project	Calvale to Calliope River Transmission Line Reinforcement Project
the Offsets Policy	The EPBC Act Environmental Offsets Policy
Umwelt	Umwelt (Australia) Pty Limited
WMP	Weed Management Plan
WoNS	Weeds of National Significance

Contents

Abbreviations and Definitions i

1.0 Introduction 1

1.1 Project Description 1

1.2 Purpose of the OMP 1

1.3 Project Boundaries 2

1.3.1 Disturbance Footprint 2

1.3.2 Impact Area 3

1.3.3 Offset Area 3

2.0 Legislation and Administration 4

2.1 Responsibility of the OMP 4

2.2 Timing 4

2.3 Land Dealings and Ownership 4

2.4 Legal Mechanism 5

2.5 Policies and Guidance 5

3.0 Statement of Outcomes 7

3.1.1 Offset Area Size and Suitability 7

3.1.2 Habitat Quality Improvement of Offset MNES 17

4.0 Offset Assessment Methodology 19

4.1 Offset Survey Effort 19

4.2 Offset Suitability Survey Methodologies 25

4.2.1 Offset Management Assessments 25

4.2.2 Targeted MNES Surveys 27

4.3 Habitat Quality Assessments 28

4.3.2 Habitat Quality Scoring 31

4.3.3 Assessment Units 33

5.0 Impact Area 36

5.1 Impact Summary 36

5.2 Impact Habitat Quality 37

5.3 Offset Requirement 38

6.0 Brigalow Belt Offset Area 40

6.1 Site Context 40

6.1.1 Lone Star 40

6.1.2 The Cedars 41
6.1.3 Ecological Values 43
6.2 Threats and Disturbances 57
6.2.1 Habitat Clearing 57
6.2.2 Wildfire and Inappropriate Fire Regimes 58
6.2.3 Weeds 61
6.2.4 Feral Pests 62
6.3 Offset Strategy 63
6.3.1 Forecast Habitat Quality and Habitat Extent 64
6.3.2 Semi-evergreen Vine Thicket 65
6.3.3 Cycas megacarpa 70
6.3.4 Samadera bidwillii 76
6.3.5 Collared Delma 81
6.3.6 Greater Glider 88
6.3.7 Koala 98
6.3.8 Yellow-bellied Glider 107
6.3.9 Offset Area Acquittal – Brigalow Belt Offset MNES 114
7.0 South-east Queensland Offset Area 117
7.1 Site Context 117
7.2 Vegetation and Condition Types 119
7.3 Threats and Disturbances 121
7.3.1 Habitat Clearing 121
7.3.2 Wildfire and Inappropriate Fire Regimes 122
7.3.3 Weeds 124
7.3.4 Waterway Degradation 125
7.4 Offset Strategy 126
7.4.1 Feral Pests 126
7.4.2 Eucalypt Floodplain Forest 127
7.4.3 Offset Area Acquittal – SEQ Offset MNES 133
8.0 Offset Management Actions 137
8.1 Management Zones 137
8.1.1 Management Zone 1 140
8.1.2 Management Zone 2 140
8.1.3 Management Zone 3 141
8.1.4 Management Zone 4 142

8.1.5 Management Zone 5 143
8.2 Offset Management Phases 143
8.2.1 Establishment: Yr 1–2 144
8.2.2 Early Interventions: Yr 2–5 145
8.2.3 Maintenance: Yr 5-15 145
8.2.4 Completion: Yr 15-20 146
8.3 Supporting Management Plans 147
8.4 Management Actions 148
8.4.1 SMART Framework for Management Actions 148
8.4.2 Weed Management 149
8.4.3 Feral Pest Management 157
8.4.4 Bushfire Management 162
8.4.5 Managing Cattle Grazing 168
8.4.6 Restoration Management Actions 172
8.4.7 Glider Hollow and Artificial Habitat Management 179
8.5 Offset Management Program 181
9.0 Monitoring Program and Evaluation Plan 187
9.1 Field Surveys and Condition Assessments 187
9.1.1 Habitat Quality Monitoring 187
9.1.2 Target MNES Monitoring 189
9.1.3 Monitoring of Management and Threats Towards Progressive Criteria 191
9.2 Progressive and Completion Criteria 194
9.2.1 Progressive Criteria 194
9.2.2 Completion Criteria 198
9.3 Adaptive Management 202
9.3.1 Corrective Actions 203
9.4 Compliance Reporting 205
9.4.1 Quarterly Reporting 205
9.4.2 Annual Reporting 206
9.4.3 Five-Yearly Summary Reporting 206
10.0 Risk Management Plan 207
10.1 Force Majeure 207
11.0 References 217

Figures

Figure 3.1	Current and Forecast SEVT TEC Habitat Extent	9
Figure 3.2	*Cycas megacarpa* Habitat throughout the Offset Area	10
Figure 3.3	*Samadera bidwillii* Known Habitat throughout the Offset Area	11
Figure 3.4	Current and Forecast collared delma Habitat Extent	12
Figure 3.5	Current and Forecast greater glider Habitat Extent	13
Figure 3.6	Current and Forecast koala Habitat Extent	14
Figure 3.7	Current yellow-bellied glider Habitat Extent	15
Figure 3.8	Current and Forecast Eucalypt Floodplain TEC Habitat Extent	16
Figure 4.1	Survey Effort Across BBOA – East	22
Figure 4.2	Survey Effort Across BBOA – West	23
Figure 4.3	Survey Effort Across SEQOA	24
Figure 6.1	BBOA Site Context	42
Figure 6.2	GTRE throughout BBOA	45
Figure 6.3	SEVT TEC throughout the BBOA	50
Figure 6.4	*Cycas megacarpa* Records and Habitat throughout the BBOA	51
Figure 6.5	*Samadera bidwillii* Records and Habitat throughout BBOA	52
Figure 6.6	Collared delma Habitat throughout BBOA	53
Figure 6.7	Koala Records and Habitat throughout the BBOA	54
Figure 6.8	Greater glider Records and Habitat throughout the BBOA	55
Figure 6.9	Yellow-bellied glider Records and Habitat throughout the BBOA	56
Figure 6.10	Fire Scar Mapping Across the BBOA	60
Figure 6.11	SEVT TEC-associated AUs and HQAs Conducted throughout the BBOA	69
Figure 6.12	*Cycas Megacarpa* Associated AUs and HQAs Conducted throughout the BBOA	75
Figure 6.13	*Samadera bidwillii* Associated AUs and HQAs Conducted Throughout the BBOA	80
Figure 6.14	Collared delma Associated AUs and HQAs Conducted throughout the BBOA	87
Figure 6.15	Greater glider Associated AUs and HQAs Conducted throughout the BBOA	97
Figure 6.16	Koala Associated AUs and HQAs Conducted throughout the BBOA	106
Figure 6.17	Yellow-bellied glider-associated AUs and HQAs Conducted throughout the BBOA	113
Figure 7.1	SEQOA Site Context	118
Figure 7.2	Ground-truthed REs throughout SEQOA	120
Figure 7.3	Fire Scar Mapping Across SEQOA – 1999, 2024 and 2025	123
Figure 7.4	Eucalypt Floodplain Forest TEC Associated AUs and HQAs Conducted Throughout the SEQOA	132

Figure 8.1 Management Zones throughout the BBOA 138
Figure 8.2 Management Zones throughout the SEQOA 139
Figure 8.3 Weed Severity throughout the BBOA 154
Figure 8.4 Weed Severity throughout the SEQOA 155
Figure 8.5 Feral Pest Detections Throughout the BBOA 160
Figure 8.6 Feral Pest Detections throughout the SEQOA 161
Figure 8.7 Bushfire Management throughout the BBOA 166
Figure 8.8 Bushfire Management throughout the SEQOA 167
Figure 8.9 Managing Cattle throughout the BBOA 170
Figure 8.10 Managing Cattle throughout the SEQOA 171
Figure 8.11 Restoration throughout the BBOA 176
Figure 8.12 Restoration throughout the SEQOA 177

Tables

Table 3.1 Summary of the Outcomes for Each Offset MNES 7
Table 3.2 Summary of the Offset Management Actions per Offset MNES 17
Table 4.1 Survey Effort throughout the Three Offset Properties 20
Table 4.2 Adapted Density Classes for Weed Mapping Using Standard Weeds of National Significance Protocols (McNaught *et al.* 2008) 25
Table 4.3 Summary of MHQA scoring 30
Table 4.4 MNES-specific habitat quality scoring 32
Table 4.5 Survey Effort of HQAs throughout the Disturbance Footprint and Offset Area 33
Table 4.6 Summary of AUs and HQAs throughout the Impact Area 34
Table 4.7 Summary of AUs and HQAs throughout the Offset Areas 34
Table 5.1 MNES Habitat within the Impact Area 36
Table 5.2 Summary of HQS throughout the Impact Area of each MNES 37
Table 5.3 Offset Area Requirements for Impacted MNES based on the OAG 38
Table 5.4 Summary of the *Cycas megacarapa* HQS throughout Remnant And Non-remnant Areas 39
Table 6.1 Site context of Lone Star 40
Table 6.2 Site context for The Cedars 41
Table 6.3 Summary of REs mapped throughout the BBOA and wider host properties 43
Table 6.4 Records and Habitat of Offset MNES throughout BBOA and Wider Host Properties 46
Table 6.5 Summary of the Forecast Habitat Quality and Extent for the Offet MNES 64

Table 6.6	SEVT TEC – Offset HQS summary	65
Table 6.7	SEVT TEC – Offset HQS breakdown	66
Table 6.8	SEVT TEC - offset site condition scores	66
Table 6.9	SEVT TEC – Offset Site Context Scores	67
Table 6.10	*Cycas megacarpa* – Offset HQS Summary	70
Table 6.11	*Cycas megacarpa* – Offset HQS Breakdown	70
Table 6.12	*Cycas megacarpa* – Offset Site Condition Scores	71
Table 6.13	*Cycas megacarpa* – Offset Site Context Scores	72
Table 6.14	*Cycas megacarpa* – Offset SSR Scores	73
Table 6.15	*Samadera bidwillii* – Offset HQS Summary	76
Table 6.16	*Samadera bidwillii* – Offset HQS Breakdown	76
Table 6.17	*Samadera bidwillii* – Offset Site Condition Scores	77
Table 6.18	*Samadera bidwillii* – Offset Site Context Scores	78
Table 6.19	*Samadera bidwillii* – Offset SSR Scores	78
Table 6.20	Collared delma – Offset HQS Summary	81
Table 6.21	Collared delma – Offset HQS Breakdown	81
Table 6.22	Collared delma – Offset Site Condition Scores	82
Table 6.23	Collared delma – Offset Site Context Scores	83
Table 6.24	Collared Delma – Offset SSR Scores	84
Table 6.25	Greater glider – Offset HQS Summary	89
Table 6.26	Greater glider – Offset HQS Breakdown	90
Table 6.27	Greater glider – Offset Site Condition Scores	91
Table 6.28	Greater glider – Offset Site Context Scores	93
Table 6.29	Greater glider – Offset SSR Scores	93
Table 6.30	Koala – Offset HQS Summary	99
Table 6.31	Koala – Offset HQS Breakdown	100
Table 6.32	Koala – Offset Site Condition Scores	101
Table 6.33	Koala – Offset Site Context Scores	103
Table 6.34	Koala – Offset SRR Scores	103
Table 6.35	Yellow-bellied glider – Offset HQS Summary	107
Table 6.36	Yellow-bellied glider – Offset HQS Breakdown	107
Table 6.37	Yellow-bellied glider – Offset Site Condition Scores	108
Table 6.38	Yellow-bellied Glider – Offset Site Context Scores	109
Table 6.39	Yellow-bellied glider - Offset SSR Scores	110
Table 6.40	Summary of the Inputs and Outputs of the OAG Calculator to Acquit the Impact for the Offset MNES Occuring in the Brigalow Belt	116

Table 7.1	Site Context South-east Queensland Offset Area – South Kolan	117
Table 7.2	Summary of REs Mapped throughout South Kolan	119
Table 7.3	Eucalypt Floodplain Forest TEC HQS Summary	128
Table 7.4	Eucalypt Floodplain Forest Offset HQS Breakdown	128
Table 7.5	Eucalypt floodplain forest site condition scores	129
Table 7.6	Eucalypt Floodplain Forest Offset Site Context Scores	130
Table 7.7	Summary of the Inputs and Outputs of the OAG Calculator to Acquit the Impact for the Eucalypt Floodplain Forest TEC	136
Table 8.1	Overarching Objectives and Management Actions Throughout MZ01	140
Table 8.2	Overarching \ Objectives and Management Actions throughout MZ02	141
Table 8.3	Overarching Objectives and Management Actions of MZ03	141
Table 8.4	Overarching Objectives and Management Actions of MZ04	142
Table 8.5	Overarching Objectives and Management Actions of MZ05	143
Table 8.6	Distribution and severity of key weeds within the Offset Areas	151
Table 8.7	Feral Animal Control Techniques and Implementation Notes	158
Table 8.8	Fire Management Considerations for the Offset MNES	162
Table 8.9	Summary of the FFLH Assessments throughout the Offset Areas	164
Table 8.10	Area of Habitat Forecast for Restoration	172
Table 8.11	Restoration Objectives within each Patch	174
Table 8.12	Management program throughout the Offset Area	182
Table 9.1	Habitat Quality Monitoring	187
Table 9.2	Offset Monitoring and Reporting Program	188
Table 9.3	Targeted MNES Monitoring Methods	189
Table 9.4	Progressive Criteria Relevant to Bushfire, Weeds, Feral Animals and Regrowth Recovery	195
Table 9.5	Formal Offset Completion Criteria as Measured by the HQS	199
Table 10.1	Risk Matrix Used within the Risk Management Plan	207
Table 10.2	Final Risk Rating based on the Likelihood and Consequence Ratings	208
Table 10.3	Risk Management Plan	210

Photos

Photo 6.1	*Cycas megacarpa*	48
Photo 6.2	*Samadera bidwillii* within RE 11.10.13	48
Photo 6.3	Greater Glider within *Eucalyptus melanophloia*	49

Photo 6.4	Representative photo of SEVT TEC	49
Photo 6.5	Representative photo of RE 11.11.15	49
Photo 6.6	Representative photo of RE 11.3.4	49
Photo 6.7	Representative photo of RE 11.3.25	49
Photo 6.8	Koala within *Melaleuca bracteata*	49
Photo 6.9	Cleared paddock with emerging native recruits on Lone Star	58
Photo 6.10	Cleared strip between patches of SEVT TEC on The Cedars	58
Photo 6.11	Ongoing selective clearing evident with stands of dead stags at The Cedars	58
Photo 6.12	Felling of juvenile canopy recruits (≈5cm DBH) within a grazing paddock on The Cedars	58
Photo 6.13	Cat's claw creeper infestation throughout SEVT TEC patch on The Cedars	61
Photo 6.14	Parthenium infestation throughout a tributary of Spring Creek on The Cedars	61
Photo 6.15	Lantana infestation throughout The Cedars	61
Photo 6.16	Paddock dominated by Indian bluegrass on The Cedars	61
Photo 6.17	Feral pig observed on a camera trap within Lone Star	63
Photo 6.18	Feral cat observed on a camera trap within Lone Star	63
Photo 6.19	Pig rootings throughout Lone Star	63
Photo 6.20	Dingo observed on a camera trap on The Cedars	63
Photo 6.21	Cleared strip between patches of SEVT TEC	68
Photo 6.22	Patch of SEVT TEC with an open canopy	68
Photo 6.23	Typical high condition of known – confirmed *Cycas megacarpa* habitat with scattered infestations of lantana and creeping lantana	74
Photo 6.24	Suitable *Cycas megacarpa* habitat subject to historic and ongoing selective clearing	74
Photo 6.25	High fuel load within known *Samadera bidwillii* habitat	79
Photo 6.26	Whipstick growth in the understorey surrounding *Samadera bidwillii* (bottom- right corner of photo)	79
Photo 6.27	Selectively cleared patch forecast to provide collared delma habitat	85
Photo 6.28	Creeping lantana throughout the ground layer	85
Photo 6.29	Representative photo of non- remnant AU21 with scattered canopy recruits, vegetated watercourse (Malakoff Ck) in the distance	95
Photo 6.30	Riparian corridor canopy in the foreground with adjacent, selectively cleared paddocks in the background (site OFF01)	95
Photo 6.31	Non-remnant AU21 on drainage lines and surrounding paddocks	95
Photo 6.32	Likely or current denning habitat (AU24) intersected with barbed- wire fencing	95
Photo 6.33	Representative photo of non- remnant AU21 with scattered canopy trees and an isolated, vegetated watercourse in the distance (site OFF73)	105

Photo 6.34 Representative photo of non- remnant AU21 with scattered canopy trees and an isolated, vegetated watercourse in the distance (site OFF21) 105

Photo 6.35 Remnant condition 11.11.15 with selective clearing and highly modified understorey (site OFF31) 105

Photo 6.36 Evidence of selective clearing of subcanopy and recruiting canopy species (same site OFF31) within AU11 105

Photo 6.37 Lantana infestation within shrub layer of 11.3.25 habitat 111

Photo 6.38 Billy-goat weed dominating the ground layer within 11.11.3 habitat 111

Photo 7.1 South Kolan property 1998 (Q Imagery 2025) 121

Photo 7.2 Grazed paddock dominated by giant rat's tail facing a fragmented strip of vegetation in the Offset Area 122

Photo 7.3 Grazing paddock dominated by giant rat's tail facing fragmented patch of RE 12.3.3d in the Offset Area 122

Photo 7.4 Lantana throughout regrowth Eucalypt Floodplain TEC within the SEQOA 124

Photo 7.5 Cat's claw creeper infestation from ground to canopy within Eucalypt Floodplain TEC in the SEQOA 124

Photo 7.6 Lantana and cat's claw creeper infestations in shrub and canopy layers 125

Photo 7.7 Giant rat's tail infested paddock at the SEQOA 125

Photo 7.8 Cleared vegetation along Burnett River with high exotic grass densities 125

Photo 7.9 Limited bank structure along Burnett River resulting in high erosion potential 125

Photo 7.10 Two European red foxes observed on camera trap within the SEQOA 126

Photo 7.11 Domestic cow observed on camera trap within the SEQOA 126

Photo 7.12 Patch of remnant 12.3.3d with significant infestations of giant rat's tail and lantana 131

Photo 7.13 Dense cat's claw creeper cover from ground to canopy 131

Photo 8.1 Very dense lantana infestation along the riparian corridor at the SEQOA 153

Photo 8.2 Giant rat's tail grass throughout RE 12.3.3d on the SEQOA 153

Photo 8.3 Cat's claw creeper reaching the canopy at the SEQOA 153

Photo 8.4 The most extensive patch of lantana observed at the BBOA 153

Photo 8.5 Exotics throughout paddocks on the BBOA including Indian blue grass, blue billygoat weed 153

Photo 8.6 Dense infestation of parthenium adjacent to SEVT TEC on the BBOA 153

Photo 8.7 'Extreme' fire fuel hazard rating due to the surface and near- surface layers recorded within the alluvial plains of Malakoff Ck on the BBOA 164

Photo 8.8 'Extreme' fire fuel hazard rating largely due to surface and elevated fuel loads recorded on the western ridge in *Samadera bidwilli* habitat 164

Photo 8.9 'Very high' fire fuel hazard rating recorded on the western slope of Fannys Creek on the BBOA 164

Photo 8.10 'Very high' fire fuel hazard rating within riparian community along Fannys Creek on the BBOA 164
Photo 8.11 'Moderate' fire fuel hazard rating recorded within selectively cleared patch of 11.11.15 on the BBOA 165
Photo 8.12 'High' fire fuel hazard rating recorded within 12.3.3d at the SEQOA 165
Photo 8.13 'Moderate' fire fuel hazard rating recorded within remnant 11.11.15 on the BBOA 165
Photo 8.14 'High' fire fuel hazard rating recorded within non-remnant paddock at the SEQOA 165
Photo 8.15 Scattered canopy recruits within the BBOA representing one of the better regrowth sites 173
Photo 8.16 Thin restoration area adjacent to SEVT TEC prescribed for restoration on the BBOA 173
Photo 8.17 Canopy recruits scattered throughout a paddock prescribed for restoration within the BBOA 174

Appendices

Appendix A MHQA Methodology
Appendix B Offset Assessment Guide
Appendix C Habitat Quality Score Results – Impact
Appendix D Habitat Quality Score Results – Offset
Appendix E Forecasted Habitat Quality Scores
Appendix F HQA Raw Data
Appendix G Habitat Quality Assessment Photos
Appendix H Offset Monitoring Results
Appendix I HQA Sites Throughout Disturbance Footprint and Offset Areas

1.0 Introduction

1.1 Project Description

Powerlink Queensland (the Proponent) is proposing to deliver the Calvale to Calliope River Transmission Line Reinforcement Project (the Project), a critical electricity infrastructure development aimed at strengthening transmission capacity in Central Queensland. The Project involves the reinforcement of the existing transmission network between the Calvale and Calliope River substations to improve reliability and support future renewable energy integration into the National Energy Market.

The Project area spans a predominantly rural landscape and has been selected based on its strategic location within the existing transmission corridor, proximity to key substations, and potential to minimise environmental and social impacts. Multiple Offset Areas have been identified to compensate for potential impacts on Matters of National Environmental Significance (MNES), consistent with the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The proposed action was referred under the EPBC Act (EPBC 2024/10044) on 6 January 2025. Following public consultation and assessment, on 4 February 2025, the Commonwealth Minister for Environment and Water determined that the action is a controlled action due to its potential significant impact on the following MNES:

- Listed threatened species and ecological communities (sections 18 & 18A)
- World Heritage values of a declared World Heritage property (sections 12 & 15A)
- National Heritage values of a National Heritage place (sections 15B & 15C)
- The environment in the Great Barrier Reef Marine Park.

As a result, the Project is subject to assessment through a Public Environment Report (PER). The PER Guidelines – issued on 24 March 2025 – outline specific requirements for addressing potential impacts on MNES, including offset obligations. These requirements are addressed in this Offset Management Plan (OMP) to support final approval under the EPBC Act as part of the PER assessment process.

1.2 Purpose of the OMP

The purpose of this OMP is to define the management, monitoring and reporting actions required to deliver a conservation outcome that is commensurate with the scale and nature of the residual impacts, and consistent with the EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population, Communities and Public Affairs, 2012). The OMP builds upon the Project Offset Management Strategy (OMS), which established the strategic, quantitative and policy basis for offset delivery, and translates those commitments into property-specific management actions, monitoring programs and performance criteria to be implemented over the offset period.

The OMP includes the following components:

- Project impact including the results of significant impact assessments for Matters of National Environmental Significance requiring offsets (collectively referred to as the 'Offset MNES') including:
    - Semi-evergreen vine thicket (SEVT TEC)
    - Subtropical Eucalypt Floodplain Forest and Woodland of the NSW North Coast and SEQ Bioregions TEC (Eucalypt Floodplain TEC)
    - Collared delma (*Delma torquata*)
    - *Cycas megacarpa*
    - Greater glider (southern and central) (*Petauroides volans*), herein referred to as 'greater glider'
    - Koala (*Phascolarctos cinereus*)
    - *Samadera bidwillii*
    - Yellow-bellied glider (south-eastern) (*Petaurus australis*), herein referred to as 'yellow-bellied glider'.
- Description of the Offset Area including land parcel and property details, habitat descriptions, baseline condition (also known has habitat quality scoring), and the prevalence of threats and disturbances and Offset Area suitability.
- Description of the legal mechanism to be used to secure the offset.
- Offset Area management including threat abatement, restorative actions and schedules.
- Offset monitoring including methodologies, schedule and evaluation plan. This includes success criteria and corrective action triggers.
- Risk management plan aimed to identify risk and their management.

The OMP will be supported by a suite of specialist sub-plans prepared during the Establishment Phase (year 1) including weed, bushfire, restoration and grazing management plans (**Section 8.3**). Together, these documents provide additional operational detail required to implement the offset program and demonstrate progress toward achieving the conservation outcomes prescribed within this OMP.

1.3 Project Boundaries

For the purposes of assessing impacts to MNES and defining the scope of offset delivery, three spatial boundaries are used within this Offset Management Plan: the Disturbance Footprint, the Impact Area, and the Offset Area. These boundaries are applied consistently throughout the OMP to clearly distinguish between areas of Project disturbance, areas of MNES impact and areas secured for offset delivery.

1.3.1 Disturbance Footprint

The Disturbance Footprint represents the maximum spatial extent of vegetation clearing, ground disturbance and construction-related activities associated with the Project. It defines the outer limit of direct Project disturbance and forms the basis for impact assessment undertaken within the PER.

1.3.2 Impact Area

The Impact Area is defined as the areas of direct and indirect impacts to MNES habitat as a result of the project disturbance footprint. The Impact Area underpins the Significant Impact Assessments (SIA) and informs the calculation of offset requirements using the EPBC Act Offsets Assessment Guide (OAG). Habitat that is not considered habitat critical to the survival of a species is excluded from the Impact Area in accordance with the Significant Impact Guidelines 1.1 (Department of the Environment, 2013).

1.3.3 Offset Area

The Offset Area comprises a total of three offset properties, two offset properties within the Brigalow Belt bioregion: Lone Star and The Cedars, and a single property in the Southeast Queensland bioregion: South Kolan, which collectively meet the offset requirements for all eight Offset MNES. Further refinement of the Offset Area including MNES-specific offset extents, is provided in subsequent sections of this OMP.

2.0 Legislation and Administration

This section outlines the legislative, policy and administrative framework governing the preparation and implementation of this OMP.

2.1 Responsibility of the OMP

Powerlink Queensland (Powerlink) is responsible for the implementation of this OMP, including securing offset land, funding and resourcing management actions, undertaking monitoring and reporting and ensuring compliance with EPBC Act approval conditions.

Where required, implementation may involve suitably qualified ecological consultants, land managers and contractors operating under Powerlink's oversight to ensure that all actions are delivered in accordance with this OMP.

2.2 Timing

The delivery of the OMP is underpinned by a clear and staged implementation framework aligned with the PER Guidelines and anticipated EPBC Act approval conditions. This section outlines the key timing considerations for the establishment, legal security and long-term management of the Offset Areas.

Legal protection of the offset areas is intended to be achieved through the registration of a conservation covenant within 24 months of the commencement of relevant Project-related impacts on MNES.

Offset implementation will occur over a 20-year management period comprising four sequential phases (**Section 8.2**):

- Establishment (Years 1–2)
- Early Interventions (Years 2–5)
- Maintenance (Years 5–15)
- Completion (Years 15–20).

Each phase includes defined management actions, monitoring and reporting designed to progressively improve habitat condition and support the Offset MNES.

Following achievement of completion criteria, the offset areas will continue to be managed for the duration of the Project's residual impacts, ensuring that conservation outcomes remain secure and effective over the long term.

2.3 Land Dealings and Ownership

Powerlink intends to purchase and manage each of the three properties on which the Offset Area occurs as freehold tenure, enabling the conservation covenant to be registered directly on title.

2.4 Legal Mechanism

The Offset Area is intended to be secured through the registration of a conservation covenant under the *Land Act 1994*. Registration of a covenant on the land title provides a legally binding and enduring mechanism that restricts incompatible land uses and ensures that the ecological values and long-term management objectives of the offset are protected, consistent with the EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population, Communities and Public Affairs, 2012). Powerlink commits to registering the conservation covenant within 24 months of the commencement of relevant Project-related impacts on MNES, ensuring timely and enduring legal protection of the Offset Areas.

2.5 Policies and Guidance

The development of this OMP, including habitat modelling, survey methodology, prescription of habitat quality gains, and the design of offset management strategies, has been informed by Commonwealth policies, Guidelines, Conservation Advices and Recovery Plans relevant to the Offset MNES. Key reference documents include:

- EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population, Communities and Public Affairs, 2012)
- Guide to Determining Terrestrial Habitat Quality (v1.2) (Department of Environment and Heritage Protection, 2017)
- **SEVT TEC** – *Conservation Advice for the Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions* (Department of Climate Change, Energy, the Environment and Water 2023) and *National recovery plan for the Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions ecological community* (McDonald 2010).
- **Eucalypt Floodplain TEC** – *Conservation Advice for the Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions* (Department of Climate Change, Energy, the Environment and Water 2022a)
- ***Cycas megacarpa*** – *National Multi-species Recovery Plan for the cycads. Cycas megacarpa, Cycas ophilitica, Macrozamia cranei, Macrozamia lomandroides, Macrozamia pauli-guilielmi and Macrozamia platyrachis* (Queensland Herbarium 2007a).
- ***Samadera bidwillii*** – *Approved Conservation Advice for Quassia bidwillii (Quassia)* (Department of the Environment, Water, Heritage and the Arts 2008b).
- **Greater glider (southern and central)** – *Conservation Advice for Petauroides volans (greater glider southern and central))* (Department of Climate Change, Energy, the Environment and Water 2022b) and *Draft National Recovery Plan for Greater Gliders* (Department of Climate Change Energy the Environment and Water 2025).
- **Koala** – *National Recovery Plan for the Koala (Phascolarctos cinereus)* (Department of Agriculture, Water and the Environment 2022) and *Conservation Advice for Phascolarctos cinereus (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory* (Department of Agriculture Water and the Environment 2022b).
- **Yellow-bellied glider (SE)** – *Conservation Advice for Petaurus australis australis* (Department of Agriculture Water and the Environment 2022a).

- **Collared delma** – *Approved Conservation Advice for Delma torquata (Collared Delma)* (Department of the Environment, Water, Heritage and the Arts 2008a).

Collectively, these documents provide the scientific and policy foundation for defining habitat quality benchmarks, identifying key threats, prescribing management actions, and establishing measurable performance criteria to ensure that the offset delivers a conservation outcome consistent with EPBC Act requirements.

3.0 Statement of Outcomes

The overarching objective of this OMP is to deliver effective, offsets that compensate for the Project's unavoidable significant residual impacts on the Offset MNES quantified through the Offset Assessment Guide (OAG) (Department of Sustainability, Environment, Water, Population and Communities, 2012). The offset package has been designed to ensure that, for each Offset MNES, sufficient habitat is protected and managed to maintain or improve its viability at a local and landscape scale. This is achieved through a combination of immediate management and protection of existing functional habitat as well as progressive habitat quality improvements delivered through targeted management actions over the 20-year offset period.

3.1.1 Offset Area Size and Suitability

The Offset Areas have been delineated to ensure that for each Offset MNES, the total extent of habitat available meets or exceeds the calculated offset requirements (**Table 3.1**). In addition to providing existing, functional habitat for each Offset MNES, the Offset Areas include strategically selected regrowth and degraded areas that are expected to contribute to future habitat availability and functionality. This configuration ensures that the offset delivers both immediate conservation value and long-term habitat quality improvement over the offset period.

Offset Areas were selected to maximise ecological suitability by prioritising:

- Habitat where the Offset MNES are known to occur or are highly likely to occur based on habitat attributes such as vegetation type or microhabitat availability.
- Areas that can be restored and/or repaired to improve habitat availability and function.
- Areas contiguous with or adjacent to remnant vegetation and ecological corridors, supporting landscape connectivity and population resilience.
- Land capable of being secured and managed for long-term conservation outcomes.

The offset areas for each MNES are presented in **Figure 3.1** to **Figure 3.8,** whereas **Table 3.1** shows the areas to be secured for each Offset MNES at baseline and the expected area of habitat upon the completion of the 20-year offset period. Further detail on the offset strategy for each MNES is provided within **Section 6.0** and **Section 7.0.**

Table 3.1 Summary of the Outcomes for Each Offset MNES

MNES	Offset Area Requirement (ha)	Habitat within Offset Area (ha) – Baseline			Habitat within Offset Area (ha) – Completion (Yr 20)		
		Lone Star	The Cedars	South Kolan	Lone Star	The Cedars	South Kolan
SEVT TEC	15.5	0	13.9	-	-	15.8	-
Cycas megacarpa	285.5	336.5	96.8	-	336.5	96.8	-
Samadera bidwillii	1.4	1.4	0	-	1.4	0	-
Collared delma	396.4	558.6	213.0	-	561.7	354.7	-
Greater glider	793.3	827.8	415.7	-	892.6	596.7	-
Koala	727.4	824.8	401.7	-	892.6	602.6	-

MNES	Offset Area Requirement (ha)	Habitat within Offset Area (ha) – Baseline			Habitat within Offset Area (ha) – Completion (Yr 20)		
		Lone Star	The Cedars	South Kolan	Lone Star	The Cedars	South Kolan
Yellow-bellied glider	120.9	322.5	0	-	322.5	0	-
Eucalypt floodplain TEC	52.7	-	-	15.7	-	-	70.2

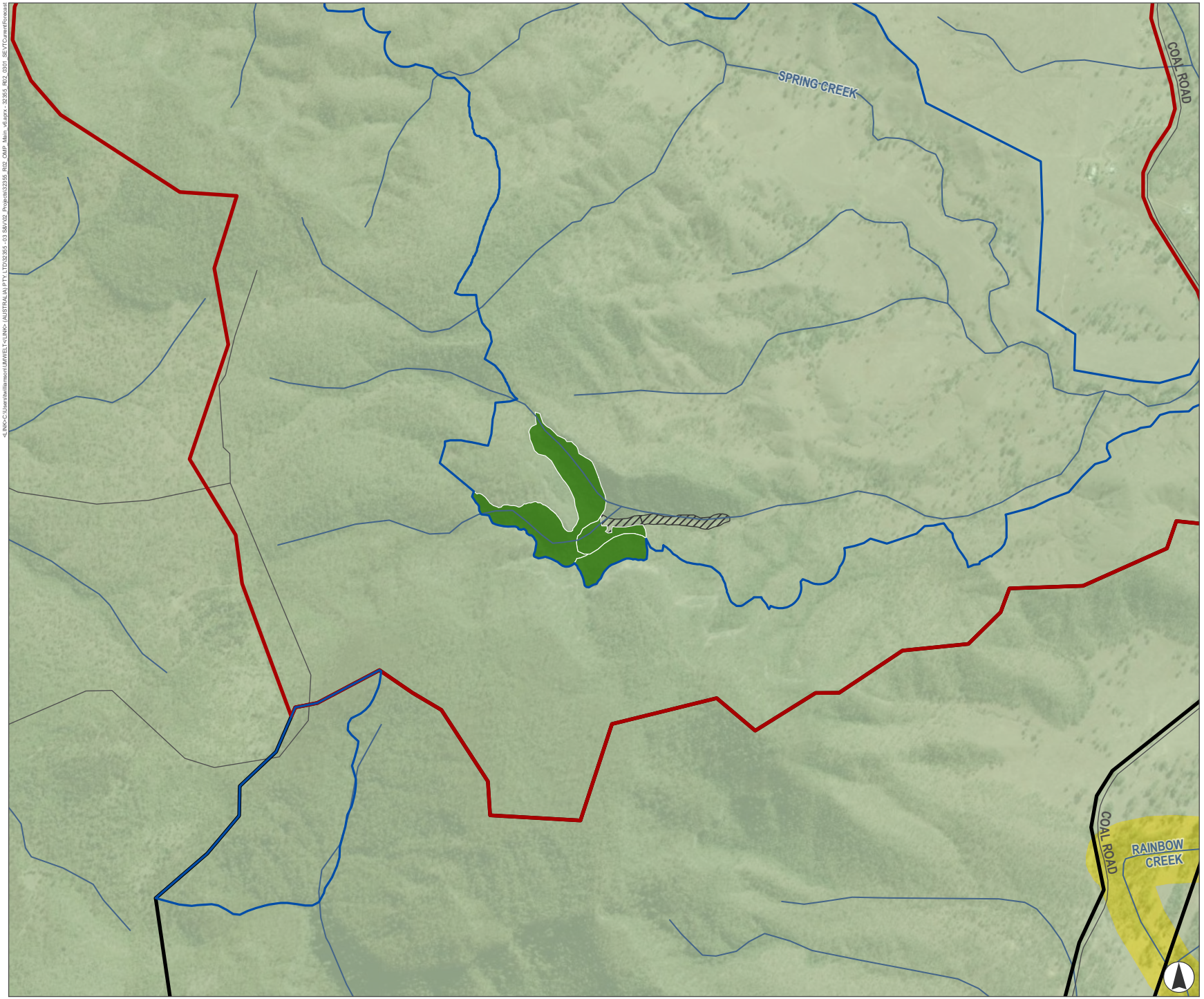


FIGURE 3.1

Current and forecast SEVT TEC habitat extent

Legend

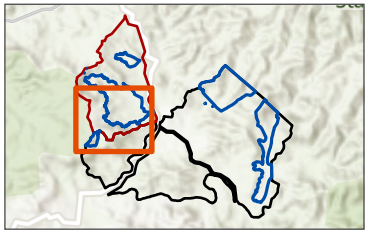
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

SEVT Habitat Mapping

- Forecast SEVT
- SEVT

Biodiversity Corridor

- Riparian/Terrestrial
- Terrestrial



0 0.25 0.5

Kilometres

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

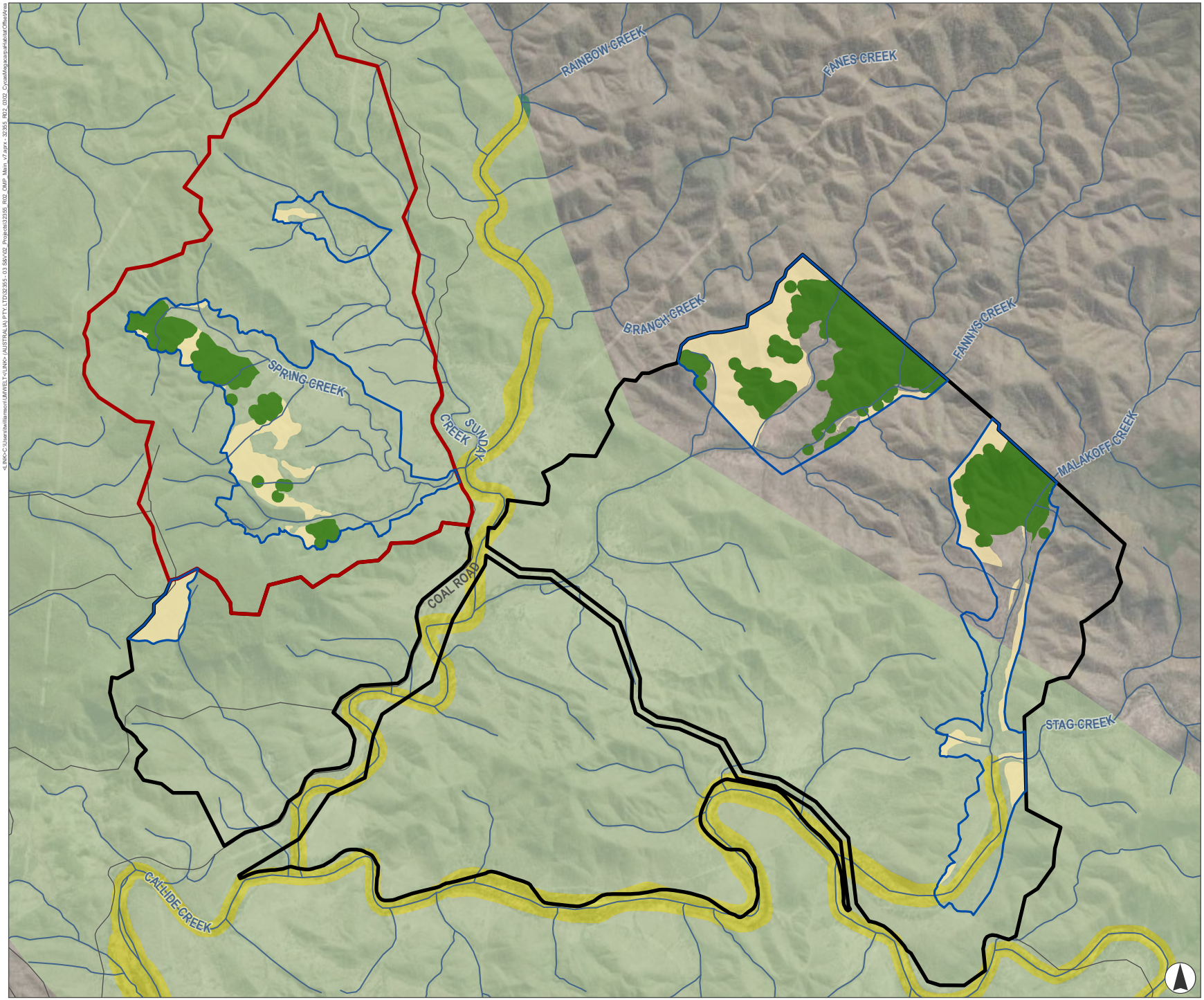


FIGURE 3.2

Cycas megacarpa Habitat throughout the Offset Area

Legend

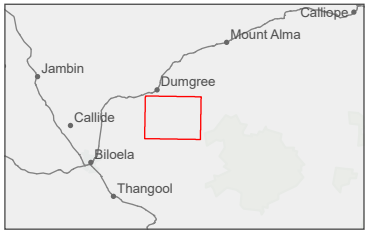
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Cycas megacarpa Habitat Mapping

- Known - Confirmed
- Known - Suspected

Biodiversity Corridor

- Riparian
- Riparian/Terrestrial
- Terrestrial



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

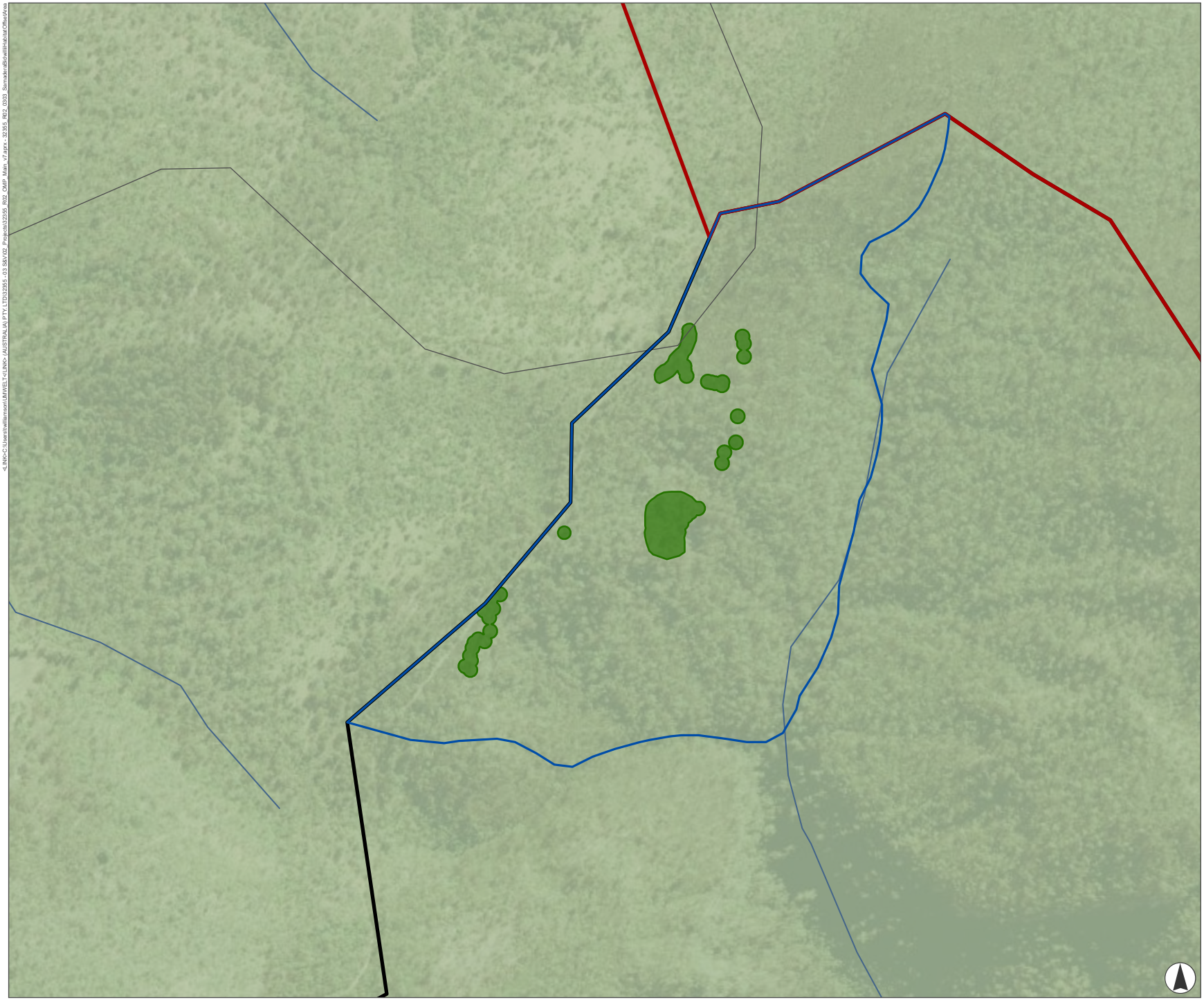


FIGURE 3.3

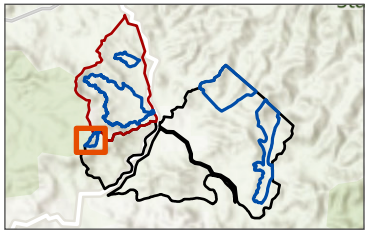
Samadera bidwillii Known Habitat throughout the Offset Area

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area
- *Samadera Bidwillii* Known Habitat

Biodiversity Corridor

- Terrestrial



0 0.1 0.2

Kilometres

Scale 1:7,500 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

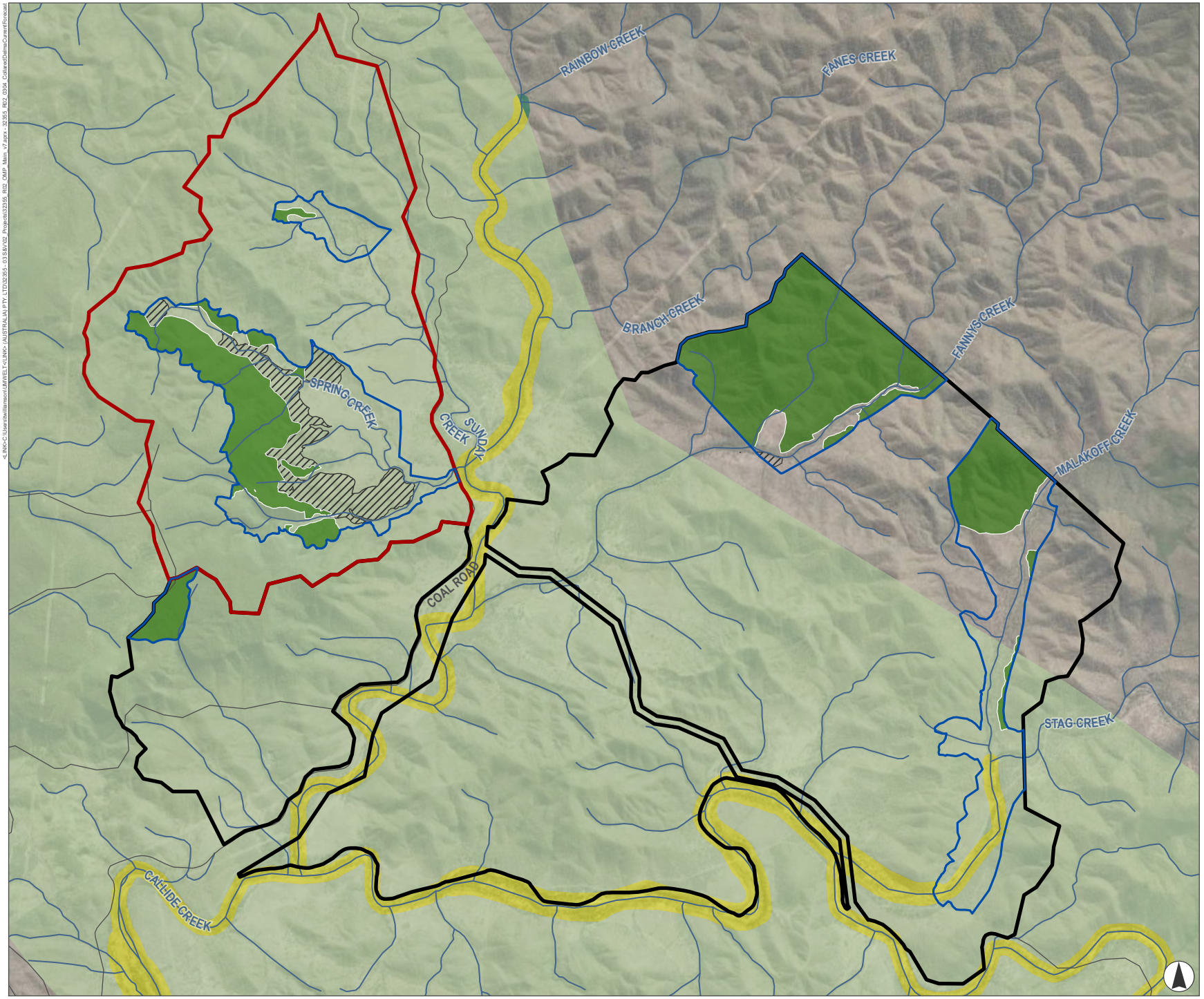


FIGURE 3.4

Current and forecast collared delma habitat extent

Legend

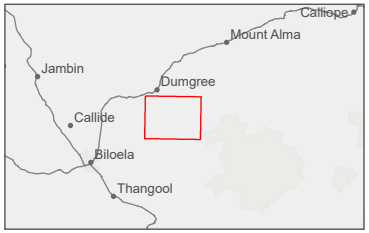
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Collared Delma Habitat Mapping

- Forecast suitable habitat
- Suitable habitat

Biodiversity Corridor

- Riparian
- Riparian/Terrestrial
- Terrestrial



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

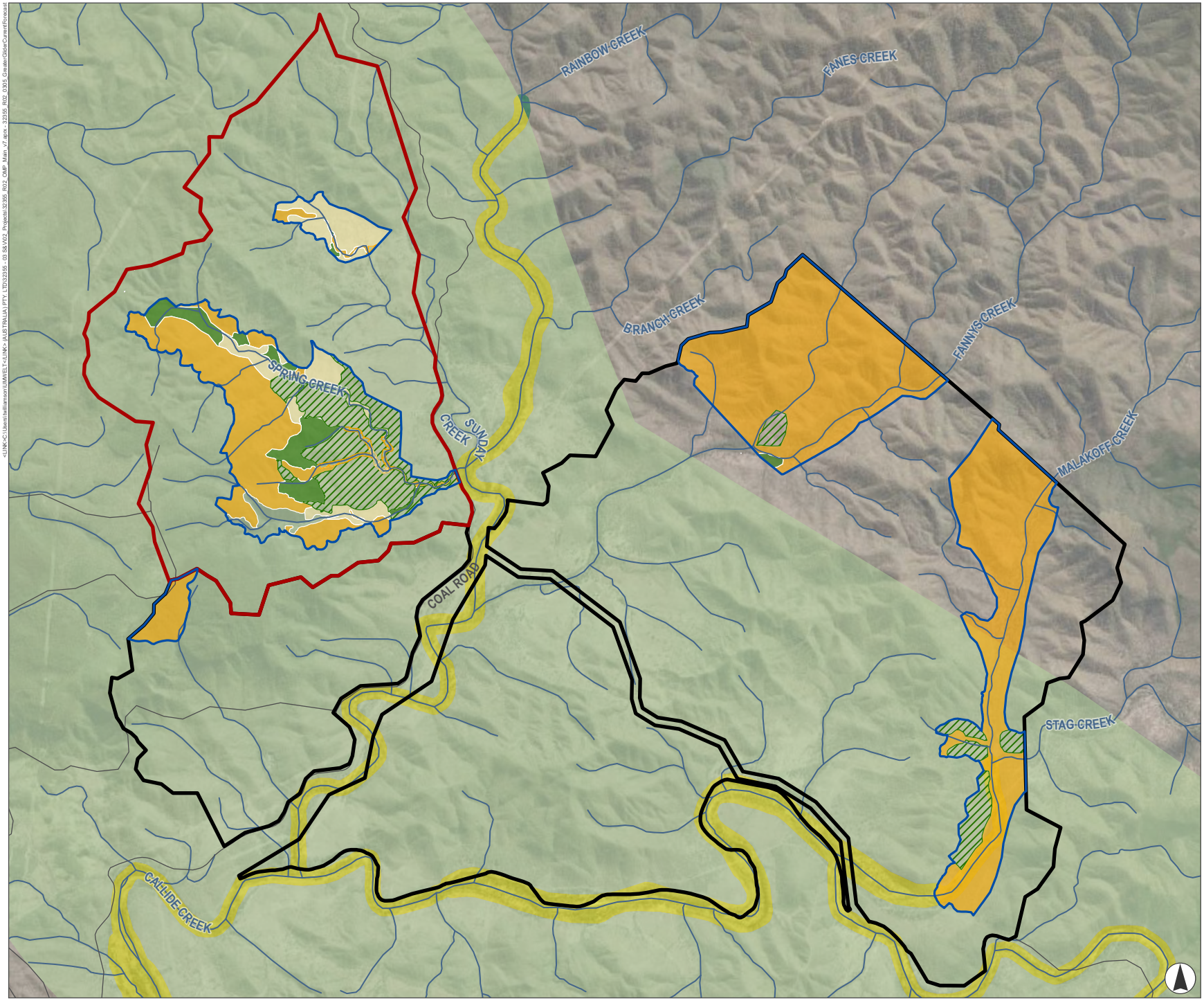


FIGURE 3.5

Current and forecast greater glider habitat extent

Legend

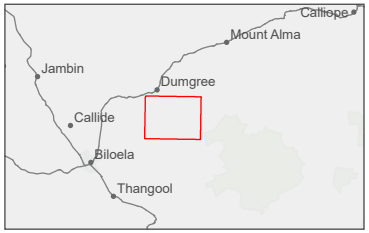
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Greater Glider Habitat Mapping

- Foraging and dispersal
- Likely or current denning
- Potential or future denning
- Forecast foraging and dispersal
- Forecast likely or current denning
- Forecast potential or future denning

Biodiversity Corridor

- Riparian
- Riparian/Terrestrial
- Terrestrial



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

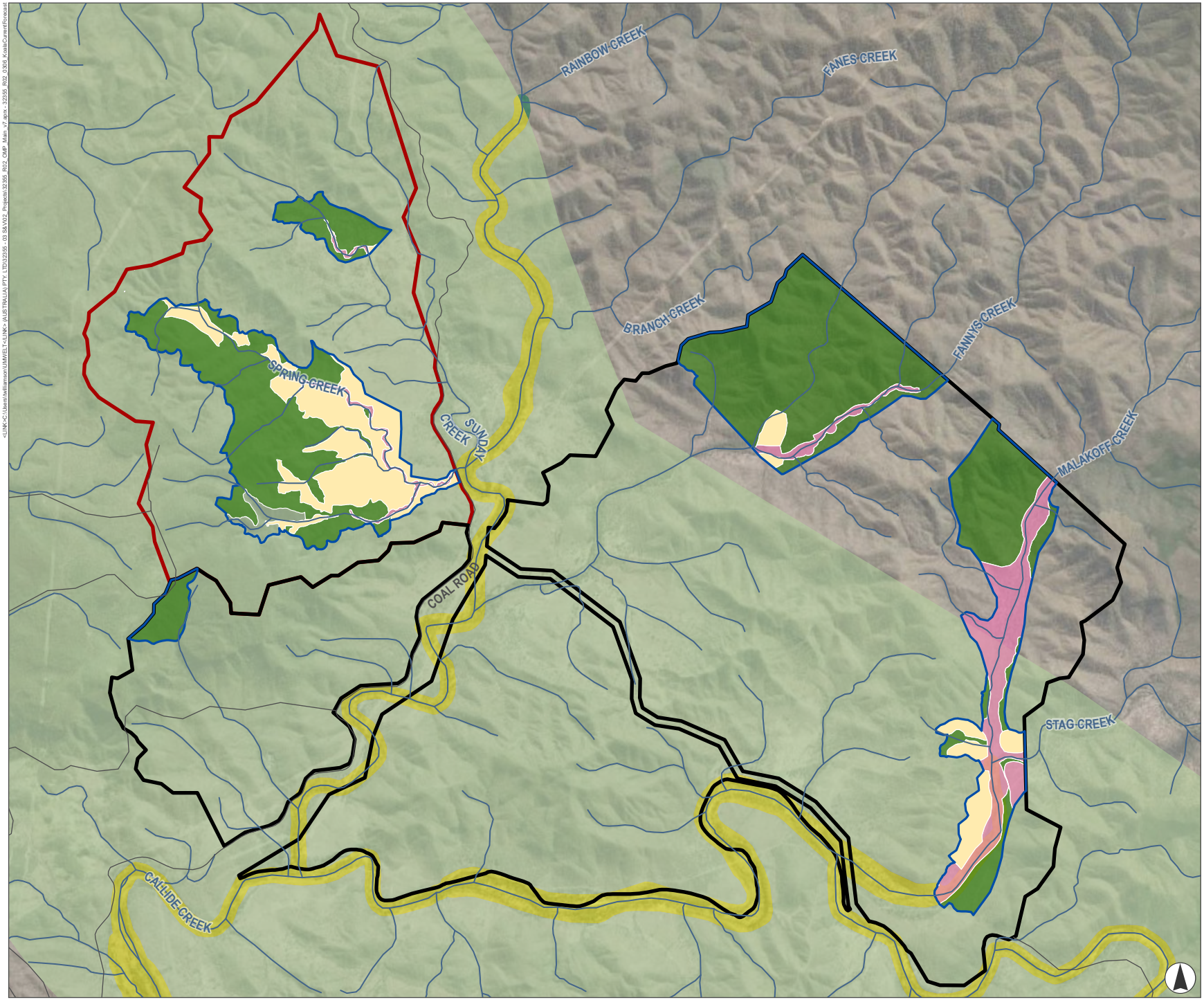


FIGURE 3.6

Current and forecast koala habitat extent

Legend

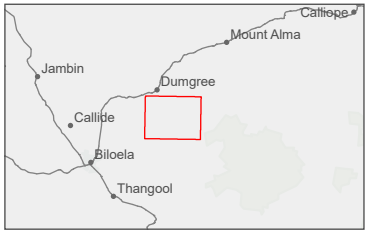
- Road
- Watercourse
- The Cedars Boundary
- Lone Star Boundary
- Offset Area

Koala Habitat Mapping

- Breeding, foraging and shelter
- Climate refugia
- Forecast breeding foraging and shelter

Biodiversity Corridor

- Riparian
- Riparian/Terrestrial
- Terrestrial



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<UNK><C:\Users\twilliamson\UMWELT-(UNK)-(AUSTRALIA)PTY LTD\32355 - 03 SM\V02_Projects\32355_R02_CMP_Main_v7.aprx - 32355_R02_0306_KoalaCurrentForecast

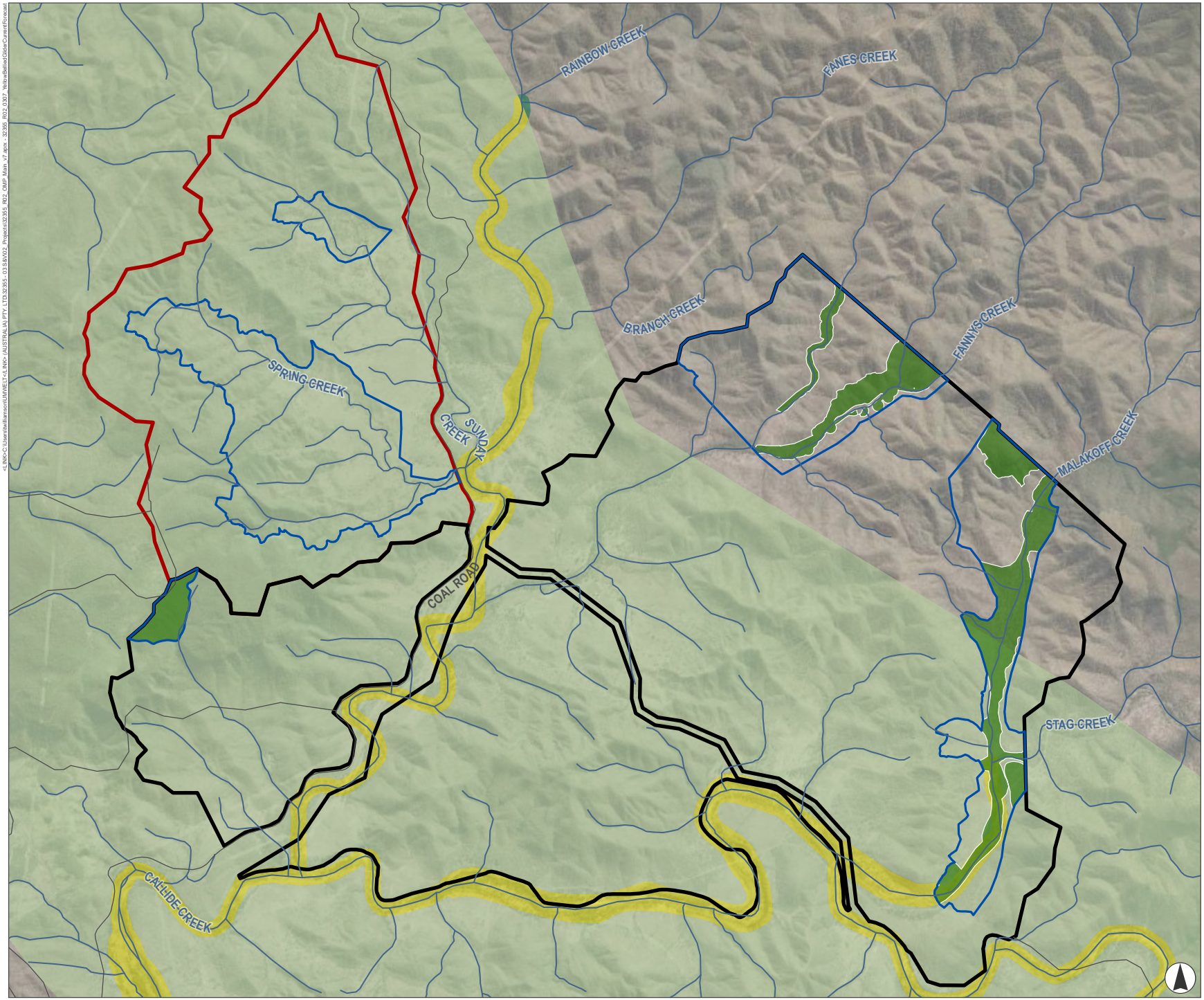


FIGURE 3.7

Yellow-bellied glider habitat extent

Legend

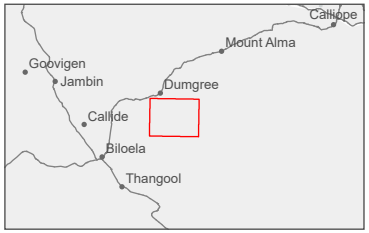
- Road
- Watercourse
- The Cedars Boundary
- Lone Star Boundary
- Offset Area

Yellow-bellied Glider Habitat Mapping

- Breeding, foraging and dispersal

Biodiversity Corridor

- Riparian
- Riparian/Terrestrial
- Terrestrial



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LNK>C:\Users\wellsmson\UMWELT<LINK> (AUSTRALIA) PTY. LTD\52355 - 03 SUV\02_Projects\52355_R02_OMP Main_v7.aprx - 52355_R02_0307_YellowBellied GliderCurrentForecast

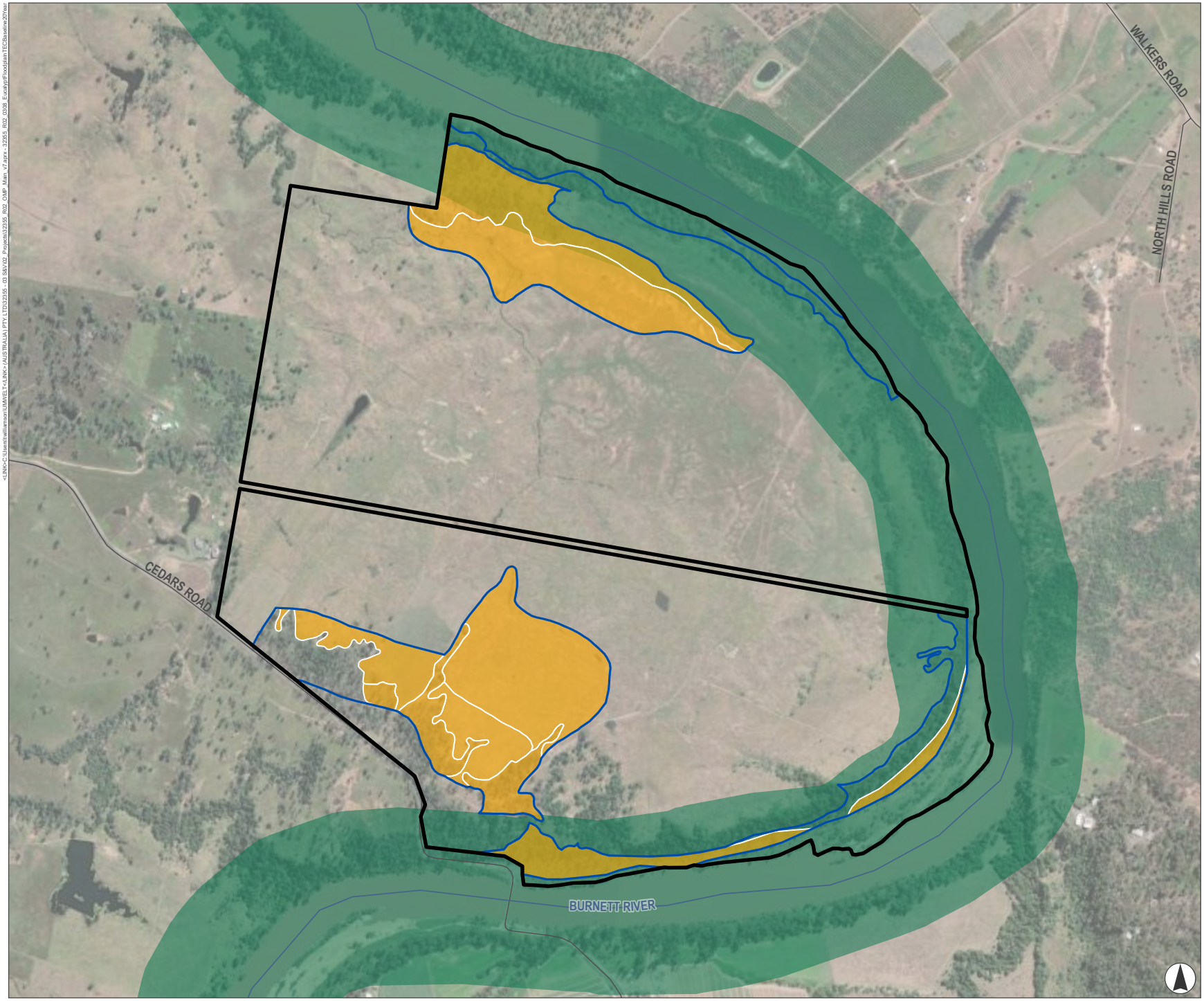


FIGURE 3.8

Current and forecast Eucalypt floodplain TEC habitat extent

Legend

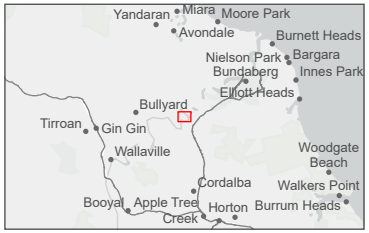
- Watercourse
- Road
- South Kolan Boundary
- Offset Area

Eucalypt Floodplain Forest Mapping

- Forecast Eucalypt Floodplain Forest TEC

Biodiversity Corridor

- Riparian



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LNK>C:\Users\williamson\UMWELT<LNK>(AUSTRALIA) PTY LTD\32358 - 03 SKV\02_Projects\32355_R02_OMP_Main_v7.aprx - 32355_R02_03\08_EucalyptFloodplainTECBaseline2\Year

3.1.2 Habitat Quality Improvement of Offset MNES

Habitat quality improvements prescribed for the Offset MNES have been set conservatively and are achievable within the 20-year offset period. A one-point habitat quality gain has been prescribed for six Offset MNES, while a two-point gain has been prescribed for koala. A three-point gain is prescribed for the Eucalypt Floodplain TEC, reflecting the expected transition of non-remnant and regrowth areas to functional habitat which meets TEC status.

The prescribed gains are based on the baseline habitat condition, identified threats and the expected trajectory of recovery under active management. For most Offset MNES, a one-point increase represents a modest improvement in habitat structure, composition and function through the removal of degrading pressures and facilitation of natural ecological processes. For koala and the Eucalypt Floodplain TEC, the two and three point gain reflects the significant habitat quality improvements expected throughout non-remnant and regrowth areas capable of transitioning to functional habitat following restoration actions.

Habitat quality improvements are expected to be achieved through a combination of management interventions, including assisted natural regeneration (**Section 8.4.6**), active restoration (**Section 8.4.6**), targeted weed control (**Section 8.4.2**), exclusion or reduction of grazing pressure (**Section 8.4.5**), appropriate fire management (**Section 8.4.4**) and ongoing feral animal control (**Section 8.4.3**). These actions are designed to improve key habitat attributes relevant to each MNES, such as canopy cover and height, recruitment of native species, ground-layer condition, availability of shelter and denning features and functional connectivity across the landscape.

Table 3.2 summarises the offset management actions prescribed for each Offset MNES. While individual actions are tailored to the ecological requirements and threats relevant to each species or ecological community, the actions collectively aim to stabilise existing high-quality habitat, improve degraded areas and expand the extent of functional habitat available over time. Monitoring and adaptive management will be used to confirm that habitat quality is improving in line with the prescribed gains and to refine management actions where recovery trajectories deviate from expectations.

Table 3.2 Summary of the Offset Management Actions per Offset MNES

MNES	Prescribed Habitat Quality Improvement (OAG)	Offset Management Actions
SEVT TEC	1	• Assist natural regeneration throughout young regrowth patches in The Cedars. • Targeted weed control of cat's claw and lantana in and around SEVT TEC margins. • Exclude cattle. • Protect SEVT TEC from high-intensity fire through exclusion zones and tailored fire regimes.
Collared delma	1	• Exclude or reduce grazing intensity to allow native grass recovery and encourage leaf-litter accumulation. • Targeted weed control of creeping lantana. • Retain and enhance coarse woody debris and other microhabitats important for shelter. • Implement a suitable fire regime.

MNES	Prescribed Habitat Quality Improvement (OAG)	Offset Management Actions
Cycas megacarpa	1	• Protect known populations from trampling and browsing; reduce localised grazing pressure. • Control woody weeds to reduce competition around cycads and promote recruitment. • Control feral pigs throughout the Offset Area, focusing on occupied *Cycas megacarpa* habitat. • Implement a suitable fire regime.
Greater glider	1	• Enhance vegetation structure and composition through assisted natural regeneration in regrowth and degraded paddocks. • Increase connectivity of fragmented riparian corridors, targeting patches where the species was recorded. • Where installed, monitor and maintain salvaged / artificial hollows throughout suitable greater glider habitat. • Implement ongoing feral predator control of dogs and cats. • Remove or replace (top strand) barbed-wire fencing in high-movement zones. • Targeted weed control of lantana and rubber vine throughout riparian corridors. • Implement a suitable fire regime.
Koala	2	• Assist natural regeneration throughout regrowth and degraded paddocks to increase food-tree density and canopy structure. • Targeted weed control of lantana and rubber vine throughout riparian corridors. • Implement a suitable fire regime.
Samadera bidwillii	1	• Protect known and adjacent suitable habitat from clearing and grazing. • Manage whipstick regrowth throughout known habitat to improve vegetation structure and species richness. • Implement a suitable fire regime and reduce high fuel loads within and adjacent to known habitat patches.
Yellow-bellied glider	1	• Assist natural regeneration throughout regrowth and degraded paddocks. • Increase connectivity of fragmented riparian corridors throughout The Cedars. • Where installed, monitor and maintain salvaged / artificial hollows throughout suitable greater glider habitat. • Implement ongoing control of feral dogs and cats. • Implement a suitable fire regime.
Eucalypt Floodplain TEC	3	• Implement active restoration throughout degraded, non-remnant paddocks. • The introduction of coarse woody debris (CWD) throughout restoration areas, in alignment with regional ecosystem benchmark values • Targeted weed control of cat's claw and giant rat's tail. • Implement a suitable fire regime. • Exclude cattle.

4.0 Offset Assessment Methodology

4.1 Offset Survey Effort

Field surveys undertaken across the offset properties followed the standardised vegetation and fauna assessment approaches outlined in the draft PER (Chapter 4). Methods were consistent with the Methodology for the Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland the Terrestrial Vertebrate Fauna Survey Guidelines for Queensland (Neldner, Wilson, Dillewaard, & Ryan, 2025) and recognised threatened-species survey guidelines. Survey effort was designed to balance targeted field verification with the information needs of offset planning and management, ensuring sufficient ecological resolution to inform habitat mapping, baseline condition assessment and the prescription of management actions.

Targeted flora searches used the random meander method (Cropper, 1993), or in the case of *Cycas megacarpa* surveys were conducted as part of extensive walking transects through suitable habitat. Targeted surveys to confirm presence of *Cycas megacarpa* were also conducted from slow-moving vehicles with the use of binoculars where terrain permitted. MNES-focused fauna habitat assessments characterised resource availability such as denning structures, food-tree composition, ground-layer condition and microhabitat features. Nocturnal spotlighting surveys targeted koala, greater glider and yellow-bellied glider throughout suitable habitat whilst active reptile searches focused on collared delma habitat.

A suite of additional surveys including habitat quality assessments (HQAs) offset-management assessments, fire fuel-load and hazard assessments and targeted camera-trap monitoring were conducted to determine the offset habitat quality and inform management actions. **Table 4.1** summarises survey effort and explicitly maps each survey to the applicable guideline(s) and alignment, while **Figure 4.1** to **Figure 4.3** present the spatial coverage and effort distribution by property.

Table 4.1 Survey Effort throughout the Three Offset Properties

Survey Type	Survey Date Range (M/Y)	Primary Guidance	Alignment Summary	Survey Effort (number of assessments)		
				Lone Star	The Cedars	South Kolan
Quaternary assessment	05/25 – 01/26	*Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland v7.0* (Neldner *et al.*, 2023)	Traverse-based quaternary observations at vegetation change points; aligns with RE mapping verification approach.	196	134	13
Targeted habitat assessments	05/25 – 11/25	*Terrestrial Vertebrate Fauna Survey Guidelines for Queensland* (Eyre *et al.*, 2018) + Applicable targeted species survey guidelines	Assessed denning/shelter, food-tree composition, ground layer and microhabitats consistent with fauna habitat descriptors.	45	35	Na
Nocturnal spotlight survey	11/25	*Terrestrial Vertebrate Fauna Survey Guidelines for Queensland* (Eyre *et al.*, 2018)	Nocturnal spotlighting in suitable vegetation for koala and gliders; effort reported as person-hours per guideline convention.	12.7 person hours	10.1 person hours	Na
Targeted threatened flora surveys	05/25 – 01/26	*Management of endangered plants* (Cropper, 1993)	Random meander method: additional *Cycas megacarpa* by extensive walking transects. Visual confirmation of larger sub populations was also made by slow-moving vehicle where terrain permitted.	98.8 km	58.9 km	Na
Active reptile searches	11/25 – 01/26	*Terrestrial Vertebrate Fauna Survey Guidelines for Queensland* (Eyre *et al.*, 2018) + Applicable targeted species survey guidelines	Systematic inspection of rocks, logs, timber, tussocks and leaf-litter targeting collared delma; effort in person-hours.	5 person hours	4 person hours	Not surveyed
Offset management assessments	05/25 -11/25	PER Ch. 4 (project method) + *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland v7.0* (Neldner *et al.*, 2023)	Forecasting-oriented assessments documenting condition, threats, regenerative capacity and interventions; method aligns to project OAMP.	8	10	Not surveyed
Habitat quality assessments	05/25 – 01/26	*Queensland Guide to Determining Terrestrial Habitat Quality (version 1.2), BioCondition Assessment Manual (version 2.2)*, Project MHQA (**Section 4.3**)	Standardised MHQA applied to baseline condition and MNES-relevant resources; replicable plot design.	20	30	12
FFLH assessments	11/25 – 01/26	*Overall fuel hazard assessment guide, 4th edition* (Hines, Tolhurst, & Wilson, 2010)	Surface/near-surface/elevated fuel measurements to derive t/ha and hazard ratings per method.	20	21	17

Survey Type	Survey Date Range (M/Y)	Primary Guidance	Alignment Summary	Survey Effort (number of assessments)		
				Lone Star	The Cedars	South Kolan
Camera trap surveys	11/25 – 01/26	*Terrestrial Vertebrate Fauna Survey Guidelines for Queensland* (Eyre *et al.*, 2018)	Baited cameras in representative habitats; effort reported as trap-nights; camera failures documented.	1,083†	170‡	105
Weed monitoring assessment	12/25 - 01/26	*Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland v7.0* (Neldner *et al.*, 2023)	Species-level weed richness, height, cover and abundance recorded per standard floristic attributes.	6	9	18
Regrowth recovery assessment	12/25 - 01/26	*Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland v7.0* (Neldner *et al.*, 2023) + Project OAMP	Indicators of recovery (canopy development, recruitment, ground-layer, weeds, CWD)) aligned to condition attributes.	3	6	9

Notes:

† *Lone Star camera-trap breakdown: 15 cameras × 68 nights; 3 cameras × 21 nights; 2 cameras failed on day 1.*

‡ *The Cedars camera-trap breakdown: 17 cameras × 10 nights; 3 cameras failed on day 1.*

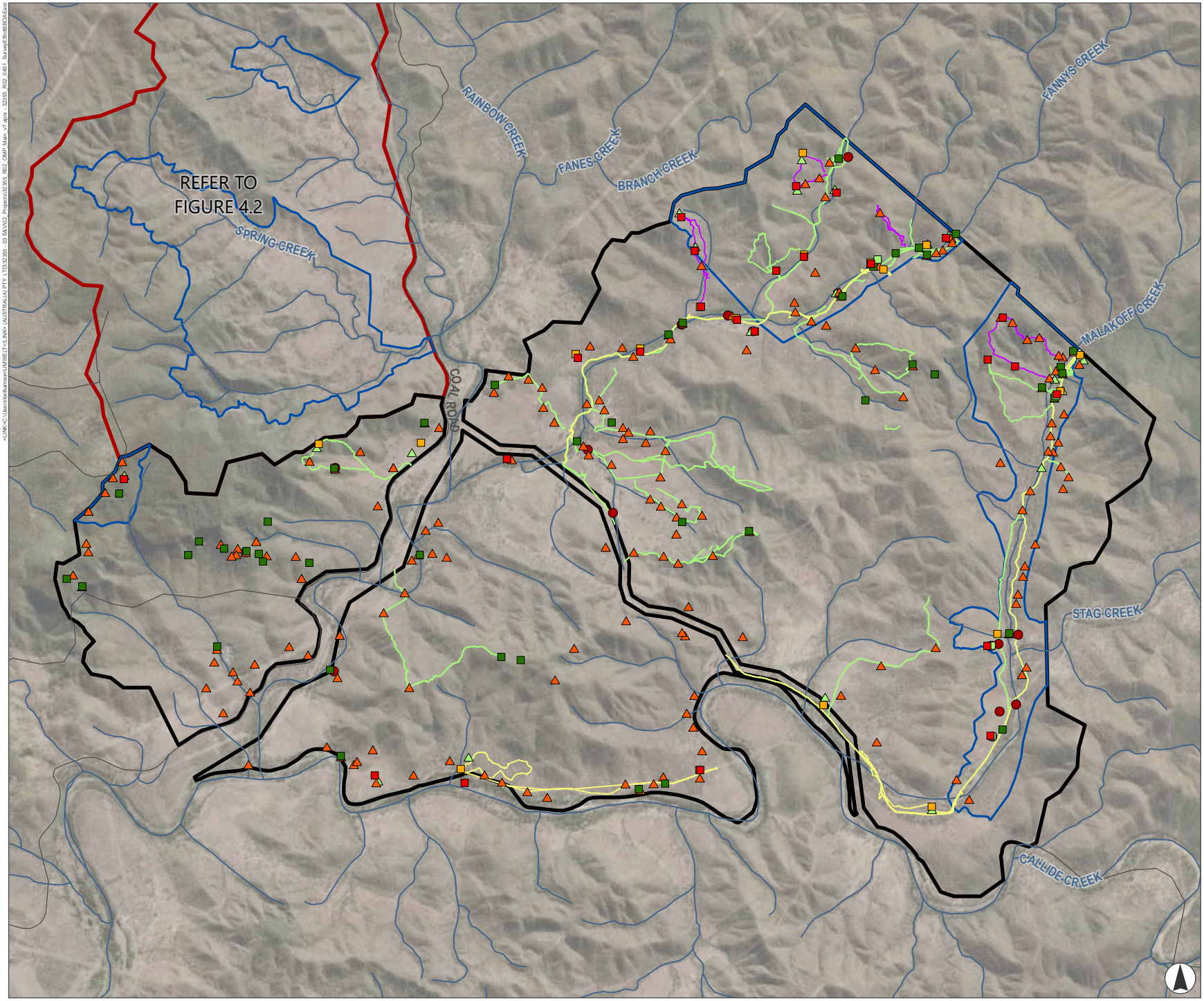
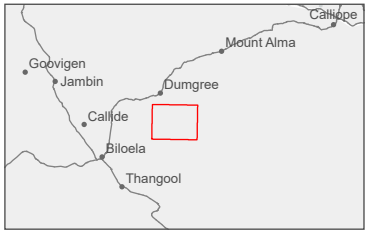


FIGURE 4.1

Survey Effort Across BBOA - East

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area
- Camera Trap
- Weed Monitoring Assessment
- Habitat Assessment
- Fuel Fire Load and Hazard Assessments
- Habitat Quality Assessments
- Quaternary
- Offset Management Assessments
- Regrowth Recovery Assessment
- Active Reptile Search
- Threatened Flora Search
- Nocturnal Spotlight



0 1 2

Kilometres

Scale 1:60,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

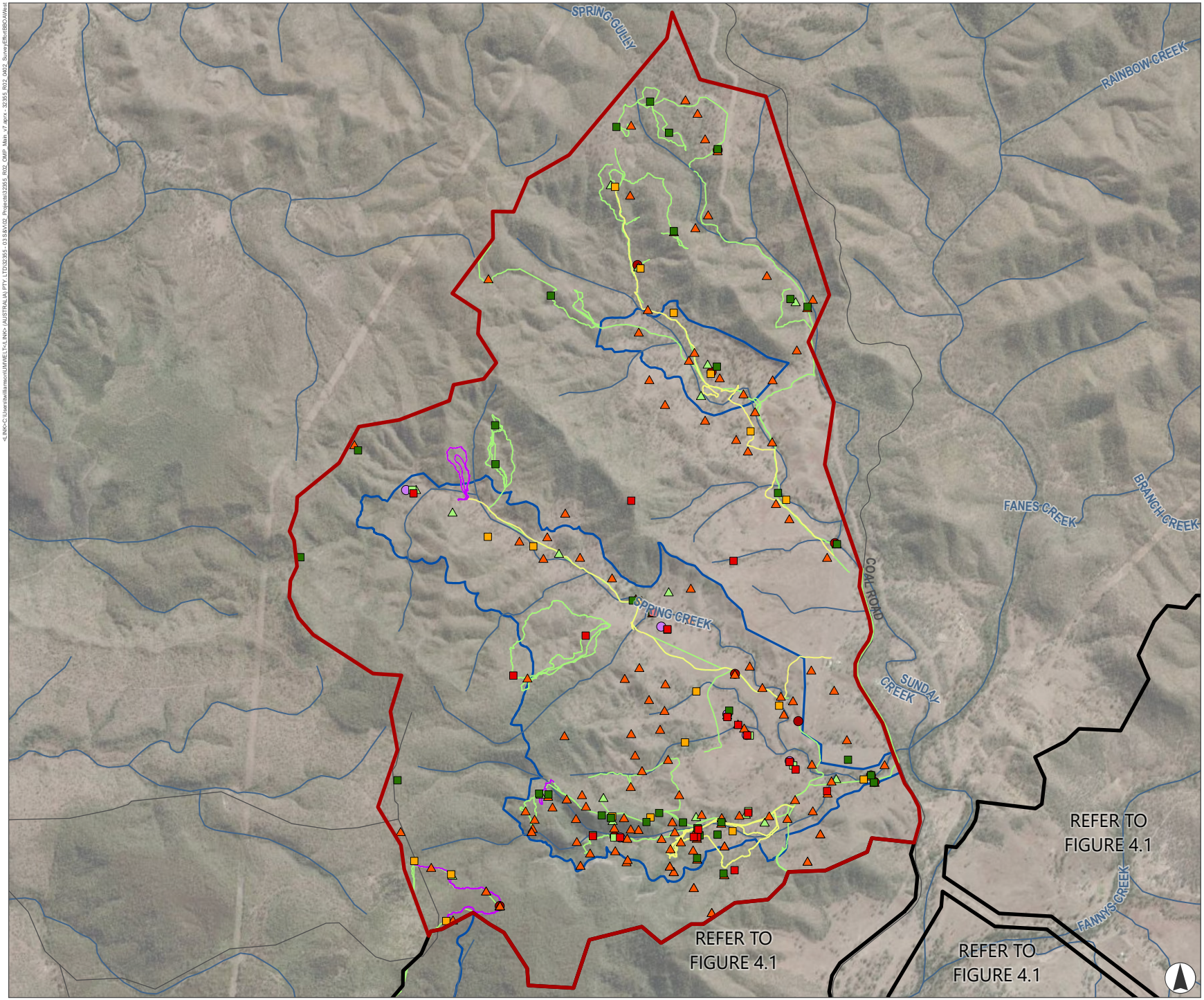
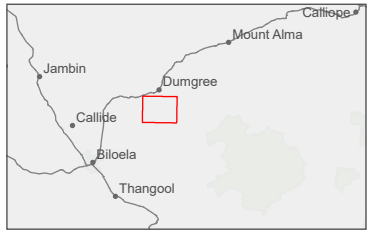


FIGURE 4.2

Survey Effort Across BBOA - West

Legend

- Road
- Watercourse
- The Cedars Boundary
- Lone Star Boundary
- Offset Area
- Camera Trap
- Weed Monitoring Assessment
- Habitat Assessment
- Fuel Fire Load and Hazard Assessments
- Habitat Quality Assessments
- Quaternary
- Offset Management Assessments
- Regrowth Recovery Assessment
- Active Reptile Search
- Threatened Flora Search
- Nocturnal Spotlight



0 1 2

Kilometres

Scale 1:40,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

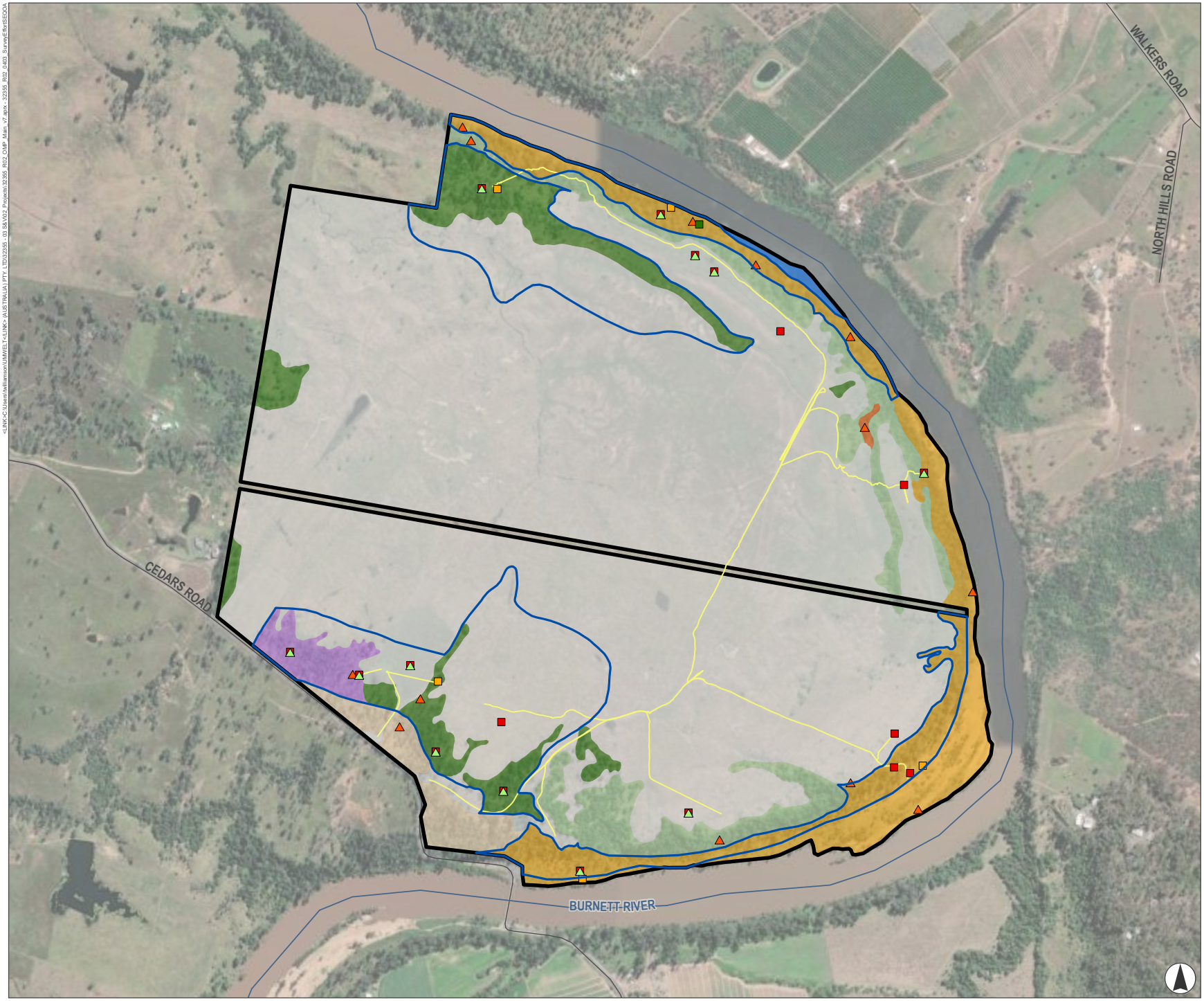


FIGURE 4.3

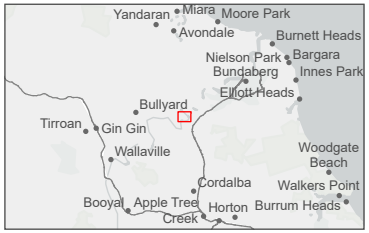
Survey Effort Across the SEQOA

Legend

- Watercourse
- Road
- South Kolan Boundary
- Offset Area
- Habitat Quality Assessments
- Quaternary
- Camera Trap
- Habitat Assessment
- Fuel Fire Load and Hazard Assessments / Weed Monitoring Assessments / Regrowth Recovery Assessments
- Survey Effort

GTRE

- 12.3.3
- 12.3.3d
- 12.3.7
- 12.3.7a
- 12.3.17
- 12.5.7a
- Burnett River
- Non-remnant



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

4.2 Offset Suitability Survey Methodologies

4.2.1 Offset Management Assessments

4.2.1.1 Weed Assessment

Weed assessments were conducted using a combination of line-intercept transects, quadrats, and rapid point estimates to provide species richness, height, cover and abundance measurements for weed species. Survey methods followed the *Monitoring Manual for Invasive and Native Flora: Guidance for field monitoring and reporting* (NSW Department of Planning, Industry and Environment 2021). Consistent with WoNS protocols (McNaught, Thackway, & Brown, 2008), these datasets flow directly into the OMP by standardising cover-class assignment and spatial mapping, which supports clear prioritisation, works scheduling and evaluation of treatment outcomes across the offset properties.

- **Rapid point surveys –** within an unbounded plot, the surveyor records the presence/absence of weed species and estimates percentage cover for the immediate vicinity. Outputs support early detection and prioritisation of species and locations for control and guide on-going targeted surveillance where spread risk is highest (see **Section 8.4.2.3**).
- **Quadrats (5 m x 5 m) –** Percent cover is estimated by species, enabling assignment to standard WoNS density/cover classes. The OMP uses the classes to set action thresholds, define site-level treatment targets, and track progress over time (**Table 4.2**).
- **Line-intercept transects (50 m) –** The length of intercept for each weed species is recorded along the transect to derive detailed cover measures. This data reveals spread along edges, tracks, and riparian corridors, informing containment lines, buffer widths and sequencing of works (e.g., edge-inward treatment) and follow-up scheduling under the OMP (see **Section 8.4.2.2**).

The combined results from dedicated weed surveys, HQAs and incidental observations inform the weed-density map (**Section 8.4.2.1**), prepared in accordance with WoNS mapping and reporting conventions, enabling consistent tracking of priorities, actions and outcomes within the OMP.

Table 4.2 Adapted Density Classes for Weed Mapping Using Standard Weeds of National Significance Protocols (McNaught *et al.* 2008)

Cover Class	% Cover Range	Description[1]
Very dense	>75%	The crowns or edges of individual plants of the target species are either touching or overlapping one another – forming a monoculture with few other species present.
Dense	51–75%	The crowns or edges of individual plants of the target species are either slightly separated or touching – not forming a monoculture, with other plants present or bare ground.
Sparse	26–50%	The crowns or edges of individual plants of the target species are clearly separated. Other plants present or bare ground.
Very sparse	6–25%	The crowns or edges of individual plants of the target species are well-separated. Other plant species dominate and typically occur between the target species.
Isolated plants	1–5%	Individual plants of the target species are scarce or scattered.
Absent	0%	The target species is not present.

[1] Based on the Braun–Blanquet cover–abundance scale. Refer to Mueller-Dombois and Ellenburg (1974) for more information.

4.2.1.2 Fire Fuel Load Hazard Assessment

Fire fuel load hazard (FFLH) assessments were conducted in accordance with the methodology outlined in *Overall fuel hazard assessment guide 4th edition* (Hines *et al.* 2010). FFLH outputs are then translated into treatment triggers, prescriptions, and monitoring under an appropriate fire management framework (see **Section 9.1.3.1**).

At each site, a 25 m radius around the surveyor was used as the assessment area to capture a representative sample of local fuel loads. Within this area, fuel height and cover were estimated for three distinct fuel strata, which collectively influence the likelihood and intensity of fire spread:

- **Surface fuels:** The litter layer, including fallen leaves, twigs, and other fine organic material.
- **Near-surface fuels:** Low vegetation and coarse woody debris that can contribute to fire continuity and intensity near the ground.
- **Elevated fuels:** Decorticating bark, suspended dead material, and live or dead vegetation occurring above the surface layer, which can act as ladder fuels promoting vertical fire spread.

Each fuel type was assigned a hazard category based on these measurements: low, moderate, high, very high, or extreme, reflecting increasing potential for fire ignition and spread. In addition, a separate bark hazard rating was applied, incorporating the type, habit, and quantity of combustible bark present on trees, which can significantly influence fire behaviour. Bark and ladder-fuel ratings inform ignition tactics (e.g., backing fire/point ignition), retention of unburnt refugia and protection of hollow-bearing trees as set out in **Section 8.4.4** and **Section 8.4.7**.

These individual ratings were combined to derive an overall fire hazard rating for the site, also expressed as low, moderate, high, very high, or extreme, which indicates the likelihood that a fire would be difficult to control and reflects the combined influence of surface, near surface, and elevated fuels, as well as bark characteristics. The overall class is then used to prioritise treatment (see **Table 8.9** for current ratings), with prescriptions and readiness checks implemented in accordance with **Section 8.4.4**. Following treatment, FFLH is re-assessed to confirm a step-down in hazard and to determine any follow-up actions (e.g., mosaic reburn scheduling and rapid post-burn weed control) (see **Section 9.1.3.1**).

4.2.1.3 Feral Pest Assessment

The *Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland Version 4.0* (Eyre, Ferguson, et al. 2022) suggests camera trapping as a preferred, non-invasive survey method to detect a wide range of medium to large sized mammals, and require effort to reported as trap-nights. Given that the feral animals that pose a risk to the Offset MNES are medium to large (e.g. feral cats (*Felis catus*), feral pigs (*Sus scrofa*), wild dogs (*Canis familiaris*), foxes (*Vulpes vulpes*), a camera trapping program was implemented across the offset areas. Passive infrared cameras were baited with a universal lure (peanut butter, sardines, and oats) and deployed in representative habitats during the pest vertebrate peak breeding season (spring-summer) in the Brigalow Belt and Southeast Queensland bioregions, with effort and equipment performance recorded to guidelines convention (i.e., **trap-nights** and **camera failures**).

As per **Table 4.1**, deployment and effort were as follows:

- **Lone Star:** 18 cameras deployed, 1,083 trap-nights achieved (15 cameras x 68 nights; 3 cameras x 21 nights).
- **The Cedars:** 17 cameras deployed for 170 trap-nights (17 x 10 nights).

- **South Kolan:** 5 cameras deployed for 105 trap-nights (5 x 11 nights).

These settings are consistent with the Queensland guidelines (Eyre, Ferguson, et al. 2022), and the results directly inform feral-pest management scheduling under the OMP.

4.2.1.4 Regrowth Recovery Plots

Regrowth Recovery Plots have been established to track vegetation structural development, natural regeneration and threat dynamics within areas of regrowth and degraded vegetation prescribed for habitat improvement under this OMP. These plots provide a repeatable, field-based monitoring framework to assess whether assisted natural regeneration and associated management actions are achieving the intended habitat quality outcomes for the Offset MNES.

Data collected within Regrowth Recovery Plots focuses on key indicators of vegetation recovery and ecosystem function, including canopy development, recruitment density and diversity, ground-layer condition, weed pressure and the availability of coarse woody debris. Together, these attributes provide an integrated measure of habitat trajectory, allowing early detection of stagnation, decline or emerging threats.

4.2.2 Targeted MNES Surveys

4.2.2.1 Cycas megacarpa, Samadera bidwillii

A targeted survey approach for *Cycas megacarpa* was developed through review of available scientific literature including the SPRAT profile and the *National Multi-species Recovery Plan for the cycads, Cycas megacarpa*, *Cycas ophiolitica*, *Macrozamia cranei*, *Macrozamia lomandroides*, *Macrozamia pauli-guilielmi* and *Macrozamia platyrhachis* (Queensland Herbarium 2007b). During early field surveys, occurrences of *C. megacarpa* within the Offset Area were opportunistically recorded, and then targeted assessments were conducted during the 2025 and 2026 field surveys. All surveys employed at least one of the following methods to record the presence or abundance of *C. megacarpa*:

- Individual point counts (single individuals were recorded with a GPS unit).
- Visual point counts within a 25 m radius (a centre point was marked with a GPS and all individuals within a 25 m radius from that point were recorded).

These surveys enabled specific mapping of presence and absence of this species and allowed the refinement and targeting of known habitat.

4.2.2.2 Active Reptile Searches – Collared delma

Targeted surveys were undertaken across the survey program (June 2025 to January 2026) in general accordance with the Draft referral guidelines for the nationally listed Brigalow Belt reptiles, the Survey Guidelines for Australia's Threatened Reptiles and Queensland survey guidelines (Eyre, Ferguson, et al. 2022). At each site, observers searched the ground layer for shelter sites, including turning over surface rocks, logs, timber, and other debris and carefully replacing them after inspection. Grass tussocks and leaf litter were also gently parted to detect individuals.

4.2.2.3 Spotlighting – Koala, Greater glider, Yellow-bellied glider

Spotlighting was undertaken on foot by conducting slow walking transects, targeting greater glider, yellow-bellied glider and koala habitat within eucalyptus woodland, and followed the *Queensland Terrestrial Vertebrate Fauna Survey Guidelines v4.0* (2022), Survey Guidelines for Australia's Threatened Mammals (2011) and Guide to Greater Glider Habitat in Queensland (2022). Surveys targeted suitable woodland and riparian areas on the offset properties and were conducted during the first three hours after sunset within the optimal seasonal windows for the species: Sept-Nov (Brigalow Belt) and Sept-Dec (SEQ).

Surveys were conducted in areas of representative habitat, using spotlights to search on foot and from by vehicle where access tracks permitted. All surveys avoided inclement weather (e.g., rain, high wind, etc.). High-lumen LED spotlights and head torches were used to scan potential flight pathways along riparian corridors and amongst lower and upper branches of the canopy in woodlands. The spotlight was held near the observer's line of vision to maximise the chance of detecting eye shine (Department of Sustainability, Environment, Water, Population and Communities 2011). To identify these species, observers looked for eye-shine as well as body shape. Binoculars were also carried to assist the observer in identifying these species. Spotlighting is an effective method when trying to directly observe greater glider (southern and central), yellow-bellied glider (south-eastern) and koala as between dawn and dusk is their peak activity period (Department of Sustainability, Environment, Water, Population and Communities 2011).

4.3 Habitat Quality Assessments

HQAs were conducted in accordance with the DCCEEW-preferred Modified habitat quality assessment (MHQA) methodology. These assessments generate a habitat quality score (HQS) out of 10, tailored to each Offset MNES, allowing comparison of habitat condition between areas and over time. The MHQA adapts the Queensland Guide to Determining Terrestrial Habitat Quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition Assessment Manual (version 2.2) to evaluate desktop and field data across three core components.

4.3.1.1 Site Condition

Site condition evaluates the physical and biological condition of habitat using 13 BioCondition attributes drawn from the BioCondition Assessment Manual (Eyre *et al.* 2015). Each attribute has a maximum score (5–15), with a combined default maximum of 80 for woodland and forest communities. For fauna MNES, site condition also incorporates two habitat-quality sub-attributes that account for food and foraging resource availability, and shelter, denning and breeding resources (**Table 4.3**).

4.3.1.2 Site Context

Site context measures landscape-scale factors influencing habitat viability and connectivity. This includes patch size, site context, connectivity to surrounding remnant or regrowth vegetation and proximity to ecological corridors (**Table 4.3**). Moreover, the role of the site location to species' overall population and threats to the species is assessed. In addition, the species mobility capacity is assessed for fauna MNES which are species-specific (**Appendix A**).

Threats

Relevant threats for each MNES were identified through a review of Approved Conservation Advice, National Recovery Plans and/or Listing Advice and assessed via field observations. Not all potential threats identified in these sources were assessed; rather, the assessment focuses on those threats that are locally prevalent within the Offset Area and can be effectively managed through implementation of this OMP. Accordingly, broader or indirect threats that cannot be meaningfully addressed at the site scale (e.g. climate-driven range shifts or disease) have not been included in this assessment.

For the purposes of scoring 'Threats' within the HQA, habitat clearing and fragmentation has not been assessed as an ongoing threatening process as MNES habitat is regulated under the EPBC Act and therefore assumed to have no risk of future clearing within the Offset Area for the purposes of this assessment. However, targeted removal of *Cycas megacarpa* individuals due to livestock toxicity concerns, as well as potential illegal harvesting, have been assessed as a relevant threat as these pressures can result in localised population decline and reduction in reproductive individuals.

An 'absence of threats' score was provided for each MNES as per the Queensland Guide to Determining Terrestrial Habitat Quality (version 1.3) (Department of Environment and Science 2020). However, the maximum threat score of 25 prescribed in that framework has been adapted to a maximum score of 15 in accordance with the MHQA methodology.

Threats are characterised using two complementary dimensions: scope and severity, adapted from the International Union for Conservation of Nature - Conservation Measures Partnership (IUCN –CMP) framework. Scope describes the spatial extent of a threat, defined as the proportion of the species' habitat or local population within the matter area that is expected to be affected over the next ten years if current trends continue and is rated on a five-point scale from Very Low (affecting a negligible proportion) to Very High (affecting most or all of the matter area). Severity describes the magnitude of impact within that affected area, defined as the expected level of damage or reduction to habitat quality or the local population over ten years or three generations, and is similarly rated from Very Low (negligible reduction) to Very High (near-total loss or destruction). Together, scope and severity provide a structured, transparent basis for assessing the relative importance of threats to MNES habitat condition and viability. Although multiple threats are assessed for each MNES, the lowest score/ most prevalent threat is applied globally to the final HQS.

4.3.1.3 Species Stocking Rate

The species stocking rate (SSR) component is a Commonwealth-specific addition to the MHQA methodology and provides a species-centric measure of population relevance to a site. The SSR attributes differ for fauna and flora species as presented within **Appendix A.**

Table 4.3 provides a consolidated summary of the MHQA framework, outlining the site condition, site context and SSR sub-attributes applied to each Offset MNES. The table identifies the assessment method used for each sub-attribute and the maximum score allocated under the MHQA, noting that default values from the BioCondition Manual and Queensland Guide have been adapted where necessary to better represent species-specific habitat requirements as shown in **Appendix A.**

Table 4.3 Summary of MHQA scoring

Component	Sub-attribute	Methodology	Maximum Score[a]
Site condition	Number of large native trees	As per the BioCondition Assessment Manual v2.2 (Eyre *et al.* 2015)	15
	Tree canopy height		5
	Recruitment of woody perennial species (in Ecologically dominant layer) (%)		5
	Tree canopy cover		5
	Native shrub layer cover (%)		5
	Coarse woody debris		5
	Native tree species richness		5
	Native shrub species richness		5
	Native grass species richness		5
	Native forbs/other species richness		5
	Non-native plant cover (%)		10
	Native perennial grass cover (%)		5
	Organic litter cover (%)		5
Threatened Flora and TEC Site Condition Maximum Total			**80**
Site Condition (fauna only)	Quality and availability of food and foraging habitat	As per the Guide to Determining Terrestrial Habitat v1.2 (Department of Environment and Science 2020)	10
	Quality and availability of shelter		10
Threatened Fauna Site Condition Max Total			**100** [b]
Site Context	Size of patch	As per the BioCondition Assessment Manual v2.2 (Eyre *et al.* 2015)	10
	Connectedness		5
	Context		5
	Ecological corridors	As per the Guide to Determining Terrestrial Habitat v1.2 (Department of Environment and Science 2020)	6
	Role of site location to species/ TEC overall population in the state		5
	Threat to species/ TEC	Threats matrix as per MHQA rules (**Appendix A)** and results (**Appendix F**)	15
Threatened Flora and TEC Site Context Max Total			**46**
Site context (fauna only)	Species mobility capacity	Species specific attributes as per MHQA rules (**Appendix A)**	10
Threatened Fauna Site Context Max Total			**56**[c]
Species stocking rate (fauna)	Presence detected on or adjacent to site	Species specific attributes as per MHQA rules (**Appendix A)**	10
	Species usage of the site (habitat type)		15
	Approximate density		30

Component	Sub-attribute	Methodology	Maximum Score[a]
	Role / importance of species population on site		15
Threatened Fauna Species-stocking Rate Total			**70**
Species stocking rate (flora)	Presence detected on or adjacent to site	Species specific attributes as per MHQA rules (**Appendix A**)	10
	Number of plants on site		30
	Extent of population on site		30
	Approximate density (per ha) over suitable habitat within Project area		20
	Role/ importance of species population on site		15
Threatened Flora Species-stocking Rate Total			**105**

[a] The maximum scores represent the default MHQA methodology, with adaptations applied as detailed within **Section 4.3.2**

[b] The maximum score for threatened fauna site condition includes threatened flora and TEC sub-attributes and two sub-attributes unique to fauna only, being quality and availability of food and foraging habitat and quality and availability of shelter.

[c] The maximum score for threatened fauna site context includes threatened flora and TEC sub-attributes and one sub-attributes unique to fauna only, being species mobility capacity

4.3.2 Habitat Quality Scoring

The HQS for each Offset MNES were derived through application of the MHQA framework, with interpretation of species-relevant attributes undertaken within the bounds of the existing methodology. While a consistent assessment structure was applied across all MNES, the relative influence of selected sub-attributes was interpreted to ensure that HQS values appropriately reflect known species-specific habitat requirements and limiting ecological processes.

Any variation from default MHQA scoring assumptions was informed by Approved Conservation Advice, Recovery Plans and other credible, peer-reviewed scientific literature relevant to each MNES. Such variations were only applied where necessary to ensure that HQSs remain ecologically representative, transparent and fit-for-purpose. All departures from default BioCondition and Queensland Guide scoring assumptions are documented in **Appendix A** and retain full compatibility with offset calculations and long-term monitoring requirements.

For the **SEVT TEC** and **Eucalypt Floodplain Forest** TECs, default MHQA weightings were applied with site condition contributing 70% of the total HQS and site context contributing 30%. For these matters, SSR was excluded, consistent with the community-level focus of assessment.

For threatened fauna, the MHQA framework was refined to ensure that habitat attributes that directly limit occupancy, persistence and reproduction exert the greatest influence on HQS. While a total site condition weighting of 30% (3/10) was retained in line with MHQA defaults (excluding collared delma which is described further below), species-specific foraging and shelter sub-attributes were up-weighted (relative to vegetation condition attributes) where appropriate to reflect reliance on particular resources.

For **koala**, increased weighting was applied to foraging and shelter attributes within site condition to reflect the species' dependence on a limited suite of preferred food trees and the availability of mature trees for refuge. These attributes directly influence koala habitat suitability and occupancy and were therefore given greater influence than generic vegetation metrics.

For **greater glider**, foraging and shelter attributes were substantially up weighted within site condition to ensure that critical microhabitat features drive habitat quality scores. Foraging quality was weighted to reflect reliance on recognised browse species and sufficient abundance of large trees to support a year-round foliar diet. Shelter quality was weighted most strongly to reflect the species' dependence on large trees with expected capacity to bear hollows for denning. These attributes are directly limiting for greater glider persistence and therefore exert the strongest influence on HQS.

For **yellow-bellied glider,** foraging and shelter attributes were similarly up weighted to account for dependence on preferred eucalypt species for sap and nectar resources and on large, mature trees for denning and refuge. These resources are critical determinants of habitat use and population viability and were weighted accordingly within the site condition component.

For **collared delma**, site condition was assigned a higher proportional contribution (60% of the total HQS), reflecting the species' strong site fidelity and reliance on ground-layer microhabitats. Habitat suitability for this species is closely tied to the presence and quality of surface rocks, coarse woody debris, leaf litter and dense native grass cover, which provide shelter, foraging opportunities and thermal buffering. Because individuals typically occupy and reuse the same microhabitats over time, these attributes are directly limiting and therefore dominate habitat quality scoring.

For threatened flora ***Cycas megacarpa*** and ***Samadera bidwillii***, default MHQA weightings were applied, with site condition contributing 30%, site context 30% and SSR 40%. This reflects the importance of population size, density and spatial extent in determining conservation value for threatened flora, alongside vegetation condition and landscape context.

The resulting MNES-specific HQS framework is summarised in **Table 4.4.**

Table 4.4 MNES-specific habitat quality scoring

MNES	Site Condition	Site Context	Species-stocking rate	HQS
SEVT TEC	7	3	na	10
Cycas megacarpa	3	3	4	10
Samadera bidwillii	3	3	4	10
Collared delma	6	2	2	10
Greater glider	3	3	4	10
Koala	3	3	4	10
Yellow-bellied glider	3	3	4	10
Eucalypt Floodplain Forest TEC	7	3	na	10

4.3.3 Assessment Units

To determine baseline habitat quality within the Disturbance Footprint and Offset Areas, a total of 43 HQAs were completed throughout the Disturbance Footprint and 52 HQAs throughout the Offset Area. Sampling effort was stratified in accordance with recommendations for the total number of sampling sites, as provided in the *Guide to Determining Terrestrial Habitat v1.2* (Department of Environment and Science 2017). HQA sites were based on the extent of Assessment Units (AU) as defined by each Regional Ecosystem (RE) and condition class., This approach ensures that sampling effort was proportional to the extent of each vegetation and habitat type of the Offset MNES (**Table 4.5** to **Table** 4.7).

The number of HQAs undertaken within each AU reflects this stratified approach and the resulting HQS values were area-weighted to generate final HQSs for each Offset MNES. **Table 4.4** to **Table 4.7** summarises the HQA survey effort per habitat type and AU across the Impact Area and Offset Area respectively. These are also presented as figures within **Appendix I.**

Table 4.5 Survey Effort of HQAs throughout the Disturbance Footprint and Offset Area

MNES	Habitat Type	Disturbance Footprint		Offset Area	
		Area (ha)	HQA Site Count	Area (ha)	HQA Site Count
SEVT TEC	Remnant TEC	2.2	2	13.9	3
	Forecast TEC	na		1.8	1
Eucalypt Floodplain Forest TEC	Remnant TEC	16.6	3	15.7	3
	Forecast TEC	na		54.5	8
Cycas megacarpa	Known – confirmed	53.0	6	433.3	15
	Known – suspected	0.5	0	306.4	n/a
Samadera bidwillii	Known habitat	0.2	2	1.4	2
Collared delma	Suitable habitat	49	10	771.6	14
	Forecast habitat	na		144.8	4
Greater glider	Likely or current denning	31.5	5	1,062.5	24
	Potential or future denning	105.7	10	106.6	3
	Foraging and dispersal	4.3	1	74.4	1
	Forecast habitat	na		245.7	6
Koala	Breeding, foraging and shelter	131	23	1,032.1	22
	Climate refugia	22.8	10	194.4	7
	Dispersal/ forecast breeding, foraging and shelter	na		268.8	6
Yellow-bellied glider	Denning, foraging and dispersal	20.9	6	322.5	11

Table 4.6 Summary of AUs and HQAs throughout the Impact Area

Assessment Unit	Regional Ecosystem	Condition	Area in Disturbance Footprint	Number of HQA Sites
AU01	12.1.2	Remnant	0.1	3 however no longer relevant to Offset MNES
AU02	12.11.6	Remnant	11.2	2
AU03	11.11.3	Remnant	15.7	3
AU04	11.11.4	Remnant	8.0	2
AU05	11.11.4c	Regrowth	1.6	1
AU06	11.10.4	Regrowth	0.2	2
AU07	11.3.25	Remnant	2.1	3
AU08	11.3.25	Regrowth	0.6	1
AU09	11.12.1	Regrowth	6.7	2
AU10	11.8.4	Remnant	1.3	2
AU11	11.11.15	Remnant	27.1	5
AU12	11.3.4	Regrowth	2.5	2
AU13	11.11.10	Regrowth	4.5	1
AU14	11.3.26	Remnant	0.8	1
AU15	12.3.3	Remnant	13.1	3
AU16	11.10.3	Regrowth	0.5	1
AU17	11.10.13	Remnant	9.9	1
AU18	11.10.13	Regrowth	2.3	1
AU19	11.11.18	Remnant	1.5	2
AU20	12.1.3	Regrowth	0.2	2 however no longer relevant to Offset MNES
AU21	-	Non-remnant	263.0	3 however no longer relevant to Offset MNES

Table 4.7 Summary of AUs and HQAs throughout the Offset Areas

Assessment Unit	Regional Ecosystem	Condition	Area in Offset Area	Number of HQA Sites
AU03	11.11.3	Remnant	55.5	3
AU04	11.11.4	Remnant	44.0	2
AU07	11.3.25	Remnant	111.6	5
AU10	11.8.4	Remnant	12.3	2
AU11	11.11.15	Remnant	769.9	11
AU15	12.3.3	Remnant	5.5	2
AU17	11.10.13	Remnant	42.4	2
AU21	-	Non-remnant	300.0	10
AU22	11.8.3	Remnant	11.5	1
AU23	11.11.18	Remnant	1.6	2

Assessment Unit	Regional Ecosystem	Condition	Area in Offset Area	Number of HQA Sites
AU24	11.3.4	Remnant	68.5	2
AU25	12.3.3	Regrowth	9.1	1
AU26	12.3.7	Remnant	12.6	2
AU27	12.3.3d	Remnant	4.3	2
AU28	12.3.7	Regrowth	4.9	1
AU29	11.11.15	Regrowth	41.3	2

5.0 Impact Area

5.1 Impact Summary

The Project is situated amongst the Brigalow Belt and Southeast Queensland bioregions, which are renowned for their species richness and unique diversity. The total Disturbance Footprint covers 415.4 ha. Sections A to D of the Disturbance Footprint predominantly sit within the Mount Morgan Ranges subregion of the Brigalow Belt, dominated by *Eucalyptus crebra* (narrow-leaf ironbark) with *Corymbia erythrophloia* (red bloodwood) and *Blakella citriodora* (spotted gum), all of which typically occur in association with steep slopes. Woodlands of *E. melanophloia* (silver-leaved ironbark) are present on the lower slopes and *E. moluccana* (gum-topped box) forms a woodland on colluvial slopes. Where Section A traverses into the Callide Creek Downs subregion, tertiary deposits house *Acacia harpophylla* communities which are characteristic of the bioregion. Sections D and E of the Disturbance Footprint overlap with the Burnett – Curtis Hills and Ranges subregion, which is comprised of *Eucalyptus crebra* and *Blakella citriodora* woodlands, eucalypt mixed open forest and *Araucarian* microphyll rainforest. In this subregion, the geology varies and incorporates granite ranges and hills in the east, and low rolling hills on old sedimentary rock in the west.

The diversity of habitat provided within these bioregions is suitable for a variety of MNES. To assess whether the Project has the potential to impart a significant impact on known, likely or potential MNES, SIAs have been conducted (see Chapter 8 of the PER). For the purposes of the SIA and offset calculations, a precautionary assumption of complete canopy removal was adopted within the Disturbance Footprint, where *Cycas megacarpa* and *Samadera bidwillii* individuals are present and retained. Residual impacts were concluded for TECs and certain flora and fauna species, even after applying micro-siting, spanning, co-location within existing easements and best-practice mitigation measures.

SIAs determined that a total of eight MNES are likely to incur a significant residual impact, including SEVT TEC, Eucalypt Floodplain Forest TEC, *Cycas megacarpa, Samadera bidwillii,* collared delma, greater glider (southern and central) (herein referred to as greater glider), koala, and yellow-bellied glider (south-eastern) (herein referred to as yellow-bellied glider). As a result, these MNES have consequent offset requirements and are henceforth referred to as the 'Offset MNES'. MNES requiring offsets, as well as the associated impact areas to suitable habitat have been presented in **Table 5.1**.

Table 5.1 MNES Habitat within the Impact Area

MNES	Status	Habitat Type	Detection within Disturbance Footprint	Impact Area (ha)
SEVT TEC	Endangered	-	Present	2.2
Eucalypt Floodplain Forest TEC	Endangered	-	Present	16.6
***Cycas megacarpa* – full clearing**	Endangered	Known – confirmed	1,032 individuals	23.2
		Known – suspected	-	0.5
***Cycas megacarpa* – selective clearing**		Known – confirmed		29.8
		Known – suspected		0
Samadera bidwillii	Vulnerable	Known	541 stems*	0.2
Collared delma	Vulnerable	Suitable	2	49.0

MNES	Status	Habitat Type	Detection within Disturbance Footprint	Impact Area (ha)
Greater glider	Endangered	Likely or current denning	-	31.5
		Potential or future denning		105.7
		Foraging and dispersal		4.3
Koala	Endangered	Breeding, foraging and shelter	1	131.0
		Climate refugia		22.8
Yellow-bellied glider	Vulnerable	Denning, foraging and dispersal	-	20.9

*Assessed as stems within and adjacent to Impact Area and not individuals, due to their tendency to coppice and consequent difficulties determining total numbers without disturbance

5.2 Impact Habitat Quality

Table 5.2 provides a breakdown of HQS for each relevant Offset MNES within the Impact Area. Area-weighted scores for each MHQA component - site condition, site context, and species stocking rate are presented, along with the total area-weighted HQS. The detailed results of the HQAs are provided within **Appendix C.**

The total offset area liability for each MNES has been calculated using the EPBC Act OAG which incorporates the EPBC Act listing status of each matter alongside quantitative and qualitative variables including the extent and condition of impacted habitat, the condition of proposed offset habitat, and the expected habitat quality improvement achievable through management interventions. The output of each OAG is provided within **Appendix B.** It is also important to note that certain habitat types for koala and *Samadera bidwillii* were not included in the OAG impact area calculations. In accordance with the EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (Department of the Environment, 2013), offset requirements are only triggered where a significant residual impact to MNES is predicted. For the Project, koala dispersal habitat and *Samadera bidwillii* suitable habitat were not considered to represent functional habitat types where a significant impact would occur (refer to Chapter 8 of the PER) and therefore do not give rise to an offset requirement. Accordingly, these habitat types were excluded from the Impact Area inputs to the OAG.

Table 5.2 Summary of HQS throughout the Impact Area of each MNES

MNES	Site Condition	Site Context	Species Stocking Rate	Habitat Quality Score (Area-weighted)
SEVT TEC	3.5	1.6	-	**5.2***
Eucalypt Floodplain Forest TEC	3.9	1.7	-	**5.6**
Cycas megacarpa	1.7	1.5	2.4	**5.6**
Samadera bidwillii	1.4	2.0	2.3	**5.7**
Collared delma	4.5	1.1	1.4	**7.0**
Greater Glider	1.7	1.5	0.9	**4.1**
Koala	1.8	1.8	2.1	**5.7**
Yellow-bellied glider	1.8	1.8	1.1	**4.8***

* Minor differences reflect cumulative rounding of individual MHQA component scores

5.3 Offset Requirement

The total offset area liability for each MNES has been calculated using the EPBC Act OAG which incorporates the EPBC Act listing status of each matter alongside quantitative and qualitative variables including the extent and condition of impacted habitat, the condition of proposed offset habitat, and the expected habitat quality improvement achievable through management interventions. The output of each OAG is provided within **Appendix C.**

The MNES that were assessed as incurring an offset requirement include SEVT TEC, Eucalypt Floodplain Forest TEC, *Cycas megacarpa, Samadera bidwillii,* collared delma, greater glider, koala and yellow-bellied glider.

It is also important to note that certain habitat types for koala and *Samadera bidwillii* were not included in the OAG impact area calculations. In accordance with the EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (Department of the Environment, 2013), offset requirements are only triggered where a significant residual impact to MNES is predicted. For the Project, koala dispersal habitat and *Samadera bidwillii* suitable habitat were not considered to represent functional habitat types where a significant impact would occur (refer to Chapter 8 of the PER) and therefore do not give rise to an offset requirement. Accordingly, these habitat types were excluded from the Impact Area inputs to the OAG. The resulting offset requirements for these MNES are summarised in **Table 5.3.**

Table 5.3 Offset Area Requirements for Impacted MNES based on the OAG

MNES	Status	Habitat Type	Area (ha) in Disturbance Footprint	Offset Multiplier	Total Offset Area (ha) Requirement
SEVT TEC	Endangered	-	2.2	7.0	15.5
Eucalypt Floodplain Forest TEC	Endangered	-	16.6	4.2	52.7
***Cycas megacarpa* – full clearing**	Endangered	Known – confirmed	23.2	8.5	197.2
		Known – suspected	0.5		4.2
***Cycas megacarpa* – selective clearing**	Endangered	Known – confirmed	29.8	2.8	84.1
		Known – suspected	0		0
Samadera bidwillii	Vulnerable	Known	0.2	7	1.4
Collared delma	Vulnerable	Suitable	49.0	8.1	396.4
Greater Glider	Endangered	Likely or current denning	31.5	5.6	177.9
		Potential or future denning	105.7		596.2
		Foraging and dispersal	4.3		24.2
Koala	Endangered	Breeding, foraging and shelter	131.0	4.8	623.6
		Climate refugia	22.8		108.6
Yellow-bellied glider	Vulnerable	Denning, foraging and dispersal	20.9	5.8	120.9

Cycas megacarpa

The offset liability for *Cycas megacarpa* has been calculated to distinguish between fully cleared habitat and selectively cleared habitat where individual cycads will be retained in situ, recognising the differing impact types associated with Project construction.

For selectively cleared areas, the offset requirement was calculated based on the expected reduction in habitat quality attributable to the Project, rather than treating these areas as fully cleared habitat. The reduction in habitat quality was quantified by comparing the average HQS of *Cycas megacarpa* habitat in non-remnant condition with that of remnant condition habitat across the Impact Area assuming an absent canopy height and canopy cover (score of 0) for all non-remnant sites as anticipated for these areas following the selective clearing. The difference between these scores represents the anticipated decline in habitat quality following canopy removal while retaining cycads. This reduction in habitat quality value was then input into the OAG as the impact habitat quality for selectively cleared areas**. Table 5.4** presents the HQS of these two MNES condition types and indicates a moderate decline in the Site Condition component reflecting the simplified vegetation structure and composition without a canopy or subcanopy. Moreover, the Site Context component will decline as the degradation to a non-remnant state reduces the patch size and connectedness attributes. There is no difference in the SSR component as individuals will be retained in situ and are therefore assessed at the matter level throughout the Impact Area (**Appendix A).**

Fully cleared areas of *Cycas megacarpa* habitat were assessed using the impact HQS applicable to those areas, reflecting a greater loss of habitat function (**Table 5.1**). The offset liability of each impact type is summed to calculate the total *Cycas megacarpa* offset requirement (**Table 5.4**).

Table 5.4 Summary of the *Cycas megacarapa* HQS throughout Remnant And Non-remnant Areas

MNES – Condition	Site Condition	Site Context	Species Stocking Rate	Habitat Quality Score
Cycas megacarpa – remnant	1.8	1.7	2.9	**6.3**
Cycas megacarpa – non-remnant	1.0	0.6	2.9	**4.4***
Expected reduction in HQS input as the 'Impact Habitat Quality' for selectively cleared areas				**2**

*Minor differences reflect cumulative rounding of individual MHQA component scores.

6.0 Brigalow Belt Offset Area

The Brigalow Belt Offset Area (BBOA) is situated across two adjacent, freehold properties – 'Lone Star' and 'The Cedars'. These properties were selected as suitable offset properties for the Project based on the following:

- Contain suitable existing habitat for seven Offset MNES.
- Confirmed presence of *Cycas megacarpa, Samadera bidwillii,* koala, greater glider.
- Close proximity to existing records of collared delma.
- Contain degraded, cleared habitat that can be restored to functional habitat for several Offset MNES.
- High connectivity to remnant vegetation, ecological corridors and protected areas thereby improving the habitat quality and connectivity at a landscape level.
- Within close proximity to the Disturbance Footprint.

The two properties provide a diverse and balanced range of habitat types and habitat quality to support the habitat preservation and restoration objectives of the offset strategy.

6.1 Site Context

6.1.1 Lone Star

The Lone Star property is situated less than 1 km from the Disturbance Footprint and within the Brigalow Belt bioregion. It is dominated by remnant vegetation atop alluvial flats and ranges and with a current land use of grazing native vegetation. These alluvial landforms are a defining feature of the property, underpinning its ecological significance by supporting climate refugia zones, ecological corridors and vegetation communities that contain dense shelter and breeding habitat for multiple MNES.

There is a Mineral Development License (Coal) authorised for Batchfire Callide Pty Ltd which overlaps the western boundary of Lone Star. A Sunwater Ltd Industrial Pipeline – 'Stag Creek Pipeline' also traverses the southern boundary of the property.

An overview of the property is provided in **Table 6.1** and its location and context within the surrounding landscape is presented in **Figure 6.1.**

Table 6.1 Site context of Lone Star

Site Context Attribute	Lone Star
Total Property Size (ha)	5,877.5
Offset area (ha)	892.6
Location	25.4 km north-east of Biloela, 0.7 km east of the Disturbance Footprint
Lot/Plan	Lot 23 on Plan RN527
Tenure	Freehold
Elevation range	221–579 m above sea level
Past and current land use	Grazing native vegetation.

Site Context Attribute	Lone Star
Biodiversity corridor	Intersected by Terrestrial and Riparian statewide biodiversity corridors which buffer most of the property.
Connectivity	Dominated by remnant native vegetation (85.8%) and surrounded by remnant vegetation to the north-east and south-east. Direct connectivity to vegetated areas within Callide Timber Reserve to the west and more broadly to Kroombit Tops National Park to the east.
Primary Watercourses and Wetlands	Malakoff Creek (stream order 1-4), Fannys Creek, Rainbow Creek (stream order 1-4). Callide Creek (stream order 5) runs along the southern boundary of Lone Star.

6.1.2 The Cedars

The Cedars property is situated within the Brigalow Belt bioregion and directly borders the Disturbance Footprint to the east. An overview of the property has been provided in **Table 6.2** and its location and context within the surrounding landscape is presented within **Figure 6.1**.

Table 6.2 Site context for The Cedars

Site Context Attribute	The Cedars
Total Property Size (ha)	2,088.6
Offset Area (ha)	622.8
Location	20 km north-east of Biloela, directly adjacent to the proposed Disturbance Footprint
Lot / Plan	Lot 18 on Plan RN1457
Tenure	Freehold
Elevation Range	270–620 m above sea level
Past and Current Land Use	Grazing native vegetation and other minimal use
Biodiversity Corridor	Intersected by Terrestrial statewide biodiversity corridors which buffer most of the property
Connectivity	Dominated by remnant native vegetation (75.5%) and surrounded by remnant vegetation to the north-east and south-east. Direct connectivity to vegetated areas within Callide Timber Reserve to the west and more broadly to Kroombit Tops National Park to the south-east
Primary Watercourses and Wetlands	Spring Creek (stream order 1-2)

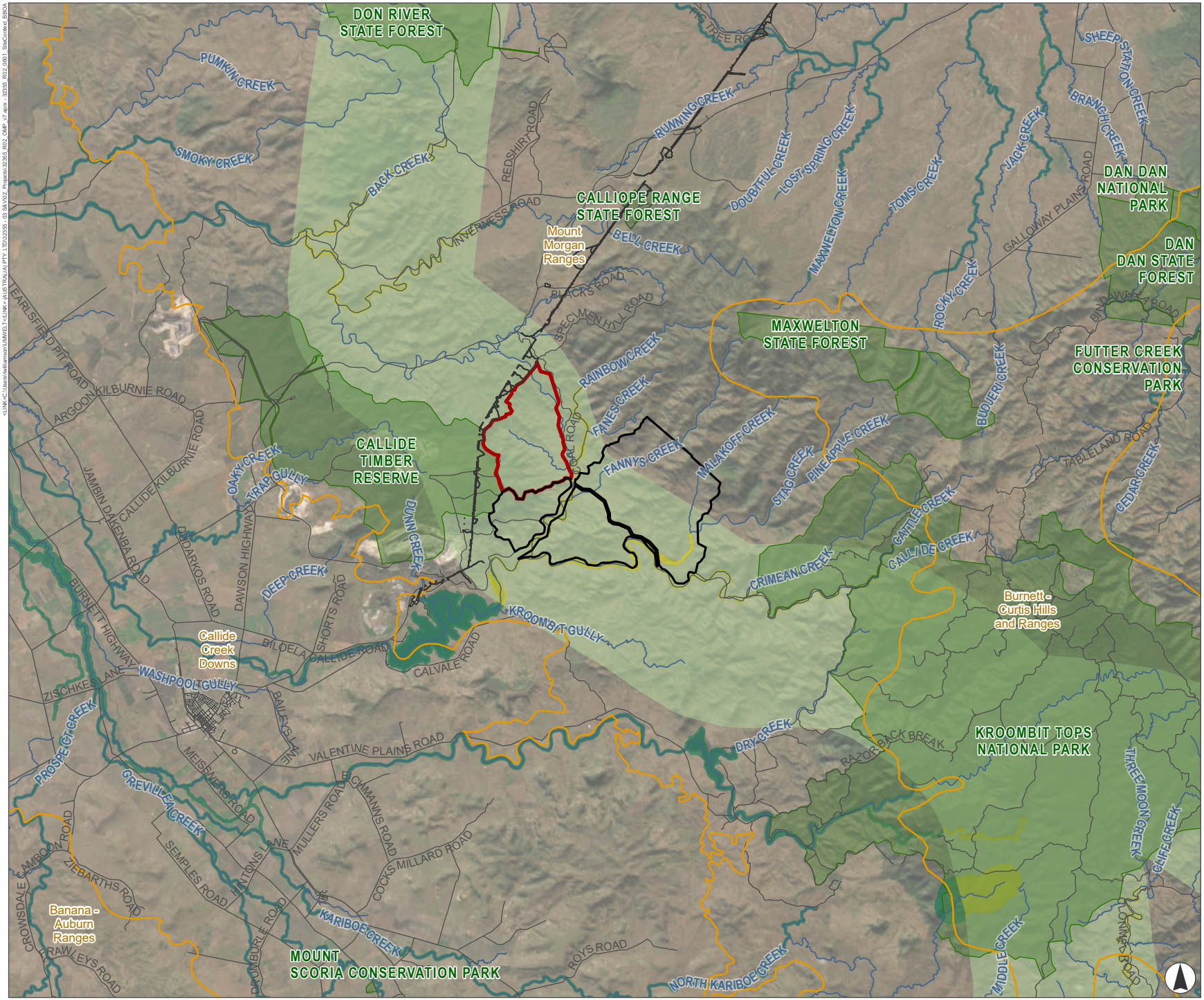


FIGURE 6.1

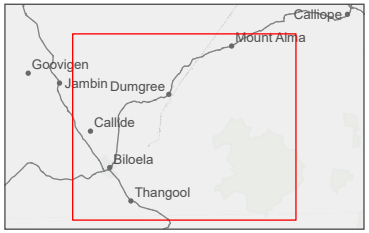
BBOA Site Context

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Biogeographic Subregion
- Protected Areas
- Disturbance Footprint

Biodiversity Corridor

- **Riparian**
- **Riparian/Terrestrial**
- **Terrestrial**



0 1 2

Kilometres

Scale 1:285,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK:C:\Users\lwilkinson\UMWELT<LINK> (AUSTRALIA) PTY. LTD\32355 - 03 SIUV03 -Projects\32355 R02_OMP_v7.aprx - 32355_R02_0001_SiteContext_BBOA

6.1.3 Ecological Values

6.1.3.1 Vegetation and Condition Types

The broader BBOA properties support a diverse mosaic of vegetation communities, characteristic of the Brigalow Belt bioregion, including extensive areas of eucalypt woodland and open forest occurring across alluvial flats, lower slopes and ridgelines. Riparian and alluvial ecosystems are well-represented along the major drainage features, supporting structurally complex habitat and important movement corridors for several Offset MNES.

The mapped habitat areas included within the BBOA include larger swathes of remnant vegetation, owing to the requirement to offset like for like habitat, and preference for existing species record locations to be incorporated. However, regrowth and non-remnant areas which demonstrated a strong potential for assisted natural regeneration under improved management have also been preferentially included. Examples of areas included within the BBOA include:

- The areas surrounding the Fanny's and Malakoff creeks have been included within the BBOA as they are of very high-quality habitat for several MNES with a high density of large shelter trees, tree hollows and further provide climatic refuge and ecological corridors.
- A separate habitat patch known to comprise a population of *Samadera bidwillii* is also included within the BBOA.
- Areas comprising vegetated and unvegetated watercourses surrounding Spring Creek in the south-east and a tributary to Sunday Creek in the north of the property. These areas incorporate both high-quality remnant vegetation and highly degraded, non-remnant grazing paddocks.

Vegetation communities within the BBOA and the broader properties are presented within **Table 6.3** and depicted in **Figure 6.2.**

Table 6.3 Summary of REs mapped throughout the BBOA and wider host properties

Regional Ecosystem	Description	Area (ha)		
		Lone Star	The Cedars[1]	Offset Area
11.10.4	*Eucalyptus decorticans, Lysicarpus angustifolius* +/- *Eucalyptus spp., Corymbia spp., Acacia spp.* woodland on coarse-grained sedimentary rocks	0.0	29.7	0.0
11.10.13	*Eucalyptus* spp. and/or *Corymbia* spp. open forest on scarps and sandstone tablelands	271.6	131.5	42.4
11.11.10	*Eucalyptus melanophloia* woodland on deformed and metamorphosed sediments and interbedded volcanics	36.0	0.0	7.7
11.11.14	*Acacia harpophylla* open forest on deformed and metamorphosed sediments and interbedded volcanics	2.0	0.0	0.0
11.11.15	*Eucalyptus crebra* woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics	4,053.0	1,151.3	837.5
11.11.3	*Blackella citriodora, Eucalyptus crebra, E. acmenoides* open forest on old sedimentary rocks with varying degrees of metamorphism and folding	84.7	0	84.7

Regional Ecosystem	Description	Area (ha)		
		Lone Star	The Cedars[1]	Offset Area
11.11.4	Mixed *Eucalyptus* spp. with *Eucalyptus crebra* dominant or co-dominant woodland on old sedimentary rocks with varying degrees of metamorphism and folding	31.5	21.3	47.5
11.11.5a	Microphyll vine forest +/- *Araucaria cunninghamii* on old sedimentary rocks with varying degrees of metamorphism and folding	16.8	7.0	7.0
11.11.18	Semi-evergreen vine thicket on old sedimentary rocks with varying degrees of metamorphism and folding	0.0	1.6	1.6
11.3.25	*Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines	131.5	31.2	112.4
11.3.25b	*Melaleuca leucadendra* and/or *M. fluviatilis, Nauclea orientalis* open forest	3.3	0.0	2.8
11.3.36	*Eucalyptus crebra* and/or *E. populnea* and/or *E. melanophloia* on alluvial plains. Higher terraces	4.8	0.0	0.0
11.3.4	*Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains	388.1	0.6	68.5
11.3.6	*Eucalyptus melanophloia* woodland on alluvial plains	22.7	0.0	10.6
11.8.3	Semi-evergreen vine thicket on Cainozoic igneous rocks	0	12.4	12.4
11.8.4	*Eucalyptus melanophloia* woodland to open woodland on Cainozoic igneous rocks	22.4	209.3	11.6
Non-remnant	Cleared areas maintained as grazing paddocks	809.1	478.4	264.0
	Total	**5,877.5**	**2,078.9[1]**	

[1]: Area value exclusive of vegetation within designated gas infrastructure easement (total area of 9.7 ha).

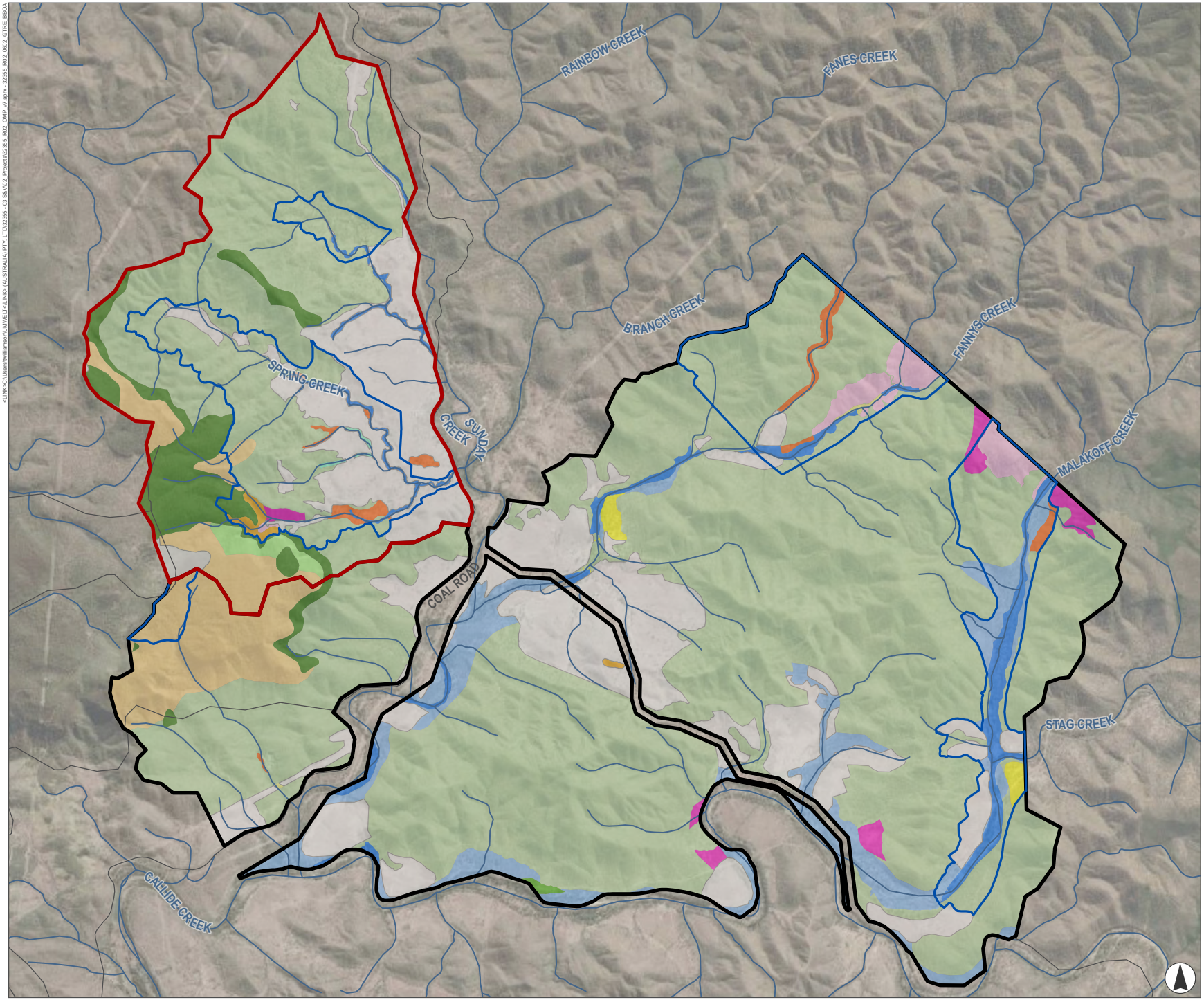


FIGURE 6.2

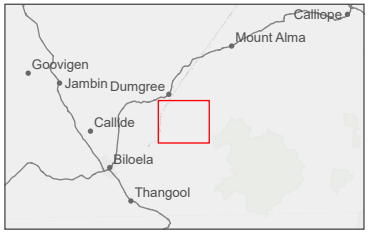
GTRE throughout BBOA

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Ground-truthed Regional Ecosystems

- 11.10.4
- 11.10.13
- 11.11.3
- 11.11.3
- 11.11.4
- 11.11.5a
- 11.11.10
- 11.11.14
- 11.11.14
- 11.11.15
- 11.3.4
- 11.3.6
- 11.3.6
- 11.3.25
- 11.3.25b
- 11.3.36
- 11.8.3
- Non-remnant



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.1.3.2 Presence and Habitat of Offset MNES

All relevant Offset MNES have been recently recorded or historically recorded within BBOA or from connective habitat areas. Baseline survey confirmed extensive areas of suitable habitat for all Offset MNES.

Table 6.4 summarises the distribution of known, suspected and suitable habitats for each Offset MNES, along with any confirmed or historical records. For each Offset MNES, a defined subset of this habitat has been designated as the formal Offset Area. Selection of Offset Areas was undertaken in accordance with the MNES-specific Offset Strategies (**Section 6.3**) and prioritises contiguous habitat, areas surrounding confirmed detections, high-quality habitat where the MNES is likely to occur and strategically selected degraded areas expected to increase the extent and functionality of habitat within the 20-year offset period.

Table 6.4 Records and Habitat of Offset MNES throughout BBOA and Wider Host Properties

MNES	Habitat Type	Total Area (ha) within Lone Star	Total Area (ha) within Cedars	Area (ha) within Offset Area	Field Validation
SEVT TEC	Known – Remnant	0	13.9	13.9*	Field verified areas represented as known-remnant habitat.
	Forecast SEVT TEC (11.11.18)	0	1.8	1.8*	
Collared delma	Suitable	3,333.1	1,184.3	771.6	Two records (2025) detected 6 to the west of BBOA. Records made within the Disturbance Footprint.
	Forecast suitable	14.3	38.3	144.8	
Cycas megacarpa	Known – Confirmed	533.2	293.6	433.3	An estimated 4000 individuals have been detected throughout BBOA.
	Known – Suspected	3,556.7	850.1	306.4	
Greater glider	Foraging and dispersal	257.2	46.7	74.4	Total of 20 individuals detected throughout creek lines and alluvial plains.
	Likely or current denning	4,978.9	1,294.1	1,062.5	
	Potential or future denning	48.3	195.1	106.6	
	Forecast habitat	na	na	245.7	
Koala	Breeding, foraging and shelter	4,484.4	1,600.0	1032.1	Historically recorded within the Lone Star property (1987), known to the Cedars Property (2025).
	Climate refugia	550.4	31.8	194.4	
	Dispersal/ forecast breeding foraging and shelter	809.1	428.1	268.8	

MNES	Habitat Type	Total Area (ha) within Lone Star	Total Area (ha) within Cedars	Area (ha) within Offset Area	Field Validation
Samadera bidwillii	Known	1.9	0	1.4	Approximately 261 stems have been detected to date. Known patch of *Samadera bidwillii* occurs in continuous habitat on the adjacent property to the Cedars, and as close as 15 m from the boundary.
	Suitable	4,347.3	975.4	766.8	
Yellow-bellied glider	Breeding, foraging and dispersal	917.2	114.9	322.5	Historically recorded within the property (1997). Not detected in recent field surveys.

* Total SEVT area is 15.8 ha once forecast and known – remnant habitat types are combined and rounded

The SEVT TEC occurs throughout a single, connected patch within gullies, lower slopes and a drainage line throughout the southern portion of the Cedars property (**Figure 6.3**, **Photo 6.4**). Within this area, there is also a highly degraded patch of young regrowth vegetation that is forecast to regenerate into the SEVT TEC community.

Cycas megacarpa is well represented across the BBOA, with an estimated 4,050 detected individuals. These occur within extensive areas of suitable habitat throughout slopes, ridges and drainage lines (**Figure 6.4, Photo 6.1**). Occupancy within the waterways indicates this population is dispersing throughout the broader landscape. Therefore, the Offset Area has prioritised contiguous areas of *Cycas megacarpa* – including known habitat within the catchments of Fanny's and Malakoff Creeks.

Samadera bidwillii is present within the BBOA (Lone Star) with approximately 261 stems recorded during baseline surveys. These occur throughout the upper slopes, ridgelines and sheltered gullies of REs 11.10.13 and 11.11.15 **(Figure 6.5, Photo 6.2)**. The Offset Area includes a buffer to the occupied, *Samadera bidwillii* – known patches throughout the southwestern boundary of the property to acquit the liability for this MNES. It is also noted that The Cedars encompasses suitable habitat that extends into a patch of known records as close as 15 m from the boundary within the Callide Timber Reserve and Lone Star (**Figure 6.5**).

Collared delma was not detected during baseline surveys. However, two nearby records (2025) occur within 7 km. These detections, coupled with the extensive areas of suitable mapped habitat (**Figure** 6.6**, Photo 6.5**), indicate a high likelihood of occurrence. The collared delma Offset Area includes contiguous areas of both high quality and connected, degraded habitat which is likely to support collared delma now whilst allowing for extension of habitat throughout the 20-year offset timeframe (**Figure 6.6)**.

A koala was recorded within the BBOA in 2025, confirming presence and habitat use. Extensive areas of breeding, foraging and dispersal habitat occur throughout whilst climate refugia habitat fringes the scattered creek lines (**Figure 6.7, Photo 6.8**). Moreover, the few highly degraded paddocks on the lower slopes and plains of the Offset Area are forecast to regenerate as functional breeding, foraging and shelter koala habitat during the 20-year offset timeframe (**Section 6.3.7**).

A total of 20 greater gliders were detected during baseline surveys, primarily along creek lines and adjacent eucalypt woodlands (**Figure 6.8, Photo 6.3**). There are extensive areas of likely and potential denning habitat throughout BBOA as mature eucalypt woodland and open forest occurs throughout riparian zones, alluvial plains and connected slopes and ridges. In addition, the few areas of degraded paddocks across the lower slopes and plains of the BBOA are anticipated to progressively recover over the 20-year offset period, transitioning into functional greater glider habitat that supports foraging and dispersal habitat (**Section 6.3.6).**

Yellow-bellied glider was not observed during the offset survey program, however one WildNet record (1997) occurs nearby along the Awoonga-Callide pipeline. Suitable breeding, foraging and dispersal habitat occurs throughout the BBOA and is mostly associated with the Eucalypt woodlands and forests on riparian zones, alluvial plains and lower slopes due to the density of smooth-barked foraging and preferred den species (**Figure 6.9**). The zones surrounding Fanny's and Malakoff creeks were prioritised for inclusion into the BBOA due to the high quality of habitat, likelihood of occurrence and landscape connectivity of the patches.

Photo 6.1 ***Cycas megacarpa***

Photo 6.2 ***Samadera bidwillii* within RE 11.10.13**

Photo 6.3 Greater Glider within *Eucalyptus melanophloia*

Photo 6.4 Representative photo of SEVT TEC

Photo 6.5 Representative photo of RE 11.11.15

Photo 6.6 Representative photo of RE 11.3.4

Photo 6.7 Representative photo of RE 11.3.25

Photo 6.8 Koala within *Melaleuca bracteata*

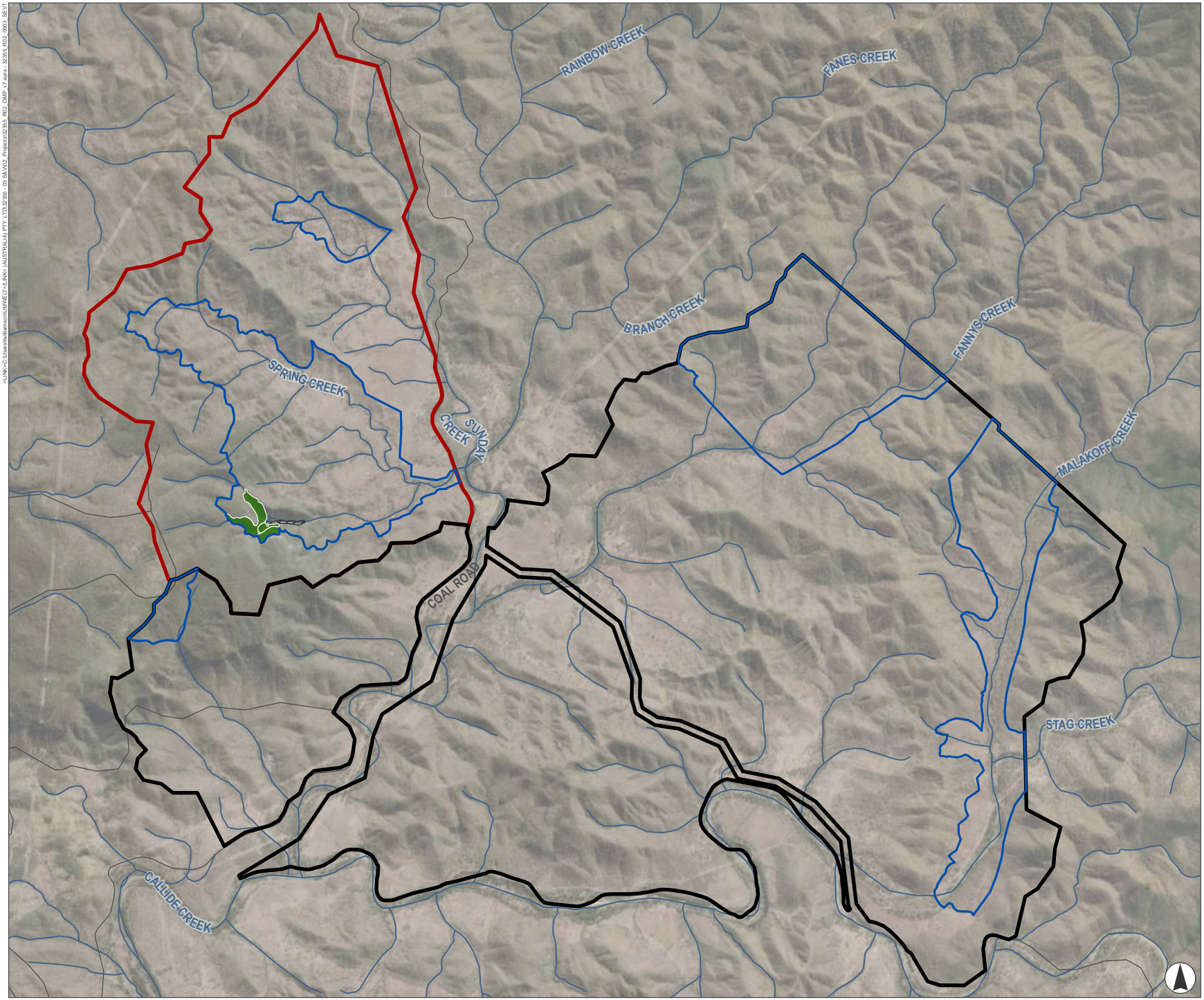


FIGURE 6.3

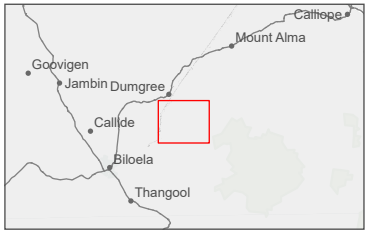
SEVT TEC Throughout the BBOA

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

SEVT Habitat Mapping

- Forecast SEVT
- SEVT



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

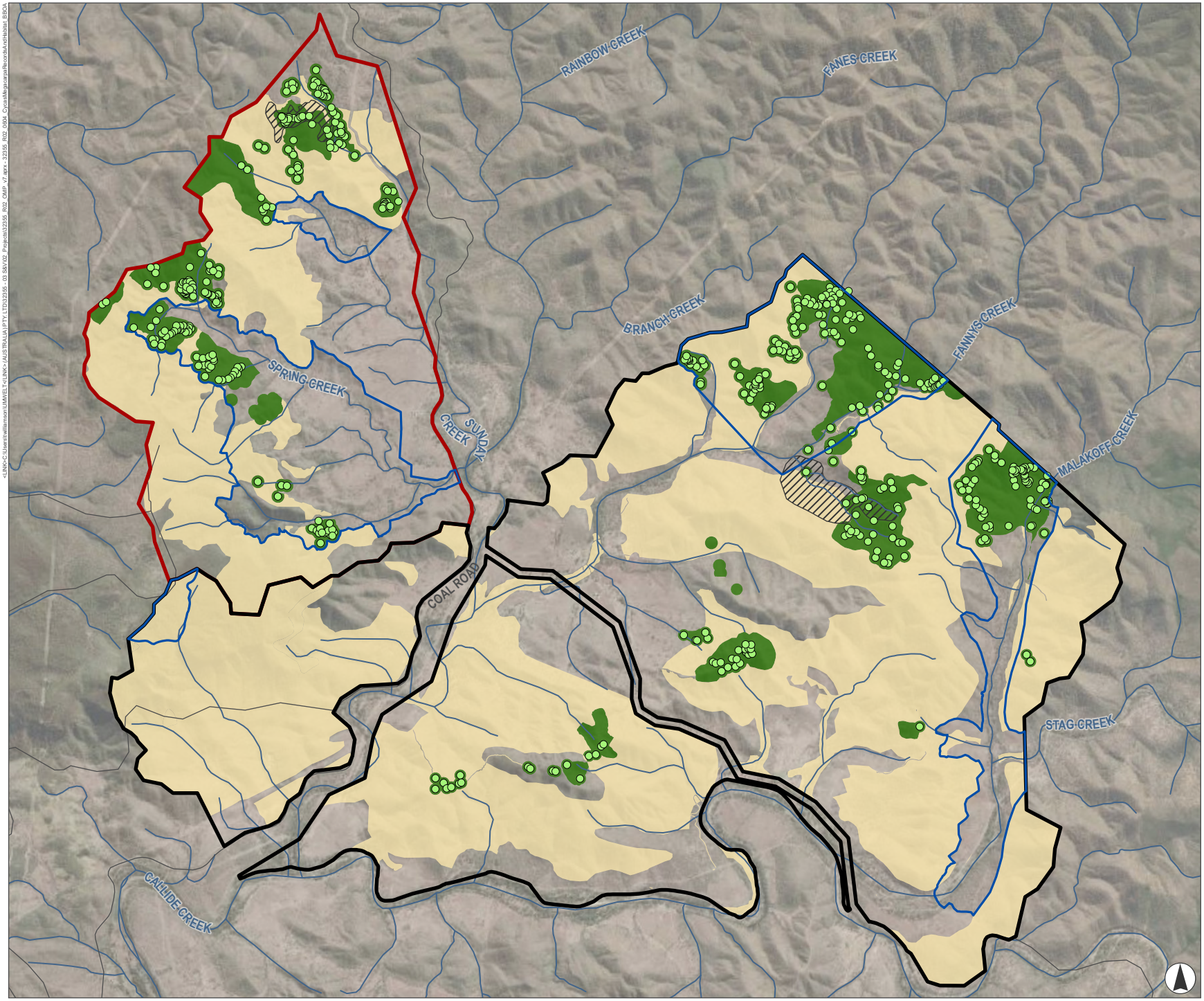


FIGURE 6.4

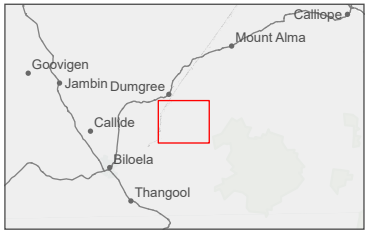
Cycas megacarpa Records and Habitat Throughout the BBOA

Legend

- *Cycas megacarpa* Records - Umwelt
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area
- Cycad Recipient Site

***Cycas megacarpa* Habitat Mapping**

- Known - Confirmed
- Known - Suspected



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK>C:\Users\williamson\UMWELT<LINK>(AUSTRALIA)PTY LTD\32355 - 03 SW\02_Projects\32355_R03_OMP_v7.aprx - 32355_R03_0004_CycasMegacarpaRecordsAndHabitat_BBOA

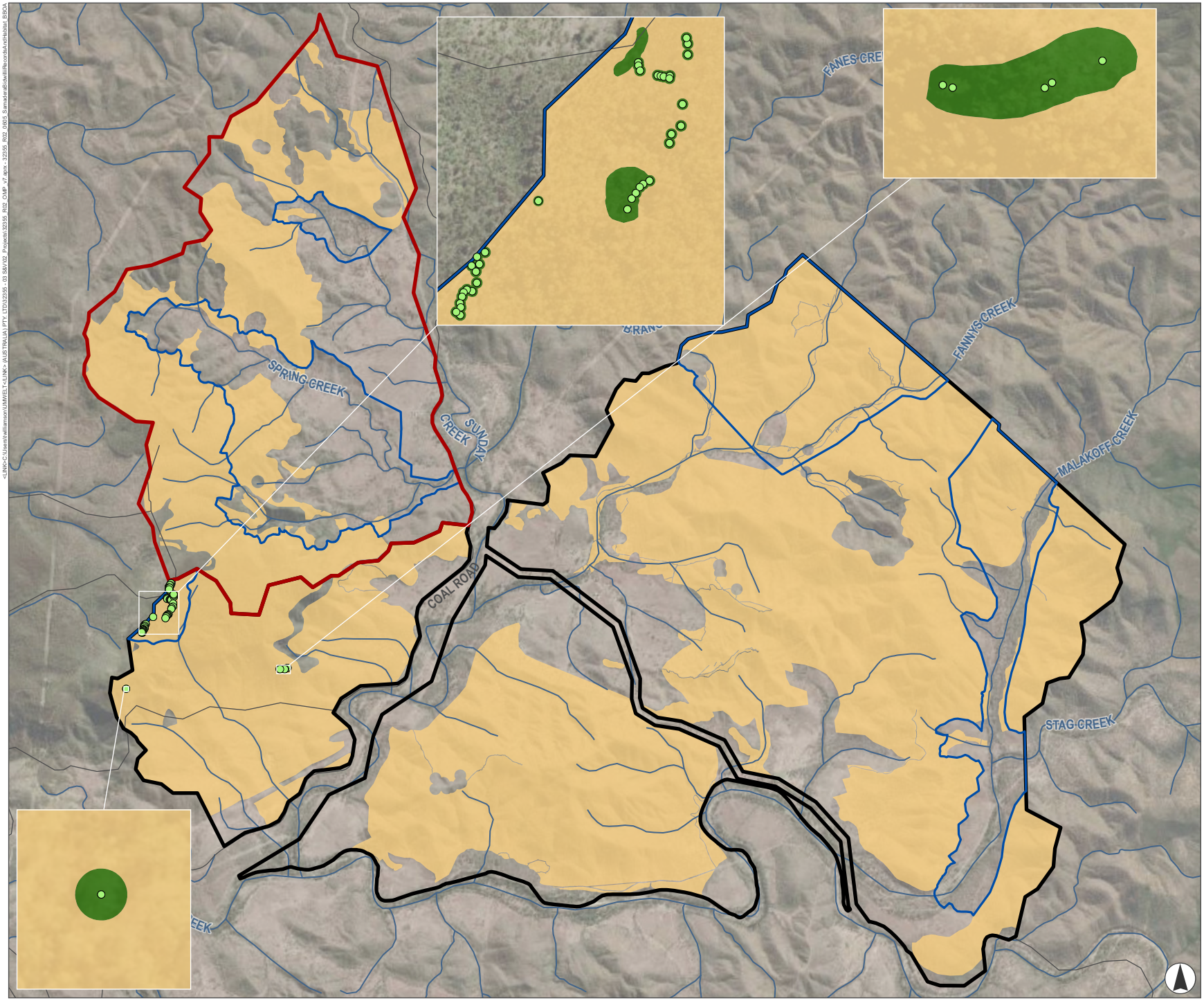


FIGURE 6.5

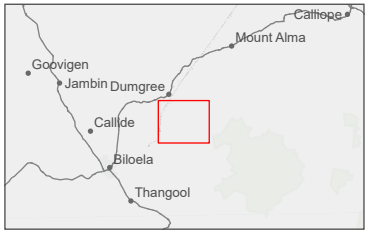
Samadera bidwillii Records and Habitat Throughout The BBOA

Legend

- *Samadera Bidwillii* Records
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

***Samadera Bidwillii* Habitat Mapping**

- Known habitat
- Suitable habitat



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

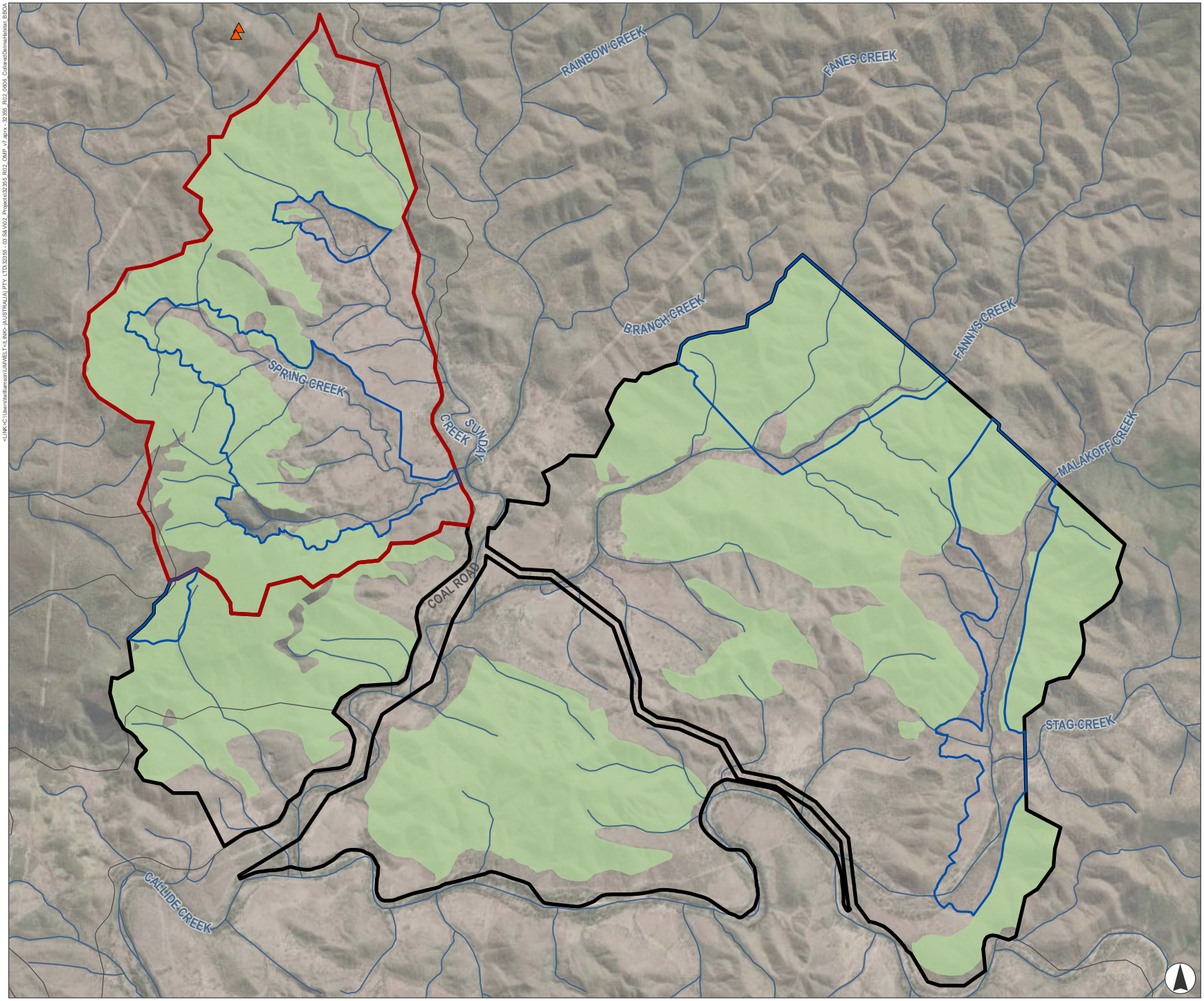


FIGURE 6.6

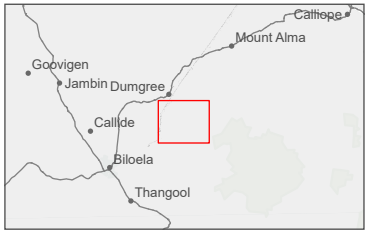
Collared Delma Habitat Throughout the BBOA

Legend

- Collared Delma Record - Impact
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Collared Delma Habitat Mapping

- Suitable habitat



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

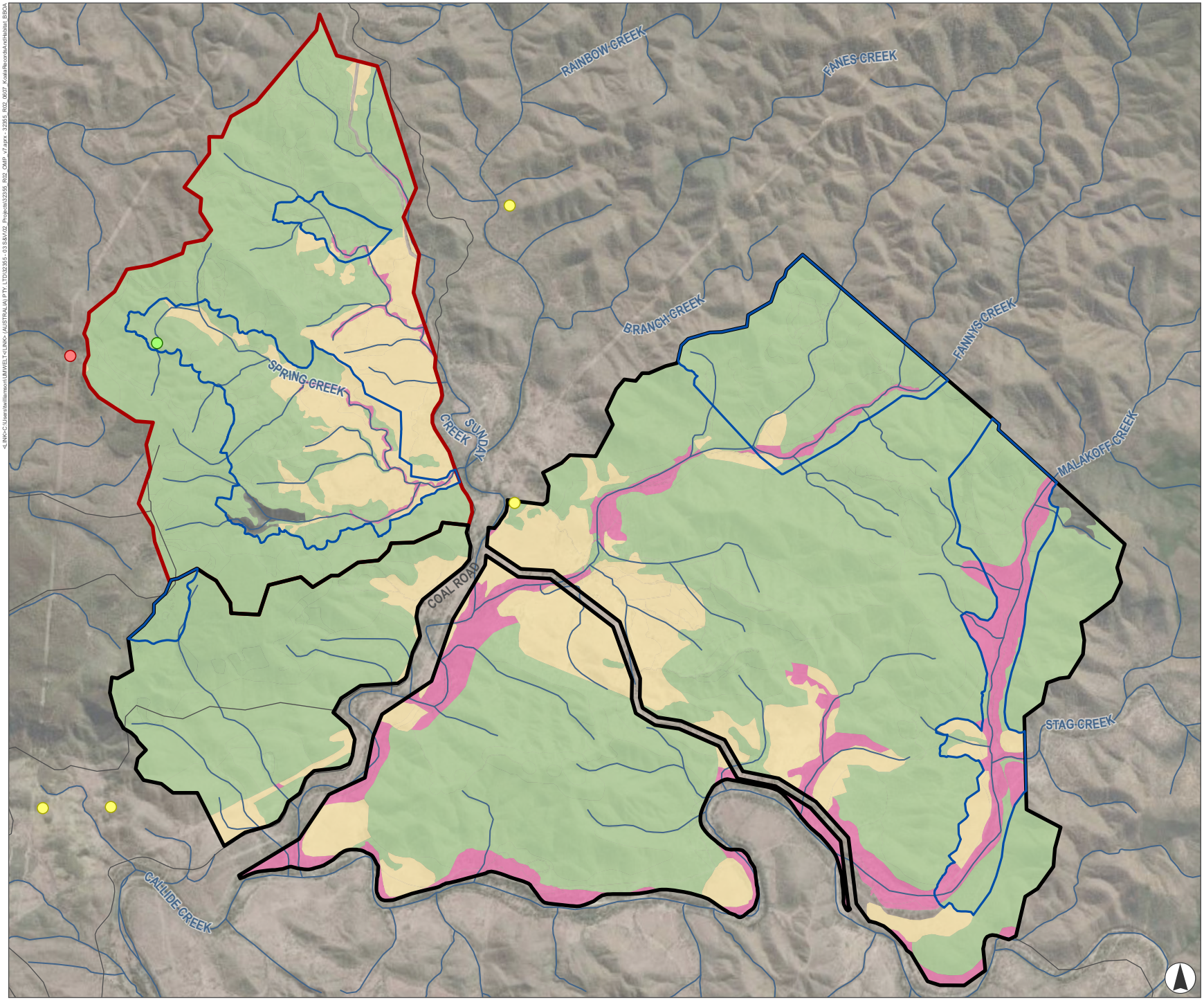


FIGURE 6.7

Koala Records and Habitat Throughout the BBOA

Legend

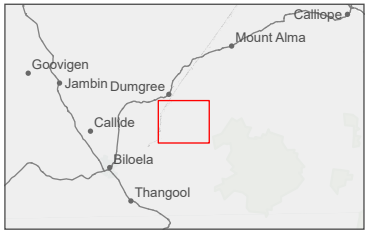
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Koala Records

- Historical
- Umwelt
- Impact Area

Koala Habitat Mapping

- Dispersal
- Breeding, foraging and shelter
- Climate refugia



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

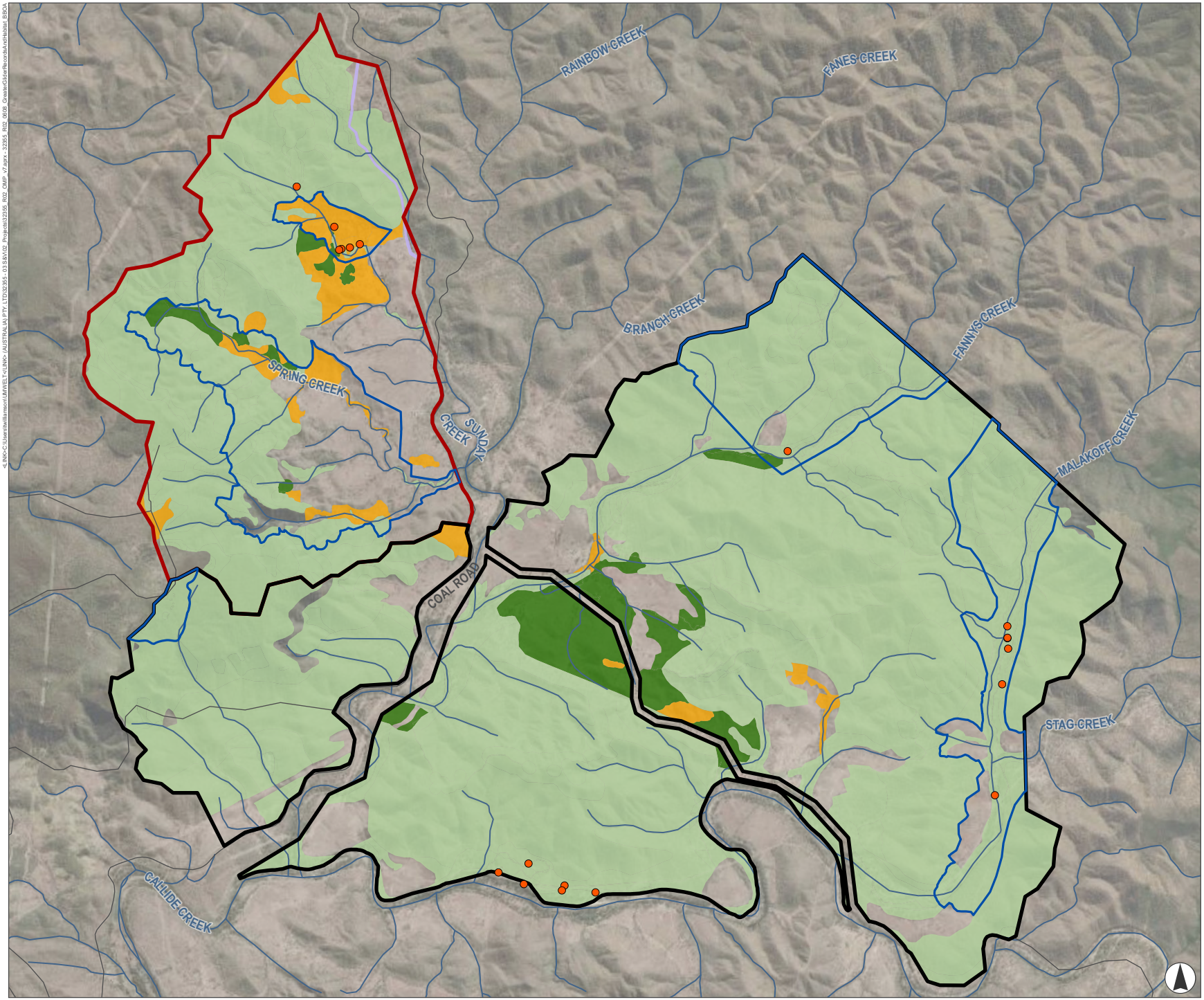


FIGURE 6.8

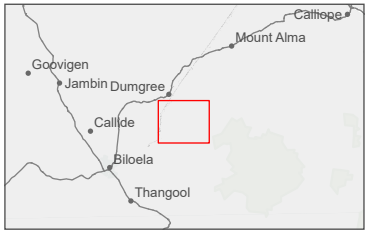
Greater Glider Records and Habitat Throughout the BBOA

Legend

- Greater Glider Record (Umwelt)
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Greater Glider Habitat Mapping

- Foraging and dispersal
- Likely or current denning
- Potential or future denning
- Gas easement



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

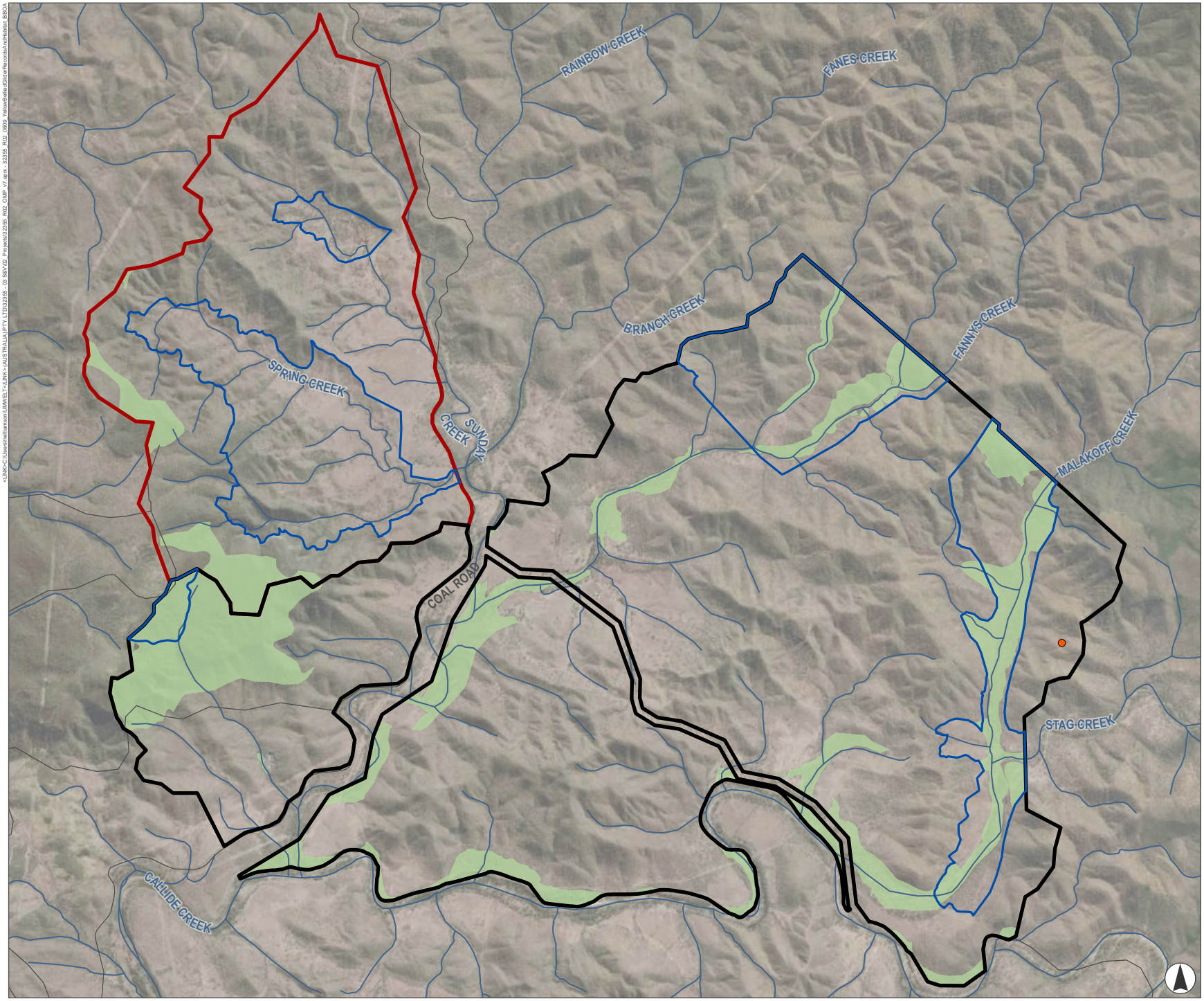


FIGURE 6.9

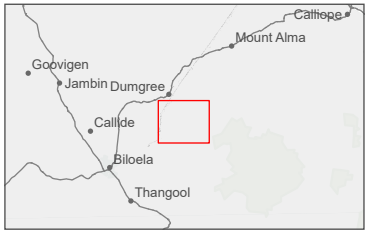
Yellow-bellied Glider Records and Habitat Throughout the BBOA

Legend

- Yellow-bellied Glider - Historical Record
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Yellow-bellied Glider Habitat Mapping

- Breeding, foraging and dispersal



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.2 Threats and Disturbances

6.2.1 Habitat Clearing

Historic and ongoing vegetation clearing associated with grazing has resulted in extensive areas of highly degraded paddocks across the western section of the BBOA. These areas are mapped as non-remnant vegetation and reflect a clearing pattern concentrated on gently sloping plains and lower slopes. These areas continue to be managed for cattle grazing with evidence of ongoing selective and broadscale suppression of native regrowth observed across the BBOA (**Photo 6.9** to **Photo 6.12**), limiting natural recovery of habitat critical to the Offset MNES. In contrast, native vegetation on the steeper upper slopes and ridgelines largely persists in remnant condition, although some patches exhibit a structurally modified understorey and/ or overstorey as a legacy of past selective clearing (**Photo 6.11**).

Habitat clearing has reduced the extent, structural complexity and connectivity of vegetation across the Offset Area, resulting in species-specific impacts to each MNES:

- For greater glider and yellow-bellied glider, the clearing of mature woodland and open forest has reduced the density of large hollow-bearing trees required for denning and shelter, simplified midstorey structure, and fragmented canopy connectivity necessary for movement and foraging. Isolation of remnant patches by cleared paddocks increases edge effects and limits dispersal between habitat patches, reducing overall habitat functionality throughout the BBOA.
- For koala, the removal of preferred feed trees and suppression of natural regrowth has reduced foraging resources, canopy continuity and connectivity to riparian corridors that function as climate refugia during periods of thermal stress and drought.
- *Cycas megacarpa* has been directly impacted by historic deliberate removal associated with livestock toxicity concerns.
- *Samadera bidwillii* has only been detected within large, intact patches of remnant vegetation indicating that current populations are not directly affected by clearing, however at threat from wildfire.
- The removal of canopy and midstorey vegetation has reduced litter and wood debris accumulation necessary for collared delma. Weed invasion (particularly *Lantana montevidensis*) has further degraded habitat for this species.
- The SEVT TEC patch within the BBOA has also been affected by historic clearing with the single patch likely reduced in extent and bisected by a narrow strip of clearing through its central portion. This internal fragmentation has further increased edge exposure and subsequent weed infestations.

For the purposes of scoring 'Threats' within the HQA, habitat clearing and fragmentation has not been assessed as an ongoing threatening process as MNES habitat is regulated under the EPBC Act and therefore assumed to have no risk of future clearing within the Offset Area for the purposes of this assessment (**Section 4.3.1.2, Appendix F**). However, targeted removal of *Cycas megacarpa* individuals due to livestock toxicity concerns, as well as potential illegal harvesting, have been assessed as a relevant threat as these pressures can result in localised population decline and reduction in reproductive individuals.

To better understand the current condition, regenerative capacity and recovery potential of these cleared and regrowth areas, targeted regrowth recovery assessments were undertaken, with results used to inform the prioritisation and design of restoration and management actions outlined in the Restoration Actions (**Section 8.4.6**).

Photo 6.9 **Cleared paddock with emerging native recruits on Lone Star**

Photo 6.10 **Cleared strip between patches of SEVT TEC on The Cedars**

Photo 6.11 **Ongoing selective clearing evident with stands of dead stags at The Cedars**

Photo 6.12 **Felling of juvenile canopy recruits (≈5cm DBH) within a grazing paddock on The Cedars**

6.2.2 Wildfire and Inappropriate Fire Regimes

Over the last 30 years, the most extensive fire events across Lone Star and The Cedars have occurred between September and February, a period associated with elevated temperatures, summer storms and increased ignition risk. At Lone Star, large-scale burns were recorded in 2012 and 2023 (**Figure** 6.10), while at The Cedars the most extensive fires occurred in 2006 and 2011 (**Figure 6.10**). Smaller-scale burns historically occurred across both properties throughout the year, with more frequent low-intensity fires evident prior to 2006. The reduced frequency of these smaller burns over the past two decades is likely to have contributed to increased fuel accumulation and consequently, a higher risk of severe summer wildfire events in recent years.

The large, contiguous patches of native vegetation within the Offset Areas and their connectivity to surrounding vegetated landscapes, further elevate wildfire risk by increasing the potential for fire spread under extreme weather conditions. Recent fire management across the properties has largely been driven by hazard reduction objectives with limited consideration of conservation outcomes or the specific ecological requirements of the Offset MNES.

Severe wildfire and/or inappropriate fire regimes are recognised threats to all Offset MNES, with potential to cause direct mortality, loss of critical habitat features (e.g. hollow-bearing trees, denning structures, ground-layer microhabitat), disruption to recruitment processes and long-term degradation of habitat quality. Fire fuel load and hazard assessments were undertaken across the Offset Areas to better characterise current fire risk and inform appropriate fire management of the Offset MNES (**Section 8.4.4.2**).

A Bushfire Management Plan will be prepared, drawing on historic fire patterns, fuel load assessments and the fire management guidelines of the relevant REs and Offset MNES to prescribe appropriate fire regimes for each property (**Section 8.4.4**).

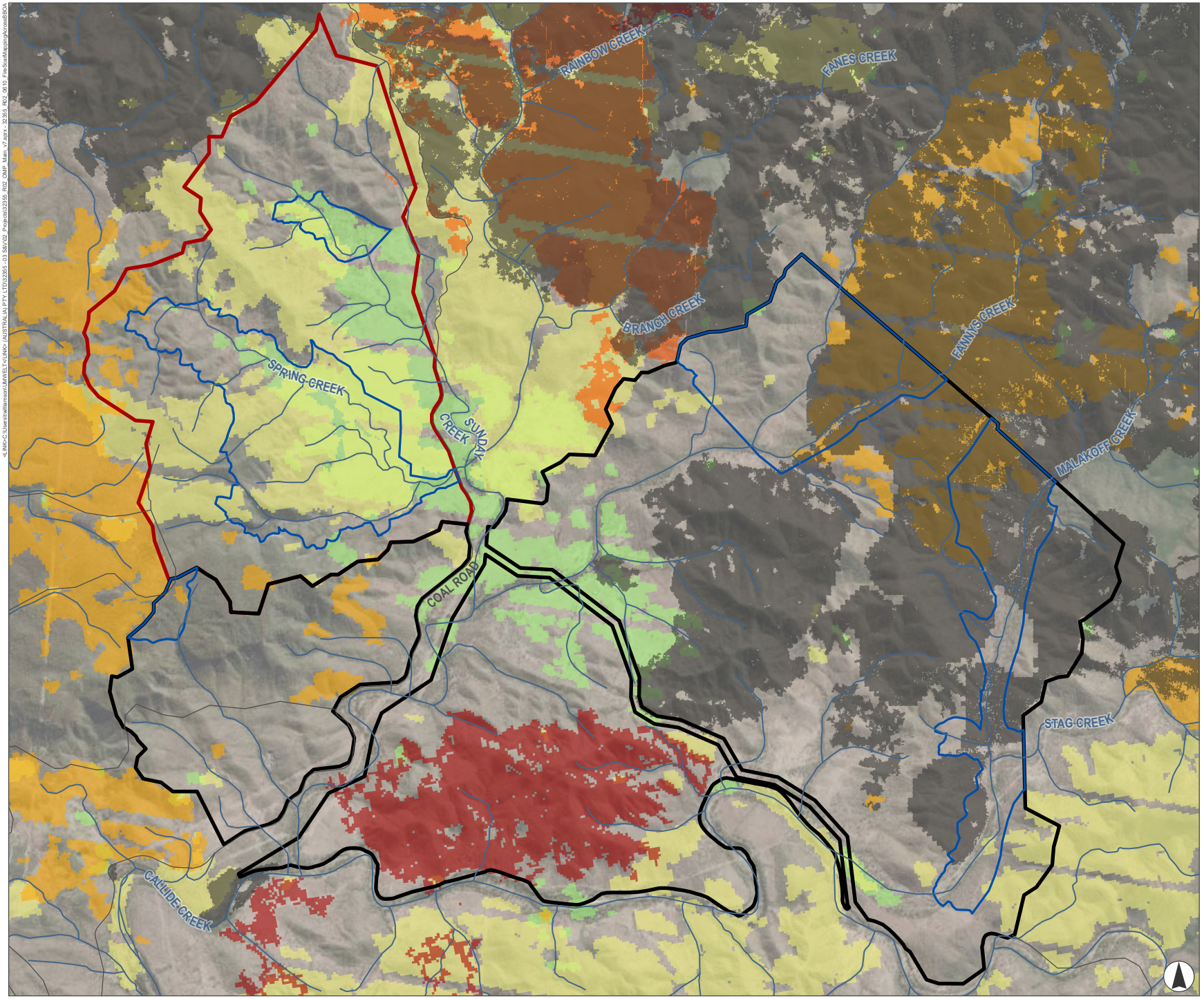
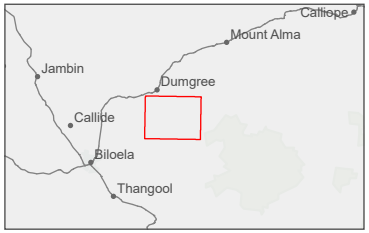


FIGURE 6.10

Fire Scar Mapping Across the BBOA

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area
- 2023 Fire scar mapping
- 2015 Fire scar mapping
- 2013 Fire scar mapping
- 2012 Fire scar mapping
- 2011 Fire scar mapping
- 2006 Fire scar mapping



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.2.3 Weeds

Weeds within the ground-layer and shrub-layer are widespread across the BBOA, occurring throughout both vegetated areas and cleared paddocks while exotic tree species were not observed. The most significant weeds within vegetated areas include creeping lantana (*Lantana montevidensis*), lantana (*Lantana camara*), rubber vine (*Cryptostegia grandiflora*), red-natal grass (*Melinis repens*) and chickweed (*Stellaria media*). In addition, a single patch of cat's claw creeper (*Macfadyena unguis*-cati) is incurring on a patch of SEVT TEC. Whereas paddock areas are dominated by pasture and broadleaf weeds such as Indian bluegrass (*Bothriochloa pertusa*), sabi grass (*Urochloa mosambicensis*), billygoat weed (*Ageratum houstonianum*), red-natal grass and parthenium (*Parthenium hysterophorus*) (**Photo 6.13** to **Photo 6.16**).

Invasive weeds degrade vegetation condition by suppressing native species richness and cover, resulting in reduced habitat quality for the Offset MNES. Extensive infestations also increase biomass and fuel loads, elevating the likelihood and severity of wildfire events that can further degrade habitat. Several species pose direct threats to specific Offset MNES, including creeping lantana, which reduces shelter and denning microhabitats for collared delma by spreading over surface rocks and lantana and rubber vine, which can form dense infestations within riparian corridors and restrict koala movement and dispersal.

Weed presence, cover and composition were documented during HQAs and through dedicated weed assessment plots established across the properties. This data informed weed management actions outlined in **Section 8.4.2**.

Photo 6.13 **Cat's claw creeper infestation throughout SEVT TEC patch on The Cedars**

Photo 6.14 **Parthenium infestation throughout a tributary of Spring Creek on The Cedars**

Photo 6.15 **Lantana infestation throughout The Cedars**

Photo 6.16 **Paddock dominated by Indian bluegrass on The Cedars**

6.2.4 Feral Pests

Due to the modified landscape and history of vegetation clearing, the Lone Star and The Cedars properties support several introduced fauna species that pose varying levels of risk to native fauna and habitat condition. A total of 40 camera traps were deployed across both properties and identified feral pig (*Sus scrofa*) and feral cat (*Felis catus*) as the primary feral pest species of concern within the Offset Areas. Multiple canids were recorded during camera trapping however, all detections were assessed as native dingoes (*Canis dingo*) (**Photo 6.20**) and are therefore not considered feral pests but natural predators in functional habitat and the broader landscape. While dingoes are listed as a restricted invasive animal under the *Biosecurity Act 2014* outside protected areas, they are also recognised as native apex predators under the Nature Conservation Act 1992. No evidence was identified of hybridisation, livestock predation or impacts to Offset MNES within the Offset Area. Accordingly, active control of dingoes is not proposed under this OMP.

Feral pigs were detected on five camera traps and are considered the most prominent feral pest across the two properties. Widespread evidence of rooting and soil disturbance was observed during field surveys, particularly within and adjacent to riparian corridors on Lone Star (**Photo 6.17** and **Photo** 6.19). These activities degrade ground-layer vegetation and promote weed invasion thereby reducing habitat quality for the Offset MNES. Rooting within riparian zones can also destabilise stream banks and contribute to sedimentation of watercourses within corridors suitable to threatened arboreal mammals, while disturbing microhabitat features important for collared delma.

Feral cats were detected on the BBOA (**Photo 6.18**), including in proximity to a riparian patch on The Cedars where greater glider has been recorded. Feral cats pose a direct predation risk to small and medium-sized fauna, including juvenile and dispersing individuals of koala, yellow-bellied glider and greater glider MNES. Their presence within structurally complex riparian vegetation further elevates predation risk in areas that otherwise function as refuge and movement corridors.

Cattle (*Bos taurus*) were observed throughout both properties and continue to exert pressure on vegetation condition contributing to soil compaction, suppression of native regeneration and degradation of ground-layer habitat. During field surveys, additional introduced species including cane toad (*Rhinella marina*), hare (*Lepus saxatilis*) and rabbit (*Oryctolagus cuniculus*) were recorded. These species are of lower relative concern to the Offset MNES although they may contribute cumulatively to general habitat degradation and suitability within the offset.

The presence and impacts of feral animals represent a moderate, localised threat to the Offset MNES through predation, habitat degradation, disruption of regeneration processes and increased weed invasion. These risks underpin the need for targeted, sustained feral animal management actions within the Offset Areas, as outlined in **Section 8.4.3**.

Photo 6.17 **Feral pig observed on a camera trap within Lone Star**

Photo 6.18 **Feral cat observed on a camera trap within Lone Star**

Photo 6.19 **Pig rootings throughout Lone Star**

Photo 6.20 **Dingo observed on a camera trap on The Cedars**

6.3 Offset Strategy

The BBOA supports extensive remnant vegetation, riparian watercourse systems, areas of native regrowth and degraded paddocks with strong recovery potential. The BBOA provides sufficient suitable habitat to acquit the offset requirements for seven Offset MNES within the Brigalow Belt bioregion.

Baseline assessments have identified a range of threats and condition constraints across the BBOA that currently limit habitat quality for the Offset MNES (**Section 6.2**). This section presents the starting Offset HQS for each MNES, alongside the corresponding Impact HQS for comparison and summarises the forecast HQS at the end of the offset timeframe as input as the final Offset HQS within the OAG. This approach ensures that prescribed habitat quality improvements, progressive criteria and completion criteria are directly informed by baseline condition and clearly linked to identified threats and management actions, providing a transparent, data-driven basis for prioritising offset management and resourcing. The offset start HQS area provided within **Table 6.40,** with the associated sub-attribute scores provided in **Appendix D** and **Appendix F** with the forecast HQS provided in **Appendix E.**

6.3.1 Forecast Habitat Quality and Habitat Extent

Forecast habitat quality and extent were derived from a consideration of each MNES' ecology, the starting condition of the Offset Area and the expected restorability of the relevant habitat types within the 20-year offset timeframe. Large areas within the BBOA are prescribed for restoration and these areas are expected to contribute to improved habitat function for several Offset MNES. For fauna MNES, forecasts have also been informed by contemporary literature on the ecological value of regrowth forests and woodlands for threatened species (Thomas, Simmonds, Ward, Eyre, & Maron, 2025), particularly in relation to the minimum age at which regrowth provides functional habitat and the development of key structural attributes such as hollows, foraging trees and ground-layer resources (**Table 6.5**).

For flora and TEC MNES, forecasts reflect species-specific life-history traits, canopy dependency and vegetation recovery trajectories. Substantial increases in functional habitat extent are anticipated for collared delma, koala, greater glider (foraging and dispersal habitat only) where restoration of degraded paddocks will re-establish woodland. In contrast, species/ habitat types reliant on mature hollow-bearing trees such as yellow-bellied glider and greater glider (denning habitat) are not expected to realise material increases in denning habitat within the 20-year timeframe. For *Cycas megacarpa* and *Samadera bidwillii* offsets, forecast improvements are primarily qualitative (habitat condition) rather than spatial, reflecting the retention of existing populations and limited expansion potential within the offset period. Further targeted surveys within the BBOA may refine the documented extent of known individuals and habitat however, any increase would represent improved detection rather than a material expansion of population extent during the offset timeframe and therefore no habitat extent increase has been forecast for these MNES. For SEVT TEC, an increase in habitat extent is forecast through the restoration of the currently cleared inter-patch area, which will consolidate existing remnant stands.

Together, these forecasts provide a conservative and ecologically grounded basis for the prescribed habitat quality gains and extent increases applied within the OAG.

Table 6.5 Summary of the Forecast Habitat Quality and Extent for the Offet MNES

Offset MNES	Minimum Age (years) of Regrowth Before Functional Habitat	Key Habitat Attributes	Forecast Habitat Quality Improvement from Baseline	Forecast Habitat Extent Increase
Collared delma	10	Shelter resources including woody debris, rocks, leaf litter	1–2*	Increase in suitable habitat – 144.8 ha
Greater glider	63	Tree hollows, suitable foraging and denning trees	1	Increase in habitat - – 245.7
Koala	4	Preferred Eucalypt feed trees, large trees for shelter	2	Increase in breeding, foraging and shelter habitat – 268.8 ha

Offset MNES	Minimum Age (years) of Regrowth Before Functional Habitat	Key Habitat Attributes	Forecast Habitat Quality Improvement from Baseline	Forecast Habitat Extent Increase
Yellow-bellied glider	68	Tree hollows and suitable foraging trees	1–2*	No increase of functional habitat forecast for the offset period
Cycas megacarpa	0 – known to persist when retained within cleared sites	Presence of *Cycas megacarpa*	1	No increase of known - confirmed habitat is forecast noting the species slow growing nature
Samadera bidwillii	10 – it is expected that the species requires a canopy	Presence of *Samadera bidwillii*	1	No increase of known habitat forecast due to the uncertainty on species' reproduction
SEVT TEC	15 – Limited knowledge of regeneration suggests slow growth	Characteristic flora species	1	Increase with the restoration of a cleared area between existing patches – 1.8 ha

**1 pt habitat quality improvement assigned within the OAG. Forecast suggests an improvement of 2.*

6.3.2 Semi-evergreen Vine Thicket

6.3.2.1 Habitat Quality Scores

A total of four HQAs were conducted throughout the SEVT TEC habitat within the BBOA (**Table 6.6**, **Figure 6.11**) and situated on The Cedars property only. A summary of the scores for each component has been presented by AU in **Table 6.7** with the full HQS dataset provided in **Appendix D.** The final, area-weighted HQS of 7 was input as the starting offset habitat quality within the OAG and represents a higher score than SEVT TEC within the Impact Area which scored a 5.

A one-point habitat quality improvement has been prescribed for SEVT TEC across the 20-year timeframe, committing to an end area-weighted HQS of 8.

Table 6.6 SEVT TEC – Offset HQS summary

AU	RE and Condition	Site Count	HQS (average)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU22	11.8.3 remnant	2	7.5	12.4	0.78	5.9		
AU23	11.11.18 remnant	1	6.4	1.6	0.10	0.6		
AU21	non-remnant	1	2.9	1.8	0.12	0.3		
			Total	**15.8**	**1**	**6.8**	**7**	**5**

Table 6.7 SEVT TEC – Offset HQS breakdown

AU	RE and condition	Site condition score/7	Site context score/3	HQS/10	Area-weighted		
					Site condition	Site context	HQS/10
AU22	11.8.3 remnant	5.2	2.3	7.5	4.0	1.8	5.9*
AU23	11.11.18 remnant	4.1	2.3	6.4	0.4	0.2	0.6
AU21	non-remnant	1.9	1.0	2.9	0.2	0.1	0.3
				Total	**4.7***	**2.2***	**6.8**

* Minor differences reflect cumulative rounding of individual MHQA component scores

Site Condition

Four HQAs were conducted within areas of SEVT TEC/ forecast SEVT TEC within the offset area, resulting in a moderate score for Site Condition. AU21 exhibited low scores for the majority of BioCondition attributes due to its non-remnant status. AU22 and AU23 exhibited lower native tree and forb species richness scores and deficiencies in tree canopy cover and height. While native shrub canopy cover exceeded the benchmarks by double (>200%) for both remnant AUs which may explain the reduced species richness of recruiting trees, grasses and forbs and consequent deficiencies in litter cover.

A summary of the Site Condition Scores is presented within **Table 6.8** and the cells where an expected improvement has been forecasted is highlighted red. This includes most attributes within the emerging non-remnant patch and a select couple of attributes in the other AUs.

Table 6.8 SEVT TEC - offset site condition scores

Attribute (Maximum Score)	AU22	AU23	AU21
Recruitment of woody perennial species in EDL (5)	4	3	0
Native tree species richness (5)	2.5	2.5	0
Native shrub species richness (5)	3.8	5	2.5
Native grass species richness (5)	5	5	5
Native forb species richness (5)	2.5	2.5	0
Tree canopy height (5)	3.8	3	3
Tree canopy cover (5)	2.5	1	0
Native shrub canopy cover (5)	4	5	3
Native grass cover (5)	2.5	0	0
Organic litter cover (5)	2.5	0	3
Number of large native trees (15)	12.5	5	5
Coarse woody debris (5)	3.5	5	0
Non-native plant cover (10)	10	10	0
Average BioCondition Score (Site condition) (80)	**59.0**	**47.0**	**21.5**
Average Site Condition Score (weighted out of 7 (i.e. 70%))	**5.2**	**4.1**	**1.9**
Area-weighted Site Condition Score	**4.0**	**0.4**	**0.2**
Final Site Condition Score/7		**4.7**	

Site Context

A moderate score for Site Context was recorded for SEVT TEC within the BBOA with the two remnant AUs a part of a larger area of vegetation (**Table 6.9**). Conversely, the non-remnant AU21 scored substantially lower due to the currently cleared status of the patch. However, it is expected that the size of patch and connectedness attributes will improve as the SEVT TEC regenerates into a continuation of the surrounding vegetation.

For the remnant AUs (AU22 and AU23), the role of the site location to the TEC throughout the state was considered to be critical to SEVT persistence and were assigned a maximum score of 5. Conservation Advice states that, given the restricted and fragmented distribution of SEVT, all areas that meet the definition of this ecological community are considered habitat critical to its long-term survival (Department of Climate Change, Energy, the Environment and Water, 2023). This directly informed the assigned score. As AU21 is in a highly modified, non-remnant state, it was assigned a score of 0, with the expectation that this will increase over time in response to the prescribed restoration.The threats score resulted in the most substantial decrease to the overall Site Context score with both fire and weeds assigned a score of 4.5/15 due to the observed fuel load in the broader patches and severe infestation of cat's claw in remnant 11.8.3 and a variety of invasive weeds in the non-remnant AU21 (**Photo 6.13**). A future threat score of 7 has been forecasted following an appropriate bushfire management plan and weed management plan (**Appendix F)**.

Table 6.9 SEVT TEC – Offset Site Context Scores

Attribute (Maximum Score)	AU22	AU23	AU21
Size of patch (10)	10	10	0
Connectedness (5)	5	5	0
Context (5)	5	5	5
Ecological Corridors (6)	6	6	6
Role of site location to the TEC throughout the state (5)	5	5	0
Threats to TEC (15)	4.5	4.5	4.5
Average Site Context Score (46)	**35.5**	**35.5**	**15.5**
Average Site Context Score (weighted out of 3 (i.e. 30%))	**2.3**	**2.3**	**1.0**
Area-weighted Site Context Score	**1.8**	**0.2**	**0.1**
Final Site Context Score/3		**2.2**	

6.3.2.2 Approach to Improving Habitat Quality

The OMP commits to achieving a one-point gain in habitat quality for SEVT TEC as demonstrated within the forecasted HQS of SEVT TEC within **Appendix E.** Consistent with the preceding HQA results, the primary focus of management is to lift the currently low-scoring non-remnant patch (AU21) and address key constraints recorded within AU22 and AU23 (i.e. deficiencies in canopy height/cover, lower forb richness and low litter cover).

HQS improvement throughout the Site Condition component will be driven by actions that increase vegetation structure and floristic function, particularly in AU21:

- Improvements in vegetation structure, floristic richness and litter cover throughout AU21
- Modest improvements in canopy and subcanopy height and cover in AU23
- Minor increase in organic litter throughout AU22

- Reduction of non-native plant cover throughout AU21.

Assisted natural regeneration will be prioritised within AU21 to facilitate transition from a cleared/non-remnant state into a functional continuation of the adjoining SEVT TEC patches (**Photo 6.21**).

Photo 6.21 **Cleared strip between patches of SEVT TEC**

Photo 6.22 **Patch of SEVT TEC with an open canopy**

Site context improvement will occur through:

- Increase it patch size and connectedness as AU21 regenerates to a continuation of surrounding vegetation.
- Reduction of key threats that currently drive down the threats score including and particularly clearing, weeds, fire and pest management.
- Threat management will prioritise reducing the risk of high-intensity fire through tailored fire planning and protection measures for SEVT TEC patches. Weed control of cat's claw creeper (**Photo 6.13**) and other priority weeds where present within and adjacent to SEVT TEC margins.

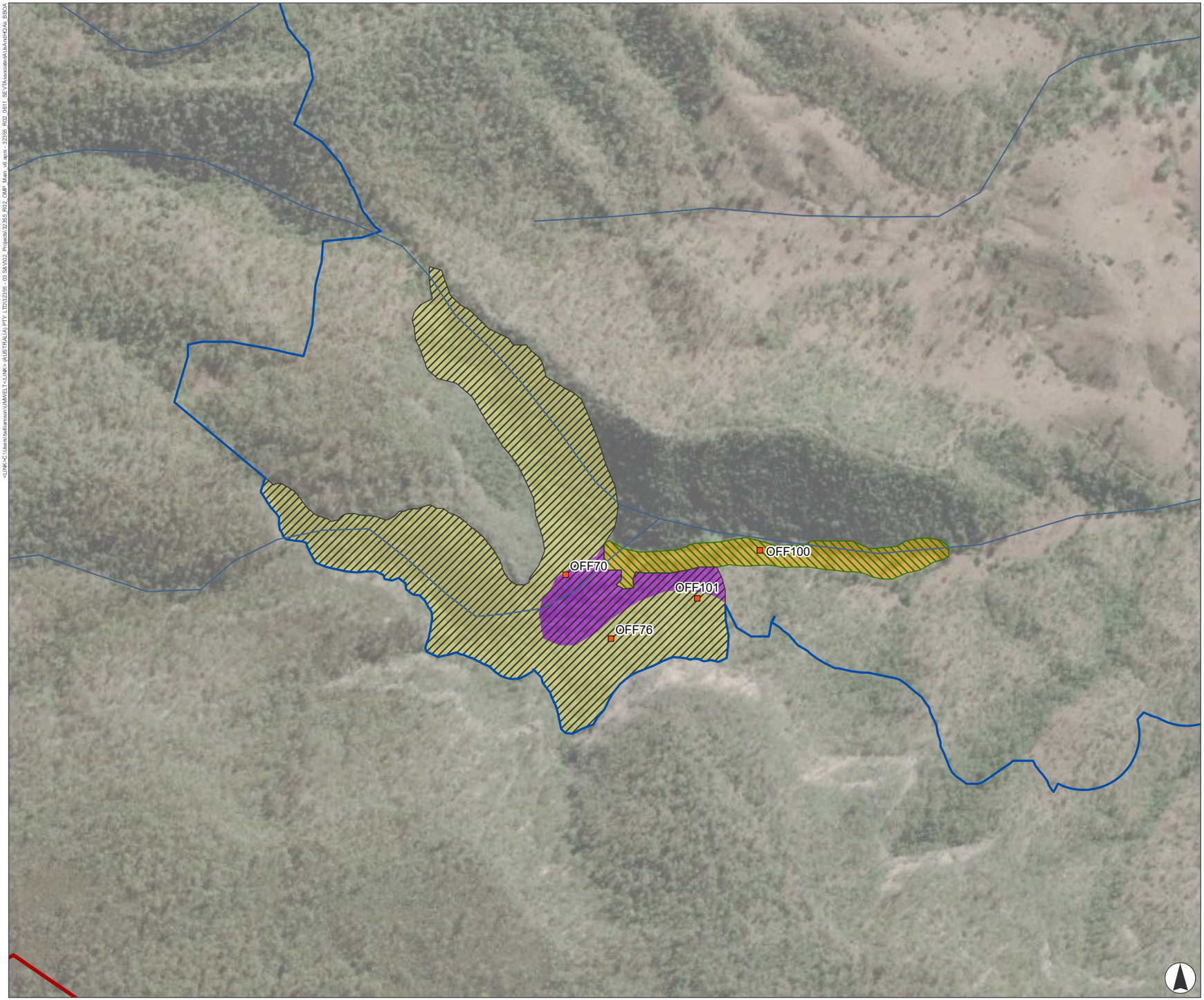


FIGURE 6.11

SEVT TEC-associated AUs and HQAs conducted throughout the BBOA

Legend

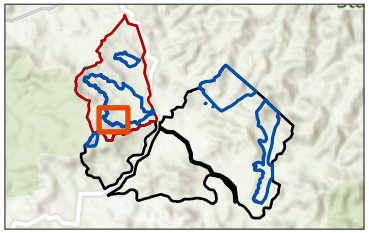
- Habitat Quality Assessments
- Watercourse
- The Cedars Boundary
- Offset Area

SEVT Mapping

- Forecast SEVT
- SEVT

AU

- AU21
- AU23
- AU22



0 0.1 0.2

Kilometres

Scale 1:7,500 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.3 *Cycas megacarpa*

6.3.3.1 Habitat Quality Scores

A total of 15 HQAs were conducted throughout *Cycas megacarpa* known – confirmed habitat throughout the BBOA (**Figure 6.11**). A summary of the scores for each component across each AU have been presented in **Table 6.10** and **Table 6.11** resulting in a final HQS of 7. This represents an established population throughout largely intact vegetation within a connected landscape and in its current state, a higher score than the habitat within the Impact Area.

A one-point habitat quality improvement has been prescribed for *Cycas megacarpa* – known habitat across the 20-year timeframe, committing to an area-weighted HQS of 8.

Table 6.10 *Cycas megacarpa* – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU24	11.3.4 remnant	1	7.0	9.0	0.02	0.17		
AU07	11.3.25 remnant	2	6.7	13.9	0.04	0.25		
AU29	11.11.15 regrowth	2	5.9	8.7	0.03	0.14		
AU11	11.11.15 remnant	6	6.9	269.7	0.73	5.08		
AU03	11.11.3 remnant	3	7.2	55.5	0.15	1.08		
AU04	11.11.4 remnant	1	6.8	11.7	0.03	0.22		
			Total	**368.5**	**1**	**6.93**	**7**	**6**

Table 6.11 *Cycas megacarpa* – Offset HQS Breakdown

AU	RE and condition	Site condition score / 3	Site context score / 3	SSR/ 4	HQS/10	Area-weighted			
						Site condition / 3	Site context / 3	SSR / 4	HQS / 10
AU24	11.3.4 remnant	2.4	2.2	2.5	7.0*	0.06	0.05	0.06	0.17
AU07	11.3.25 remnant	2.0	2.2	2.5	6.7	0.08	0.08	0.09	0.25
AU29	11.11.15 regrowth	0.9	2.3	2.5	5.6*	0.02	0.05	0.06	0.13
AU11	11.11.15 remnant	2.3	2.2	2.5	6.9*	1.65	1.62	1.81	5.08
AU03	11.11.3 remnant	2.5	2.2	2.5	7.2	0.38	0.33	0.37	1.08

AU	RE and condition	Site condition score / 3	Site context score / 3	SSR/ 4	HQS/10	Area-weighted			
						Site condition / 3	Site context / 3	SSR / 4	HQS / 10
AU04	11.11.4 remnant	2.2	2.2	2.5	6.8*	0.07	0.07	0.08	0.22
					Total	**2.25***	**2.21***	**2.48***	**6.93**

* Minor differences reflect cumulative rounding of individual MHQA component scores

Site Condition

The Site Condition score for *Cycas megacarpa* is high as expected considering that remnant RE 11.11.15 (AU11) and remnant RE 11.11.13 (AU03) comprise 88% of the known – confirmed habitat throughout the BBOA. Minor improvements have been identified throughout the sub-attributes (as highlighted in red within **Table 6.12**) under offset management including non-native cover and coarse woody debris throughout multiple AUs and with select improvements in vegetation structure as indicated by near-threshold baseline data (**Appendix E**).

Table 6.12 *Cycas megacarpa* – Offset Site Condition Scores

Attribute (Maximum Score)	AU29	AU24	AU07	AU11	AU03	AU04
Recruitment of woody perennial species in EDL (5)	5	5	5.0	5.0	5.0	5
Native tree species richness (5)	5	5	5.0	4.6	5.0	5
Native shrub species richness (5)	5	5	5.0	4.6	4.2	2.5
Native grass species richness (5)	3.75	2.5	2.5	2.1	4.2	2.5
Native forb species richness (5)	3.75	2.5	3.8	3.8	5.0	2.5
Tree canopy height (5)	4	5	5.0	4.7	4.7	5
Tree canopy cover (5)	3.5	5	3.8	3.5	3.5	5
Native shrub canopy cover (5)	3	3	3.0	4.0	2.7	0
Native grass cover (5)	0.5	5	1.5	3.3	5.0	5
Organic litter cover (5)	3	3	3.0	4.3	5.0	3
Number of large native trees (15)	2.5	15	10.0	10.8	15.0	15
Coarse woody debris (5)	5	2	2.0	3.5	3.0	2
Non-native plant cover (10)	4	5	5.0	5.8	4.3	5
Average BioCondition Score (80)	30	63	54.5	60.0	66.5	57.5
Average Site Condition Score (weighted out of 3 (i.e. 30%))	**0.9**	**2.4**	**2.0**	**2.3**	**2.5**	**2.2**
Area-weighted Site Condition Score	**0.02**	**0.06**	**0.08**	**1.65**	**0.38**	**0.07**
Final Site Condition Score/3	**2.25**					

Site Context

A moderate to high score for Site Context was calculated for *Cycas megacarpa* reflecting the high connectivity, patch size and population extent of the Offset Area (

Table 6.13). Threats scored relatively lower offering the greatest opportunity for improvement within the Site Context component. Threat scored low to moderate with both 'Inappropriate fire regime' and 'destruction of habitat and individuals'(**Appendix F**). The marginal increase in threat score (to a 7) in response to individual detection and protection and the implementation of species-suitable fire management is the sole improvement forecast for the Site Context scores .

For all AUs, the role of the area's location to the species' overall population in the state was assigned a maximum score of 5. As per the National Multi-species Recovery Plan **(Queensland Herbarium, 2007)**, habitat supporting remaining viable populations is considered critical to the survival of *Cycas megacarpa*.

Table 6.13 *Cycas megacarpa* – Offset Site Context Scores

Attribute (Maximum Score)	AU29	AU24	AU07	AU11	AU03	AU04
Size of patch (10)	10	10	10	10	10	10
Connectedness (5)	5	5	5	5	5	5
Context (5)	4	5	5	4.8	5	5
Ecological Corridors (6)	6	4	4	4.7	4	4
Role of site location to species overall population in the state (5)	5	5	5	5	5	5
Threats to species (15)	4.5	4.5	4.5	4.5	4.5	4.5
Average Site Context Score (46)	**34.5**	**33.5**	**33.5**	**34.0**	**33.5**	**33.5**
Average Site Context Score (weighted out of 3 (i.e. 30%))	**2.3**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
Area-weighted Site Context score	**0.05**	**0.05**	**0.08**	**1.62**	**0.33**	**0.07**
Final Site Context Score/3	**2.2**					

Species Stocking Rate

The SSR for Cycas megacarpa was assessed as moderate to high, reflecting a substantial known population that approaches the upper threshold of viability described in the National Multi-species Recovery Plan (Queensland Herbarium, 2007). The population within the Offset Area is considered locally significant due to its size and occurrence within a connected landscape corridor. Sub-attributes that did not achieve maximum scores and forecast for improvement (as highlighted red in **Table 6.14**) include the number of plants and extent of population on site in response to dedicated targeted surveys and refinement of known – confirmed habitat boundaries across the properties. These surveys are intended to improve confidence in population size and spatial extent, thereby strengthening the SSR component over time.

Table 6.14 *Cycas megacarpa* – Offset SSR Scores

Attribute (Maximum Score)		AU29	AU24	AU07	AU11	AU03	AU04
Presence detected on or adjacent to site (10)		10	10	10	10	10	10
Number of plants on site (30)		20	20	20	20	20	20
Extent of population on site (ha) (30)		20	20	20	20	20	20
Approximate density (per ha) over suitable habitat (20)		5	5	5	5	5	5
Role/ Importance of species population on site (15)		10	10	10	10	10	10
SSR Supplementary: Role/importance of species population on site (45, 15)*	Key source population for germination and seed/ gamete dispersal* (10)	10	10	10	10	10	10
	Necessary for maintaining genetic diversity* (15)	15	15	15	15	15	15
	Near the limit of the species range* (15)	0	0	0	0	0	0
	SSR Supplementary table total	25	25	25	25	25	25
SSR (out of 105)		**65**	**65**	**65**	**65**	**65**	**65**
SSR score (weighted out of 4 (i.e. 40%))		**2.5**	**2.5**	**2.5**	**2.5**	**2.5**	**2.5**

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.3.2 Approach to Improving Habitat Quality

Management and monitoring actions for *Cycas megacarpa* are designed to deliver a conservative one-point improvement in habitat quality over the 20-year offset period as forecast within **Appendix E.** Given that the species already occurs in high densities within largely intact remnant vegetation, the strategy focuses on threat abatement, protection of individuals and incremental improvements to vegetation condition and population knowledge rather than broad structural change **(Figure 6.12**).

Site condition:

Improvements to Site Condition are expected to be modest and targeted. Across multiple AUs, reductions in non-native plant cover are forecast through systematic weed control, particularly within regrowth (AU29) and selected remnant patches where weed cover is suppressing or outcompeting native ground cover and richness (**Photo 6.24**). Implementation of an appropriate fire regime, tailored to maintain canopy structure while reducing fuel loads, together with retention of all known individuals and exclusion of cattle from key habitat, will reduce trampling and browsing pressure and promote functional, intact vegetation condition. These measures are expected to deliver modest increases in native grass and forb species richness and cover, support recruitment within the EDL, and over time enhance ground-layer condition and coarse woody debris through natural branch fall and vegetation maturation.

Site context:

The primary opportunity for improvement within Site Context relates to the threats sub-attribute. Current scores reflect legacy and ongoing risks associated with inappropriate fire regimes . Implementation of species-appropriate fire management, combined with formal protection of known habitat under the OMP and cessation of any selective clearing, is expected to improve the threat score. Given the already high scores for patch size, connectedness and landscape context, no material changes are forecast for these attributes.

Species-stocking rate:

Improvements to the SSR component are forecast through refinement of population knowledge and potential expansion of the mapped extent of known–confirmed habitat. Dedicated targeted surveys over the offset period will aim to detect additional individuals across currently untraversed upper slopes and ridgelines and refine habitat boundaries within existing AUs. This is expected to increase the knowledge of the size and extent of the population, strengthening the corresponding SSR sub-attributes.

Collectively, these actions represent a conservative pathway to achieving the prescribed one-point habitat quality improvement while maintaining and enhancing the long-term viability of the *Cycas megacarpa* population within the Offset Area.

Photo 6.23 **Typical high condition of known – confirmed *Cycas megacarpa* habitat with scattered infestations of lantana and creeping lantana**

Photo 6.24 **Suitable *Cycas megacarpa* habitat subject to historic and ongoing selective clearing**

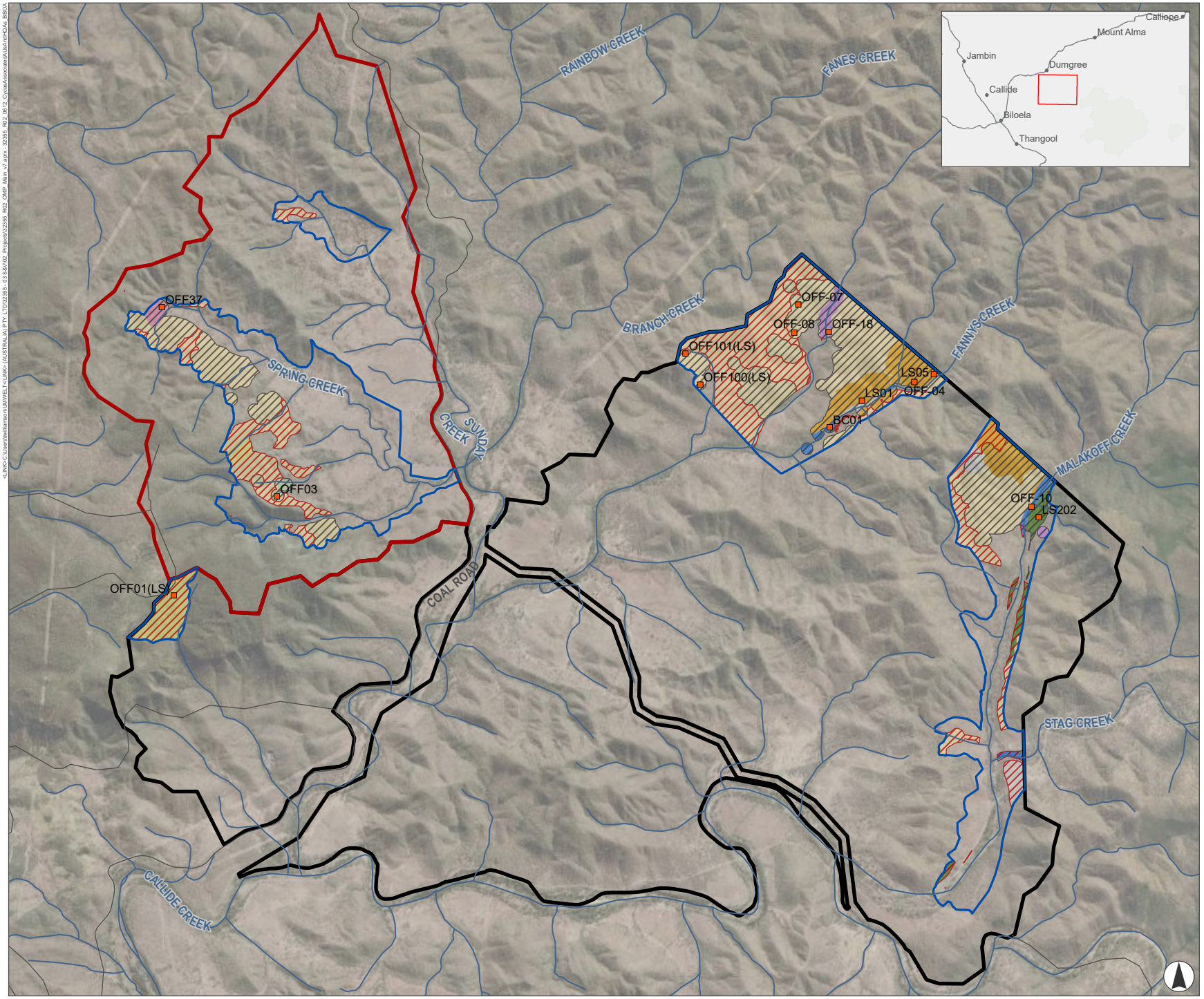


FIGURE 6.12

Cycas Megacarpa associated AUs and HQAs conducted throughout the BBOA

Legend

- Habitat Quality Assessments
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Cycas megacarpa Habitat Mapping

- Known - Confirmed
- Known - Suspected

AU

- AU03
- AU04
- AU07
- AU10
- AU11
- AU12
- AU17
- AU21
- AU24
- AU29
- N/A

0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.4 *Samadera bidwillii*

6.3.4.1 Habitat Quality Scores

The *Samadera bidwillii* offset area is situated within a single patch of remnant RE 11.10.13 (AU17) along a western ridgeline and adjacent to the Callide Timber Reserve. A total of two HQAs were conducted and scored to provide the HQS of *Samadera bidwillii* known habitat (**Table 6.15**). One of these sites (OFF06) is situated outside the final Offset Area for the MNES but was included to more accurately represent the habitat quality of the Offset Area which ranged from a high-quality state with minimal signs of disturbance to moderate quality with whipstick regrowth throughout the understorey. This HQA site will be relocated into comparable high quality *Samadera bidwillii* habitat when the permanent plots are established in Year 1.

The scores for each component within each AU have been presented in **Table 6.15** and **Table 6.16** resulting in a final score of 6 input into the OAG consistent with the Impact Area.

A one-point habitat quality improvement has been prescribed for *Samadera bidwillii* across the 20-year timeframe, committing to an area-weighted HQS of 7.

Table 6.15 *Samadera bidwillii* – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU17	11.10.13 remnant	2	6.3	1.90	1	6.3		
			Total	**1.90**	**1**	**6.3**	**6**	**6**

Table 6.16 *Samadera bidwillii* – Offset HQS Breakdown

AU	RE and condition	Site condition score/ 3	Site context score/ 3	SSR/ 4	HQS/10
AU17	11.10.13 remnant	1.8	2.2	2.3	6.3

Site Condition

A moderate Site Condition score was recorded for *Samadera bidwillii* which reflects a mature vegetation structure in a state of post-disturbance and/ or extended absence of fire with whipstick regrowth, very high coarse woody debris and litter cover. The excessive understorey canopy and litter cover is likely reducing grass species richness and cover. Sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red within **Table** 6.17**.**

Table 6.17 *Samadera bidwillii* – Offset Site Condition Scores

Attribute (Maximum Score)	AU17
Recruitment of woody perennial species in EDL (5)	4
Native tree species richness (5)	2.5
Native shrub species richness (5)	3.8
Native grass species richness (5)	0
Native forb species richness (5)	2.5
Tree canopy height (5)	5
Tree canopy cover (5)	3.3
Native shrub canopy cover (5)	5
Native grass cover (5)	0.5
Organic litter cover (5)	4
Number of large native trees (15)	7.5
Coarse woody debris (5)	2
Non-native plant cover (10)	7.5
Average BioCondition Score (80)	47.5
Average Site Condition Score (weighted out of 3 (i.e. 30%))	**1.8**
Area-weighted Site Condition Score	**1.8**
Final Site Condition Score/3	**1.8**

Site Context

A moderate to high score for Site Context was input for *Samadera bidwillii* reflecting the high connectivity, patch size and population extent of the Offset Area. Threats scored relatively lower offering the greatest opportunity for improvement within the Site Context component (**Table 6.18**).

The lowest scoring threat of which was 'Inappropriate fire regime' as evident by the excessive fuel load throughout the elevated, surface and near-surface layers with areas containing *Samadera bidwillii* considered an extreme fire hazard (**Photo 6.25, Appendix F**).

The role of each AU's location to the species' overall population in the state is considered to be critical to *Samadera bidwillii* persistence and was assigned a maximum score of 5. Habitat critical to the survival of the species is not explicitly defined in the Conservation Advice however, it recognises that any occupied (known) habitat is inherently important for maintaining genetic diversity and long-term evolutionary processes **(Department of the Envirnoment, Water, Heritage and the Arts, 2008)**. Accordingly, all known habitat within the Offset Area is considered critical to the survival of the species and therefore assigned a score of 5.

Table 6.18 *Samadera bidwillii* – Offset Site Context Scores

Attribute (Maximum Score)	AU17
Size of patch (10)	10
Connectedness (5)	5
Context (5)	5
Ecological Corridors (6)	4
Role of site location to species overall population in the state (5)	5
Threats to species (15)	4.5
Average Site Context Score (46)	**33.5**
Average Site Context Score (weighted out of 3 (i.e. 30%))	**2.2**
Final Site Context Score/3	**2.2**

Species Stocking Rate

Average SRR for *Samadera bidwillii* was moderate reflecting the population size (261 stems) extent (1.9 ha) and density (137.3/ ha) across the BBOA. Whilst the extent of population sub-attribute may increase following further targeted surveys, this has not been accounted for within the HQS forecast to demonstrate the conservative assumptions underlying the prescribed habitat quality improvement (**Appendix E**).

Table 6.19 *Samadera bidwillii* – Offset SSR Scores

Attribute (Maximum Score)		AU17
Presence detected on or adjacent to site (10)		10
Number of plants on site (30)		15
Extent of population on site (ha) (30)		15
Approximate density (per ha) over suitable habitat (20)		10
Role/ Importance of species population on site (15)		10
SSR Supplementary: Role/importance of species population on site (45, 15)*	Key source population for germination and seed/ gamete dispersal* (10)	10
	Necessary for maintaining genetic diversity* (15)	15
	Near the limit of the species range* (15)	0
	SSR Supplementary table total	**5**
SSR (out of 105)		**60**
SSR score (weighted out of 4 (i.e. 40%))		**2.3**

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.4.2 Approach to Improving Habitat Quality

A one-point habitat quality improvement has been prescribed for the *Samadera bidwillii* Offset Area over the 20-year offset period, committing to a final HQS of 7. The forecasted, Year 20 HQS for *Samadera bidwillii* is presented within **Appendix E** which highlights each individual sub-attribute prescribed an increase in the offset. This improvement is considered achievable and conservative, given the existing habitat condition, the scale of the Offset Area and the targeted management actions proposed.

Areas supporting *Samadera bidwillii* currently exhibit excessive surface, near-surface and elevated fuel loads, creating an extreme fire hazard and a high risk of severe damage should wildfire occur (**Photo 6.25**, **Photo 6.26** and **Figure 6.13**). Inappropriate fire regimes were therefore a key driver of the relatively low threat score and the implementation of an ecologically appropriate fire regime and fuel load management is expected to deliver a corresponding improvement in the threat score over time.

Minor but measurable improvements are also anticipated within the Site Condition component. Reinstatement of a suitable fire regime is expected to reduce whipstick regrowth and facilitating increases in native grass species richness and cover whilst reducing excessive litter cover and coarse woody debris. These changes will improve understorey structure and ground-layer condition while maintaining the mature overstorey characteristics of the habitat.

No sub-attributes within the SSR component have been forecast over the offset period, noting that further targeted surveys may identify additional individuals and increase the recorded extent of the population. Where this occurs, habitat mapping and management extent will be updated accordingly to ensure all occupied habitat is incorporated into ongoing offset management.

In addition, Powerlink will facilitate access to the BBOA for research and conservation organisations where practicable, to support targeted research on *Samadera bidwillii*. This is intended to contribute to addressing key knowledge gaps in the species' life history and ecology, consistent with the research priorities identified in the Conservation Advice (Department of the Envirnoment, Water, Heritage and the Arts, 2008).

Collectively, these improvements are forecast to result in a one-point improvement of the HQS for *Samadera bidwillii* Offset Area as presented in **Appendix E.**

Photo 6.25 **High fuel load within known *Samadera bidwillii* habitat**

Photo 6.26 **Whipstick growth in the understorey surrounding *Samadera bidwillii* (bottom-right corner of photo)**

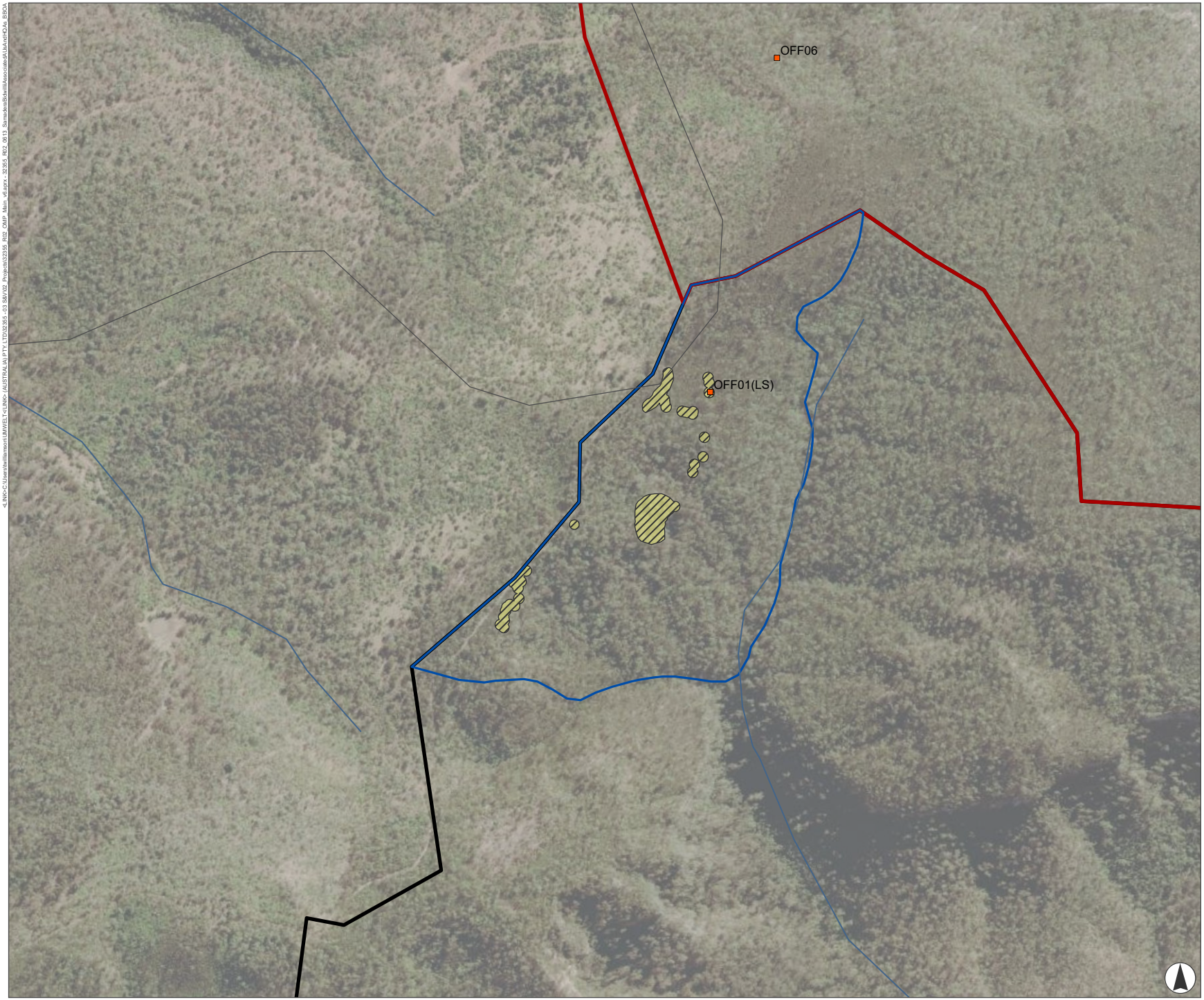


FIGURE 6.13

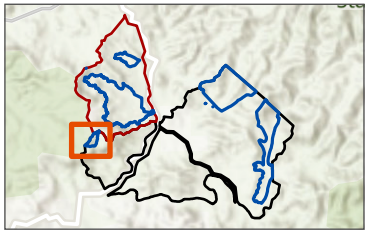
Samadera Bidwillii Associated AUs and HQAs Conducted Throughout the BBOA

Legend

- Habitat Quality Assessments
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area
- *Samadera Bidwillii* Known Habitat

AU

- AU17



0 0.1 0.2

Kilometres

Scale 1:10,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.5 Collared Delma

6.3.5.1 Habitat Quality Scores

A total of 18 HQAs were conducted throughout collared delma habitat within the BBOA **(Table 6.20, Figure 6.14**). The scores for each component within each AU have been presented in **Table 6.21** with the full dataset provided in **Appendix D**. The final offset HQS of six was input into the OAG for the collared delma, one lower than the impact area. A one-point habitat quality improvement has been prescribed for collared delma across the 20-year timeframe, committing to an area-weighted HQS of seven.

Table 6.20 Collared delma – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU21	Non-remnant	4	3.6	81.9	0.09	0.34		
AU29	11.11.15 regrowth	1	5.0	68.2	0.08	0.39		
AU11	11.11.15 remnant	8	5.9	605.5	0.68	4.05		
AU17	11.10.13 remnant	1	4.6	42.4	0.05	0.22		
AU03	11.11.3 remnant	3	5.9	55.5	0.06	0.37		
AU04	11.11.4 remnant	1	5.9	35.2	0.04	0.23		
			Total	**888.7**	**1**	**5.6**	**6**	**7**

Table 6.21 Collared delma – Offset HQS Breakdown

AU	RE and condition	Site condition score/ 6	Site context score/ 2	SSR/ 2	HQS/ 10	Area-weighted			
						Site condition / 3	Site context / 3	SSR/ 4	HQS/ 10
AU21	Non-remnant	2.8	0.6	0.3	3.6	0.26	0.05	0.02	0.33
AU29	11.11.15 regrowth	2.7	1.5	0.8	5.0	0.21	0.12	0.06	0.38
AU11	11.11.15 remnant	3.9	1.5	0.6	5.9	2.66	0.99	0.43	4.03
AU17	11.10.13 remnant	2.3	1.5	0.8	4.6	0.11	0.07	0.04	0.22
AU03	11.11.3 remnant	4.0	1.4	0.8	5.9	0.25	0.09	0.05	0.38
AU04	11.11.4 remnant	4.4	1.4	0.8	5.9	0.17	0.06	0.03	0.26*
					Total	**3.66**	**1.37***	**0.62***	**5.59***

* Minor differences reflect cumulative rounding of individual MHQA component scores

Site Condition

Overall, Site Condition was moderate to high reflecting suitable collared delma habitat in a range of condition classes. Site Condition contributes 60% (6/10) of the total HQS, reflecting the species' strong site fidelity and reliance on ground-level microhabitats (**Section 4.3.2**). Furthermore, weightings of foraging and shelter attributes were increased to account for dependence on the availability of surface rocks, coarse woody debris, leaf litter and dense native grass cover (Department of the Environment, Water, Heritage and the Arts, 2008). This is reflected within the species-weighted site condition score within **Table 6.22.**

Sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red in within **Table 6.22.** This includes widespread improvement throughout AU21 and key collared delma sub-attributes coarse woody debris and litter cover.

Table 6.22 Collared delma – Offset Site Condition Scores

Attribute (Maximum Score)	AU21	AU29	AU11	AU17	AU03	AU04
Recruitment of woody perennial species in EDL (5)	5.0	5	5.0	5	5.0	5
Native tree species richness (5)	3.8	5	4.4	2.5	5.0	5
Native shrub species richness (5)	3.8	5	4.7	2.5	4.2	2.5
Native grass species richness (5)	2.5	2.5	2.5	0	4.2	2.5
Native forb species richness (5)	1.9	2.5	3.4	2.5	5.0	2.5
Tree canopy height (5)	2.0	3	4.4	5	4.7	5
Tree canopy cover (5)	0.3	3.5	3.2	2.5	3.5	5
Native shrub canopy cover (5)	1.3	3	3.6	5	2.7	0
Native grass cover (5)	3.5	0	3.8	0	5.0	5
Organic litter cover (5)	3.3	3	4.3	5	5.0	3
Number of large native trees (15)	2.5	0	10.0	0	15.0	15
Coarse woody debris (5)	3.0	5	3.5	2	3.0	2
Non-native plant cover (10)	3.8	3	5.6	5	4.3	5
Average BioCondition Score (80) – 0.5 multiplier applied	**36.4**	**45.3**	**58.3**	**37.0**	**66.5**	**57.5**
Presence of coarse woody debris for prey items (5)	3.1	5	3.9	2.5	3.8	2.5
Presence of organic litter for prey items (5)	3.1	2.5	3.9	5	5	5
Quality and availability of food and foraging habitat (10) – 2 multiplier applied	**6.3**	**7.5**	**7.8**	**7.5**	**8.3**	**7.5**
Presence of loose surface rocks (2.5)	1.2	0	1.2	0	.8	2
Native grass cover (2.5)	2	0.3	1.5	0	.3	0.3
Organic litter cover (2.5)	0.8	2.5	0.8	0	.3	2.5
Presence of coarse woody debris (2.5)	1.9	0	1.9	1.3	1.7	1.3

Attribute (Maximum Score)	AU21	AU29	AU11	AU17	AU03	AU04
Quality and availability of shelter (10) – 4 multiplier applied	**5.9**	**2.8**	**5.4**	**1.3**	**3.1**	**6.1**
Species-weighted Site Condition Score (100)	**48.6**	**55.6**	**71.5**	**45.8**	**77.9**	**71.1**
Average Site Condition Score (out of 6)	**2.8**	**2.8**	**3.9**	**2.3**	**3.7**	**3.8**
Area-weighted Site Condition Score	**0.26**	**0.21**	**2.64**	**0.11**	**0.23**	**0.15**
Final Site Condition Score/6 (60%)	**3.6**					

Site Context

Site context for collared delma within the BBOA was moderate (**Table 6.23**), driven by strong landscape attributes including large patch size, high connectivity, proximity to ecological corridors and a favourable position within the broader state-wide distribution of the species. These factors confirm the suitability of the Offset Area for the MNES. The primary constraint on the Site Context score was the threats sub-attribute owing to the prevalence of creeping lantana throughout the Offset Area (**Appendix F**).

For all AUs, the role of the site location to the species' overall population in the state was assigned a score of 4. The extent of habitat within these areas is such that it could likely be considered necessary for the purposes of maintaining genetic diversity and providing movement and breeding opportunities at a landscape scale. An individual has been detected in adjacent connected habitat however, none have been detected throughout the BBOA or broader host properties to date. As such, patches of suitable habitat within each area broadly meets the definition of important habitat (Department of the Environment, Water, Heritage and the Arts 2008a) and therefore is likely to be habitat critical to the survival of the species, which informed the score. Confirmation of species presence would increase the score.

Table 6.23 Collared delma – Offset Site Context Scores

Attribute (Maximum Score)	AU21	AU29	AU11	AU17	AU03	AU04
Size of patch (10)	0	10	10	10	10	10
Connectedness (5)	0	5	5	5	5	5
Context (5)	5	5	5	5	5	5
Ecological Corridors (6)	0	6	5	6	4	4
Role of site location to species overall population in the state (5)	4	4	4	4	4	4
Threats to species (15)	4.5	4.5	4.5	4.5	4.5	4.5
Average Site Context Score (46)	**13.5**	**34.5**	**33.5**	**34.5**	**32.5**	**32.5**
Average Site Context Score (out of 2 (i.e. 20%))	**0.6**	**1.5**	**1.5**	**1.5**	**1.4**	**1.4**
Area-weighted Site Context Score	**0.05**	**0.12**	**0.99**	**0.07**	**0.09**	**0.06**
Final Site Context Score/2 (20%)	**1.4**					

Species Stocking Rate

The SSR component was down weighted for collared delma to reflect the species' cryptic behaviour and low detectability (**Appendix A**). The approximate density sub-attribute was removed, given the absence of reliable population benchmarks and the inherent difficulty in deriving meaningful density estimates for this species. Despite targeted surveys in suitable habitat, collared delma was not detected within the BBOA and therefore scored 0 for presence detected and low for role of the species population on site. Notwithstanding the absence of detections, the Offset Area occurs within the northern extent of the species' Brigalow Belt distribution and contributes to landscape connectivity, supporting potential dispersal and genetic exchange between subpopulations and thereby maintaining long-term population viability (**Table 6.24**).

Table 6.24 Collared Delma – Offset SSR Scores

Attribute Maximum (Score)		AU21	AU29	AU11	AU17	AU03	AU04
Presence detected on or adjacent to site (10)		0	0	0	0	0	0
Species usage of the site (15)		0	15	15	15	15	15
SSR Supplementary: Role/importance of species population on site (45, 15)*	Key source population for breeding*	0	0	0	0	0	0
	Key source population for dispersal*	0	0	0	0	0	0
	Necessary for maintaining genetic diversity*	15	15	15	15	15	15
	Near the limit of the species range*	0	0	0	0	0	0
	SSR Supplementary table total	**5**	**5**	**5**	**5**	**5**	**5**
SSR (out of 40)		**5**	**20**	**20**	**20**	**20**	**20**
Area-weighted SSR score		**.02**	**.03**	**.43**	**.04**	**.05**	**.03**
SSR (out of 2 (i.e. 20%))		**.62**					

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.5.2 Approach to Improving Habitat Quality

Management actions for collared delma within the Offset Area are designed to achieve a one-point increase in HQS over the 20-year offset period. Improvement is forecast to result from regeneration of cleared areas, targeted threat abatement and confirmation of species presence within the BBOA. The forecast Year 20 HQS including sub-attribute-level changes, is presented in **Appendix E.**

Widespread improvement in habitat quality is expected within the non-remnant AU21 as it transitions to functional woodland (**Photo 6.27**). Cattle will be excluded from these regenerating areas to increase the likelihood of key species-specific attribute including native grass cover, litter cover and coarse woody debris. Modest improvements are forecasted throughout remnant, collared delma habitat in response to threat abatement actions including limited cattle grazing to fuel load management, implementation of an appropriate fire regime expected to maintain ground-layer heterogeneity without removing essential microhabitat resources.

Targeted control of creeping lantana (*Lantana montevidensis*) will reduce suppression of surface rocks, coarse woody debris and grass tussocks, thereby restoring or increasing access to key shelter sites (**Photo 6.28**).

The forecast improvements to collard delma HQS include:

Site Condition

- Microhabitat attributes: Modest increases in coarse woody debris and leaf litter cover, recognising these as ecological processes associated with functional, intact communities. Surface rock cover is not expected to change, as it reflects stable landform features.
- Non-native plant cover: Reduction in overall weed cover, with a particular focus on creeping lantana due to its known smothering effect on foraging and shelter resources.
- Vegetation structure and composition: Selective, incremental improvements within remnant AUs, and more substantial structural and compositional gains within non-remnant AU21 as regeneration progresses.

Site Context

- Patch size and connectivity: Increase within the non-remnant AU21 as these habitat patches regenerate suitable vegetation structure and microhabitat features to qualify as collared delma habitat.
- Threats: Conservative improvement in the threat score following the legal securement and threat abatement actions.

Species-stocking Rate

- Presence Detected: A conservative forecast of a single detection within the BBOA within habitat connected to the 2025 detection in the Disturbance Footprint.
- Species usage: Increase for AU21 recognised once the habitat regenerates.

Collectively, these measures are expected to enhance habitat suitability at the microhabitat scale, strengthen connectivity between suitable patches and increase the likelihood of occupancy, thereby delivering the prescribed one-point improvement in habitat quality.

Photo 6.27 **Selectively cleared patch forecast to provide collared delma habitat**

Photo 6.28 **Creeping lantana throughout the ground layer**

6.3.5.3 Collared Delma Relocation

If a collared delma is located within the Disturbance Footprint, individuals will be relocated to suitable habitat within the BBOA. Any subsequent detections of the relocated individual within the Offset Area would not increase the SSR or overall HQSfor the MNES.

Relocation Site

The final relocation site will be selected by a suitably qualified fauna spotter catcher (FSC) or ecologist) and micro-sited within the BBOA based on the availability of suitable shelter habitat. The relocation site will replicate the capture location as closely as practicable including a similar landform and aspect to the location that the individual was found with a similar density to detections should multiple individuals be found (Department of Climate Change, Energy, the Environment and Water, 2024).

Relocation Action

Upon relocation of a collared delma the following steps will be taken:

- Conduct targeted habitat assessment to microsite the release location to confirm the following habitat features to qualify the location as suitable:
    - Remnant vegetation status
    - Surface rocks >10 cm are present and at least 10% cover of the ground layer
    - Organic litter cover is between 20-40% (RE 11.11.15 benchmark metric for litter)
    - Coarse woody debris (>10 cm diameter and greater than 0.5 m long) present
    - Native grass cover >10% (RE 11.11.15 benchmark for grass cover)
    - There is no creeping lantana (*Lantana montevidensis*) within 25 m.
- Describe the habitat, landform and take representative photos of the release site.
- Collect the GPS location of the release site.
- Release the animal and relocated shelter material in a similar configuration to where it was collected.
- Release locations will be included in subsequent iterations of the OMP.

Follow-up Monitoring and Reporting

There is no commitment to the individual's persistence within the release location. Despite this, targeted surveys will be conducted at each release site given the opportunity to capture data on habitat utilisation that may be of value to inform offset management and monitoring. Targeted surveys will be conducted at each release site, with observer(s) systematically searching ground-layer shelter sites by turning over surface rocks, logs, timber and other debris (carefully replacing them after inspection) and gently parting grass tussocks and leaf litter to detect individuals. Observer(s) will search for the individual by actively searching microhabitat out to 40 m outwards from the release location.

Should collared delma be translocated into the Offset Area, follow-up monitoring will be undertaken in Years 1, 2, 3, 4, 5, 10, 15 and 20. However, repeat surveys between Years 2 and 4 will be avoided if an individual is detected, in order to minimise disturbance to important shelter habitat. Survey results will be reported in the relevant annual or five-yearly reports prescribed in **Section 9.4.3.**

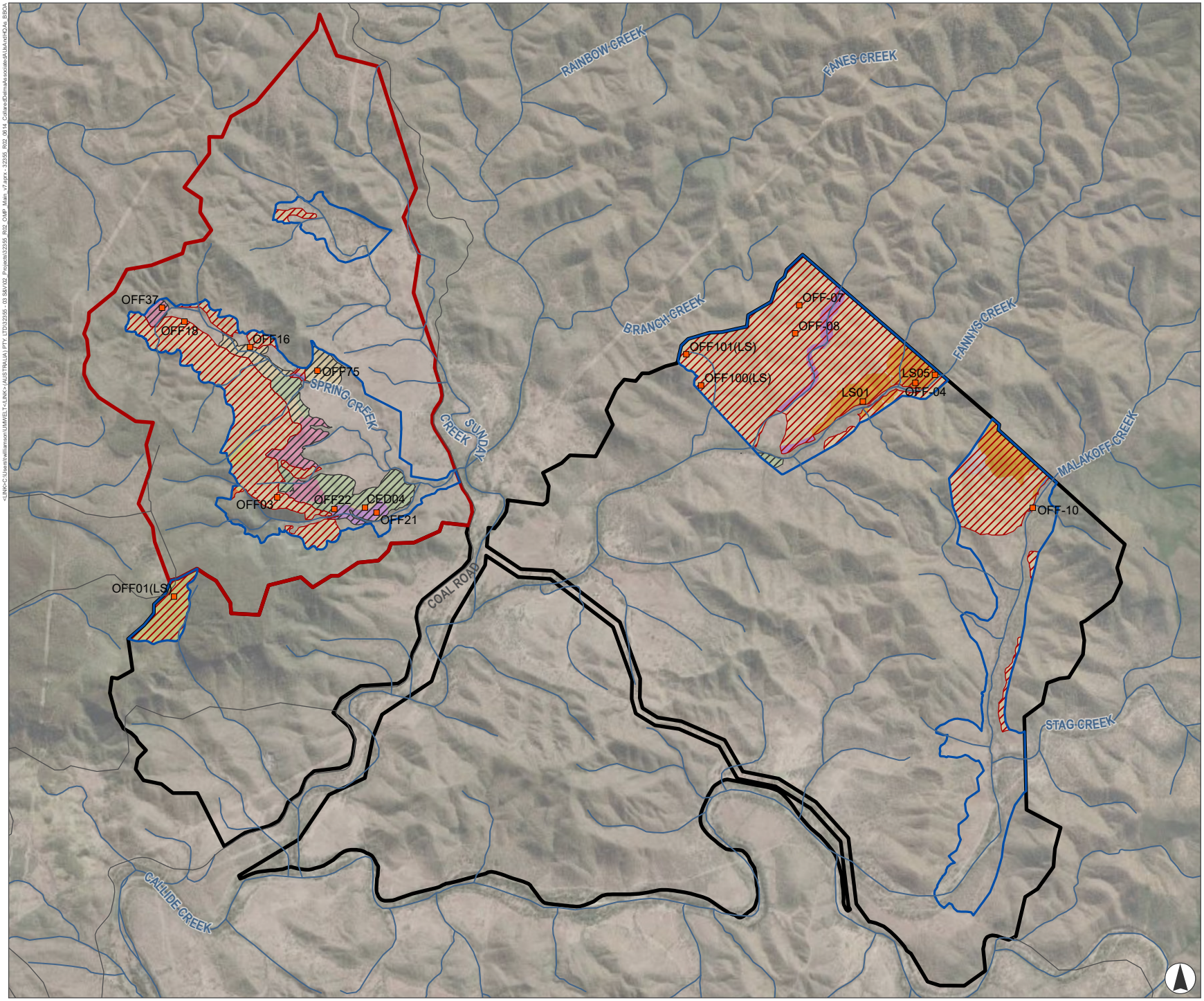


FIGURE 6.14

Collared Delma Associated AUs and HQAs Conducted Throughout the BBOA

Legend

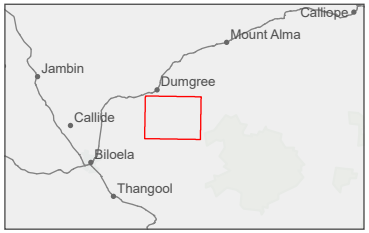
- Habitat Quality Assessments
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Collared Delma Habitat Mapping

- Forecast suitable habitat
- Suitable habitat

AU

- AU03
- AU04
- AU07
- AU10
- AU11
- AU12
- AU17
- AU21
- AU29
- N/A



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.6 Greater Glider

6.3.6.1 Habitat Quality Scores

Habitat quality for greater glider within the BBOA was measured across 34 HQAs throughout nine AUs (**Table 6.25**, **Figure 6.15**). Assessment results indicate that the Offset Area currently supports moderate-quality habitat, with an area-weighted HQS of 5. This reflects the range of habitat quality, vegetation status and landform throughout greater glider habitat in the BBOA. This indicates the starting offset habitat quality is greater than the Impact Area which returned a lower HQS of 4.

Consistent with the offset strategy, a conservative one-point habitat quality gain has been prescribed for greater glider over the 20-year offset period, with the Offset Area managed to achieve an end-state area-weighted HQS of 6.

Table 6.25 Greater glider – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU24	11.3.4 remnant	2	6.6	68.5	0.05	0.35		
AU07	11.3.25 remnant	5	6.6	103.7	0.03	0.53		
AU17	11.10.13 remnant	2	6.4	34.3	0.03	0.17		
AU03	11.11.3 remnant	3	6.8	55.5	0.04	0.30		
AU04	11.11.4 remnant	2	6.0	44.0	0.03	0.21		
AU10	11.8.4 remnant	2	6.0	12.3	0.01	0.06		
AU11	11.11.15 remnant	11	5.8	733.2	0.58	3.35		
AU29	11.11.15 regrowth	1	4.6	41.3	0.03	0.15		
AU21	Non-remnant	6	2.1	181.4	0.14	0.15		
	Total	**34**	**5.8***	**1,274.2**	**1**	**5.4**	**5**	**4**

* Minor differences reflect cumulative rounding of individual MHQA component scores

Table 6.26 Greater glider – Offset HQS Breakdown

AU	RE and condition	Site condition score/ 3	Site context score/ 3	SSR/ 4	HQS/10	Area-weighted			
						Site condition/ 3	Site context/ 3	SSR/ 4	HQS/ 10
AU24	11.3.4 remnant	2.1	2.2	2.3	6.6	0.11	0.12	0.12	0.35
AU07	11.3.25 remnant	2.4	2.0	2.2	6.6	0.19	0.16	0.18	0.53
AU17	11.10.13 remnant	2.1	2.2	2.0	6.3	0.06	0.06	0.05	0.17
AU03	11.11.3 remnant	2.4	2.1	2.3	6.8*	0.1	0.09	0.10	0.3
AU04	11.11.4 remnant	2.1	2.1	1.9	6.0*	0.07	0.07	0.06	0.21
AU10	11.8.4 remnant	1.8	2.1	2.0	5.9	0.02	0.02	0.02	0.06
AU11	11.11.15 remnant	1.9	2.0	1.8	5.7	1.12	1.17	1.06	3.34
AU29	11.11.15 regrowth	1.1	2.1	1.4	4.6	0.03	0.07	0.05	0.15
AU03	11.11.3 remnant	2.4	2.1	2.3	6.8	0.1	0.09	0.10	0.3
AU21	Non-remnant	0.7	0.8	0.6	2.1	0.1	0.11	0.09	0.29
Total						**1.80***	**1.86***	**1.74***	**5.41***

* Minor differences reflect cumulative rounding of individual MHQA component scores

Site Condition

The Site Condition component ranged from high within AUs 07 – 11.3.25 remnant and 03 – 11.11.3 remnant to low within AU21 – non-remnant. As detailed within **Section 4.3.2**, weightings of foraging and shelter attributes were increased to account for dependence on foraging and denning habitat trees density, richness and cover, this is reflected within the species-weighted site condition score within **Table 6.27**.

Several sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red in within **Table 6.27**, **Table 6.32**.This includes widespread improvement throughout AU21 and more selective improvements throughout the other AUs in response to regeneration and offset management.

Table 6.27 Greater glider – Offset Site Condition Scores

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Recruitment of woody perennial species in EDL (5)	5	4.6	4	5.0	5	4	5.0	5	2.5
Native tree species richness (5)	3.8	5	2.5	5.0	3.75	5	4.1	5	1.3
Native shrub species richness (5)	3.8	5	3.75	4.2	2.5	5	4.8	5	1.3
Native grass species richness (5)	1.3	2.5	0	4.2	2.5	3.8	2.7	2.5	3.8
Native forb species richness (5)	1.3	2.5	2.5	5.0	2.5	2.5	3.2	2.5	2.5
Tree canopy height (5)	4.5	5	5	4.7	5	4.5	4.3	3	1.5
Tree canopy cover (5)	3.8	4.5	3.3	3.5	2.5	4	3.0	3.5	1.8
Native shrub canopy cover (5)	1.5	2.8	5	2.7	0	3	3.3	3	0
Native grass cover (5)	3.0	1.8	0.5	5.0	5	4	3.7	0	4
Organic litter cover (5)	3.0	3.8	4	5.0	4	3	4.1	3	1.5
Number of large native trees (15)	12.5	10	7.5	15.0	10	7.5	9.1	0	0
Coarse woody debris (5)	3.5	2.6	2	3.0	1	3.5	3.9	5	0
Non-native plant cover (10)	2.5	5.6	7.5	4.3	5	7.5	5.1	3	0
Average BioCondition Score (80) – 0.625 multiplier applied	**49.3**	**55.7**	**47.5**	**66.5**	**48.8**	**57.3**	**56.3**	**40.5**	**20**
Density of foraging large trees (>30cm DBH) (3.3)	3.3	3.3	3.3	3.3	2.6	3.3	3.1	0	0.1
Species richness of recognised habitat trees (3.4)	3.4	2.6	3.1	3.4	3.4	3.1	2.8	3.4	1.7
Canopy cover (%) (3.3)	3.3	2.6	3.3	3.3	1.8	3.3	2.0	1.7	0.2

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Quality and availability of food and foraging habitat (10) – 2.5 multiplier applied	**10**	**8.5**	**9.7**	**10**	**7.8**	**9.7**	**7.9**	**5.1**	**2**
Density of denning large trees (>50cm DBH) (7)	3.5	6.2	4.9	4.2	4.9	0.7	2.9	0	0
Presence of habitat tree species and preferred den tree species that occur as denning large trees (>50cm DBH) (3)	3	3	2.7	2	2.7	1.2	1.7	0	0
Quality and availability of shelter (10) – 2.5 multiplier applied	**6.5**	**9.2**	**7.6**	**6.2**	**7.6**	**1.9**	**4.6**	**0**	**0**
Species-weighted Site Condition Score (100)	**65.8**	**73.4**	**64.8**	**82.7**	**64.2**	**68.9**	**68.8**	**45.6**	**22**
Average Site Condition Score (/3)	**2.1**	**2.4**	**2.2**	**2.4**	**2.1**	**1.8**	**1.9**	**1.1**	**0.7**
Area-weighted Site Condition Score	**0.11**	**0.19**	**0.06**	**0.10**	**0.07**	**0.02**	**1.12**	**0.03**	**0.10**
Final Area-weighted Site Condition Score/3 (30%)	**1.81**								

Site Context

Site Context for greater glider within the offset was generally high (**Table 6.28**), reflecting a landscape of large, connected habitat patches that support movement and long-term persistence. Most remnant and regrowth AUs performed strongly across Site Context attributes and opportunities for improvement within these AUs are limited and primarily relate to strengthening connectivity across select locations (notably AU07) and reducing the influence of ongoing threats. In contrast, non-remnant AU21 recorded lower Site Context scores due to its low patch size and fragmentation however, these attributes are expected to improve progressively as regeneration increases patch size, connectivity and functional linkage with surrounding habitat over the 20-year offset timeframe.

Scores of 0, 4 or 5 were assigned to sites based on habitat suitability and confirmed species presence. This scoring was informed by the definition of critical habitat in the Conservation Advice (Department of Climate Change, Energy, the Environment and Water, 2022) which identifies eucalypt forest containing mature hollow-bearing trees and a diversity of preferred food species as key habitat requirements for greater glider.

Areas that meet this definition but without confirmed detections were assigned a score of 4 reflecting that these areas are likely to be important to the species' persistence. Areas that both meet habitat requirements and support confirmed detections of greater glider were assigned the maximum score of 5, reflecting their importance in supporting existing, known individuals. Areas that do not meet the definition of critical habitat were assigned a score of 0.

Table 6.28 Greater glider – Offset Site Context Scores

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Size of patch (10)	10.0	8	10	10	10	10	9.0	10.0	0.0
Connectedness (5)	5.0	3.8	5	5	4.5	5	4.4	5.0	0.0
Context (5)	4.0	4	4	4	4	4	4.0	4.0	4.0
Ecological Corridors (6)	5.0	4.8	6	4	5	6	5.4	6.0	5.0
Role of site location to species overall population in the state (5)	4.0	4.4	4.5	4	4.5	5	4.7	4	0
Threats to species (15)	3	3	3	3	3	3	3	3	3
Size of habitat patch (2)	2	1.8	2	2	2	2	1.9	2	0
Tree-height and canopy structure (3.5)	2.5	2.2	2.5	2.5	1.9	1.9	1.7	1.4	0.4
Presence or proximity to riparian corridors (1)	1	1	1	1	1	1	1	1	1
Connectivity of suitable habitat in the landscape (3.5)	3.5	3.3	3.5	3.5	3.5	3.5	3.0	3.5	0.7
Mobility habitat scores (10)	9.0	8.4	9.0	9.0	8.4	7.75	7.6	7.9	2.1
Average Site Context Score (56)	**40.0**	**36.4**	**41.5**	**39.0**	**47.8**	**39.8**	**37.8**	**39.9**	**14.1**
Average Site Context Score (/3)	**2.2**	**2.0**	**2.2**	**2.1**	**2.1**	**2.2**	**2.0**	**2.1**	**.8**
Area-weighted Site Context Score	**0.12**	**0.16**	**0.06**	**0.09**	**0.07**	**0.02**	**1.14**	**0.07**	**0.11**
Final Area-weighted Site Context Score/3 (30%)	**1.87**								

Species Stocking Rate

The SSR for greater glider ranged from low to moderate throughout the Offset, reflecting limited detections and the concentration of records within a small number of habitat patches, as well as variable species usage across habitat types. Forecast improvements to the HQS assume additional detections across other suitable habitat patches and increased species usage and approximate density within the non-remnant AU21 as regeneration progresses. This is expected to occur through the development of structurally connected foraging and dispersal habitat. A summary of SSR scores is provided in **Table 6.29** with sub-attributes expected to improve over the offset period highlighted in red.

Table 6.29 Greater glider – Offset SSR Scores

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Presence detected on or adjacent to site (10)	10	9	5	10	5	5	5	5	5.8
Species usage of the site (15)	15	15	15	15	12.5	15	11.8	5	0

Attribute (Maximum Score)		Assessment Unit								
		24	07	17	03	04	10	11	29	21
Approximate density within suitable habitat (30)		10	10	10	10	10	10	10	10	0
SSR Supplementary : Role/importance of species population on site (45, 15)*	Key source population for breeding*	10	10	10	10	10	10	10	10	10
	Key source population for dispersal*	5	5	5	5	5	5	5	5	5
	Necessary for maintaining genetic diversity*	0	0	0	0	0	0	0	0	0
	Near the limit of the species range*	0	0	0	0	0	0	0	0	0
	SSR Supplementary table total	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
SSR (out of 70)		**40.0**	**39**	**35.0**	**40.0**	**32.5**	**35**	**32**	**25**	**33.5**
Average SSR score (out of 4)		**2.3**	**2.2**	**2.0**	**2.3**	**1.9**	**2.0**	**1.8**	**1.4**	**1.9**
Area-weighted SSR score		**0.12**	**0.18**	**0.05**	**0.10**	**0.06**	**0.2**	**1.06**	**0.05**	**0.09**
Final SSR score/4 (40%)		**1.7**								

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.6.2 Approach to Improving Habitat Quality

Management actions for greater glider are designed to deliver a one-point improvement in habitat quality over the 20-year offset period across vegetation sub-attributes, foraging and denning availability, improved landscape connectivity and the regeneration of non-remnant areas into foraging and dispersal habitat. The forecasted, Year 20 HQS for the greater glider is presented within **Appendix E** which highlights each individual sub-attribute prescribed an increase in the greater glider offset.

Connectivity between high-quality riparian and alluvial habitats will be enhanced through restoration of degraded plains and lower slopes surrounding fragmented watercourses. **Photo 6.29** and **Photo 6.30** presents vegetated watercourse surrounded by non-remnant paddocks extending and isolating riparian habitat from the nearest intact habitat on the upper slopes. The restoration of these areas will improve structural continuity between currently isolated habitat patches, increasing their effectiveness as ecological corridors for movement, dispersal and foraging. Regional ecosystem 11.11.4 was adopted as the reference community throughout the plains and lower slopes to maximise the quality of the restored habitat ensuring preferred foraging and den species including *Eucalyptus tereticornis, Blackella citriodora, Corymbia intermedia* and *Eucalyptus crebra* are represented within the canopy (Eyre, et al., 2022).

Across the broader Offset Area, modest improvements are expected in several vegetation-related sub-attributes in response to offset management including appropriate fire regimes, weed control, exclusion of cattle and cessation of selective clearing. These actions are anticipated to support the function and resilience of intact vegetation resulting in a range of sub-attribute improvements including increased recruitment of EDL and/ or recognised habitat tree species, non-native plant cover, improved grass and forb species richness, suitable CWD abundance, native grass and litter cover. Forecasts on large tree increases were limited to sites where the baseline score was recorded to be marginally below the max score, noting the unreliability of trunk-diameter growth over the 20-years offset period.

Photo 6.29 **Representative photo of non-remnant AU21 with scattered canopy recruits, vegetated watercourse (Malakoff Ck) in the distance**

Photo 6.30 **Riparian corridor canopy in the foreground with adjacent, selectively cleared paddocks in the background (site OFF01)**

Photo 6.31 **Non-remnant AU21 on drainage lines and surrounding paddocks**

Photo 6.32 **Likely or current denning habitat (AU24) intersected with barbed-wire fencing**

Salvaged and Artificial Glider Hollows

As provided in the MNES Management Plan, the Project has committed to the avoidance and mitigation of impacts to greater glider denning resources by the following actions (in order):

- Avoid clearing greater glider hollow-bearing trees and retain in situ where possible.
- Where full avoidance is not achievable, however hollow can be retained, stem inject tree and complete any required trimming.
- Salvage hollows which cannot be avoided and relocate them into the BBOA.
- Install an artificial den within the BBOA for every suitable hollow that cannot be salvaged.

OMP Commitment – Monitoring and management

The monitoring and management of salvaged and/or artificial dens within the BBOA constitutes a dedicated offset management action and will contribute to habitat quality improvement. The addition of these features into areas of suitable habitat (and particularly areas suitable for foraging but lacking denning opportunities) will increase the density of denning large trees within recipient patches from the current average baseline of approximately 3–5 trees/ ha to a forecast range of 6–9/ ha.

While the final number and spatial distribution of salvaged hollows and artificial dens will be confirmed following construction, installation across suitable recipient habitat will immediately increase denning availability and therefore increase the shelter component of HQS within the BBOA. Further detail on how the ecology of the species has been considered as part of this OMP is provided in **Section 8.4.7,** whilst details regarding the monitoring of artificial and salvaged hollows is provided in **Section 9.0**.

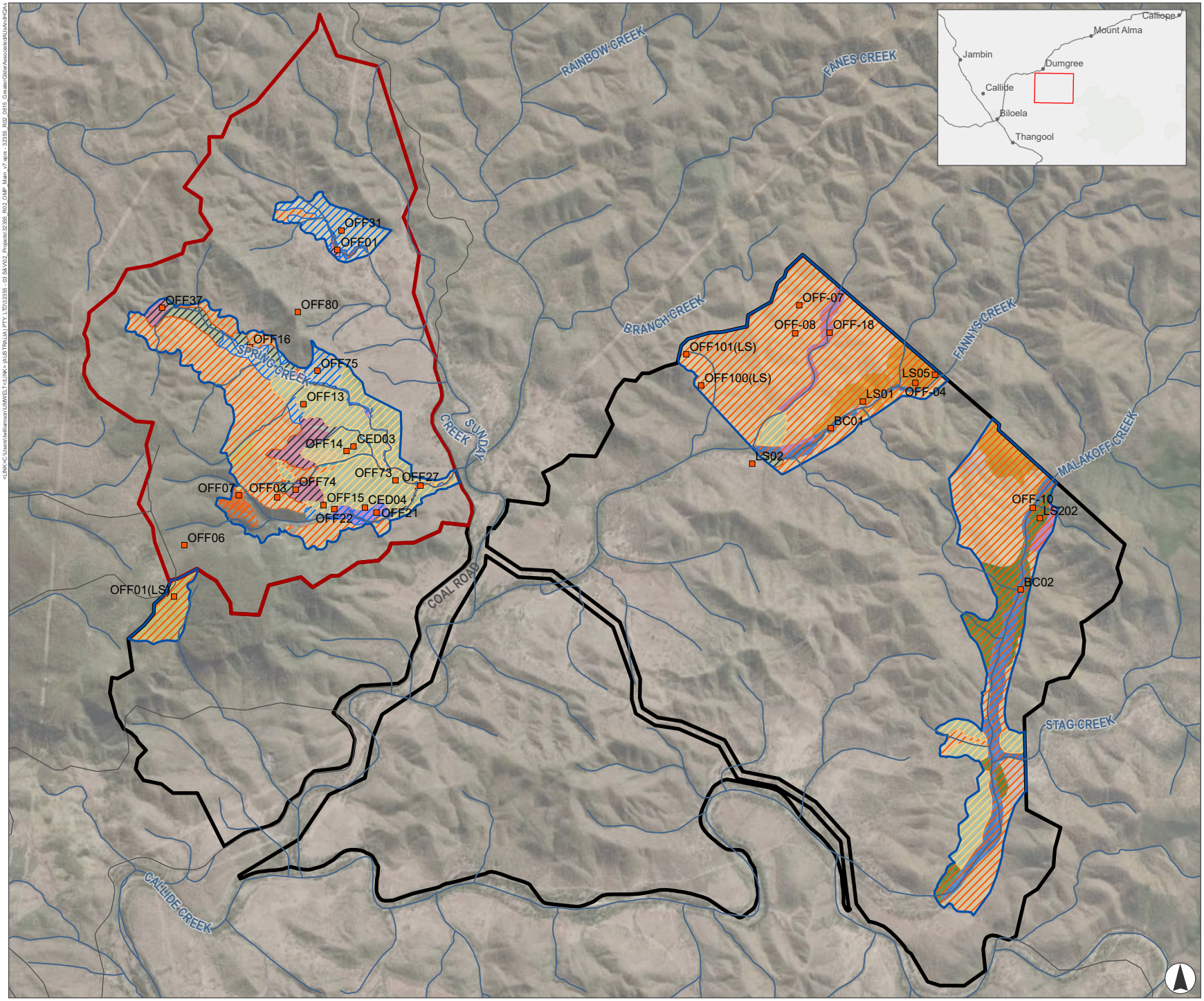


FIGURE 6.15

Greater glider associated AUs and HQAs conducted throughout the Offset

Legend

- Habitat Quality Assessments
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Greater Glider Habitat Mapping

- Foraging and dispersal
- Likely or current denning
- Potential or future denning
- Forecast habitat

AU

- AU03
- AU04
- AU05
- AU07
- AU08
- AU10
- AU11
- AU12
- AU17
- AU21
- AU24
- AU29
- N/A

0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.7 Koala

6.3.7.1 Habitat Quality Scores

Habitat quality for koala within the offset was assessed using 35 HQAs distributed across the Offset Area (**Table 6.30** and **Figure 6.16**). Component scores were calculated for each AU (**Table 6.31**) with the full dataset provided in **Appendix D.** The resulting area-weighted HQS for the koala Offset Area was 6, consistent with the impact area score and applied to the OAG.

A two-point habitat quality improvement has been prescribed for the koala across the 20-year timeframe, committing to an area-weighted HQS of 8.

Table 6.30 Koala – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU24	11.3.4 remnant	2	6.8	68.5	0.05	0.33		
AU07	11.3.25 remnant	5	6.6	111.6	0.08	0.52		
AU17	11.10.13 remnant	2	6.0	42.4	0.03	0.18		
AU03	11.11.3 remnant	3	6.8	55.5	0.04	0.27		
AU04	11.11.4 remnant	2	6.5	48.8	0.03	0.22		
AU10	11.8.4 remnant	2	6.3	12.3	0.01	0.05		
AU11	11.11.15 remnant	11	6.4	769.9	0.54	3.46		
AU29	11.11.15 regrowth	2	6.3	34.1	0.02	0.15		
AU21	Non-remnant	6	4.3	281.6	0.20	0.85		
Total		**35**	**6.1**	**1,424.7**	**1**	**6.0***	**6**	**6**

* Minor differences reflect cumulative rounding of individual HQS component scores

Table 6.31 Koala – Offset HQS Breakdown

AU	RE and Condition	Site condition score/ 3	Site context score/ 3	SSR/ 4	HQS/10	Area-weighted			
						Site condition/ 3	Site context/ 3	SSR/ 4	HQS/ 10
AU24	11.3.4 remnant	2.2	2.3	2.3	6.8	0.11	0.11	0.11	0.33
AU07	11.3.25 remnant	2.2	2.1	2.3	6.6	0.18	0.16	0.18	0.52
AU17	11.10.13 remnant	1.7	2.3	2.0	6.0	0.05	0.07	0.06	0.18
AU03	11.11.3 remnant	2.6	2.2	2.0	6.8	0.10	0.09	0.08	0.27
AU04	11.11.4 remnant	2.2	2.3	2.0	6.5	0.08	0.08	0.07	0.22
AU10	11.8.4 remnant	1.9	2.3	2.0	6.3	0.02	0.02	0.02	0.05*
AU11	11.11.15 remnant	2.1	2.2	2.1	6.4	1.15	1.20	1.11	3.46
AU29	11.11.15 regrowth	1.9	2.2	2.1	6.3*	0.05	0.05	0.05	0.15
AU21	Non-remnant	1.2	1.1	2.0	4.3	0.24	0.22	0.40	0.85
					Total	**1.91***	**2.00***	**2.07***	**6.02***

* Minor differences reflect cumulative rounding of individual HQS component scores

Site Condition

The Site Condition component ranged from high within AUs 24–11.3.4 remnant, 07–11.3.25 remnant and 03–11.11.3 remnant to low within AU21 – non-remnant. As detailed within **Section 4.3.2**, weightings of foraging and shelter attributes were increased to account for dependence on species richness, cover and recruitment of preferred food trees, as well as on the availability of large trees and suitable refugia. This is reflected within the species-weighted site condition score within **Table 6.32**.

Sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red in within **Table 6.32.** This includes a widespread improvement throughout AU21 and more selective improvements throughout the other AUs in response to regeneration and offset management.

Table 6.32 Koala – Offset Site Condition Scores

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Recruitment of woody perennial species in EDL (5)	5.0	4.6	4	5.0	5	4	5.0	5	3.6
Native tree species richness (5)	3.8	5	2.5	5.0	3.75	5	4.3	5	2.9
Native shrub species richness (5)	3.8	5	3.75	4.2	2.5	5	4.8	5	3.6
Native grass species richness (5)	1.3	2.5	0	4.2	2.5	3.8	2.5	3.8	2.5
Native forb species richness (5)	1.3	2.5	2.5	5.0	2.5	2.5	2.8	3.8	1.8
Tree canopy height (5)	4.5	5	5	4.7	5	4.5	4.3	4	1.7
Tree canopy cover (5)	3.8	4.5	3.3	3.5	2.5	4	2.9	3.5	0.6
Native shrub canopy cover (5)	1.5	2.8	5	2.7	0	3	3.5	3	1.1
Native grass cover (5)	3.0	1.8	0.5	5.0	5	4	4.0	0.5	4.1
Organic litter cover (5)	3.0	3.8	4	5.0	4	3	4.2	3	3.0
Number of large native trees (15)	12.5	10	7.5	15.0	10	7.5	9.5	2.5	2.1
Coarse woody debris (5)	3.5	2.6	2	3.0	1	3.5	3.5	5	2.4
Non-native plant cover (10)	2.5	5.6	7.5	4.3	5	7.5	5.1	4	3.3
Average BioCondition Score (80) – 0.625 multiplier applied	**44.3**	**55.7**	**53.6**	**66.5**	**48.8**	**57.3**	**56.2**	**48**	**32.8**
Species richness and canopy cover of locally important koala tree species (25)	14	13.3	5.3	12.8	17.5	10.5	11.8	10.5	9.9
Proportion of koala foraging tree species within the ecologically dominant layer	7.5	6.3	4.7	7.5	7.5	6	7.5	7.5	5.0

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
(EDL) that are recruiting (=<5cm DBH) (25)									
Quality and availability of food and foraging habitat (10) – multipliers applied	**8.6**	**7.8**	**4.0**	**8.1**	**10**	**6.6**	**7.7**	**7.2**	**6.0**
Presence of large trees (25)	6.7	5.0	4.2	8.3	5.0	4.2	5.8	1.7	0.8
Presence of refugia (25)	8.5	8.5	4.3	8.5	8.5	2.6	4.5	6.8	5.1
Canopy/ sub-canopy cover (%) (25)	7.0	6.8	7.0	6.6	4.5	5.8	6.2	7.0	0.6
Quality and availability of shelter (10) – multipliers applied	**8.9**	**8.1**	**6.2**	**9.3**	**7.2**	**5.0**	**6.6**	**6.2**	**2.6**
Species-weighted Site Condition Score (100)	**74.4**	**74.7**	**55.0**	**85.2**	**73.5**	**64.8**	**70.8**	**63.5**	**40.1**
Average Site Condition Score (/3)	**2.2**	**2.2**	**1.7**	**2.6**	**2.2**	**1.9**	**2.1**	**1.9**	**1.2**
Area-weighted Site Condition Score	**0.11**	**0.18**	**0.05**	**0.10**	**0.08**	**0.02**	**1.15**	**0.05**	**0.24**
Final Area-weighted Site Condition Score/3 (30%)	**1.91**								

Site Context

Site Context for koala within the BBOA scored high overall (**Table 6.33**) with sub-attributes that scored low and are expected to improve over the 20-year offset timeframe are highlighted red. This reflects a connected landscape with large habitat patches in proximity to ecological corridors.

Scores of 0, 4 or 5 were assigned to sites based on habitat suitability and confirmed species presence. This scoring was informed by the definition of critical habitat in the Conservation Advice (Department of Agriculture Water and the Environment 2022b). Which identifies habitat supporting key life cycle functions (foraging, breeding and shelter), use during periods of environmental stress (drought or fire) and the maintenance of connectivity, genetic diversity and long-term population viability as critical to the persistence of koala populations.

Areas that meet this definition but where no confirmed detections have been recorded were assigned a score of 4, reflecting that these areas are likely to be important to the species' persistence and may support occupancy or movement between habitat patches. Areas that both meet habitat requirements and support confirmed detections of koala were assigned the maximum score of 5, reflecting their importance in supporting existing, known individuals. Areas that do not meet the definition of critical habitat were assigned a score of 0.

Remnant and regrowth AUs generally performed well across Site Context attributes, indicating that the Offset Area is well placed to support koala persistence at a landscape scale. Opportunities for improvement within these AUs are limited and primarily relate to enhancing connectivity across select areas (notably AU07) and reducing the influence of ongoing threats with appropriate bushfire management **(Appendix F)**. In contrast, the non-remnant AU21 recorded low scores for several Site Context sub-attributes however, these are expected to improve over the 20-year offset period as vegetation regenerates increasing patch size and connectivity.

Table 6.33 Koala – Offset Site Context Scores

Attribute (Maximum Score)	Assessment Unit								
	24	07	17	03	04	10	11	29	21
Size of patch (10)	10.0	8	10	10	10	10	9.0	10.0	0.0
Connectedness (5)	5.0	3.8	5	5	4.5	5	4.4	5.0	0.0
Context (5)	4.0	4	4	4	4	4	4.0	4.0	4.0
Ecological Corridors (6)	5.0	4.8	6	4	5	6	5.4	6.0	5.0
Role of site location to species overall population in the state (5)	4	4	4	4	4	4	4.2	4.5	0
Threats to species (15)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Patch isolation and ease of movement (5)	5	4.7	5	5	5	5	5	4.3	3.5
Presence of nearby vegetated watercourses (3)	3	3	3	3	3	3	3	3	3
Size of habitat patch (2)	2	1.8	2	2	2	2	1.9	0.2	0.7
Mobility habitat scores (10)	10.0	9.5	10	10	10	10	9.9	7.5	7.2
Average Site Context Score (56)	**42.5**	**38.6**	**43.5**	**41.5**	**42.0**	**43.5**	**41.4**	**41.5**	**20.7**
Average Site Context Score (/3)	**2.3**	**2.1**	**2.3**	**2.2**	**2.3**	**2.3**	**2.2**	**2.2**	**1.1**
Area-weighted Site Context Score	**0.11**	**0.16**	**0.07**	**0.09**	**0.08**	**0.02**	**1.20**	**0.05**	**0.22**
Final Area-weighted Site Context Score/3 (30%)	**2.00**								

Species Stocking Rate

Overall, the SSR scored for the koala throughout the BBOA was low to moderate reflecting the single detection within The Cedars property. Species usage and role/ importance of species population on site scored well and represents the large extent of suitable habitat within state-recognised ecological corridors. A summary of the SSR score is provided within **Table 6.34** with low-scoring sub-attributes where an improvement is expected highlighted red.

Table 6.34 Koala – Offset SRR Scores

Attribute (Maximum Score)		Assessment Unit								
		24	07	17	03	04	10	11	29	21
Presence detected on or adjacent to site (10)		5	5	5	5	5	5	6	7.5	5
Species usage of the site (15)		15	15	10	10	10	10	10	10	5
Approximate density within suitable habitat (30)		10	10	10	10	10	10	10	10	10
SSR Supplementary:	Key source population for breeding*	10	10	10	10	10	10	10	10	10

Attribute (Maximum Score)		Assessment Unit								
		24	07	17	03	04	10	11	29	21
Role/importance of species population on site (45, 15)*	Key source population for dispersal*	5	5	5	5	5	5	5	5	5
	Necessary for maintaining genetic diversity*	15	15	15	15	15	15	15	15	15
	Near the limit of the species range*	0	0	0	0	0	0	0	0	0
	SSR Supplementary table total	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**
SSR (out of 70)		**40**	**40**	**35**	**35**	**35**	**35**	**36**	**37.5**	**30**
Average SSR score (out of 4)		**2.3**	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**	**2.1**	**2.1**	**2.0**
Area-weighted SSR score		**.11**	**.18**	**.06**	**.08**	**.07**	**.02**	**1.11**	**.05**	**.40**
Final SSR score/4 (40%)		**2.07***								

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.7.2 Approach to Improving Habitat Quality

Management actions prescribed for koala within the Offset Area are designed to deliver a two-point improvement in habitat quality over the 20-year offset period with gains achieved through vegetation regeneration, targeted threat abatement and detections of koala throughout additional areas within the BBOA. The forecasted, Year 20 HQS for the koala is presented within **Appendix E** which highlights each individual sub-attribute prescribed an increase in the koala offset.

Within the non-remnant AU21, substantial improvement is forecasted as a result of natural regeneration (**Photo 6.33** and **Photo 6.34**). This includes canopy height and cover which will increase the species richness and canopy cover of locally important koala tree (LIKT) species. As these structural attributes improve, AU21 is expected to transition from dispersal-only habitat to providing breeding, foraging and shelter habitat for koala. Further improvements are anticipated through the re-establishment of key ecological processes. Increased litter cover is expected in response to a growing abundance of trees, while forb cover is forecast to improve following weed management, cattle exclusion and the implementation of an appropriate fire regime. Recruitment of woody perennial species within the ecologically dominant layer is also expected to increase as seed sources expand and vegetation structure matures.

Within remnant habitat, several sub-attributes currently scored as low to moderate are considered reflective of ongoing disturbance or threatening processes rather than inherent habitat limitation (**Photo 6.35** and **Photo 6.36**). Modest improvements to these attributes are therefore forecast under offset management. In areas where non-native plant cover currently exceeds 25%, weed management is expected to reduce cover to approximately 10%, resulting in improved native grass and forb species richness. These gains are expected to be further supported by fire management that promotes ground-layer diversity and reduces competitive pressure from exotic species.

Improvements in presence detected, species usage (AU21 only) and approximate density are forecasted throughout the SSR component. As habitat quality and availability increase, additional koala occupation and associated detections are expected over time, resulting in higher scores for presence detected and approximate density.

Collectively, these changes are expected to deliver a two-point habitat quality improvement for the koala resulting in a final Offset Area HQS of 8.

Photo 6.33 **Representative photo of non-remnant AU21 with scattered canopy trees and an isolated, vegetated watercourse in the distance (site OFF73)**

Photo 6.34 **Representative photo of non-remnant AU21 with scattered canopy trees and an isolated, vegetated watercourse in the distance (site OFF21)**

Photo 6.35 **Remnant condition 11.11.15 with selective clearing and highly modified understorey (site OFF31)**

Photo 6.36 **Evidence of selective clearing of subcanopy and recruiting canopy species (same site OFF31) within AU11**

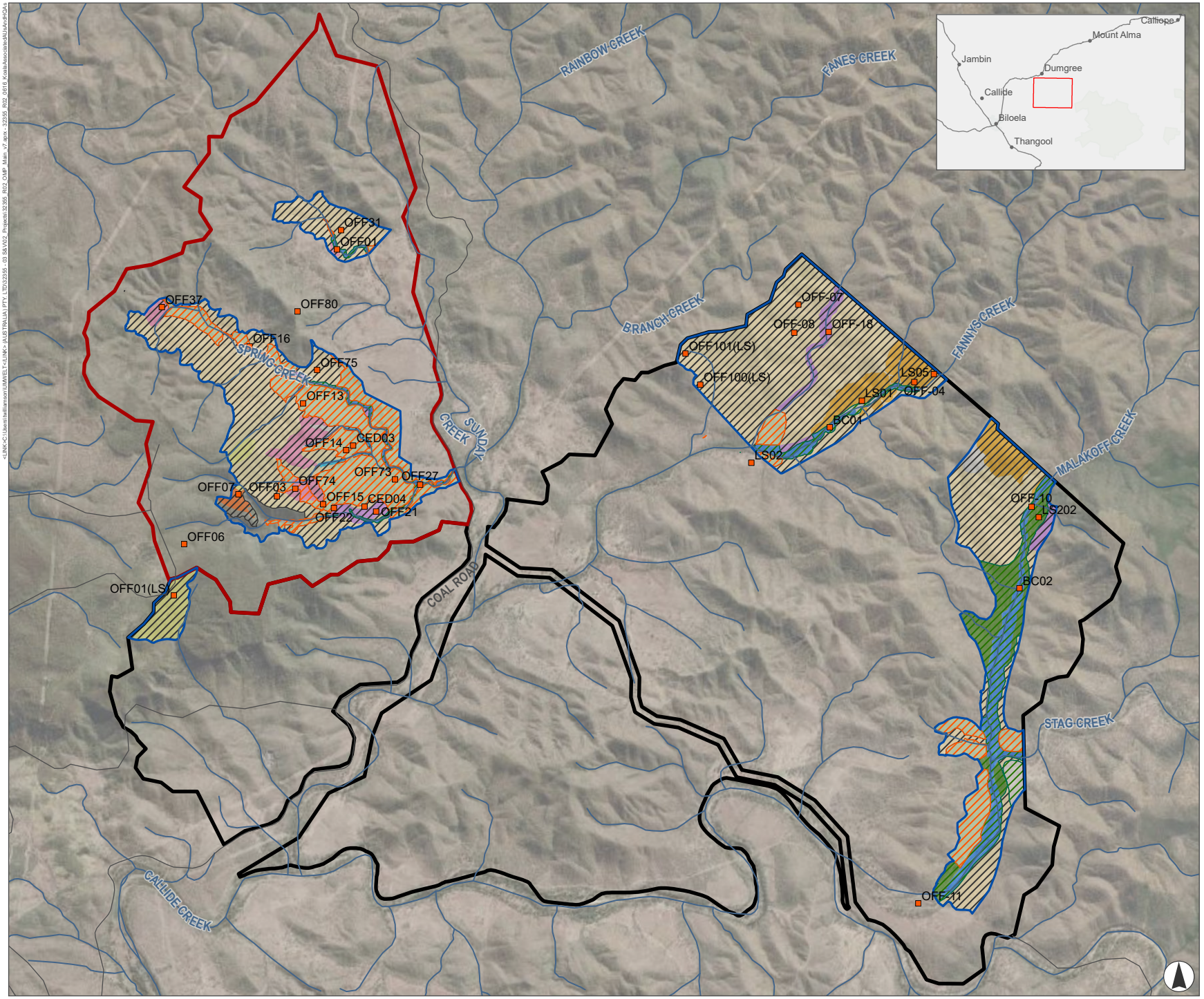


FIGURE 6.16

Koala associated AUs and HQAs conducted throughout the BBOA

Legend

- Habitat Quality Assessments
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Koala Habitat Mapping

- Breeding, foraging and shelter
- Climate refugia
- Dispersal

AU

- AU03
- AU04
- AU05
- AU07
- AU08
- AU10
- AU11
- AU12
- AU17
- AU21
- AU23
- AU24
- AU29
- N/A

0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.8 Yellow-bellied Glider

6.3.8.1 Habitat Quality Scores

A total of 11 HQAs were conducted throughout yellow-bellied glider habitat within the BBOA (**Table** 6.35 and **Figure 6.17**). Two of which occur outside the BBOA but were incorporated within the HQS dataset as they're situated within habitat continuous with the BBOA and reflective of its condition. The scores for each component within each AU have been presented in **Table 6.36.**

The full dataset provided in **Table 6.35**. The final offset HQS for yellow-bellied glider was a 5, equalling the impact area and input into the OAG accordingly. A one-point habitat quality improvement has been prescribed for yellow-bellied glider across the 20-year timeframe, committing to an area-weighted HQS of 6.

Table 6.35 Yellow-bellied glider – Offset HQS Summary

AU	RE and Condition	Site Count	HQS (avg)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact area HQS
AU24	11.3.4 remnant	2	5.6	68.5	0.22	1.4		
AU07	11.3.25 remnant	3	5.6	93.8	0.30	1.9		
AU17	11.10.13 remnant	2	5.2	34.3	0.11	0.6		
AU03	11.11.3 remnant	3	5.5	84.6	0.27	1.1		
AU04	11.11.4 remnant	1	5.0	30.4	0.10	0.5		
			Total	**311.6**	**1**	**5.45***	**5**	**5**

* Minor differences reflect cumulative rounding of individual HQS component scores

Table 6.36 Yellow-bellied glider – Offset HQS Breakdown

AU	RE and condition	Site condition score/ 3	Site context score/ 3	SSR/ 4	HQS/ 10	Area-weighted			
						Site condition/ 3	Site context/ 3	SSR/ 4	HQS/ 10
AU24	11.3.4 remnant	2.2	2.2	1.1	5.6*	0.5	0.5	0.3	1.4
AU07	11.3.25 remnant	2.3	2.2	1.1	5.6	0.8	0.7	0.4	1.9
AU17	11.10.13 remnant	1.9	2.2	1.1	5.2*	0.2	0.3	0.1	0.6
AU03	11.11.3 remnant	2.2	2.1	1.1	5.5*	0.4	0.4	0.2	1.1*
AU04	11.11.4 remnant	1.9	1.9	1.1	5.0*	0.2	0.2	0.1	0.5
					Total	**2.2**	**2.2**	**1.1**	**5.45**

* Minor differences reflect cumulative rounding of individual HQS component scores

Site Condition

Overall, Site Condition was moderate to high, with attributes that are particularly important to yellow-bellied glider include native tree species richness, tree canopy height and cover and number of large native trees scoring well. As detailed within **Section 4.3.2**, weightings of foraging and shelter attributes were increased to account for dependence on preferred eucalypt species for sap and nectar resources and on large, mature trees for denning and refuge. This is reflected within the species-weighted site condition score within **Table 6.37.**

Sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red in within **Table 6.37.** This did not include any of the foraging or shelter attributes which measure large trees, hollows and other variables which cannot be reliably expected to change within the 20-year offset timeframe.

Table 6.37 Yellow-bellied glider – Offset Site Condition Scores

Attribute (Maximum Score)	AU24	AU07	AU17	AU03	AU04
Recruitment of woody perennial species in EDL (5)	5	4.3	4	5	5
Native tree species richness (5)	3.8	5	2.5	5	5
Native shrub species richness (5)	3.8	5	3.8	4.2	2.5
Native grass species richness (5)	1.3	2.5	0	4.2	2.5
Native forb species richness (5)	1.3	3.3	2.5	5	2.5
Tree canopy height (5)	4.5	5	5	4.7	5
Tree canopy cover (5)	3.8	4.2	3.3	3.5	5
Native shrub canopy cover (5)	1.5	2	5	2.7	0
Native grass cover (5)	3	2.7	0.5	5	5
Organic litter cover (5)	3	3.7	4	5	3
Number of large native trees (15)	12.5	10	7.5	15	15
Coarse woody debris (5)	3.5	3	2	3	2
Non-native plant cover (10)	2.5	5	7.5	4.3	5
Average BioCondition Score (80) – 0.625 multiplier applied	**49.3**	**55.7**	**47.5**	**66.5**	**57.5**
Canopy Cover % (5)	5	5	5	5	5
Floristic diversity in the EDL (5)	4	3	2	2.3	0
Quality and availability of food and foraging habitat (10) – weighting applied	**9**	**8**	**7**	**7.3**	**5**
Density of live hollow-bearing trees (5)	3.5	4	2	3	2
Presence of large (>50 cm DBH) smooth bark of half-bark eucalypt species (5)	5	4.3	4	2.7	4
Quality and availability of shelter (10) – 3 multiplier applied	**8.5**	**8.3**	**6**	**5.7**	**6**
Species-weighted Site Condition Score (100)	**74.3**	**75.6**	**61.7**	**73.2**	**71.9**
Average Site Condition Score (weighted out of 3 (i.e. 30%))	**2.2**	**2.3**	**1.9**	**2.2**	**2.2**
Area-weighted Site Condition Score	**0.5**	**0.8**	**0.2**	**0.4**	**0.2**
Final Site Condition Score/3 (30%)	**2.2**				

Site Context

A moderate score for Site Context was acquired for yellow-bellied glider within the BBOA (**Table 6.38**). Sub-attributes which scored low to moderate and are expected to improve under offset management are highlighted red in **Table 6.38**. These attributes will be targeted to ensure a one-point improvement in the overall HQS for yellow-bellied glider.

For all AUs, the role of the area's location to the subspecies' overall population in the state was given a score of 4. This was informed by definitions of habitat critical to the subspecies which includes large, contiguous and floristically diverse eucalypt forests containing mature hollow-bearing trees and sap trees, as well as habitat corridors, post-fire refuges and areas that support movement, recolonisation and persistence under changing environmental conditions (Department of Agriculture Water and the Environment 2022a). This conservative approach recognises the ecological value of suitable but currently unoccupied habitat throughout the BBOA in supporting future occupancy, dispersal and long-term population viability.

The majority of Site Context attributes scored high, highlighting suitable patch sizes, connectedness with surrounding landscape, proximity to ecological corridors and good location of site in relation to state-wide populations.

Most of the other Site Context attributes scored well, reinforcing the appropriate choice of the Offset Area amongst the broader landscape. Threats resulted in the most substantial decrease to the overall Site Context score, with threats including fire and predation from feral cats and red foxes (**Appendix F**). Threat mitigation priorities have been summarised below in **Section 6.3.8.2**.

Table 6.38 Yellow-bellied Glider – Offset Site Context Scores

Attribute (Maximum Score)	AU24	AU07	AU17	AU03	AU04
Size of patch (10)	10	10	10	10	10
Connectedness (5)	5	5	5	5	5
Context (5)	2	2	3	2	2
Ecological Corridors (6)	6	4	6	4	4
Role of site location to species overall population in the state (5)	4	4	4	4	4
Threats to species (15)	4.5	4.5	4.5	4.5	4.5
Size of habitat patch (3.3)	3.3	3.3	3.0	3.3	0
Presence of tall trees (6.7)	6.7	6.7	6.7	6.7	6.7
Mobility habitat scores (10)	10	10	9.7	10	6.7
Average Site Context Score (56)	**41.5**	**40.2**	**42.3**	**39.5**	**39.5**
Average Site Context Score (weighted out of 3 (i.e. 30%))	**2.2**	**2.2**	**2.2**	**2.1**	**2.1**
Area-weighted Site Context Score	**0.54**	**0.71**	**0.27**	**0.42**	**0.21**
Final Site Context Score/3 (30%)	**2.15**				

Species Stocking Rate

The SSR for yellow-bellied glider was low reflecting the absence of detections despite significant, targeted survey effort across the BBOA. Therefore, presence detected and approximate density attributes both scored a 0 as highlighted in red within **Table 6.39.** Without the confirmation of a population on the BBOA, the population was not considered a key source for breeding, dispersal or maintaining genetic diversity. However, the BBOA is located on the northwest limit of the species' range and a score of 15 was attributed (Department of the Environment, Water, Heritage and the Arts, 2022).

Table 6.39 Yellow-bellied glider - Offset SSR Scores

Attribute Maximum (Score)		AU24	AU07	AU17	AU03	AU04
Presence detected on or adjacent to site (10)		0	0	0	0	0
Species usage of the site (15)		15	15	15	15	15
Approximate density within suitable habitat (30)		0	0	0	0	0
SSR Supplementary: Role/importance of species population on site (45, 15)*	Key source population for breeding*	0	0	0	0	0
	Key source population for dispersal*	0	0	0	0	0
	Necessary for maintaining genetic diversity*	0	0	0	0	0
	Near the limit of the species range*	15	15	15	15	15
	SSR Supplementary table total	**5**	**5**	**5**	**5**	**5**
Species stocking rate (out of 70)		**20**	**20**	**20**	**20**	**20**
Species stocking rate score (weighted out of 4 (i.e. 40%))		**1.1**	**1.1**	**1.1**	**1.1**	**1.1**
Area-weighted Species stocking rate score		**0.28**	**0.38**	**0.14**	**0.22**	**0.12**
Final Species stocking rate score/4 (40%)		**1.14**				

* Maximum scores are determined by a supplementary scoring matrix with the DCCEEW MHQA guidelines, where data ranges correspond to a specific score which collectively total a maximum of 15 points

6.3.8.2 Approach to Improving Habitat Quality

The prescribed one-point improvement in habitat quality for yellow-bellied glider over the 20-year offset period is focused on maintaining existing high-quality habitat features, addressing identified lower-scoring sub-attributes, reducing key threats and detecting individuals throughout the Offset Area, connected habitat to the Offset Area or within either of The Cedars or Lone Star properties. The forecasted, Year 20 HQS for the yellow-bellied glider is presented within **Appendix E** which highlights each individual sub-attribute prescribed an increase in the offset.

The Site Condition component for yellow-bellied glider is already moderate to high across the BBOA, with attributes critical to the species including large mature trees, canopy height and cover, and denning resources scoring well and not expected to materially change over the offset timeframe. Instead, incremental improvements are anticipated in lower-scoring ground and mid-storey attributes in response to weed and fire management. These include native shrub and grass cover, native grass and forb species richness and non-native plant cover (**Photo 6.37**, **Photo 6.38**).

Improvements in Site Context are expected to be driven largely by threat abatement, as most landscape-scale attributes such as patch size, connectedness, ecological corridor function and mobility capacity already score highly. Targeted management of fire, weeds and feral animals is expected to reduce the severity and scope of key threats, resulting in an improved threats score and contributing directly to the overall increase in HQS.

The SSR results currently reflects the absence of confirmed detections despite suitable habitat and targeted survey effort. Offset management and is expected to increase the likelihood of occupancy and habitat utilisation over time. Confirmation of a population will increase SSR scores and further support achievement of the prescribed habitat quality gain.

Collectively, these management actions are expected to deliver a conservative but achievable one-point improvement in area-weighted HQS for yellow-bellied glider, consistent with the species' ecological requirements and the existing high baseline on-site condition of the Offset Area. The forecasted MHQA spreadsheet presented in **Appendix E** has modelled a scenario where yellow-bellied gliders were detected in the Offset Area which increases the HQS by two to a 7/10 however, the HQS will still increase to a rounded 6/10 if the SSR attributes remain at 1.1 as reflected within the completion criteria (**Section 9.2**) and OAG inputs (**Table 6.19**).

Photo 6.37 **Lantana infestation within shrub layer of 11.3.25 habitat**

Photo 6.38 **Billy-goat weed dominating the ground layer within 11.11.3 habitat**

Salvaged and Artificial Glider Hollows

As provided in the MNES Management Plan, the Project has committed to the avoidance and mitigation of impacts to yellow-bellied glider denning resources by the following actions (in order):

- Avoid clearing yellow-bellied glider hollow-bearing trees (i.e. trees with a diameter >1m) and retain in situ where possible.
- Where full avoidance is not achievable, however hollow can be retained, stem inject tree and complete any required trimming.
- Salvage hollows which cannot be avoided and relocate them into the BBOA.
- Install an artificial den within the BBOA for every suitable hollow that cannot be salvaged.

The above points intentionally mirror the commitments applicable to the greater glider, given the similarities between the species and their shared dependency on hollows. Suitable habitat for the yellow-bellied glider however is substantially less common than greater glider suitable habitat, across both the impact site and the Offset Area broadly. Nonetheless, a commitment to relocate hollows or utilise artificial dens is necessary to ensure not net loss of these opportunities.

While the final number and spatial distribution of salvaged hollows and artificial dens will be confirmed following construction, installation across suitable recipient habitat will immediately increase denning availability and therefore increase the shelter component of HQS within the BBOA. Further detail on how the ecology of the species has been considered as part of this OMP is provided in **Section 8.4.7,** whilst details regarding the monitoring of artificial and salvaged hollows is provided in **Section 9.0**.

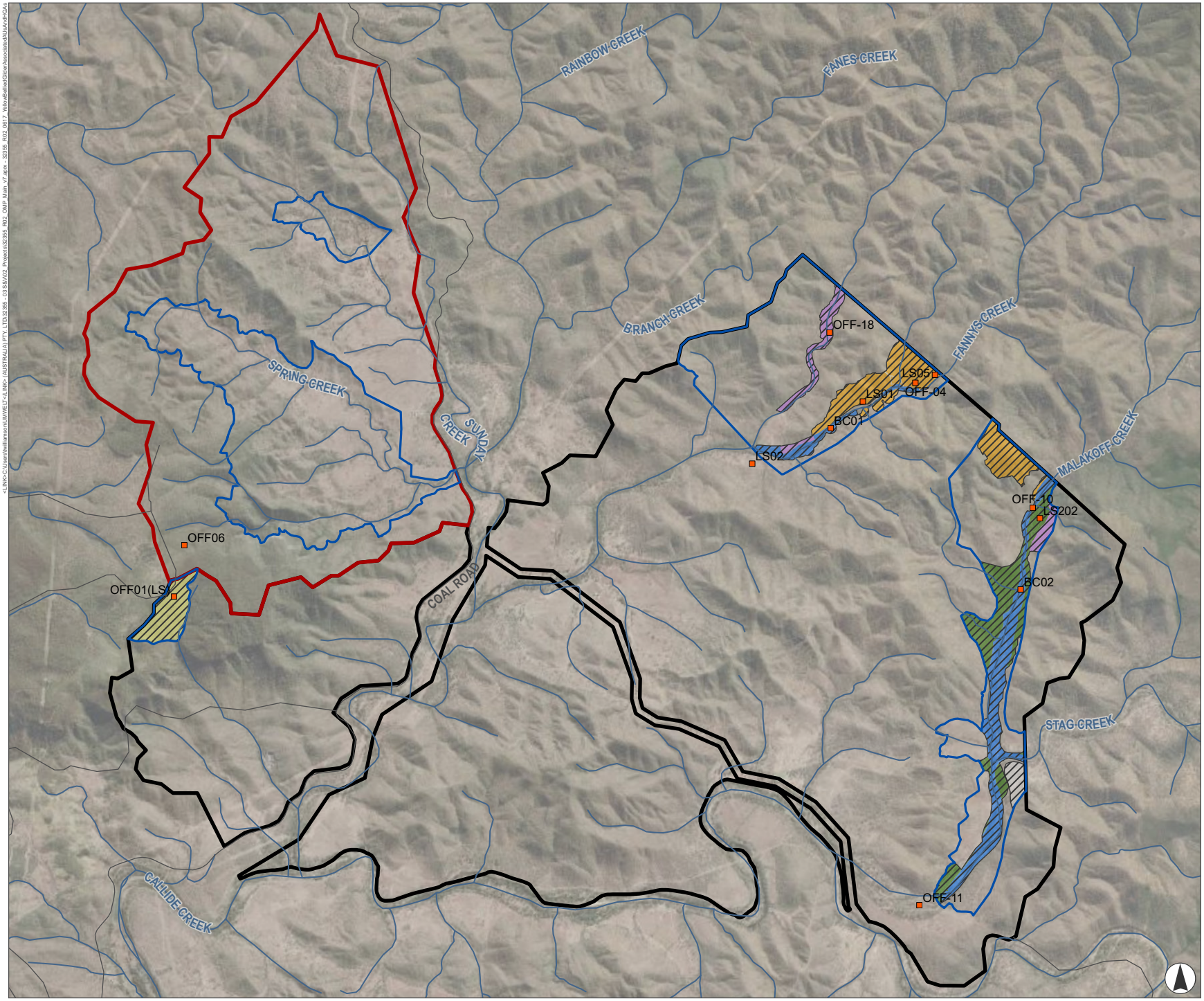


FIGURE 6.17

Yellow-bellied glider-associated AUs and HQAs conducted throughout the BBOA

Legend

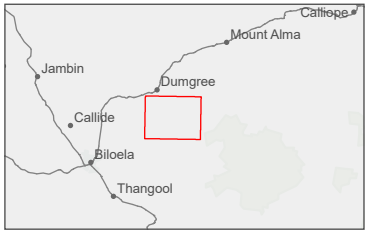
- Habitat Quality Assessments
- Road
- Watercourse
- Offset Area
- The Cedars Boundary
- Lone Star Boundary

Yellow-bellied Glider Habitat Mapping

- Breeding, foraging and dispersal

AU

- AU03
- AU04
- AU07
- AU11
- AU17
- AU21
- AU24
- N/A



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

6.3.9 Offset Area Acquittal – Brigalow Belt Offset MNES

The proposed offset package comprises direct, land-based offset that meets and, in most cases, exceeds the minimum offset requirements for the Offset MNES (**Table 6.40**). The BBOA secures extensive areas of remnant and regrowth habitat within a contiguous landscape with confirmed presence of *Cycas megacarpa, Samadera bidwillii,* koala and greater glider. In addition to protecting existing high-quality habitat, the package includes substantial areas of degraded and non-remnant vegetation prescribed for assisted natural regeneration, which are forecast to increase habitat extent, structural complexity and functional connectivity for koala, greater glider and collared delma over the 20-year offset period.

A minor shortfall is identified for greater glider potential or future denning habitat. However, this does not compromise offset acquittal as there is a substantial surplus of higher-quality likely or current denning habitat within the Offset Area that significantly exceeds the required liability for that habitat class, effectively compensating for the shortfall in the lower-quality category.

6.3.9.1 Offset Assessment Guide Calculation

Offset calculations have been undertaken using the OAG with key inputs and outputs presented in **Table 6.40** below and the complete OAG outputs provided within **Appendix B.** This section provides a summary and justification for the parameters input into the OAG to calculate the offset liability for each MNES.

Time over which loss is averted

A value of zero years has been applied for 'time over which loss is averted'. The offset strategy conservatively assumes no measurable loss aversion benefit is attributable to securing the Offset Area. Although the properties are subject to active management under this OMP, the OAG inputs do not claim additional credit for avoided decline relative to the counterfactual. This approach avoids reliance on assumptions regarding future land-use intensification or degradation and ensures that offset calculations are based solely on forecast habitat quality improvement rather than avoided loss.

Time until ecological benefit

A conservative timeframe of 20 years has been applied for all Offset MNES. This period aligns with the proposed offset duration and reflects:

- The time required for regeneration of cleared and non-remnant patches (e.g. AU21 and other forecast habitat areas) to develop structurally functional habitat.
- Incremental improvements in vegetation structure, floristic diversity and ground-layer condition within remnant and regrowth Aus.
- Gradual recovery of sub-attributes that respond to ecological processes (e.g. litter accumulation, EDL recruitment, native grass and forb richness).
- Realistic ecological timeframes for fauna response to improved habitat connectivity and resource availability.

No additional credit has been assumed for outcomes likely to exceed 20 years (e.g. natural hollow formation for gliders) ensuring that the forecast HQS improvements remain conservative and defensible.

Risk of loss (%) without and with offset

The risk of loss has been conservatively set at 0% for both 'without offset' and 'with offset' scenarios. This reflects the assumption that risk of loss under the OAG should not incorporate stochastic or external events such as bushfire, drought or other natural disturbances.

The Offset Area is not subject to imminent clearing, subdivision or approved development pressures. As such, no differential risk reduction benefit has been claimed. This conservative assumption ensures the offset liability is acquit from land-scale and habitat quality improvements rather than speculative estimates to avoid decline or risk mitigation.

Confidence in result (%)

A confidence level of 90% has been applied to the forecast habitat quality improvements for MNES within the BBOA. A one-point habitat quality gain has been prescribed for six MNES, with a two-point gain prescribed for koala. These forecasts are based on consideration of species-specific ecological requirements, the current condition of the Offset Area and the demonstrated restorability of the relevant habitat types within the 20-year offset timeframe.

Confidence is supported by the relatively moderate uplift required to achieve the target condition scores, with improvements primarily driven by threat abatement (e.g. weed control, grazing management and fire regime correction) rather than reliance on extensive structural restoration. While large areas of the BBOA are prescribed for restoration, these areas are expected to complement, rather than solely underpin, improvements in habitat quality for multiple Offset MNES.

The Offset Management Program (**Table 8.12**) is further supported by the preparation and implementation of several supporting management plans (**Section 8.3**) and is subject to an adaptive management framework informed by the Monitoring and Evaluation Plan (**Section 9.0**). These components provide clearly defined progressive criteria and corrective action to maintain feedback mechanisms between monitoring and management, reducing implementation uncertainty and increased confidence in achieving the prescribed habitat quality improvements.

For fauna MNES, confidence is further supported by evidence demonstrating the ecological value of regrowth forests and woodlands for threatened species (Thomas, Simmonds, Ward, Eyre, & Maron, 2025) (**Section 6.3.1**), indicating that measurable gains in habitat function can be achieved within the proposed timeframe. In addition, expert elicitation has informed the restoration component of the SEVT offset strategy indicating that canopy closure is achievable within approximately 3–5 years (subject to seasonal conditions), with development of more complex structure and species composition occurring over 10–20 years in Central Queensland.

While some uncertainty remains in relation to seasonal variability and the rate of ecological response, these risks are reduced through the application of established management techniques, adaptive management and the relatively low magnitude of habitat quality improvement required. Accordingly, a confidence level of 90% is considered appropriate and reflects a high likelihood of achieving the predicted outcomes within the offset timeframe.

Table 6.40 Summary of the Inputs and Outputs of the OAG Calculator to Acquit the Impact for the Offset MNES Occuring in the Brigalow Belt

MNES	Status	Habitat Type	Impact Area	Impact HQS	Time until ecological benefit	RoL (%) without and with offset	Time of which loss is averted	Offset start habitat quality	Future quality without offset	Future quality with offset	Confidence (%) in habitat quality result	Area (ha) within offset package	% of impact offset
SEVT TEC	Endangered	-	2.2	5	20	0	N/A as no RoL was factored in (0%)	7	7	8	90	**15.8**	**109***
***Cycas megacarpa* - full clearing**	Endangered	Known - confirmed	23.2	6	20	0		7	7	8	90	**433.3**	**216**
		Known - suspected	0.5									**306.4**	
***Cycas megacarpa* - selective clearing**		Known - confirmed	29.8	2	20	0		7	7	8	90	**433.3**	**515**
		Known - suspected	0									**306.4**	**n/a**
Samadera bidwillii	Vulnerable	Known	0.2	6	20	0		6	6	7	90	**1.4**	**101**
Collared delma	Vulnerable	Suitable	49.0	7	20	0		6	6	7	90	**771.6**	**231***
		Forecast habitat	na	na	na	na						**144.8**	
Greater glider	Endangered	Likely or current denning	31.5	4	20	0		5	5	6	90	**1,062.5**	**187***
		Potential or future denning	105.7									**106.6**	
		Foraging and dispersal	4.3									**74.4**	
		Forecast habitat	na	na	na	na						**245.7**	
Koala	Endangered	Breeding, foraging and shelter	131.0	6	20	0		6	6	8	90	**1,032.1**	**202***
		Climate refugia	22.8									**194.4**	
		Dispersal/ Forecast habitat	na	na	na	na						**268.8**	
Yellow-bellied glider	Vulnerable	Denning, foraging and dispersal	20.9	5	20	0		5	5	6	90	**322.5**	**267**

*Includes forecast habitat expect to meet habitat requirements within 20 years

7.0 South-east Queensland Offset Area

7.1 Site Context

The South Kolan property is located approximately 160 km southeast of the Disturbance Footprint (Section E) inland (west) of Bundaberg in southeast Queensland bioregion (**Figure 7.1**). Remnant vegetation fringes the Burnett River which forms the boundary of the property to the north, east and south. The central portion of the property is cleared paddock currently utilised for grazing but was initially cleared for sugar cane production as evidenced by a small section of narrow-gauge rail track remaining adjacent to Cedars Road along the southern boundary. A large proportion of the property is associated with an alluvial landform being located on the inside sweep of the Burnett River with numerous smaller incised drainage features emptying into the river. The alluvial landform is the defining feature of the property, underpinning its ecological significance by supporting vegetation communities, climate refugia zones and ecological corridors.

The are no current exploration permits associated with the Project with historical petroleum, coal and mineral permits having lapsed. An easement (major electricity infrastructure – Ergon) traverses east-west through the centre of the property whilst a cane-rail easement remains along the southeastern ern boundary of the property. An overview of the property is provided in **Table 7.1**.

Table 7.1 Site Context South-east Queensland Offset Area – South Kolan

Site Context Attribute	Details
Total Property Size (ha)	351
Offset Area	70.2 ha
Lot/Plan	1RP31448, 2RP31450, 3RP31450, 4RP31450, 3RP122273
Tenure	Freehold
Elevation range	5–25 m above sea level
Past and Current Land Use	Grazing native vegetation
Biodiversity Corridor	Intersected by Riparian statewide biodiversity corridors which buffer most of the property adjacent to the Burnett River.
Connectivity	Fringing remnant vegetation associated with the Burnett River, with low regrowth vegetation along several minor drainage features. Connectivity along the Burnett River south-west of the property the intersects a terrestrial statewide corridor which links Cordalba State Forest, Cordalba National Park, Elliot River State Forest, Bingera National Park and Bingera Conservation Parks 1 & 2. Connectivity of the Burnett River also extends east to Pacific Ocean and southern Great Barrier Reef.
Primary Watercourses and Wetlands	The Burnett River (Stream Order 8) forms the boundary of the property to the north, east and south. Several unnamed drainage lines (stream order 1 & 2) empty to the Burnett River.

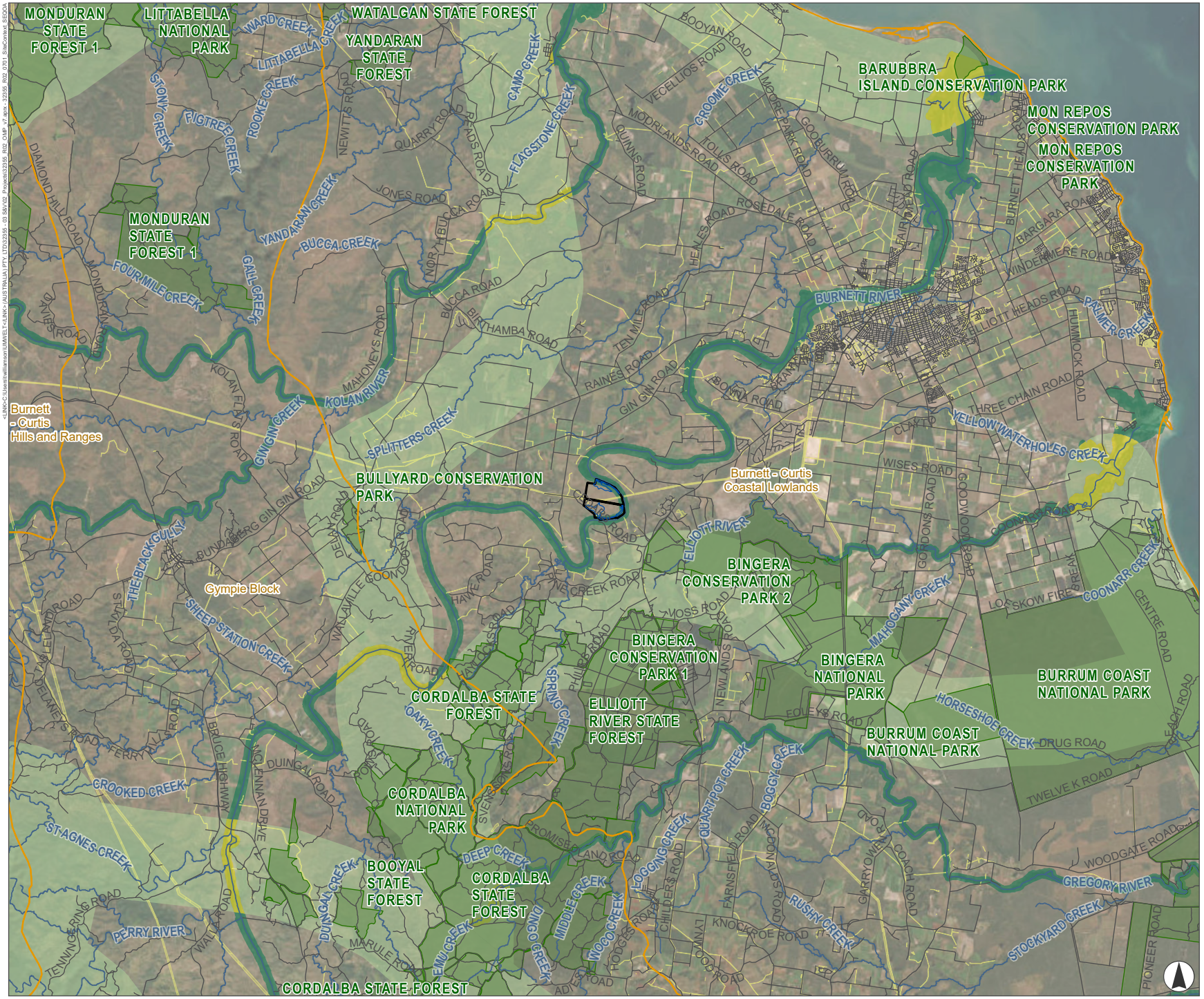


FIGURE 7.1

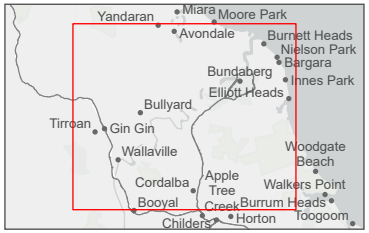
SEQOA Site Context

Legend

- Road
- Watercourse
- South Kolan Boundary
- Offset Area
- Biogeographic Subregion
- Easement Parcel
- Protected Areas

Biodiversity Corridor

- **Riparian**
- **Riparian/Terrestrial**
- **Terrestrial**



0 1 2

Kilometres

Scale 1:285,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

7.2 Vegetation and Condition Types

The South Kolan property supports vegetation communities characteristic of the South-East Qld bioregion, including narrow areas of rainforest, eucalypt woodland and open forest occurring across alluvial flats and river edges. Riparian and alluvial ecosystems are largely represented along the major drainage feature (Burnett River) whilst elsewhere, smaller drainage lines are without woody vegetation.

Vegetation conditions range from intact remnant stands along the Burnett River to highly degraded paddocks reflecting historical grazing, cane growing and localised disturbance. A substantial proportion of the property comprises non-remnant vegetation currently managed as cleared grazing paddocks without woody vegetation limiting the regenerative capacity, particularly in the centre of the property. Extensive weed cover (ground and understorey) is prevalent in vegetation fringing the Burnett River. Each RE across the property and offset area is presented within **Table 7.2** and depicted in **Figure 7.2**.

Four discrete vegetation patches have been incorporated into the formal Eucalypt Floodplain Forest Offset Area, extending along the northern and southern boundaries and comprising mature remnant woodland, small regrowth areas and degraded paddocks. The northern patch consists predominantly of *Eucalyptus tereticornis* woodland affected by cat's claw creeper and a range of exotic grasses. In contrast, the southern patch supports remnant and regrowth eucalypt woodland on alluvial plains, largely free of cat's claw but subject to significant infestations of giant rat's tail grass.

Whilst it is acknowledged that the vegetation included within the offset area provides suitable habitat for several other Offset MNES, these do not form part of the offset area for any other MNES than the Eucalypt Floodplain Forest TEC within this OMP.

Table 7.2 Summary of REs Mapped throughout South Kolan

Regional Ecosystem	Description	Area (ha)	
		South Kolan	Offset Area
12.3.3	*Eucalyptus tereticornis* woodland on Quaternary alluvium	18.2	14.6
12.3.3d	*Eucalyptus moluccana* woodland occurring on margins of Quaternary alluvial plains often adjacent sedimentary geologies	4.3	4.3
12.3.7	*Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- Melaleuca spp. fringing woodland	20.0	17.4
12.3.7a	*Melaleuca bracteata* open forest +/- emergent *Eucalypts tereticornis*. Occurs in drainage depressions on Quaternary alluvial plains	0.3	0
12.3.17	Simple notophyll fringing forest usually dominated by *Waterhousea floribunda*	19.6	0
12.5.7a	*Blackella citriodora subsp. variegata +/- Eucalyptus portuensis +/- Lophostemon spp., C. intermedia, E. moluccana* (lower slopes), *E. crebra, E. exserta* woodland	6.4	0
Non-remnant	Cleared areas maintained as grazing paddocks	263.1	33.8

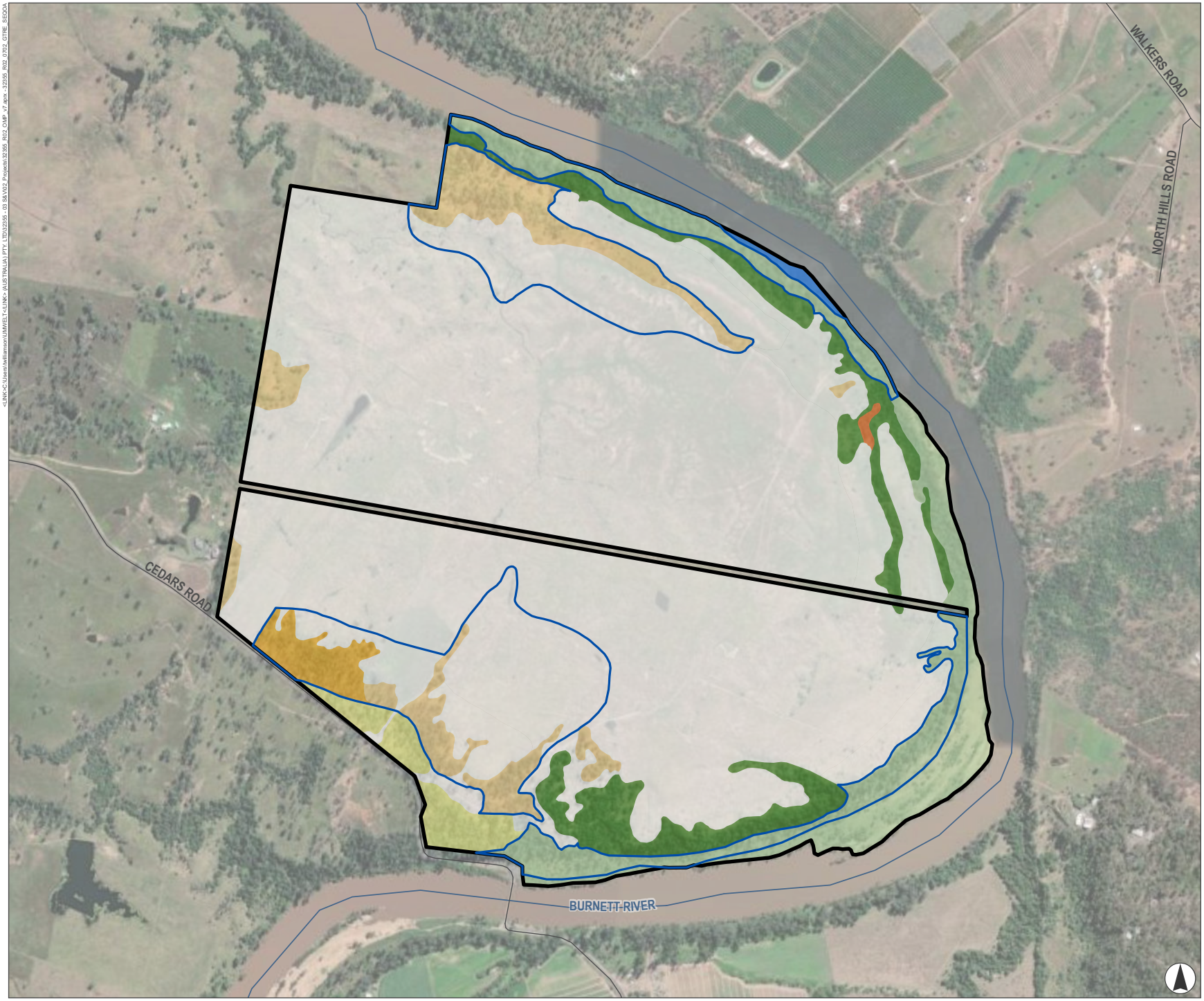


FIGURE 7.2

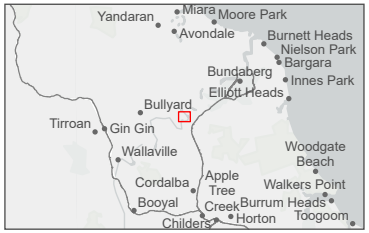
Ground-truthed REs throughout the SEQOA

Legend

- Road
- Watercourse
- South Kolan Boundary
- Offset Area

Ground-truthed Regional Ecosystem

- 12.3.17
- 12.3.3
- 12.3.3d
- 12.3.7
- 12.3.7a
- 12.5.7a
- Burnett River
- Non-remnant



0 0.2 0.4

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

7.3 Threats and Disturbances

7.3.1 Habitat Clearing

Vegetation clearing at the South Kolan property is extensive, extending in many areas to the top of bank along the Burnett River. Historical imagery indicates sugar cane farming were undertaken along the river frontage from at least 1954 to 2004, with grazing likely occurring concurrently across the central portion of the property (**Photo 7.1**). Grazing remains ongoing across the property.

Photo 7.1 South Kolan property 1998 (Q Imagery 2025)

Historic clearing has resulted in small, isolated patches of vegetation fringing the Burnett River and Cedars Road. These patches have high edge-to-area ratios, exposing a large proportion of the community to altered microclimatic conditions, increased disturbance and weed invasion. Edge environments are characterised by increased light, wind exposure and soil moisture variability, which can elevate tree stress and mortality, suppress natural regeneration, and degrade native understorey composition. Fragmentation disrupts natural floodplain processes and limits connectivity for fauna movement, reducing overall ecological function and resilience to random events such as flooding, drought and fire. Over time, these combined pressures lead to structural simplification, loss of characteristic species and reduced habitat quality, even in remnants where canopy trees persist.

In addition, agricultural practices associated with sugar cane farming (tillage, soil compaction, burning sugar cane) in areas fringing the vegetation along the Burnett River have effectively depleted the native seed bank in these areas, leaving the open grassy patches dominated by exotic grass species. The absence of a native seed bank will likely require management intervention to enable future revegetation of these areas. Observations and monitoring of the non-remnant areas of the property showed a site void of native recruitment. Historic clearing, land use and lack of recruitment suggest very low regenerative capacity.

The areas of vegetation designated as the Offset Area are fragmented and subject to edge-effect as a result of historical clearing (**Photo 7.2** and **Photo 7.3**). A minimum 100 m buffer will be applied to the offset area where threat abatement and particularly, weed management, will aim to mitigate the ongoing edge effect.

For the purposes of scoring 'Threats' within the HQA, habitat clearing and fragmentation has been assessed only in the context of potential clearing of existing MNES habitat within the Offset Area and does not account for ongoing degradation or reduced habitat function resulting from historic clearing. Furthermore, as MNES habitat is regulated under the EPBC Act, it is assumed to have no risk of future clearing within the Offset Area for the purposes of this assessment (**Section 4.3.1.2, Appendix F**).

Photo 7.2 **Grazed paddock dominated by giant rat's tail facing a fragmented strip of vegetation in the Offset Area**

Photo 7.3 **Grazing paddock dominated by giant rat's tail facing fragmented patch of RE 12.3.3d in the Offset Area**

7.3.2 Wildfire and Inappropriate Fire Regimes

Historically the most extensive burns have occurred between September and November at South Kolan, which is a period of increased temperatures and summer storms. South Kolan experienced site-wide burns in September 2024 and November 2025, with the last major historic burn in 1999 (**Figure 7.3**). Other smaller scattered patches have been burnt intermittently in 2001, 2006, 2007, 2008, 2010, 2021 and 2022. The fires with high site coverage in recent years may be largely attributed to landholder ignition to provide fodder for cattle, with past burning regimes (pre-2004) having the potential to be attributed to past cane growing practices. The Bushfire Management Plan to be delivered during the first year will consider the historic burns (prior to clearing or grazing practices), as well as optimal fire regimes for each RE, and prescribe fire regimes accordingly.

This fire history has particular relevance to the Eucalypt Floodplain Forest TEC, which is sensitive to altered fire regimes that have the potential to alter understorey composition, suppress native regeneration and promote invasive grasses within this community (Department of Climate Change, Energy, the Environment and Water 2022a).

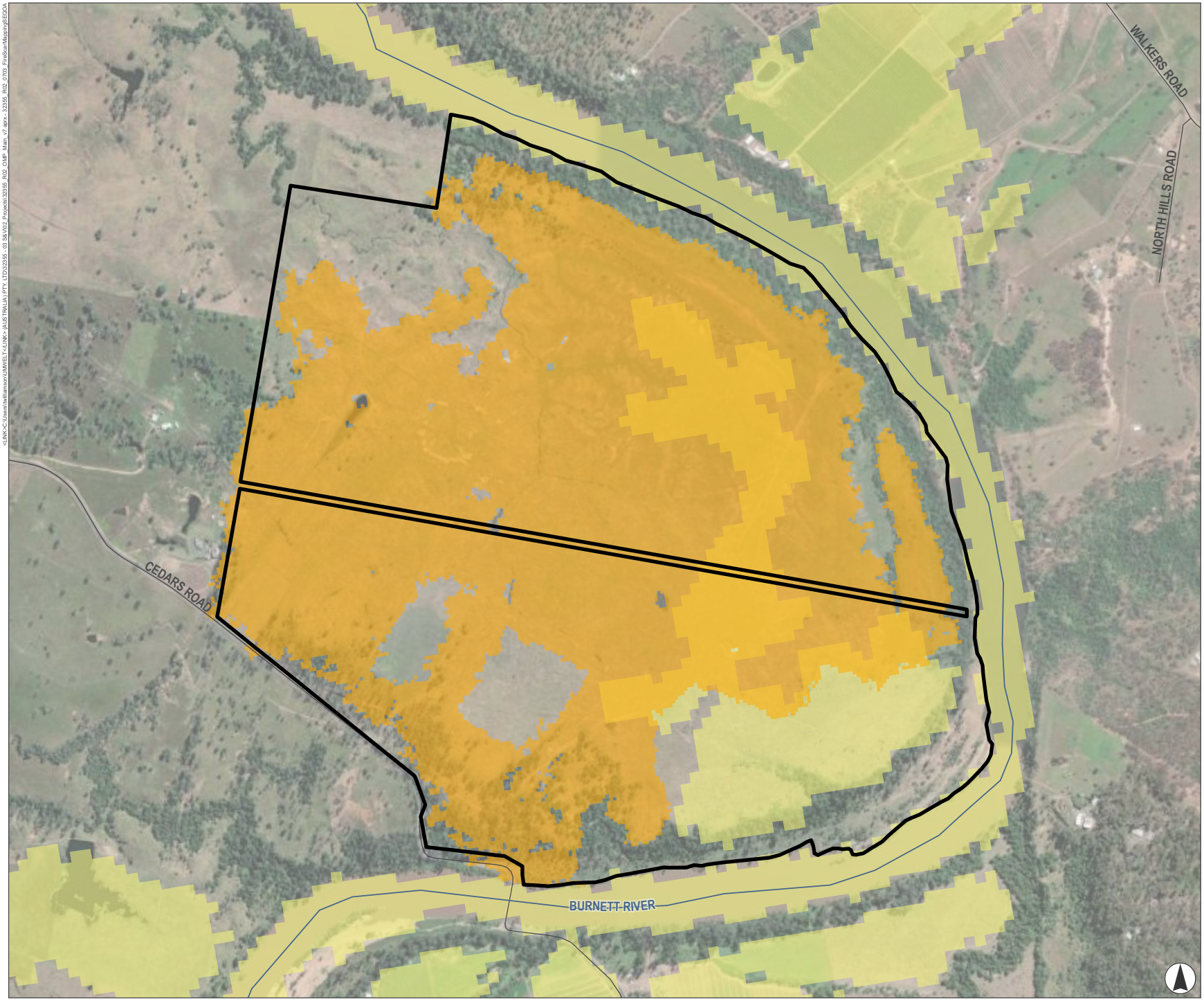
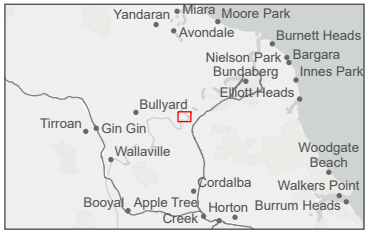


FIGURE 7.3

Fire Scar Mapping Across SEQOA - 1999, 2024 and 2025

Legend

- Watercourse
- Road
- South Kolan Boundary
- 1999 Fire scar mapping
- 2024 Fire scar mapping



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

7.3.3 Weeds

The Eucalypt Floodplain Forest TEC is recognised as highly susceptible to invasion by exotic plant species, with weed proliferation identified as a key threatening process (Department of Climate Change, Energy, the Environment and Water 2022a). At South Kolan, weed infestation is widespread across all vegetation strata, with an average cover of approximately 66% (range 40–90%). Dominant and high-impact species include cat's claw creeper, giant rat's tail grass, lantana and rubber vine (**Photo 7.3** to **Photo 7.6**). Cat's claw creeper is particularly prevalent within the northern patches, where it smothers sub-canopy, shrub and ground layers, suppressing native recruitment and altering structural complexity. Giant rat's tail grass dominates cleared paddocks and open areas, while lantana and to a lesser extent rubber vine occur throughout vegetated portions of the property forming scattered but locally dense infestations.

All four species are listed as restricted matter category 3 under the Queensland *Biosecurity Act 2014*, and therefore subject to general biosecurity obligation (GBO) to prevent or minimise the spread of a restricted matter beyond the boundary of the property. Management of these species within the Offset Area will extend beyond the minimum GBO requirements, with targeted control implemented to actively reduce weed cover and extent, suppress reinfestation and support recovery of native vegetation structure and composition. Current site conditions indicate that effective control is not occurring and that existing land use practices may be facilitating further spread. Without intervention, continued weed expansion is anticipated to further degrade the Eucalypt Floodplain Forest TEC by reducing native species richness and understorey integrity, inhibiting regeneration and altering fuel structure. In particular, the advancement of cat's claw creeper and giant rat's tail grass poses a material risk to the long-term condition and resilience of this TEC.

Photo 7.4 **Lantana throughout regrowth Eucalypt Floodplain TEC within the SEQOA**

Photo 7.5 **Cat's claw creeper infestation from ground to canopy within Eucalypt Floodplain TEC in the SEQOA**

Photo 7.6 **Lantana and cat's claw creeper infestations in shrub and canopy layers**

Photo 7.7 **Giant rat's tail infested paddock at the SEQOA**

7.3.4 Waterway Degradation

Waterway degradation along the Burnett River at South Kolan is currently characterised by significant riverbank erosion, elevated sediment and nutrient loads, degraded riparian vegetation and altered channel stability. Riverbank collapse and mass failure are the dominant sources of sediment with erosion most severe on the opposite bank to the property which is compounded by reaches along the river where riparian vegetation has been cleared for agriculture. Extensive clearing of riparian zones for sugar cane cultivation and other floodplain land uses has reduced bank stability and shading, increased weed invasion and facilitated sediment and nutrient runoff during rainfall and flood events (**Photo 7.8** and **Photo 7.9**).

These pressures will likely further intensify by recurring extreme and major flood events. Such events known to have impacted the property include events during 2011, 2013 (Ex tropical cyclone Oswald), 2022 (flooding along eastern Australia) and late 2024 which continue to strip vegetation, remobilise stored sediments and degrade water quality impacting the potential recovery of the Eucalypt Floodplain Forest TEC.

Photo 7.8 **Cleared vegetation along Burnett River with high exotic grass densities**

Photo 7.9 **Limited bank structure along Burnett River resulting in high erosion potential**

7.4 Offset Strategy

Together, these forecasts provide a conservative and ecologically grounded basis for the prescribed habitat quality gain within the OAG for the Eucalypt Floodplain Forest TEC.

7.4.1 Feral Pests

Given the highly modified condition of the South Kolan property and its history of clearing and grazing, introduced fauna represent an ongoing threat to the Eucalypt Floodplain Forest TEC. Five camera traps deployed across the Offset Area recorded two introduced species, European red fox (*Vulpes vulpes*) and domestic cattle (**Photo 7.5** and **Photo 7.6**).

Domestic cattle are present throughout the property and currently graze across both remnant and degraded areas of the TEC. Grazing pressure compacts soils, reduces native ground-layer diversity, suppresses tree and shrub recruitment and increases erosion risk, particularly within flood-affected areas along the Burnett River. Given the dominance of the unpalatable giant rat's tail grass, it is likely that cattle preferentially graze emerging native grasses and recruiting woody vegetation, further inhibiting natural regeneration processes. This selective pressure reduces the capacity of the Eucalypt Floodplain Forest TEC to recover structural complexity and canopy recruitment following disturbance.

The presence of European red fox also aligns with recognised threats to the TEC (Department of Climate Change, Energy, the Environment and Water 2022a) including predation on native fauna, potential disease transmission and facilitation of invasive plant spread. While feral pigs and other herbivores were not detected during baseline monitoring, the ecological community is known to be susceptible to trampling, soil disturbance and grazing impacts from invasive mammals more broadly.

Collectively, unmanaged grazing and invasive predators contribute to degradation of understorey composition, disruption of regeneration processes and increased vulnerability to erosion and weed invasion. Ongoing threat abatement, particularly stock exclusion and control of invasive fauna, will be required to stabilise and improve the condition and resilience of the Eucalypt Floodplain Forest TEC within the Offset Area.

Photo 7.10 **Two European red foxes observed on camera trap within the SEQOA**

Photo 7.11 **Domestic cow observed on camera trap within the SEQOA**

7.4.2 Eucalypt Floodplain Forest

7.4.2.1 Forecast Habitat Quality and Habitat Extent

Forecast habitat quality and extent for the SEQ offset area apply solely to the Eucalypt Floodplain Forest TEC. Forecasts were informed by the ecology and condition thresholds of the TEC as outlined in the Approved Conservation Advice (Department of Climate Change, Energy, the Environment and Water 2022a), the baseline condition recorded at South Kolan and the restorability of degraded floodplain vegetation within the 20-year offset timeframe.

Baseline assessments identified substantial understorey degradation, high non-native cover and suppressed recruitment. The prescribed uplift will be driven by intensive weed control, cattle exclusion the implementation of an appropriate fire regime an active restoration. These actions are expected to substantially reduce giant rat's tail grass and cat's claw creeper, increase native grass and forb species richness, improve the proportion of native understorey cover and facilitate recruitment within the canopy. Collectively, these changes directly target the minimum condition thresholds for the TEC, particularly those relating to native ground-layer richness and the proportion of native cover within the understorey (Department of Climate Change, Energy, the Environment and Water 2022a).

In addition to qualitative uplift, a moderate increase in functional TEC extent is forecast for 28.4 ha. Remnant and regrowth patches that currently meet key diagnostic characteristics but fall below minimum condition criteria are expected to transition into compliant TEC condition as understorey composition improves. Select non-remnant paddocks (AU21) are forecast to regenerate to meet minimum TEC condition thresholds, thereby increasing patch size and improving connectivity of existing patches.

7.4.2.2 Habitat Quality Scores

A total of 11 HQAs were conducted throughout Eucalypt Floodplain Forest TEC habitat within the Offset Area. The final area-weighted HQS of 3 was calculated from the 6 AUs and represents a three-point deficit compared to the Impact Area HQS as shown in **Table 7.3**. The score breakdown of each component across each AU is presented in **Table 7.4** and discussed in following sections.

A three-point habitat quality improvement has been prescribed for Eucalypt Floodplain Forest across the 20-year timeframe, committing to an end area-weighted HQS of 6.

Table 7.3 Eucalypt Floodplain Forest TEC HQS Summary

AU	RE and condition	Site Count	HQS (average)	Area (ha)	Area weighting	Area-weighted HQS	Rounded HQS used in OAG	Impact Area HQS
AU15	12.3.3 remnant	2	4.6	5.5	.08	.36		
AU25	12.3.3 regrowth	1	4.1	9.1	.13	.53		
AU26	12.3.7 remnant	2	4.3	12.6	.18	.78		
AU27	12.3.3d remnant	2	4.2	4.3	.26	.26		
AU28	12.3.7 regrowth	1	3.2	4.9	.23	.22		
AU21	Non-remnant	3	1.3	33.8	.48	.61		
			Total	**70.2**	**1**	**2.75**	**3**	**6**

Table 7.4 Eucalypt Floodplain Forest Offset HQS Breakdown

AU	RE and condition	Site condition score /7	Site context score /3	HQS /10	Area-weighted		
					Site condition	Site context	HQS/10
AU15	12.3.3 remnant	3.8	0.8	4.6	.30	.06	.36
AU25	12.3.3 regrowth	2.9	1.2	4.2*	.38	.15	.54
AU26	12.3.7 remnant	3.2	1.2	4.4	.57	.21	.79
AU27	12.3.3d remnant	3.5	0.7	4.3	.21	.04	.26
AU28	12.3.7 regrowth	2.0	1.2	3.3*	.14	.08	.23
AU21	Non-remnant	0.5	0.8	1.3*	.22	.39	.64
				Total	**1.81***	**0.94***	**2.82**

* Minor differences reflect cumulative rounding of individual HQS component scores

Site Condition

A low overall Site Condition score was recorded across the 11 HQAs undertaken at South Kolan. As summarised in **Table 7.5**, scores ranged from moderate–high in AU15 to very low in AU21, reflecting substantial condition variability across the property. Sub-attributes forecast to improve are highlighted red. The pervasive and often dense weed infestation is a key driver of reduced condition, directly influencing non-native cover, native grass and forb species richness, recruitment within the EDL and native grass cover scores.

Table 7.5 Eucalypt floodplain forest site condition scores

Attribute (Maximum Score)	AU15	AU25	AU26	AU27	AU28	AU21
Recruitment of woody perennial species in EDL (5)	3	3	4	2.5	3	0
Native tree species richness (5)	3.8	2.5	5	5	5	0.8
Native shrub species richness (5)	1.3	5	3.75	2.5	2.5	0
Native grass species richness (5)	0	0	0	0	0	0
Native forb species richness (5)	1.3	0	0	1.25	0	0
Tree canopy height (5)	5	5	4.5	5	3	0
Tree canopy cover (5)	4.5	5	3.75	1.5	2.5	0
Native shrub canopy cover (5)	3	3	0	4	0	1.7
Native grass cover (5)	0	0	0	0	0	0
Organic litter cover (5)	3	5	5	3	5	1
Number of large native trees (15)	15	5	7.5	10	0	1.7
Coarse woody debris (5)	3.5	0	1	5	2	0
Non-native plant cover (10)	0	0	1.5	0	0	0
Average BioCondition Score (Site condition) (80)	**43.3**	**33.5**	**36.0**	**39.8**	**23.0**	**5.2**
Average Site Condition Score (weighted out of 7 (i.e. 70%))	**3.8**	**2.9**	**3.2**	**3.5**	**2.0**	**0.5**
Area-weighted Site Condition Score	**.30**	**.38**	**.57**	**.21**	**.14**	**.22**
Final Site Condition Score/7	**1.81***					

* Minor differences reflect cumulative rounding of individual HQS component scores

Site Context

Eucalypt Floodplain Forest TEC returned a low Site Context score within the Offset Area (**Table 7.6**). Remnant and regrowth AUs are generally small and fragmented, occurring as discontinuous patches along the fringes of the Burnett River with limited functional connectivity. The non-remnant AU21 scored substantially lower due to its degraded state however, patch size and connectivity metrics are expected to improve as these areas are restored and progressively integrate with adjacent remnant vegetation (**Figure 7.4**).

The role of site location to the TEC overall in the state was informed by the key diagnostic criteria and the condition classes as defined in the TEC's conservation advice (Department of Climate Change, Energy, the Environment and Water 2022a). AUs that were assigned a score of 5 were considered to meet the TEC's minimum condition criteria and assigned a status. AUs that were assigned a score of 4 were remnant or regrowth TEC that contained analogous REs, however, do not meet the minimum condition criteria of the TEC. The non-remnant AU21 was assigned a score of 0.

Threats contributed most significantly to the reduced Site Context score, driven primarily by the widespread and degrading influence of invasive weeds **(Appendix F)**. This sub-attribute presents the greatest opportunity for improvement, with threat scores forecast to increase as intensive weed management reduces canopy smothering in the short term and progressively improves understorey condition over the 20-year offset period.

Table 7.6 Eucalypt Floodplain Forest Offset Site Context Scores

Attribute (Maximum Score)	AU15	AU25	AU26	AU27	AU28	AU21
Size of patch (10)	1	2	2	2	2	0
Connectedness (5)	2	2	2	2	2	0
Context (5)	2	2	1	0	2	0
Ecological Corridors (6)	0	6	6	0	6	4
Role of site location to TEC overall population in the state (5)	5	4	5	5	4	0
Threats to TEC (15)	2	2	2	2	2	2
Average Site Context Score (46)	**12**	**18**	**18**	**11**	**18**	**6**
Average Site Context Score (weighted out of 3 (i.e. 30%))	**0.8**	**1.2**	**1.2**	**0.7**	**1.2**	**0.8**
Area-weighted Site Context Score	**.06**	**.15**	**.21**	**.04**	**.08**	**.39**
Final Site Context Score/3	**0.94***					

* Minor differences reflect cumulative rounding of individual HQS component scores

7.4.2.3 Approach to Improving Habitat Quality

This OMP commits to achieving a three-point gain in habitat quality for Eucalypt Floodplain Forest, as reflected in the forecast HQS presented in **Appendix D.** Consistent with baseline HQA results, management will prioritise the uplift of the non-remnant AU21 and the rectification of key condition constraints across remnant and regrowth AUs, particularly excessive non-native cover, suppressed native grass cover and low native grass and forb richness. The dominance of giant rat's tail grass and cat's claw creeper is constraining species richness and cover of native ground-layer and EDL recruitment (**Photo 7.12** and **Photo 7.13**). Cattle grazing and inappropriate fire regimes are likely to be further contributing to the ongoing low condition of the vegetation on site. Therefore, improvements in Site Condition will be driven by intensive weed control (notably giant rat's tail grass and cat's claw creeper), cattle exclusion and implementation of an appropriate fire regime. These measures are expected to:

- Increase native grass and forb species richness throughout all AUs
- Improve native ground and shrub cover throughout all AUs
- Facilitate EDL recruitment in all AUs and allow canopy height and formation within AU21.

Collectively, these changes are directed at meeting and sustaining the minimum condition criteria for the TEC, particularly thresholds relating to native ground-layer species richness and the proportion of native cover within the understorey.

Photo 7.12 **Patch of remnant 12.3.3d with significant infestations of giant rat's tail and lantana**

Photo 7.13 **Dense cat's claw creeper cover from ground to canopy**

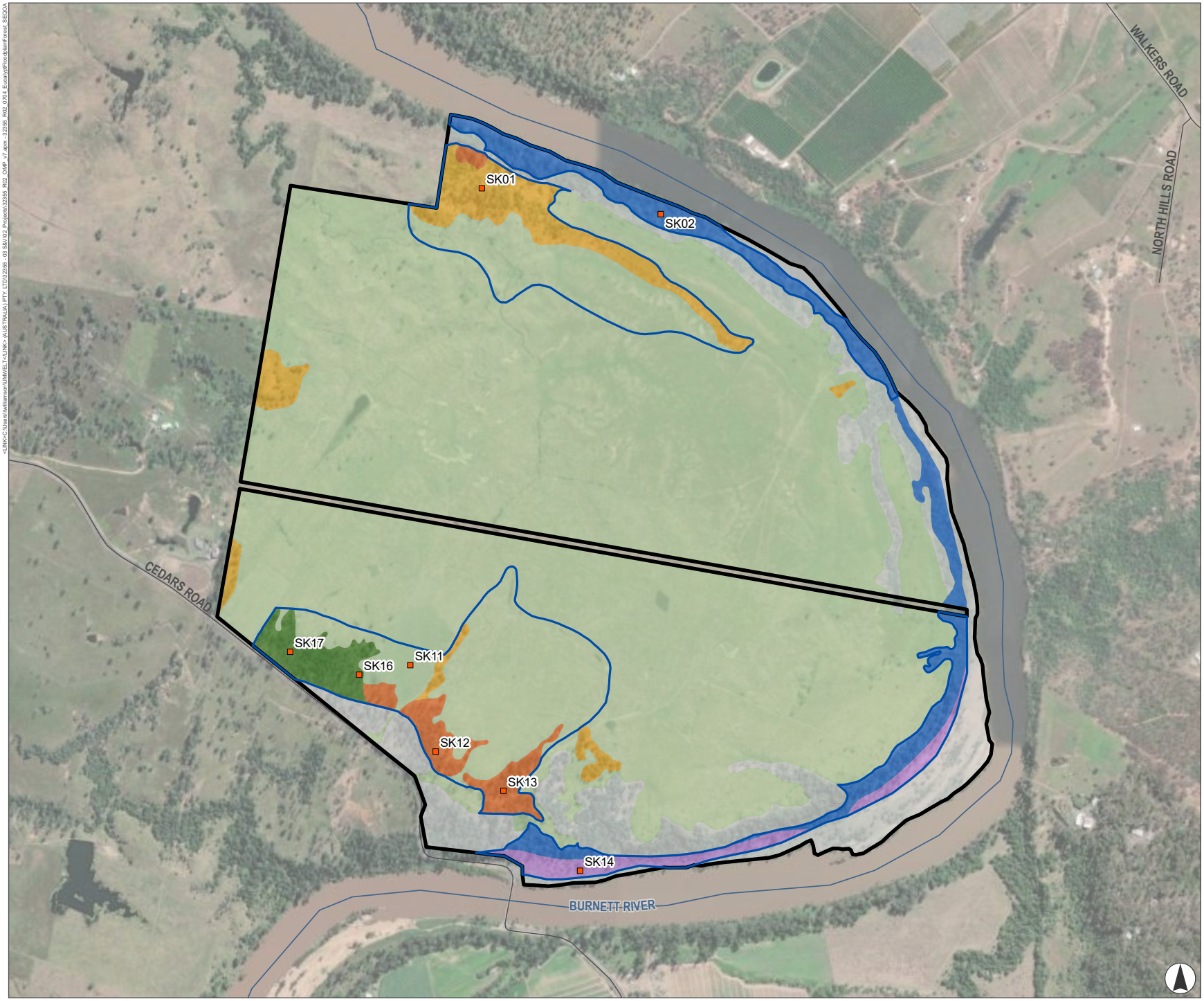


FIGURE 7.4

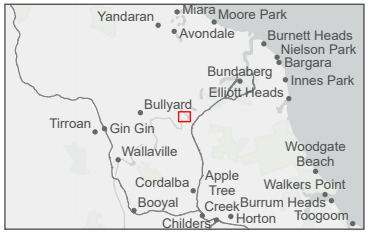
Eucalypt floodplain forest TEC associated AUs and HQAs conducted throughout the SEQOA

Legend

- HQA Sites
- Road
- Watercourse
- South Kolan Boundary
- Offset Area

AU

- AU15
- AU21
- AU25
- AU26
- AU27
- AU28
- N/A



0 0.2 0.4

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

7.4.3 Offset Area Acquittal – SEQ Offset MNES

The Eucalypt Floodplain Forest TEC will be offset as a 100% land-based strategy within the SEQ bioregion to acquit and improve an area equivalent to ≈133% of the offset liability currently estimated at 46.9 ha. This offset strategy aims to support existing patches of Eucalypt Floodplain Forest TEC with active management, restoration and habitat creation to produce a substantially larger patch of functional Eucalypt Floodplain Forest TEC. Habitat creation initiatives inherently require substantial improvements in habitat quality to transition from a degraded starting condition to a structurally and ecologically functional ecosystem capable of supporting TEC values.

To address uncertainty associated with restoration outcomes, a surplus of 17.5 ha has been incorporated into the Offset Area and prescribed for restoration. This additional area provides a management buffer against variability in ecological response and implementation risk, while increasing the likelihood of achieving the targeted three-point HQS improvement and attaining equivalency with the Impact HQS of 6. Collectively, this approach reflects a conservative and risk-managed offset design that is expected to deliver an outcome exceeding the minimum requirement for impact acquittal.

7.4.3.1 Offset Assessment Guide Calculation

Offset calculations have been undertaken using the OAG with key inputs and outputs presented in **Table 7.7** and the complete OAG outputs provided within **Appendix B**. This section provides a summary and justification for the parameters input into the OAG to calculate the offset liability for the Eucalypt floodplain forest.

Time over which loss is averted

For the purposes of the OAG inputs, this offset strategy conservatively assumes no loss aversion for Eucalypt Floodplain Forest TEC (i.e. 0 years).

Although the Offset Area will be secured and actively managed under this OMP, no portion of the calculated offset benefit has been attributed to avoided loss. This approach recognises that, while the TEC at the SEQOA is currently degraded and subject to ongoing pressures (notably invasive weeds, grazing and inappropriate fire regimes), the offset calculation does not rely on hypothetical future clearing or decline being prevented. Instead, all offset benefit is derived from measurable improvements in habitat quality within the secured Offset Area.

Time until ecological benefit

A conservative timeframe of 20 years has been adopted for Eucalypt Floodplain Forest TEC to realise the prescribed three-point habitat quality gain.

This timeframe reflects the ecological processes required to transition non-remnant AU21 and degraded regrowth patches toward meeting the minimum condition thresholds of the TEC. While weed control is expected to produce rapid reductions in canopy smothering (particularly cat's claw creeper), recovery of native ground-layer species richness, increases in native grass cover, and sustained recruitment within the EDL will occur progressively over the 20-year offset timeframe.

In AU21, structural development including canopy formation, increased litter accumulation and stabilisation of native understorey composition will require several years of active restoration following cattle exclusion and implementation of an appropriate fire regime. Similarly, improvements

within remnant AUs will depend on gradual re-establishment of native grasses and forbs currently suppressed by invasive weeds.

The 20-year timeframe therefore accounts for:

- Active restoration of cleared/non-remnant patches
- Recovery of native ground-layer species richness and cover
- Reinstatement of functional disturbance regimes
- Progressive stabilisation of vegetation structure and floristic composition
- This period is considered ecologically realistic and precautionary for achieving and sustaining the forecast HQS of 6.

Risk of loss (%) without and with offset

The risk of loss (RoL) has been conservatively assigned as 0% both without and with the offset.

This reflects that no component of the offset calculation relies on avoided clearing or assumed future decline. Although the South Kolan Offset Area is currently subject to condition-degrading processes including invasive weeds, grazing pressure and altered fire regimes, these pressures represent ongoing management issues rather than imminent land-use conversion or regulated clearing.

Consistent with EPBC offset guidance, stochastic events such as bushfire are not incorporated into the RoL input (Department of Sustainability, Environment, Water, Population and Communities, 2012).

Accordingly, the offset outcome for Eucalypt Floodplain Forest TEC is derived entirely from habitat quality improvement rather than avoided loss, representing a precautionary and transparent application of the OAG inputs.

Confidence in result (%)

A confidence level of 80% has been applied to the forecast habitat quality improvement for the Eucalypt Floodplain Forest TEC. This level of confidence reflects a balance between the inherent uncertainty associated with ecological restoration and the strong likelihood of achieving the prescribed outcomes based on site condition, threat profile and proposed management interventions.

Confidence is supported by the following key factors:

- **Manageable and well-understood threats**: The primary drivers of degradation including invasive weeds (e.g. cat's claw creeper and giant rat's tail grass), grazing pressure and altered fire regimes are established, reversible and responsive to conventional management techniques with demonstrated effectiveness.
- **Established restoration pathways:** An active restoration pathway has been elected and to be implemented in the Establishment Phase (Year 1 -2) to maximises time for vegetation growth, weed management and the development of a self-sustaining ecosystem.
- **Adaptive management framework**: The program includes short feedback loops between monitoring and management, enabling refinement of methods, effort and spatial priorities in response to observed outcomes.

- **Conservative offset design**: The inclusion of surplus restoration area provides a buffer against underperformance and increases the likelihood of achieving the required habitat quality uplift across the Offset Area.
- Notwithstanding these factors, uncertainty remains in relation to the rate of vegetation recovery, variability in seasonal conditions, the response of exotic and native understorey cover and ground species richness. These uncertainties have been appropriately accounted for through conservative timeframes, establishment of a 100 m management buffer, progressive criteria and adaptive management framework and the inclusion of surplus offset area.
- Accordingly, a confidence level of 80% is considered appropriate, reflecting a high likelihood of achieving the predicted habitat quality outcomes while acknowledging residual ecological uncertainty.

Table 7.7 Summary of the Inputs and Outputs of the OAG Calculator to Acquit the Impact for the Eucalypt Floodplain Forest TEC

MNES	Status	Habitat type	Impact area	Impact HQS	Time until ecological benefit	RoL (%) without and with offset	Time of which loss is averted	Offset start habitat quality	Future quality without offset	Future quality with offset	Confidence (%) in habitat quality result	Area (ha) within offset package	% of impact offset
Eucalypt Floodplain Forest TEC	Endangered	-	16.6	6	20	0	N/A as no RoL was factored in (0%)	3	3	6	80	**70.2**	**133**

8.0 Offset Management Actions

8.1 Management Zones

The Offset Areas have been subdivided into Management Zones (MZs) based on existing habitat condition, ecological function and the broad management interventions required to achieve measurable habitat quality improvement over the offset period. Delineation of MZs enables areas with similar objectives and management requirements to be grouped, supporting efficient, targeted and outcome-focused implementation of management actions.

The overarching management actions and objectives described for each MZ in this section are intentionally high-level and contextual, providing an overview of the intended management direction for each zone. While these actions are expected to contribute to measurable improvements in habitat quality for the Offset MNES, the specific MNES-targeted management actions, performance targets, progressive criteria and completion criteria are detailed in the subsequent sections of this OMP. Five MZs have been delineated across the Offset Areas and are summarised below, with further detail provided in **Section 8.1** and present within **Figure 8.1** and **Figure 8.2.**

- **MZ01**: Highly degraded or largely cleared areas, including former grazing paddocks, targeted for transition into regrowth woodland or open forest through assisted regeneration and restoration. Applies to koala, collared delma, greater glider, SEVT TEC and Eucalypt Floodplain Forest TEC.
- **MZ02**: Young regrowth vegetation with limited structural development, managed to promote progression toward mature regrowth woodland capable of supporting foraging habitat and developing shelter and breeding microhabitat features. Applies to koala, collared delma and greater glider.
- **MZ03**: Mature regrowth to remnant vegetation that currently provides limited foraging or shelter resources with management focused on enhancing structural complexity and key microhabitat features required for breeding, shelter or denning. Applies to koala, collared delma, greater glider and Eucalypt Floodplain Forest TEC.
- **MZ04**: Remnant vegetation that already functions as foraging, breeding, denning and shelter habitat for all Offset MNES. Managed primarily to maintain and support modest improvements in habitat quality from ongoing or emerging threats. This zone is subdivided based on accessibility and management constraints:
    - **MZ04a**: Areas generally accessible to vehicles and management personnel
    - **MZ04b**: Areas with limited or no vehicle access, requiring low-impact or passive management approaches.
- **MZ05**: The boundary of riparian woodland and forest as delineated by RE, ranging from regrowth to remnant condition, managed to protect hydrological function, enhance connectivity and support riparian-dependent MNES. Applies to koala, greater glider, yellow-bellied glider, *Cycas megacarpa* and Eucalypt Floodplain Forest TEC.

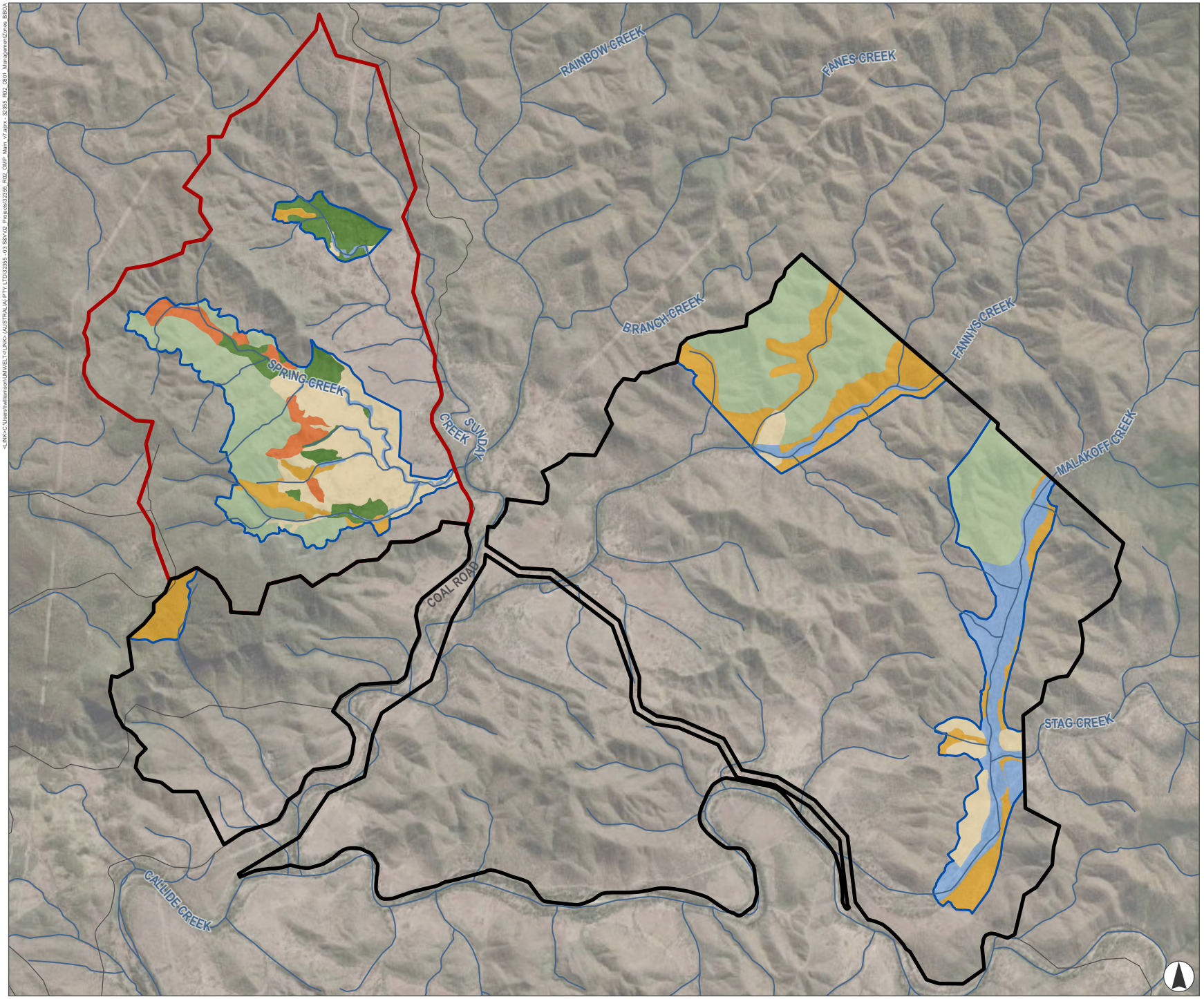
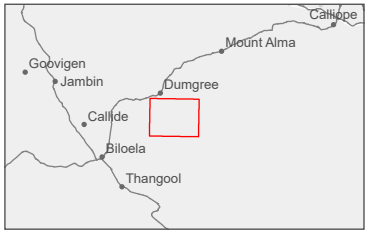


FIGURE 8.1

Management Zones throughout the BBOA

Legend

- Lone Star Boundary
- The Cedars Boundary
- Road
- Watercourse
- Offset Area
- MZ01
- MZ02
- MZ03
- MZ04a
- MZ04b
- MZ05



0 1.5 3

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

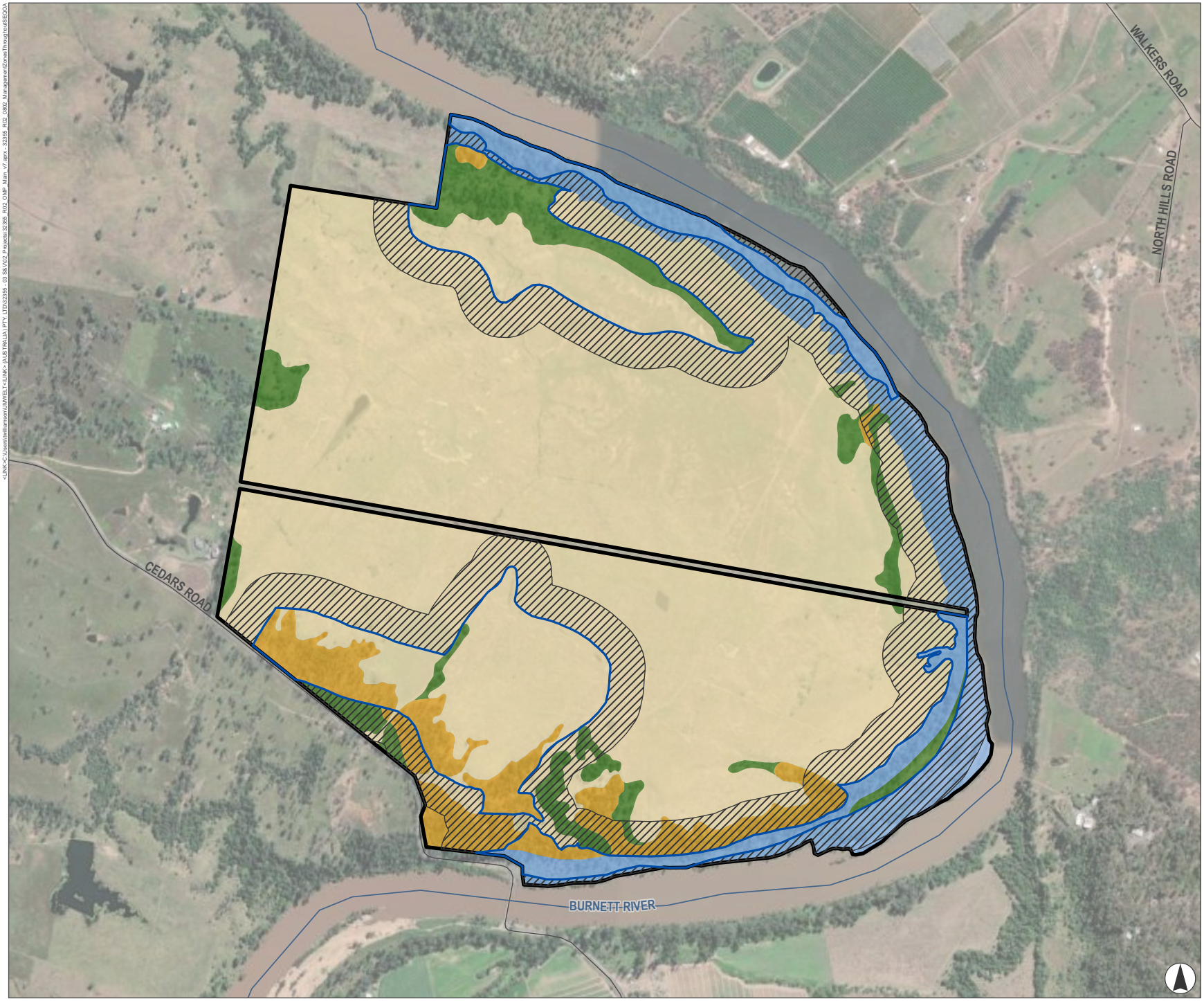


FIGURE 8.2

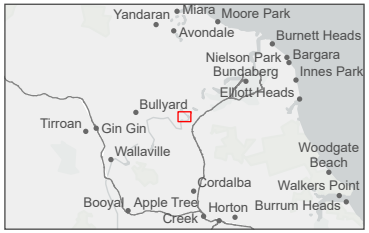
Management Zones Throughout the SEQOA

Legend

- Road
- Watercourse
- South Kolan Boundary
- Offset Area
- Offset Area Buffer

Management Zones

- MZ01
- MZ03
- MZ04a
- MZ05



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK><C:\Users\wilkinson\UMWELT<\LINK> (AUSTRALIA) PTY LTD\3258 - 03 SEQ\02 Projects\32355_R02_OMP Mgmt v7.aprx - 32355_R02_0802_ManagementZonesThroughoutSEQOA

8.1.1 Management Zone 1

MZ01 includes highly degraded, largely cleared grazing paddocks that provide minimal habitat value at the time of commencement of the offset. This MZ occurs extensively across the plains and lower slopes of the BBOA, typically adjacent to remnant vegetation (**Figure 8.1**). The SEQOA is dominated by MZ01 and largely isolates the existing vegetation to the riparian zones (**Figure 8.2**).

The objective of this MZ is to facilitate natural regeneration and implement active restoration towards a woodland structure (representative of the pre-clearance RE) and provide habitat utility value for koala, greater glider, collared delma and Eucalypt Floodplain Forest TEC within the offset timeframe. The regeneration of this MZ will provide broader landscape benefits by increasing existing habitat patch sizes and increasing connectivity value between currently fragmented patches.

8.1.1.1 Objectives and Management Actions

The primary goals within MZ01 include establishing a canopy cover at 25% of the RE benchmark and a minimum height of 10 m or 50% of the RE benchmark, incorporating species typical of the RE across all strata, while preventing weeds from dominating any layer. **Table 8.1** outlines the overarching objectives and management actions for this MZ.

Table 8.1 Overarching Objectives and Management Actions Throughout MZ01

Overarching Objectives	Overarching Management Actions
Median tree canopy height of 10 m or 50% of RE benchmark	Facilitate native vegetation recovery, planting or seeding as required.
Tree canopy cover ≥20% (of RE benchmark)	Monitor recruitment for canopy species presence and density, facilitate native vegetation recovery, planting or seeding as required.
RE characteristic canopy species	Monitor recruitment and species presence, facilitate native vegetation recovery.
Weeds do not dominate any stratum	Weed control, weed hygiene practices.
Exclude cattle grazing	Exclude cattle grazing from restoration areas
Landscape connectivity	Increase patch sizes and connectivity between existing habitat.

8.1.2 Management Zone 2

MZ02 includes early-stage young regrowth characterised by underdeveloped vegetation structure and a general scarcity of key microhabitat features associated with mature habitat. These areas have been historically cleared and the native regeneration includes RE-characteristic species which are too young to provide functional habitat. Therefore, management interventions are typically less intensive than the grazing paddocks of MZ01 yet more intensive than that required for the mature regrowth within MZ03. This MZ is only represented within one patch throughout The BBOA and absent from both the SEQOA (**Figure 8.1**, **Figure 8.2**).

8.1.2.1 Objectives and Management Actions

The aim for MZ02 is to develop a more advanced regrowth structure, progressing toward a remnant woodland or open forest condition that supports resilient foraging, dispersal and breeding habitat values. **Table 8.2** presents the overarching objectives for this MZ which include establishing a canopy cover exceeding 20% or 50% of the benchmark for the relevant RE threshold, achieving a median canopy height of 10 metres or 70% of the RE benchmark and ensuring RE-characteristic species are represented across all vegetation strata. Weed species must not dominate any vegetation layer.

Table 8.2 Overarching \ Objectives and Management Actions throughout MZ02

Overarching Objectives	Overarching Management Actions
Median tree canopy height of 10 m or 70% of the benchmark RE canopy height	Conduct weed control, conduct feral animal management, targeted infill planting if required.
Tree canopy cover ≥20% or 50% of the benchmark canopy cover	Monitor recruitment for canopy species presence and density, targeted infill planting if required, ecological thinning if required.
Characteristic canopy species	Monitor recruitment and species presence, targeted infill planting if required.
Weeds do not dominate any stratum	Weed control, weed hygiene practices.
Exclude cattle grazing	Exclude cattle grazing from restoration areas
Landscape connectivity	Increase patch sizes and connectivity between existing habitat.

8.1.3 Management Zone 3

MZ03 includes mature regrowth vegetation that generally provide foraging resources however, does not provide the more complex or old-growth microhabitat features such as tree hollows critical for breeding, shelter or denning habitat. This MZ includes areas which have been subject to selective canopy clearing and large trees have been retained whilst the understorey is highly modified and maintained for grazing use. Across both the BBOA and SEQOA, MZ03 is broadly confined to lower and mid slopes between cleared paddocks (MZ01) and remnant vegetation (MZ04).

This MZ already currently provides some habitat value for the Offset MNES however, with further habitat quality improvements possible.

8.1.3.1 Objectives and Management Actions

By the end of the 20-year offset period, the vegetation within MZ03 is anticipated to have reached or closely trending towards remnant condition, with canopy cover exceeding 50% of the RE benchmark and vegetation height achieving 70% of the benchmark for the corresponding RE. As a result, an increase in the number of habitat and shelter trees is also anticipated. Being mature regrowth condition, MZ03 would be a suitable recipient zone for artificial hollows to provide immediate, interim hollow breeding habitat for the two threatened glider Offset MNES whilst natural hollows develop. Threat management actions will focus on implementing an appropriate fire regime and minimising both the extent and density of weed infestations. The overarching objects and management actions is presented within **Table 8.3.**

Table 8.3 Overarching Objectives and Management Actions of MZ03

Overarching Objectives	Overarching Management Actions
Regrowth to remnant status (50% benchmark cover, 70% benchmark height of RE benchmark)	Exclude or manage cattle grazing, prevent selective and broadscale clearing, ecological thinning if required.
Increase abundance of glider breeding resources*	Monitor and maintain artificial hollows installed under the glider hollow protocol.
Implement appropriate fire regime	Fire regime, fire breaks, fire response plan.
Weeds do not dominate any stratum	Weed control, weed hygiene practices.
Reduce barbed entanglement and mortality*	Adapt barbed wire to remove top strand
Conditional cattle grazing	Conditional use of cattle grazing to manage fuel load and maintain ground layer structure and composition.

Notes:

*Objective (and consequent management) apply only to the BBOA

8.1.4 Management Zone 4

MZ04 is comprised exclusively of remnant and structurally mature vegetation, representing the highest-value, existing habitat available for the Offset MNES. This zone forms the largest proportion of the Offset Areas and has been subdivided to account for differences in management accessibility. MZ04a includes areas that are generally accessible to vehicles and field staff, whereas MZ04b encompasses areas where access is currently constrained, limiting the range of feasible on-ground management activities.

8.1.4.1 Objectives and Management Actions

Given the high baseline habitat quality of MZ04, management efforts are catered towards preserving and enhancing the habitat's capacity to support all Offset MNES. This is best achieved by addressing the key threats to each Offset MNES including the implementation of an appropriate fire regime, controlling weed infestations, reducing feral animal predation and the removal or replacement of barbed-wire fencing. **Table 8.4** outlines the overarching goals aimed at sustaining habitat functionality for each offset MNES.

Table 8.4 Overarching Objectives and Management Actions of MZ04

Overarching Objectives	Overarching Management Actions
Implement appropriate ecological fire disturbance and hazard reduction	Fire regime, fire breaks, bushfire management plan.
Feral animal population	Reduce feral animal population.
Weeds do not dominate any stratum	Weed control, weed hygiene practices.
Reduce barbed wire entanglement mortality*	Adapt barbed wire to remove top strand.

Notes:

*Objective (and consequent management) apply only to the BBOA

8.1.5 Management Zone 5

MZ05 has been delineated using riparian REs as these reliably define vegetation communities associated with watercourses and drainage lines, which are functionally distinct in their structure, hydrology and role as ecological corridors. Throughout the western section of the BBOA, MZ05 is fragmented and degraded with management focused on stabilisation and progressive structural recovery within and directly adjacent to the riparian areas. At the SEQOA, much of the remaining intact vegetation also occurs within MZ05.

Collectively, MZ05 plays a critical role in maintaining landscape connectivity, facilitating fauna movement and supporting ecological processes across properties and bioregions. These riparian corridors function as important climate refugia for a range of species, offering moderated microclimates, moisture availability and shelter during climatic stress. Confirmed presence of MNES within this MZ, especially the greater glider at the BBOA, further emphasise its value as functional habitat and a movement corridor for Offset MNES.

8.1.5.1 Objectives and Management Actions

MZ05 predominantly comprises remnant riparian vegetation and supports some of the largest and most structurally complex trees throughout the Offset Areas. Although this MZ has considerable natural habitat value, its quality is being reduced by weed infestations - particularly lantana (*Lantana camara*), rubber vine (*Cryptostegia grandiflora*) and cat's claw creeper (*Macfadyena ungus-cati*) as well as cattle trampling, bank erosion and fragmentation. These issues are worsened by the fact that large portions of MZ05 border non-remnant (MZ01) and regrowth (MZ02) vegetation, both core grazing areas. This increases the relative importance of complementary management in adjacent MZ01 and MZ02 areas to improve structural continuity and landscape connectivity.

Given the ecological significance and sensitivity of MZ05, cattle grazing will be excluded and appropriate fire management will be implemented to protect riparian function, mature canopy trees and habitat values for the Offset MNES. Enforcing cattle exclusion throughout this MZ may require the erection of fencing where MZ05 borders MZ04a/b where conditional grazing may occur such as the areas along the eastern areas of the BBOA (**Figure 8.1**).

The overarching objectives and management actions for MZ05 are provided in **Table 8.5**.

Table 8.5 Overarching Objectives and Management Actions of MZ05

Overarching Objectives	Overarching Management Actions
Weeds do not dominate any stratum	Weed control, weed hygiene practices.
Appropriate fire management	Appropriate landscape fire regime, fire breaks and fire management plan.
Improved connectivity	Facilitate the regeneration of regrowth and non-remnant riparian patches on and adjoining patches throughout each offset property.

8.2 Offset Management Phases

The objective of this OMP is to achieve measurable improvements in habitat quality and deliver conservation outcomes for Offset MNES within a 20-year timeframe.

The BBOA and SEQOA differ in baseline condition and offset objectives and therefore require distinct but complementary management pathways:

- The BBOA is characterised by remnant and regrowth vegetation requiring threat abatement, structural maturation and condition uplift.
- The SEQOA contains more extensive areas of significant weed infestation (including giant rat's tail grass and cat's claw creeper) and requires intensive weed suppression and active revegetation to achieve ecological recovery.

Management phases are therefore structured to:

- Front-load intensive weed control and revegetation in the SEQOA
- Prioritise regrowth recovery, structural development and threat reduction in the BBOA
- Deliver progressive HQS uplift across both areas.

To support this objective, the Offset Area will be managed through four sequential phases:

- Establishment (Year 1–2)
- Early Interventions (Year 2–5)
- Maintenance (Year 5–15)
- Completion (Year 15–20).

8.2.1 Establishment: Yr 1–2

The Establishment Phase focuses on establishing the foundations for successful long-term offset delivery. Key objectives include securing the Offset Areas under covenant, initiating data collection and completing the baseline dataset, installing infrastructure (fire breaks, access tracks), and preparing the supporting management plans that will direct all ecological interventions.

Actions to be delivered include:

- Establish enduring protection and legal security of the Offset Area as intended through a Conservation Covenant
- Destocking of the Offset Areas
- Construct/ reinstate access tracks and establish fire breaks
- Modify barbed-wire fencing to wildlife-friendly in priority areas
- Collared delma relocation and threatened glider hollow relocation should it be triggered during construction phase of the Project
- Baseline weed and feral animal management
- Permanent establishment of long-term monitoring sites including HQA, regrowth recovery and weed assessments.

During this phase, the following management plans will be delivered and initiated:

- Bushfire Management Plan
- Restoration Management Plan
- Weed Management Plan

- Grazing Management Plan.
- Feral Pest Management Plan

8.2.2 Early Interventions: Yr 2–5

Actions within the Early Interventions Phase will implement those specified within the supporting plans with a priority on restoration actions that will begin or encourage the recovery of native vegetation and reduce threats.

Key actions include:

- Commence any assisted regeneration interventions on the BBOA as guided by the RMP which may include trial planting or seeding, prescribed burns or other trigger disturbances
- Conduct planting/ seeding throughout the restoration areas on the SEQOA
- Repeat HQAs in years three and five to give a strong indication of habitat trajectory and inform early management.

All other threat abatement actions will follow the schedule and respective management plans to guide the location and timing of actions. This will include:

- Weed management as per the risk-based prioritisation strategy
- Prescribed burns and follow-up monitoring and management
- Feral animal management and monitoring
- Grazing exclusion/ regime as per the GMP, including assessments of vegetation response.
- Collared delma relocation and threatened glider hollow relocation should it be triggered during construction phase of the Project (**Section 6.3.5.3**).

8.2.3 Maintenance: Yr 5-15

The Maintenance Phase is the longest in duration and focuses on consolidating ecological gains and made during earlier phases. It is characterised by continued implementation of threat abatement and restoration actions but with an expected gradual reduction in management intensity as systems stabilise. Monitoring will be used to evaluate progress toward habitat quality targets and inform adaptive refinement of management practices.

A full reassessment of baseline conditions, targeted MNES surveys and MNES-specific indicators will be conducted in Year 5, Year 10 and Year 15 to track the trajectory of ecological outcomes. Regular monitoring and targeted interventions will continue, guided by the established management plans and informed by earlier phase outcomes.

In the BBOA, outcomes of the Year 5 recruitment assessment will determine the ongoing restoration pathway. Areas meeting canopy recruitment thresholds will continue under an assisted natural regeneration approach, while areas failing to meet these thresholds will trigger active restoration measures, including infill planting or direct seeding. Subsequent management will be tailored to support the selected pathway and achieve the relevant habitat quality targets.

Key activities in this phase will include:

- Prescribed burning implemented per the BMP, ensuring appropriate fire frequency and intensity to support native vegetation structure and composition and prevent excessive fuel build-up and fire hazard.
- Continued annual feral animal control and monitoring, with a focus on high-use corridors and seasonal population surges.
- Continue regrowth recovery plots to evaluate canopy development, species richness, and natural recruitment.
- Targeted infill planting, direct seeding or assisted regeneration in areas showing poor recovery or species imbalance.
- Implementation of the GMP, including:
    - Continued enforcement of exclusion zones
    - Condition grazing in designated areas to manage weed growth or reduce fuel loads
    - Ongoing assessment of grazing impacts on vegetation condition and recruitment.

By the end of Year 15, the following condition/management benchmarks are anticipated:

- Functional understorey structure not dominated by exotic species including lantana, creeping lantana, giant rat's tail or cat's claw creeper
- Regrowth vegetation is progressing towards forecast structure and composition RE benchmark thresholds.

This phase confirms whether the Offset Area is progressing toward a self-sustaining ecological state. Data and experience gained during this period will inform final planning and any corrective actions required in the Completion Phase.

8.2.4 Completion: Yr 15-20

The Completion Phase serves as the final period for long-term offset outcomes. The duration allows for any final interventions, corrective actions and/or adaptive management. By this stage, the previously degraded ecological systems should be functioning more independently with minimal active management required. The primary focus of this phase is on evaluating performance against the offset objectives and habitat quality targets defined for each Offset MNES (**Table 9.5**).

Management during this phase is largely limited to monitoring, verification, and targeted remedial actions if needed. It is also the period during which planning for handover, transition to custodianship, or ongoing stewardship (if applicable) is initiated.

Key activities in this phase include:

- Final HQAs to demonstrate the habitat quality improvement.
- Final monitoring and summary of permanent 'regrowth recovery' plots.
- Offset MNES surveys and final population assessment of *C. megacarpa* and *S. bidwillii*.
- Assessment of grazing regime outcomes, including:
    - Vegetation health and recruitment in exclusion vs. grazed areas
    - Evidence-based decision on whether conditioned grazing should continue as a long-term management tool.

- Preparation of the Year 20 Summary Report, summarising:
  - Ecological outcomes against performance criteria
  - Management actions undertaken
  - Monitoring results and adaptive responses
  - Recommendations for post-20-year custodianship or conservation stewardship.

At the conclusion of the Completion Phase, the Offset Area should demonstrate:

- Stable and self-sustaining vegetation communities aligned with the target REs
- Functionally connected habitat for Offset MNES, including eucalypt woodland, open forest and closed forest SEVT TEC habitat
- Ongoing natural regeneration without need for large-scale intervention
- Effective and sustainable control of key threats (weeds, ferals, fire, grazing)

8.3 Supporting Management Plans

The OMP will be supported by the delivery of several specialised management plans prepared by a suitably qualified person during Year One of offset management. These plans provide the specific technical guidance and on-ground strategies necessary to deliver effective restoration and threat abatement throughout the Offset Areas. Implementing these specialised management plans increases the likelihood of long-term offset success by enabling strategies to evolve with improved understanding of site dynamics. As data is progressively gathered through monitoring programs, these plans will be reviewed and adapted to ensure ecological objectives are being met efficiently and effectively.

While the detailed sub-plans are scheduled for delivery following Project approval, this OMP provides a clear and binding commitment to offset management to achieve the completion criteria and prescribed habitat quality improvement.

Bushfire Management Plan

Establishes an ecologically appropriate and operationally feasible fire program for the BBOA and SEQOA, integrating RE *Fire Management Guidelines/Planned Burn Guidelines* and consistent with Offset MNES requirements. The BMP will incorporate fire history and baseline FFLH results, identify control lines and access, define refugia and mosaic objectives and prescribe burn planning including site preparation, post-fire monitoring and adaptive review to manage Extreme fuel hazards and support understorey recovery consistent with RE benchmarks.

Restoration Management Plan

Provides the decision framework and work program for restoration areas supporting forecast habitat for multiple Offset MNES. The Restoration Management Plan (RMP) will confirm reference ecosystems and operationalise the approach prescribed in the OMP. Including assisted natural regeneration as the default approach for the BBOA and Year 5 recruitment and composition thresholds set to trigger active restoration by the end of Year 6. Conversely, the RMP will detail the preparation, planting/ seeding, maintenance and monitoring thresholds as the first approach for restoration throughout the SEQOA.

Feral Pest Management Plan

Provides details on targeted control strategies for priority pest species, including seasonal timing, control and monitoring methods and adaptive response protocols to minimise predation, soil disturbance, and damage to Offset MNES habitat.

Grazing Management Plan

Outlines livestock management protocols to minimise ecological impacts and support vegetation recovery. It prescribes fencing, cattle exclusion zones and monitoring to track vegetation response, fuel load changes, and weed dynamics, particularly in retained grazing areas.

Defines how cattle grazing will be managed so it does not compromise offset outcomes including the exclusion and conditional inclusion of grazing as consistent with this OMP. The Grazing Management Plan (GMP) will set stocking/rotation parameters and conservation triggers for any conditional grazing and will implement a monitoring and reference-paddock approach using HQA-derived sub-attributes (native grass cover, exotic cover, native shrub cover, EDL recruitment) to demonstrate no detriment and to support adaptive adjustment of grazing pressure.

Weed Management Plan

Operationalises a prioritised, multi-year integrated weed program across both Offset Areas to deliver measurable reductions in non-native cover and protect key MNES habitat features, consistent with the forecast HQS and progressive criteria. The Weed Management Plan (WMP) will specify hygiene protocols, mapping of priority infestations, treatment schedules and a resourcing plan aligned to weed management effort.

8.4 Management Actions

8.4.1 SMART Framework for Management Actions

Management actions within this OMP have been developed in accordance with the SMART framework (Specific, Measurable, Achievable, Relevant and Time-bound) to ensure that offset delivery is outcome-focused, clearly defined, and auditable over the 20-year offset period.

Application of the SMART framework ensures that each management action is:

- **Specific** to the ecological requirements of the Offset MNES and the associated offset strategy (**Section 6.3 and Section 0**) to deliver a measurable improvement within each management zone.
- **Measurable** through defined performance indicators, including changes in HQS, vegetation structure and condition, species presence and usage and the extent and severity of key threats (**Section 9.2**).
- **Achievable** within the operational, resourcing and access constraints of the offset properties, and within the defined offset delivery phases of Establishment, Early Intervention, Maintenance and Completion (**Sections 8.2 and 9.2.2**).
- **Relevant** to the recovery objectives of the Offset MNES and consistent with the principles of the EPBC Act Environmental Offsets Policy (**Section 4.3**).

- **Time-bound** with actions scheduled, reviewed and evaluated at defined intervals aligned with the offset timeframe, including annual monitoring, five-year performance milestones and a Year 20 completion assessment (**Section 8.5 and 9.2.1**).

In practice, the SMART framework underpins all management actions within the OMP. Threat-abatement and restoration measures are targeted and structured with defined thresholds, performance triggers and timeframes for implementation, monitoring and follow-up corrective actions. Actions, such as assisted natural regeneration, fire management and weed control, are directly linked to forecast HQS improvement and the achievement of defined progressive and completion criteria for each relevant MNES.

This section outlines the management actions to be implemented across the BBOA and SEQOA to achieve the progressive and completion criteria defined in **Section 9.0**. The actions are structured around the primary ecological drivers and threats influencing habitat quality within the Offset Areas: bushfire, weeds, feral animals, grazing and restoration.

Although the BBOA and SEQOA occur in different bioregional contexts and support different vegetation communities, they are presented within a unified management framework. This structure ensures consistency in monitoring, reporting and adaptive management while allowing site-specific prescriptions within each supporting management plan. The combination of both Offset Areas within a single management chapter reflects the shared management objectives and prescriptions.

Each management theme includes:

- A summary of baseline condition
- Clear management objectives
- Performance indicators
- Adaptive review and corrective action mechanisms.

Together, these actions provide an integrated and defensible framework for delivering measurable ecological improvement across both Offset Areas.

8.4.2 Weed Management

Weed management in the Offset Areas will focus on reducing the cover and ecological impact of priority invasive plants that are degrading habitat condition, limiting natural regeneration, and increasing wildfire risk. The program will target weeds that most directly affect MNES habitat function and the attributes measured through HQAs including ground layer species richness and cover, canopy/ subcanopy cover, height and recruitment.

8.4.2.1 Baseline Status of Weed Species

Exotic plant cover is widespread across the Offset Areas and is a major contributor to reduced HQS, with the most extensive infestations comprising cat's claw creeper, rubber vine, giant rat's tail grass, lantana and creeping lantana. Current weed data and their influence on HQS are provided in **Section 6.3** for the BBOA and **Section 7.4** for the SEQOA. A clear disparity exists between the Offset Areas as non-native cover is very high and widespread throughout the SEQOA, while exotic cover is lower and patchier throughout the BBOA.

Both Offset Areas support a mix of WoNS and other exotic grasses and forbs (**Photo 8.1** to **Photo 8.6**), with distribution and severity varying across vegetation types (**Table 8.6**), resulting in differing levels of risk to MNES and associated habitat values.

Data from dedicated weed assessments, HQAs and incidental observations were collated to produce weed density maps following the Weeds of National Significance (WoNS) Protocols (McNaught, Thackway, & Brown, 2008) (**Figure 8.3** to **Figure 8.5**).

Year 1 monitoring will expand and refine the existing dataset by improving spatial coverage and quantifying weed cover and species richness at repeatable monitoring sites to support prioritisation of management actions. While management of restricted matter weeds is a GBO, weed management within the Offset Areas will extend beyond spread minimisation to achieve measurable habitat improvements for the Offset MNES.

Table 8.6 Distribution and severity of key weeds within the Offset Areas

Category	Weed Species	Distribution and Severity		Threat to MNES and Habitat
		BBOA	SEQOA	
Weeds of National Significance (WoNS)	Lantana (*Lantana camara**)	Scattered and somewhat common with the most dense infestations occurring within and extending from riparian corridors.	• Scattered throughout the vegetated areas of the property with some very dense infestations in the fringing riparian corridor along the Burnett River.	• Inhibits fauna movement within riparian corridors and alters fire regimes and vegetation composition and structure. • ***Samadera bidwillii*:** An expected threat to the species referenced for its tendency to increase fuel load and wildfire severity (Department of Climate Change, Energy, the Environment and Water, 2026) • **SEVT TEC:** Broadscale displacement of native plants and promotes the spread of fire into vine thickets (McDonald, 2010).
	Rubber vine (*Cryptostegia grandiflora**)	Occurs sparsely within the BBOA, largely restricted to creek lines.	Occurs sparsely within the SEQOA, largely restricted to drainage lines outside the main riparian corridor.	• Inhibits fauna movement in riparian corridors. Outcompetes native species altering vegetation and habitat composition / structure.
	Cat's claw creeper (*Dolichandra unguis-cati**)	Occurs in a single, severe patch of SEVT TEC on The Cedars.	Forms dense infestations along the riparian corridor fringing the Burnett River from the north to centre of the South Kolan property.	• Degrades vegetation composition, structure and function within SEVT TEC, eucalypt riparian zones and Eucalypt Floodplain Forest TEC. • Cat's claw creeper has the capacity to collapse vegetation canopies and thereby fundamentally remove habitat suitability and TEC status.
	Giant rat's tail (*Sporobolus pyramidalis**)	Not recorded within the BBOA	Widespread and severe throughout the SEQOA. Existing grazing practices which promote frequent fires have enhanced conditions for continual spread.	• Outcompetes native ground cover and woody recruits • Alters fire regimes
	Parthenium weed (*Parthenium hysterophorus**)	Occasional infestations throughout the BBOA.	Not recorded within the SEQOA.	• Outcompetes native ground cover and woody recruits • Alters fire regimes and ground layer composition.

Category	Weed Species	Distribution and Severity		Threat to MNES and Habitat
		BBOA	SEQOA	
Other Exotic Grasses	Other: • Indian bluegrass (*Bothriochloa pertusa**) • African lovegrass (*Eragrostis curvula**) • Red-natal grass (*Melinis repens**) • Sabi grass (*Urochloa mozambicensis**) • Buffel grass (*Cenchrus ciliaris**) • green panic (*Megathyrsus maximus**)	Predominantly occur in lower-lying non-remnant areas (MZ01) with limited tree canopy cover within the Offset Areas. Indian bluegrass for example averages 24% of the groundcover throughout the BBOA. Some species (e.g. red-natal grass and buffel grass) are also widespread across regrowth and remnant vegetation.	Green panic is present as a patchy, locally dense distribution across the SEQOA.	• May outcompete native ground cover and woody recruits • Alter fire regimes and ground layer composition.
Other Exotic Forbs	Creeping lantana (*Lantana montevidensis**)	Widespread and locally severe in patches of the BBOA, forming up to 50% of the ground cover in areas. More typically occurring between 5-20% throughout 11.11.15 remnant patches.	Not recorded within the SEQOA.	• **Collared delma:** Smothers and reduces shelter habitat availability • Alters ground layer fire intensity, • Outcompete native ground cover and woody recruits.
	• blue-billygoat weed (*Ageratum houstonianum**) • zinnia (*Zinnia peruviana**) • purple verbena (*Glandularia aristigera**) • flannel weed (*Sida cordifolia**) • chickweed (*Stellaria media**)	Occur sporadically throughout remnant and regrowth vegetation, generally at low densities but occasionally forming dense infestations.	Not recorded within the SEQOA.	Outcompete native ground cover.

Photo 8.1 Very dense lantana infestation along the riparian corridor at the SEQOA

Photo 8.2 Giant rat's tail grass throughout RE 12.3.3d on the SEQOA

Photo 8.3 Cat's claw creeper reaching the canopy at the SEQOA

Photo 8.4 The most extensive patch of lantana observed at the BBOA

Photo 8.5 Exotics throughout paddocks on the BBOA including Indian blue grass, blue billygoat weed

Photo 8.6 Dense infestation of parthenium adjacent to SEVT TEC on the BBOA

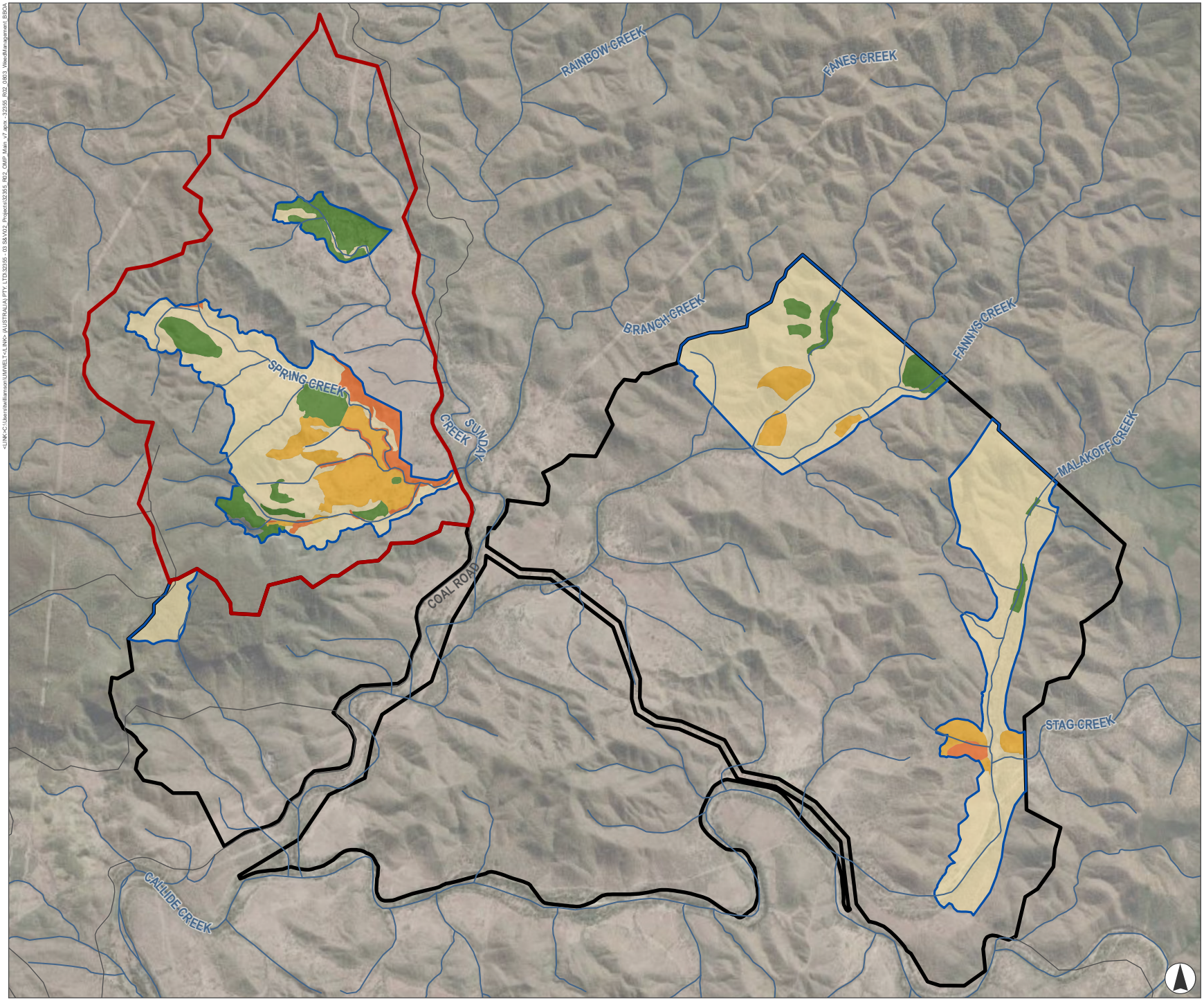


FIGURE 8.3

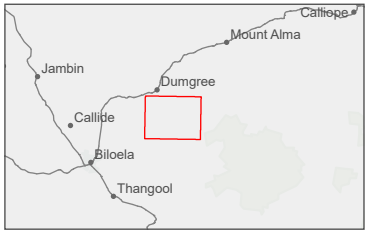
Weed Severity throughout the BBOA

Legend

- Road
- Watercourse
- Offset Area
- Lone Star Boundary
- The Cedars Boundary

Weed Density Map

- 1-10%
- 11-50%
- 51-70%
- >70%



0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

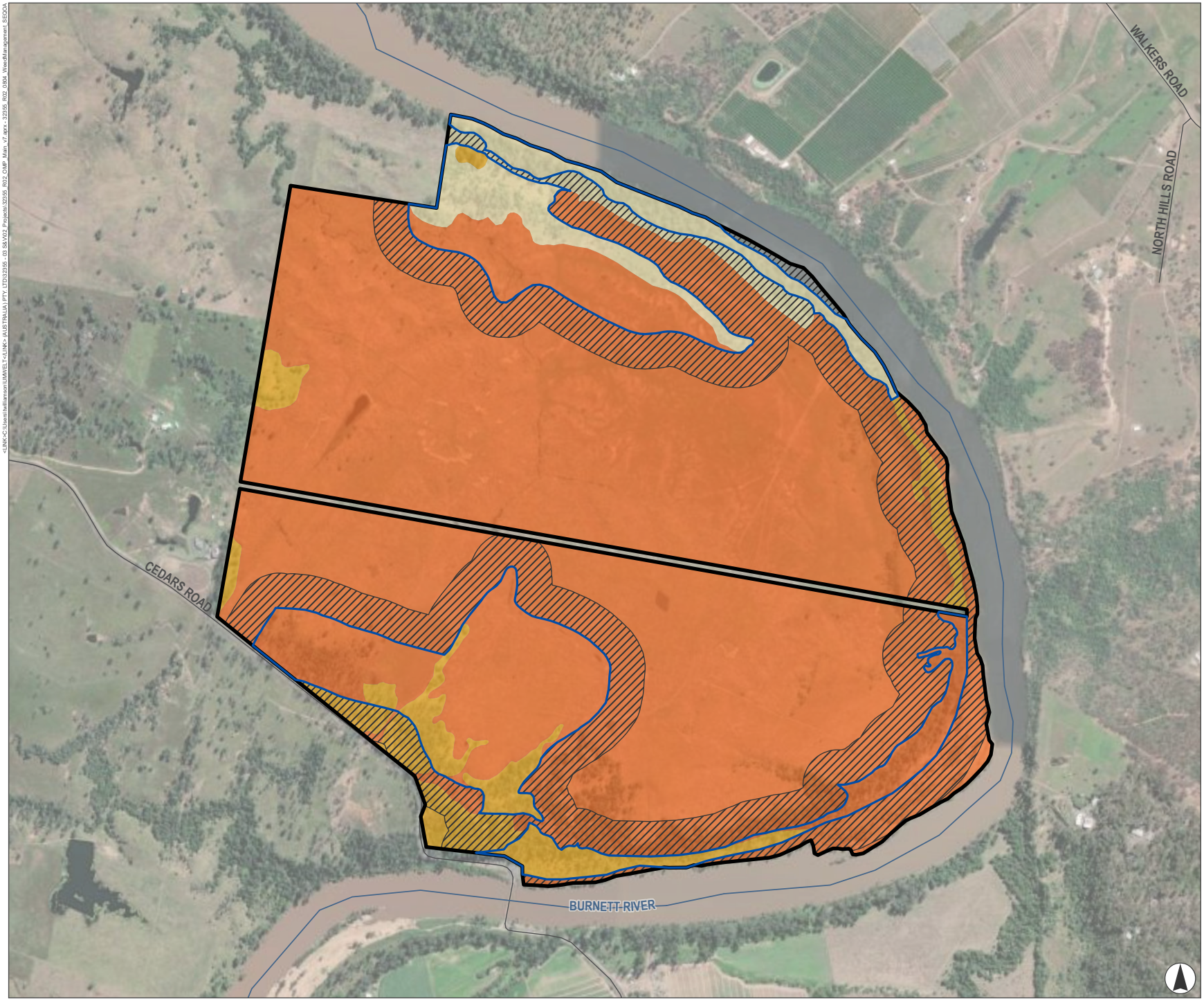


FIGURE 8.4

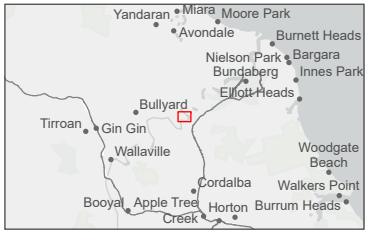
Weed Severity Throughout the SEQOA

Legend

- Watercourse
- Road
- South Kolan Boundary
- Offset Area
- Offset Area Buffer

Weed Density Map

- 11-50%
- 51-70%
- >70%



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK:<C:\Users\twilliamson\UMWELT<LINK>(AUSTRALIA) PTY LTD\23\35 - 03 S&V\02 Projects\32\35\ R02 OMP Main_v7.aprx - 32\35\ R02 _0804 WeedManagement SEQOA

8.4.2.2 Weed Management Strategy

Weed management will focus on actions that most effectively improve MNES habitat condition, guided by the following principles:

Risk-based prioritisation: Target weeds that most directly affect habitat function, including:

- Cat's claw creeper in riparian areas, SEVT TEC and Eucalypt Floodplain Forest TEC
- Creeping lantana in high-quality collared delma habitat (as measured in the HQAs)
- Lantana in *Samadera bidwillii* habitat and riparian corridors
- Parthenium, lantana, and other exotics in adjacent to SEVT TEC
- Giant rat's tail grass in Eucalypt Floodplain Forest TEC and it's 100 m buffer.
- **Focus on HQS improvement:** prioritise areas where control can measurably improve vegetation and Offset MNES habitat attributes (native ground-layer cover and richness, collared delma shelter habitat availability, canopy/ subcanopy height, cover and recruitment).
- **Integrate with fire and grazing management**: coordinate weed management with fire and grazing to avoid increasing fire severity or reinforcing post-fire weed dominance. Ensure burns are followed by timely weed control.
- **Hygiene and containment:** apply weed hygiene to vehicles, machinery and materials to reduce spread along tracks, easements and restoration areas.
- **Monitoring-led adaptive management**: use baseline and follow-up monitoring to evaluate effectiveness and refine priorities, particularly in areas where meeting TEC condition thresholds is required (e.g. Eucalypt Floodplain Forest in the SEQOA).

Management will follow a staged, integrated program combining containment, targeted treatment of priority infestations, follow-up control to prevent reinvasion and assisted natural regeneration where weed dominance suppresses native recovery. Key species include cat's claw creeper, giant rat's tail grass, lantana and creeping lantana with additional exotic grasses and forbs treated locally where they impede regeneration.

Effort will be concentrated in high-value or sensitive habitats such as riparian corridors, creek lines, TEC edges, vine thickets, threatened flora locations and collared delma microhabitat. In the SEQOA, reducing giant rat's tail grass and cat's claw creeper is essential to improving native understorey cover to meet Eucalypt Floodplain Forest condition criteria (Department of Climate Change, Energy, the Environment and Water 2022a).

Fire, where used, will remain within ecological thresholds for the relevant RE. For lantana, an integrated approach may be applied (e.g. mosaic burns followed by herbicide on regrowth), supported by post-treatment monitoring to prevent reinvasion.

8.4.2.3 Management Strategy, Progressive Criteria and Corrective Actions

Weed management will target priority infestations in high-value habitats across both Offset Areas, focusing on actions most likely to deliver measurable improvements in habitat condition. Performance will be assessed using repeated Weed Assessments and HQAs, with management priorities, methods and treatment sequencing refined over time in response to weed cover trends, reinfestation rates and native vegetation response. The progressive criteria and corrective actions area detailed within **Section 9.2 and Section 9.3.**

8.4.2.4 Weed Management Plan

A detailed WMP will be developed and implemented in Year 1 to operationalise the above approach. The WMP will:

- Map and rank priority infestations using baseline monitoring and existing survey datasets (including HQAs and weed assessment plots)
- Define priority treatment zones (e.g. drainage lines and creek lines, TEC patches, SEVT TEC edges, known threatened flora areas, collared delma microhabitat patches and movement corridors)
- Specify treatment methods by weed type and setting (e.g. vine control in riparian/TEC settings, grass weed suppression in paddocks/regrowth, integrated lantana control)
- Include hygiene protocols for vehicles, machinery and materials and procedures to prevent spread along tracks/easements
- Integrate weed actions with grazing management, fire
- Planning and restoration works to prevent reinvasion and support native recovery.

Together, these measures will reduce weed-driven degradation, support native ground-layer recovery and EDL recruitment and underpin the forecast improvements in habitat condition and function across both Offset Areas.

8.4.3 Feral Pest Management

Feral pests relevant to the Offset MNES include feral pig, feral cat, European red fox, wild dog, hare and rabbit. These species can directly impact MNES through predation and/or by degrading habitat condition (e.g. rooting, trampling, soil disturbance and vegetation damage), particularly in riparian corridors and other high-activity areas, collared delma or *Cycas megacarpa* habitat.

8.4.3.1 Baseline Status of Feral Pests

Baseline camera trapping has confirmed the presence of feral pests within the Offset Areas, with detections and sign (e.g. diggings, wallows, tracks and scat) most frequently associated with drainage lines and riparian corridors, and less frequently in cleared paddocks and open woodlands (**Figure 8.6**, **Figure 8.7**). Initial observations indicate:

- **BBOA:** feral pig and feral cat activity is primarily concentrated along riparian/drainage features and adjacent higher-quality vegetation.
- **SEQOA:** European red fox detected throughout three of the five camera traps.

8.4.3.2 Management Approach and Objectives

Feral pest management will be delivered as an adaptive, evidence-based program across the Offset Areas and, where needed, into the wider property to maintain effectiveness. The long-term objective is population suppression – rather than eradication – focused on reducing predation pressure and preventing habitat damage in MNES-dependent areas.

Initial spatial priorities reflect early detections and species ecology:

BBOA: target feral pig control throughout riparian corridors (MZ05) and target feral cat control where detections overlap with patches of occupied greater glider habitat.

South Kolan: focus on European red fox control along riparian corridors and adjacent TEC patches.

Progress will be assessed using repeatable metrics including detection rate (camera-trap index), sign frequency and catch-per-unit-effort (CPUE) (e.g. captures per trap-night or removals per event). Management intensity, timing or methods will be adjusted if monitoring indicates increasing pest activity.

8.4.3.3 Control Techniques and Implementation Notes

Control technique selection will consider efficacy, feasibility, terrain/access constraints, animal welfare, and risk to non-target fauna. These are summarised within **Table 8.7**.

Table 8.7 Feral Animal Control Techniques and Implementation Notes

Feral Animal	Control Technique	Implementation Notes
Feral pig	Shooting (aerial/ ground)	Effective for rapid reduction in suitable open terrain; aerial methods used where densities are high or access is limited (Seamark 1999).
	Trapping	Applied at active sites (e.g. water points, wallows, fence crossings), often following an initial knockdown.
	Exclusion fencing	May be used for small, high-priority areas where feasible, though generally unsuitable for broad-scale offset management.
	Poison baiting (conditional/ non-preferred)	Although 1080 baiting is cost-effective, non-target risks are significant (WIRES 2023) and use will be avoided where possible.
Feral cat/ European red fox/ wild dog	Targeted trapping	Deployed in patches with confirmed koala or glider detections and feral animal activity.
	Felixer units (cats/foxes)	Automated, sensor-based devices that discriminate between target and non-target species (Thylation 2020).
	Canid pest injectors (wild dogs/ foxes)	Deliver PAPP or 1080 directly to the target animal via a lure-triggered device, reducing non-target risk (Agriculture Victoria 2024).
	Poison baiting (conditional/ non-preferred)	As above, 1080 baiting remains a last-resort method due to non-target impacts (WIRES 2023).

8.4.3.4 Management Strategy, Progressive Criteria and Corrective Actions

Feral pest management will target priority species and high-risk locations identified through baseline detections and ongoing monitoring. Performance will be assessed using repeatable indicators and the program will be adaptively refined over time in response to control effectiveness, reinvasion pressure and habitat sensitivity (**Section 9.2 and Section 9.3).**

8.4.3.5 Feral Pest Management Plan

A detailed Feral Pest Management Plan will be prepared in Year 1 of the Offset, which will:

- Define and map high-risk locations throughout the Offset Areas,
- Provide further details on the control measures and monitoring methods that will be prioritised amongst high-risk areas, including seasonal timing of control method applications and intensity of effort,

- Delineate the calculation of pest abundance, through the collation of control method captures and monitoring numbers (e.g. comparing numbers of feral pests caught in traps with camera trap detections),
- Present a series of adaptive response pathways that incorporate the results of monitoring efforts with control outcomes, to ensure that the management objectives are achieved over the duration of the offset period.

Given that feral pests are known to fluctuate in the landscape dependent on resource availability, the Feral Pest Management Plan will be referred to every five years to guide the evaluation of the current management approach and redirect the approach as required.

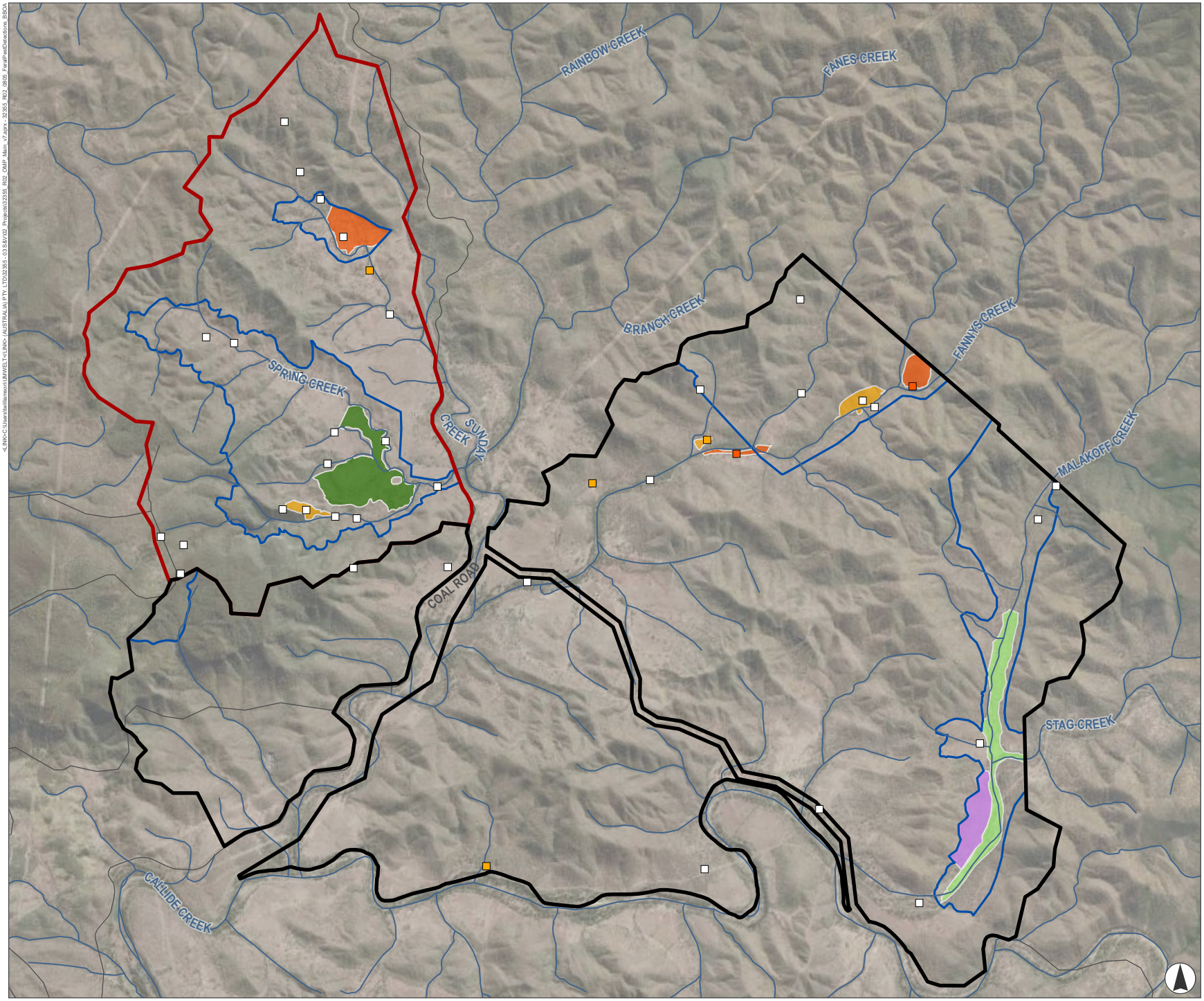


FIGURE 8.5

Feral Pest Detections throughout the BBOA

Legend

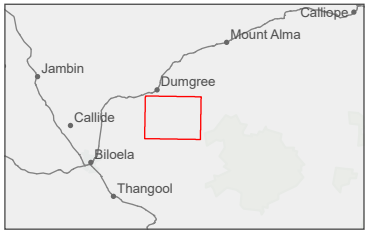
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Camera Trap

- Feral Cat
- Feral Pig
- No Records

Feral Pest Detections or Activity

- Feral cat
- Feral pig
- Hare
- Hare, rabbit
- Rabbit



0 1.5 3

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

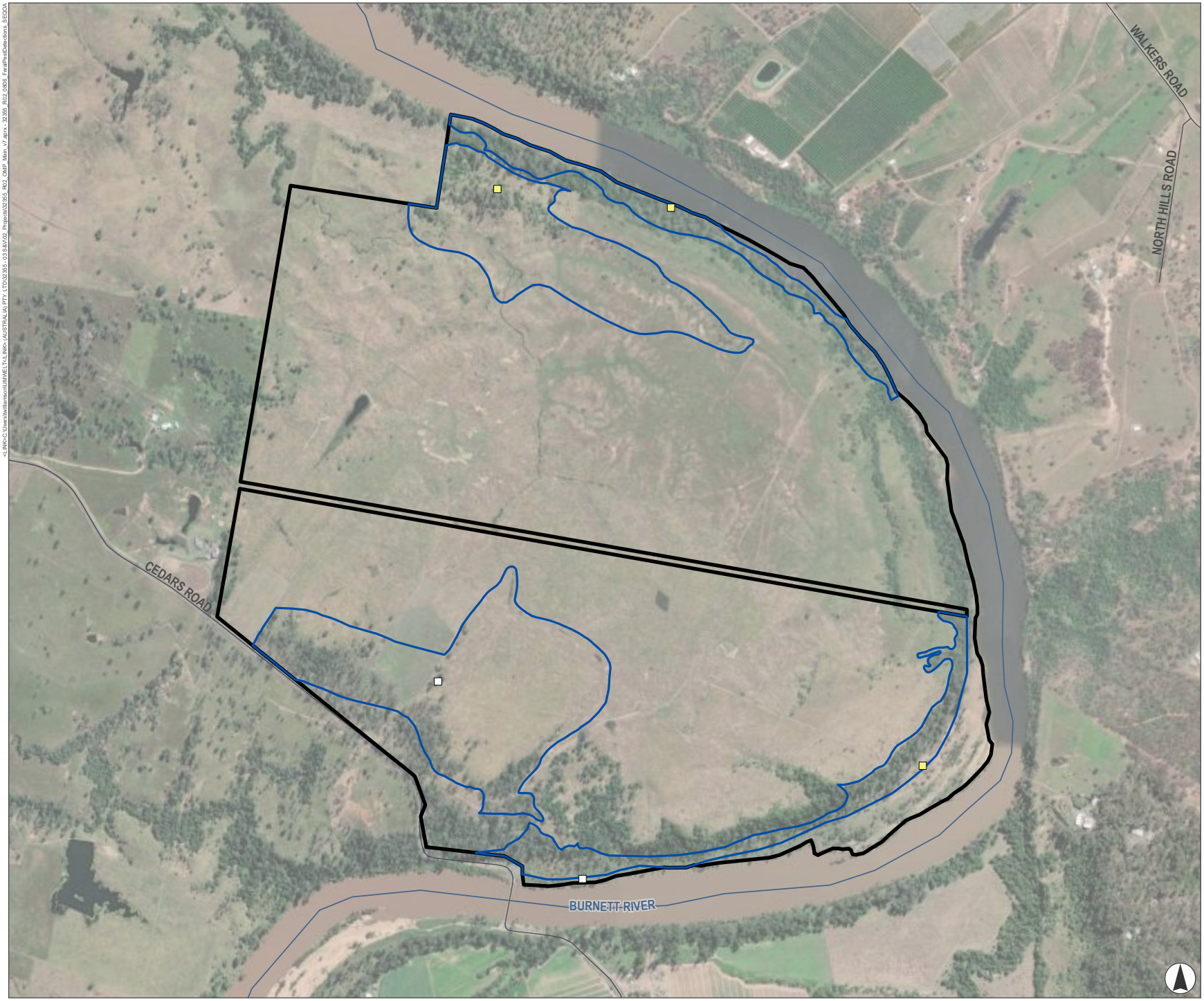


FIGURE 8.6

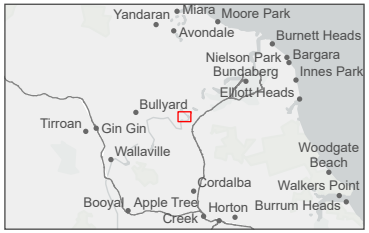
Feral Pest Detections throughout the SEQOA

Legend

- Watercourse
- Road
- South Kolan Boundary
- Offset Area

Camera Trap

- Fox
- No Records



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK>C:\Users\twilliamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\32365 - 03 S&V\02_Projects\32365_R02_OMP_Main_v7.aprx - 32365_R02_0806_FeralPestDetections_SEQOA

8.4.4 Bushfire Management

The objective of bushfire management within the Offset Areas is to support the long-term persistence of the Offset MNES and their habitat, while reducing the likelihood, intensity and severity of unplanned wildfire events. Fire will be reinstated as a planned ecological process, applied strategically to achieve both conservation outcomes and hazard reduction objectives. Implementation of an ecologically appropriate fire regime is forecast to measurably improve the HQS throughout remnant and non-remnant habitat in the following sub-attributes:

- Increase native shrub, forb and grass species richness and cover in the ground layer
- Promote native recruitment of EDL species, including LIKT
- Maintain a balanced litter and CWD cover reflective of the relevant BioCondition benchmark.

Bushfire management will be guided by relevant regional fire management guidance including the *Fire Management Guidelines* (Queensland Herbarium, 2024) and *Planned Burn Guidelines for the Brigalow Belt Bioregion* (Queensland Parks and Wildlife Service Enhanced Fire Management Team, 2012) together with species-specific ecological requirements identified in Conservation Advices and Recovery Plans for the Offset MNES.

Further detail regarding the operational implementation of bushfire management actions will be outlined in the supporting Bushfire Management Plan prepared for the Offset Areas.

8.4.4.1 Offset MNES Fire Management

Fire management across the Offset Areas will be implemented to balance ecological function and hazard reduction while safeguarding the habitat values of the Offset MNES. A summary of each Offset MNES' sensitivity/ tolerance to fire is presented within **Table 8.8** and are informed by approved Conservation Advices, Recovery Plans and species-specific fire ecology.

Table 8.8 Fire Management Considerations for the Offset MNES

Offset MNES (references)	Sensitivity/ tolerance to fire
BBOA	
SEVT TEC (McDonald, 2010), (Queensland Herbarium, 2024)	Fire-sensitive community which should be excluded from planned burns and protected from wildfire. Whilst there is little evidence of fire damage within undisturbed SEVT TEC, weed incursion by high-biomass grasses and/ or lantana can increase the fire risk.
Samadera bidwillii (Department of the Environment, Water, Heritage and the Arts, 2008), (Department of Climate Change, Energy, the Environment and Water, 2026)	The species' direct response to fire is not well known however, post-fire proliferation of lantana and exotic grasses may increase competitive pressure, alter habitat structure and increase fuel load.
Collared delma, (Department of Climate Change, Energy, the Environment and Water, 2024)	The response of the collared delma to fire is unknown however, a decline in reptile diversity is usually observed after a fire. Extensive or inappropriate fire is therefore considered a threat either through direct mortality or reduction in shelter habitat such as leaf litter and CWD. The BMP will adopt a precautionary approach within known and potential habitat by avoiding high-frequency or broadscale burns, retaining unburnt refugia and applying fine-scale, low-intensity mosaic burning where required to maintain ground-layer structure and shelter resources.

Offset MNES (references)	Sensitivity/ tolerance to fire
Cycas megacarpa, (Queensland Herbarium, 2007)	Adult plants are fire-tolerant however high-intensity fires can neutralise the seed bank. Seedlings are more sensitive and too frequent or too hot fires can reduce the population over time.
Greater glider (Department of Climate Change, Energy, the Environment and Water, 2025), (Department of Climate Change, Energy, the Environment and Water, 2022)	Negatively impacted by high severity and/or frequent fires. Abundance increases when unburnt areas remain in the landscape and with low intensity understorey fires. Unburnt areas of habitat act as important refuge in the short to long term
Yellow-bellied glider (Department of the Environment, Water, Heritage and the Arts, 2022)	Sensitive to high-severity fires that cause canopy scorch, loss of hollow-bearing and feed trees. Prescribed burning may also pose a risk through collapse of denning hollows, creating a management trade-off between short-term impacts and long-term habitat dynamics. The BMP will minimise these risks by prioritising mechanical fuel reduction where feasible and applying low-intensity, patchy burns that retain unburnt refugia and protect denning resources.
Koala, (Department of Agriculture, Water and the Environment, 2022)	Tolerant to 'natural' fire regimes, however sensitive to broadscale, high severity fires. Resilience depends on the density and quality of unburnt refuge within the landscape.
SEQOA	
Eucalypt Floodplain Forest TEC	Moderately tolerant of low-intensity fire under appropriate intervals however, high-intensity or frequent fire may suppress regeneration, reduce species richness and simplify vegetation structure. Sustained short fire intervals can result in loss of eucalypts and other canopy species, leading to structural decline and associated fauna loss.

8.4.4.2 Fire History and Current Condition

Fire scar mapping indicates a variable fire history across the Offset Areas over the past 15 years, with several notable historic events influencing current fuel structure and vegetation condition.

The BBOA has experienced a variable fire history over the past 15 years (**Figure 8.7** and **Figure 8.8**), with distinct temporal and spatial patterns of fire activity across the landscape. The western portion of the BBOA experienced burns in 2011 and 2012, including areas now supporting known *Samadera bidwillii* habitat where whipstick regrowth is currently evident (**Photo 8.8**). Fire activity was more extensive in the eastern areas within 2021. In contrast, some areas have experienced minimal recent fire activity, with no mapped fire scars since 2015 in parts of the BBOA. This uneven fire history is likely to have influenced current fuel accumulation patterns and the distribution of unburnt refuge patches that provide important habitat for koala, greater glider and yellow-bellied glider.

The SEQOA has been subject to recurrent paddock fires in 2011, 2022, 2024 and 2025 consistent with grazing management practices. Vegetated areas in the southern section of the Offset Area have also been burnt, while the northern Offset Area shows no mapped fire scars since 2010.

A total of 41 FFLH assessments were undertaken across the BBOA and 17 across the SEQOA. The majority of sites were assessed as High fuel hazard, with several Very High and two Extreme ratings recorded (**Table 8.9**). One Extreme rating occurs within alluvial floodplain habitat supporting yellow-bellied glider, greater glider and koala habitat; given its burn history in 2023. The second Extreme rating occurs within known *Samadera bidwillii* habitat and is characterised by dense leaf litter, abundant coarse woody debris and elevated fuels associated with whipstick wattle regrowth (**Photo 8.8**).

The summary of current overall fuel hazard ratings is provided in with representative photos presented from **Photo 8.1** to **Photo 8.11**.

Table 8.9 Summary of the FFLH Assessments throughout the Offset Areas

Overall Fuel Hazard Rating					
Property	**Low**	**Moderate**	**High**	**Very High**	**Extreme**
BBOA	2	11	26	3	2
SEQOA	-	2	14	1	-

Photo 8.7 **‘Extreme’ fire fuel hazard rating due to the surface and near-surface layers recorded within the alluvial plains of Malakoff Ck on the BBOA**

Photo 8.8 **‘Extreme’ fire fuel hazard rating largely due to surface and elevated fuel loads recorded on the western ridge in *Samadera bidwilli* habitat**

Photo 8.9 **‘Very high’ fire fuel hazard rating recorded on the western slope of Fannys Creek on the BBOA**

Photo 8.10 **‘Very high’ fire fuel hazard rating within riparian community along Fannys Creek on the BBOA**

Photo 8.11 **‘Moderate’ fire fuel hazard rating recorded within selectively cleared patch of 11.11.15 on the BBOA**

Photo 8.13 **‘Moderate’ fire fuel hazard rating recorded within remnant 11.11.15 on the BBOA**

Photo 8.12 **‘High’ fire fuel hazard rating recorded within 12.3.3d at the SEQOA**

Photo 8.14 **‘High’ fire fuel hazard rating recorded within non-remnant paddock at the SEQOA**

8.4.4.3 Bushfire Management Targets, Progressive Criteria and Corrective Actions

The overarching aim is to maintain fuel loads at ecologically appropriate levels, support vegetation structure and floristic diversity, and protect fire-sensitive habitat features from unplanned or high-severity fire. Performance will be assessed through fire fuel load and hazard monitoring (FFLH) and ecological condition monitoring across HQA and Regrowth Recovery Plots. Where monitoring indicates that fire regimes are not achieving their intended ecological outcomes or that fuel loads pose an elevated wildfire risk, management actions will be adjusted accordingly. **Section 9.2 and Section 9.3** outlines the progressive criteria and corrective actions to guide implementation over the duration of the offset.

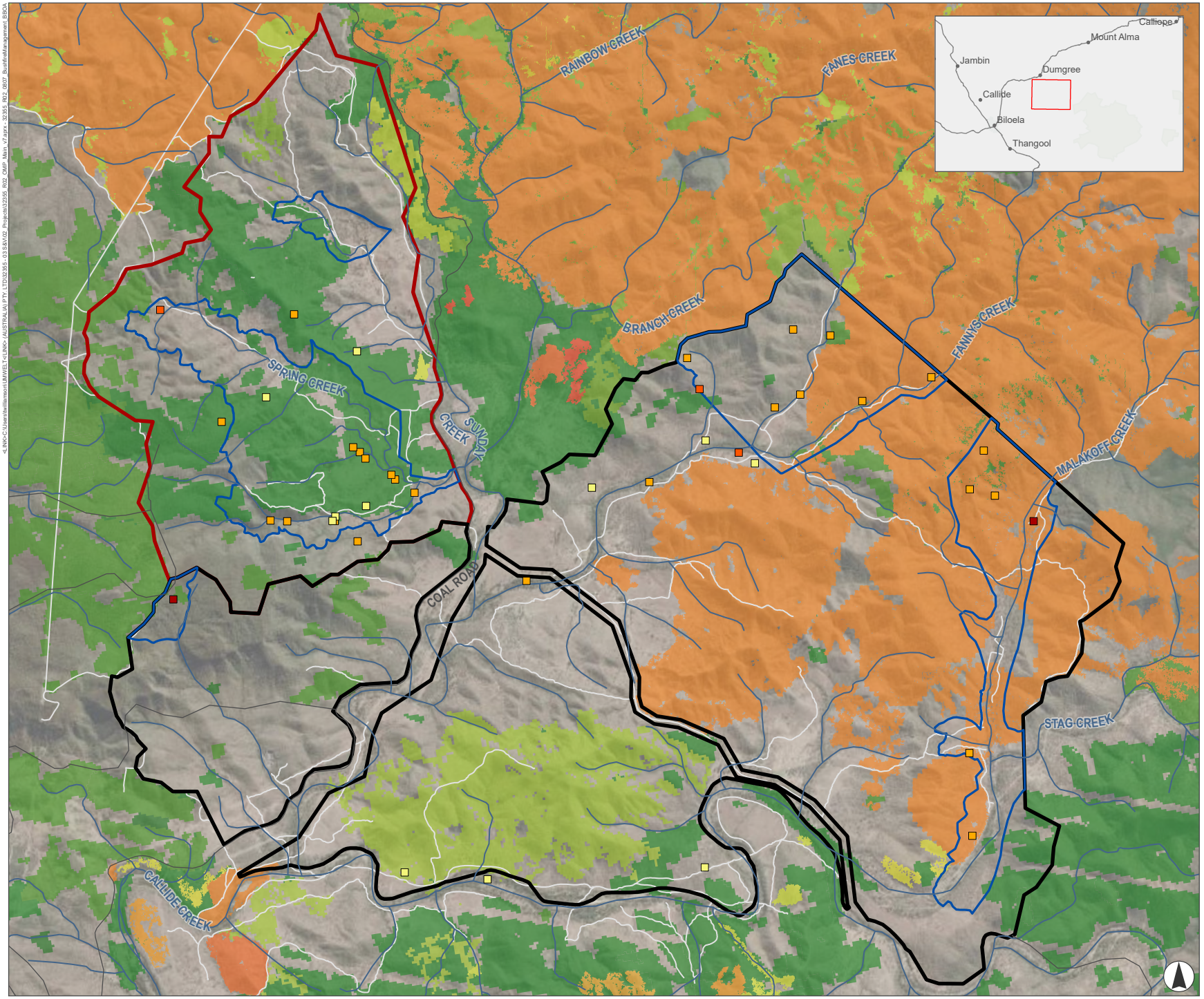


FIGURE 8.7

Bushfire Management Throughout the BBOA

Legend

- Road
- Access Tracks
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Fire Fuel Load and Hazard Assessments

- Extreme
- Very High
- High
- Moderate

Fire Scar Mapping

- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2021
- 2022
- 2023
- 2024
- 2025

0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK>C:\Users\lwilkinson\UMWELT<LINK> (AUSTRALIA) PTY LTD\32355 - 03 SVV\02 Projects\32358_R02_OMP_Main_v7.aprx - 32365_R02_0807_BushfireManagement_BBOA

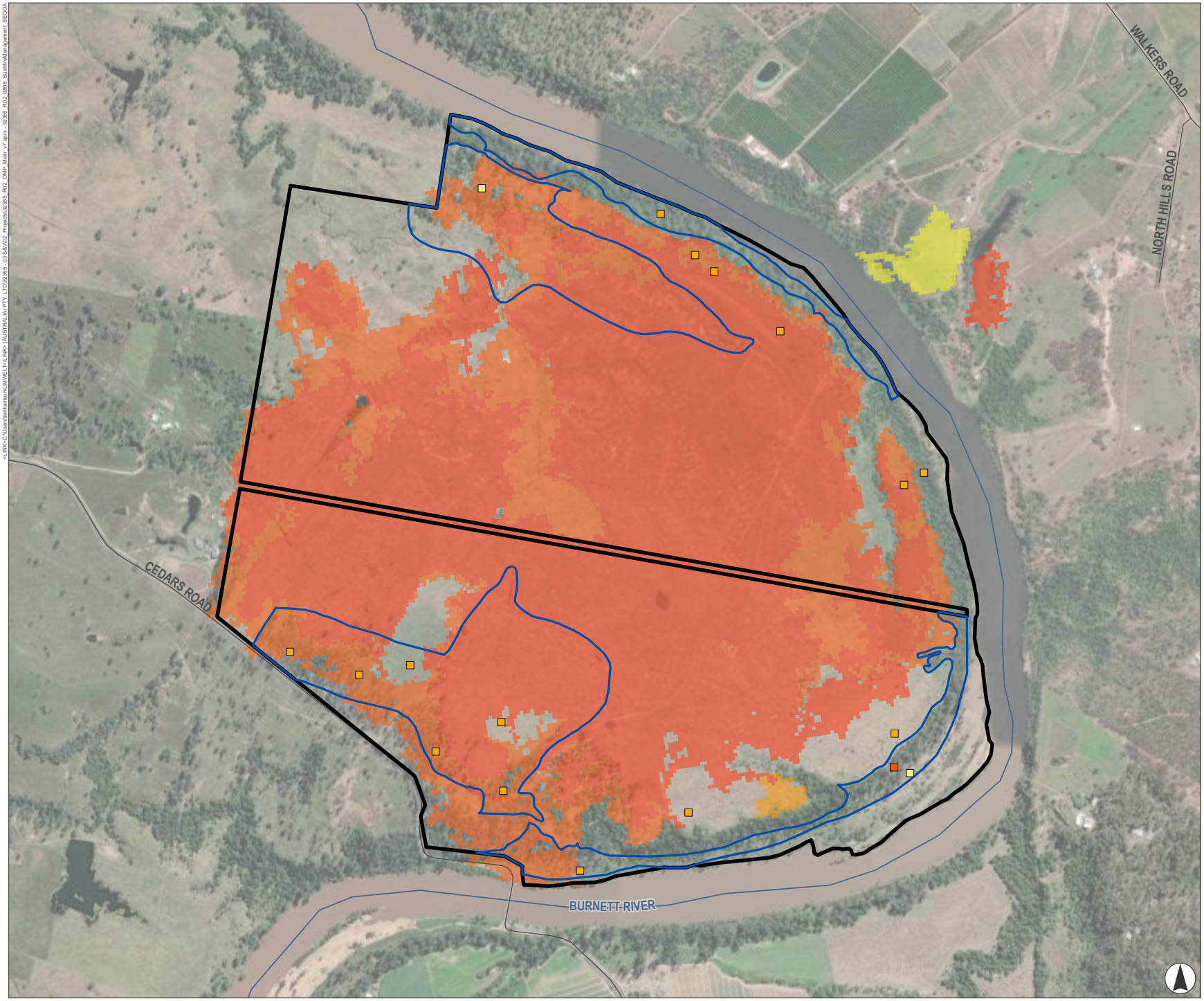


FIGURE 8.8

Bushfire Management Throughout the SEQOA

Legend

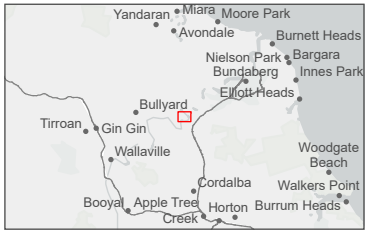
- Watercourse
- Road
- South Kolan Boundary
- Offset Area

Fire Fuel Load and Hazard Assessments

- Very high
- High
- Moderate

Fire Scar Mapping

- 2018
- 2022
- 2024
- 2025



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

8.4.4.4 Bushfire Management Plan

A detailed BMP will be prepared and implemented in Year 1 of the Offset to operationalise the principles, constraints and MNES-specific requirements outlined above. The BMP will translate the ecological envelope defined by the relevant Fire Management Guidelines, Planned Burn Guidelines and species-specific recommendations into a spatially explicit, risk-based and operationally feasible fire program for the BBOA and SEQOA.

Existing infrastructure and landscape features will be considered in fire planning, firebreak establishment and fire response to reduce disturbance and enhance safety. At the BBOA, these include the Powerlink easement, Coal Road along the western boundary, the Coal Road access track and non-remnant areas to the east; as well as Callide Creek (southern boundary), Coal Road and Zanagaris Road, the Callide Timber Reserve track and Rainbow Creek. At the SEQOA, these include the Burnett River forms a substantial natural barrier along much of the property boundary, supplemented by Cedars Road and internal access tracks. Access limitations, personnel safety and protection of neighbouring properties and the broader environment will be central considerations in burn planning and sequencing.

The Year 1 Bushfire Management Plan will include:

- A spatially explicit mosaic fire strategy for each property that contains an Offset Area.
- Fuel hazard monitoring protocols and reporting requirements.
- Prescribed burn planning, preparation and implementation procedures which recognise the Fire Management Guidelines, habitat requirements/ offset objectives for each Offset MNES associated with this OMP.
- Firebreak establishment and maintenance standards.
- Post-burn monitoring requirements and adaptive management triggers.

Through this structured and adaptive approach, fire will function as a managed ecological process that reduces wildfire risk while directly contributing to the restoration of vegetation structure, floristic diversity and long-term resilience across the Offset Areas.

8.4.5 Managing Cattle Grazing

The objective of grazing management within the Offset Areas is to ensure that cattle grazing does not compromise offset outcomes and where appropriate, may be applied as a strategic management tool to support ecological function. Grazing will not be undertaken as a production activity within the Offset Areas and will remain subordinate to the conservation objectives of the Offset.

Where used, grazing may contribute to the management of excessive fuel loads, assist with maintaining structural diversity within grassy vegetation communities and complement bushfire management where prescribed burning is impractical or undesirable. However, grazing also has the potential to degrade habitat values through soil compaction, suppression of native ground-layer diversity and reduced woody recruitment (Peeters & Butler, 2014). Moreover, grazing is recognised as a threatening process for the SEVT TEC and Eucalypt Floodplain Forest TEC and although not specifically identified in Conservation Advice (Department of the Environment, Water, Heritage and the Arts, 2008), collared delma habitat is likely sensitive to grazing, particularly due to trampling of loose rock habitat and compaction of surface soils.

Accordingly, grazing within the Offset Areas will be applied cautiously and adaptively. Grazing will only occur where monitoring indicates that it is compatible with vegetation recovery trajectories and does not compromise habitat condition for Offset MNES.

A detailed GMP will be prepared in Year 1 of the Offset to operationalise the commitments outlined in this OMP.

8.4.5.1 Role of Grazing in the Offset Areas

Grazing within the Offset Areas will be used, if required, as a targeted ecological management tool rather than a routine land use. Any application of grazing will be carefully controlled to ensure that it supports offset objectives and does not impede recovery of habitat values.

In general, grazing will not occur within areas where vegetation recovery, TECs or sensitive habitat features may be adversely affected. Where grazing is applied within suitable areas of the BBOA, it will be conditional and responsive to ecological monitoring outcomes.

Grazing will be permanently excluded from the SEQOA and from other areas where grazing may compromise restoration outcomes or sensitive habitat values.

8.4.5.2 Grazing Exclusion and Conditional Use

Paddock maps and high-level grazing areas area presented in **Figure 8.9** to **Figure 8.10** showing:

- Grazing will be excluded from existing and forecast SEVT TEC.
- Grazing will be excluded from the entire SEQOA and associated 100 m buffer on South Kolan.
- Grazing will be excluded from MZ05.
- Grazing will be excluded from all non-remnant/ MZ01 and young regrowth/ MZ02 patches to best promote and support native regeneration within these areas.
- Grazing will be conditionally conducted throughout mature regrowth/ MZ03 and non-alluvial remnant areas/ MZ04 when conditional criteria are met related to tree height, recruitment density and grass cover.

8.4.5.3 Grazing Management Targets, Progressive Criteria and Adaptive Framework

Grazing within the Offset Areas will be managed through an adaptive framework that prioritises habitat recovery and ecological condition. **Section 9.2 and Section 9.3** outlines the key grazing management targets, progressive criteria and corrective actions that will guide grazing management throughout the offset period.

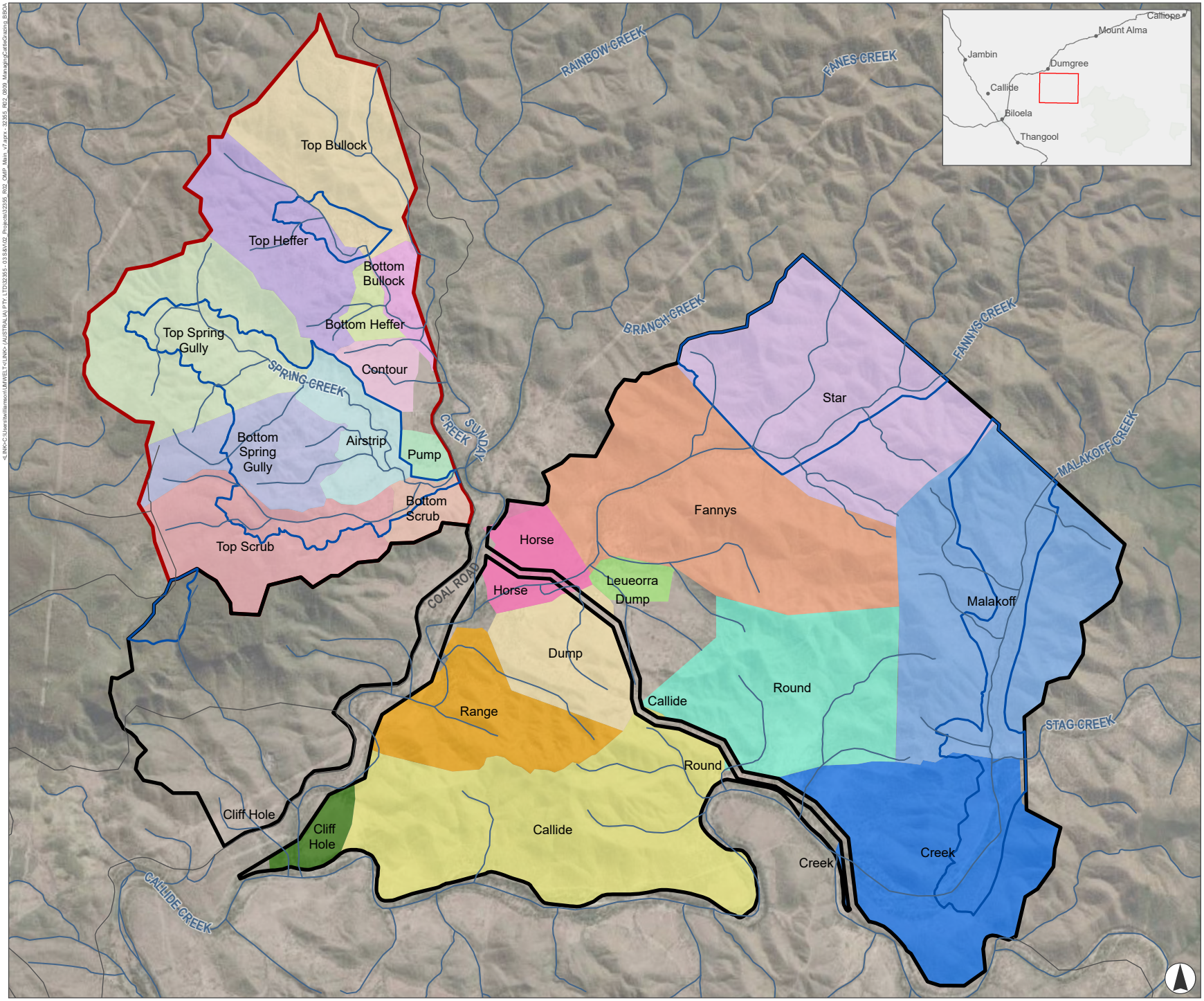


FIGURE 8.9

Managing Cattle Throughout the BBOA

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Paddocks

- Airstrip
- Bottom Bullock
- Bottom Heffer
- Bottom Scrub
- Bottom Spring Gully
- Callide
- Cliff Hole
- Contour
- Creek
- Dump
- Fannys
- Horse
- Leueorra
- Malakoff
- Pump
- Range
- Round
- Star
- Top Bullock
- Top Heffer
- Top Scrub
- Top Spring Gully
- Paddocks_LoneStar

0 1 2

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

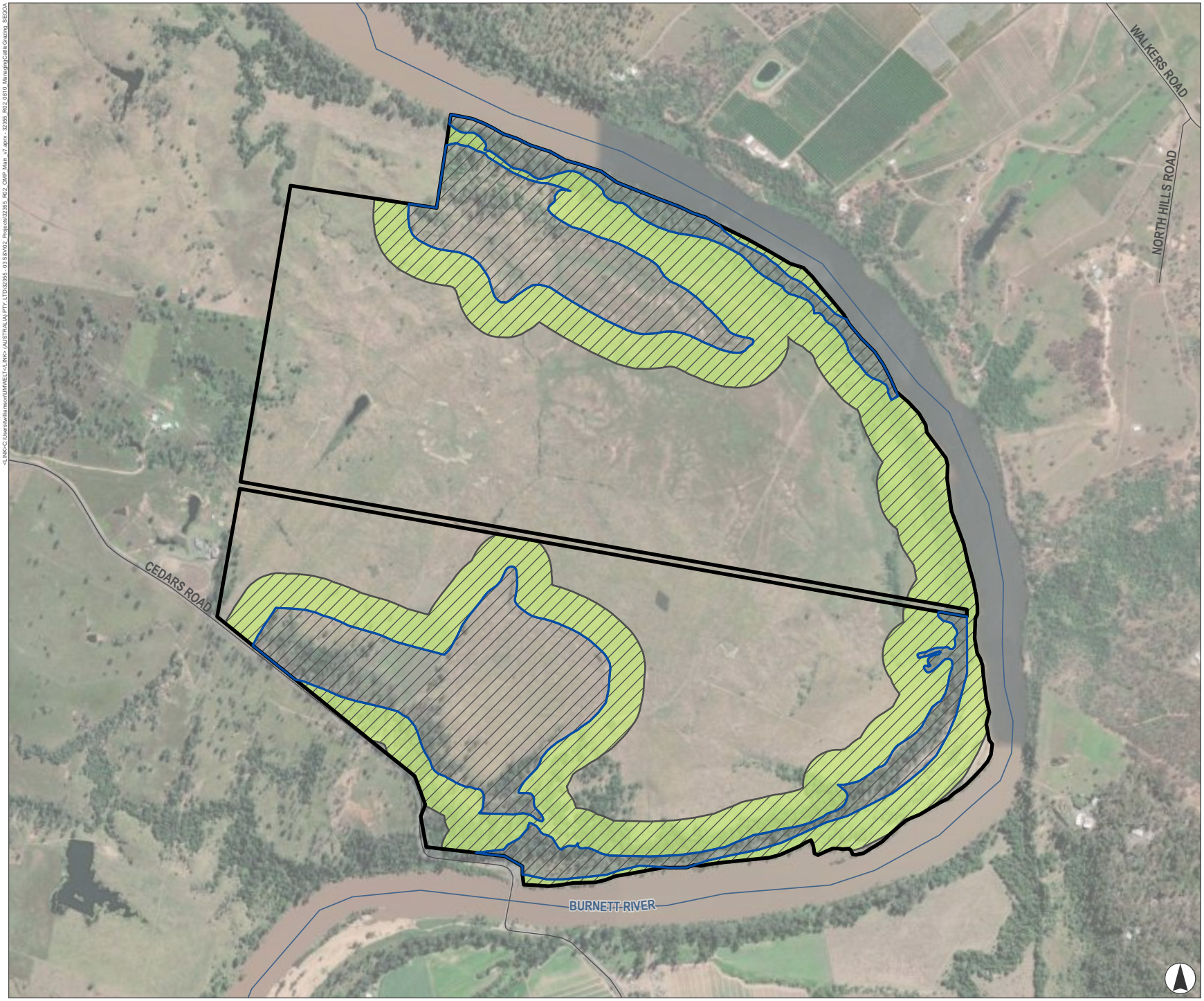
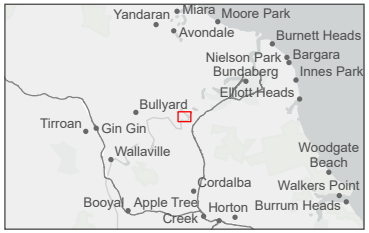


FIGURE 8.10

Managing Cattle Throughout the SEQOA

Legend

- Road
- Watercourse
- South Kolan Boundary
- Offset Area
- Cattle Exclusion Area
- Offset Area Buffer



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK>C:\Users\lwilliamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\32355 - 03 SAVO2 Projects\32355_R02_OMP Main_v7.aprx - 32355_R02_01B10_ManagingCattleGrazing_SEQOA

8.4.5.4 Transition and Destocking Commitment

The current landholder will be provided a maximum of 12 months from Offset commencement to fully destock all grazing areas within the Offset Area in accordance with the GMP. This transition period allows for orderly adjustment of existing grazing arrangements while ensuring that permanent exclusion zones are implemented within a defined timeframe.

8.4.5.5 Grazing Management Plan

The GMP will be delivered in year 1 for the BBOA only (grazing to be permanently excluded from the SEQOA) and will provide operational detail to ensure grazing remains aligned with offset objectives, exclusions areas and include the following at a minimum:

- Maximum stocking rates (seasonally responsive)
- Minimum end-of-dry season ground cover thresholds for grazed paddocks
- Mandatory rest periods
- Water point management (if required)
- Monitoring protocols and reporting requirements
- Spatial boundaries of exclusion and conditional grazing zones including additional fencing (if required)
- Spatial boundaries of reference paddocks to be used as control sites when monitoring the impacts of grazing on the HQS of the Offset MNES.

8.4.6 Restoration Management Actions

Habitat restoration is a central component of the offset strategy for five of the Offset MNES and underpins more than 300 ha of prescribed restoration across the BBOA and SEQOA (**Table 8.10**, **Photo 8.15** to **Photo 8.17**). Restoration areas include:

- A large, contiguous patch on the western section of the BBOA designed to reconnect riparian corridors with intact upper-slope vegetation.
- Smaller restoration patches within a remnant matrix in the western section of the BBOA.
- A contiguous area of non-remnant paddocks at the SEQOA extending from Eucalypt Floodplain Forest TEC and riparian vegetation.

Restoration actions are directly informed by baseline HQAs, dedicated regrowth recovery plots and incidental field observations. These datasets collectively assessed regenerative capacity, disturbance history and proximity to seed sources to assess the likelihood of natural recovery under offset management

Table 8.10 Area of Habitat Forecast for Restoration

MNES	Habitat Type	BBOA	SEQOA
SEVT TEC	Forecast TEC	1.8	0
Collared delma	Forecasted suitable habitat	144.8	0

MNES	Habitat Type	BBOA	SEQOA
Greater glider	Forecast foraging and dispersal	245.7	0
Koala	Forecast breeding, foraging and shelter	268.8	0
Eucalypt Floodplain Forest	Forecast TEC	0.0	33.8*

* Note that an additional 20.7 ha occurs as pre-existing remnant or regrowth vegetation which meet the key diagnostics of the TEC however do not meet the minimum condition criteria.

Photo 8.15 **Scattered canopy recruits within the BBOA representing one of the better regrowth sites**

Regrowth site on the BBOA where canopy recruits (≈5cm DBH) have been felled

Photo 8.16 **Thin restoration area adjacent to SEVT TEC prescribed for restoration on the BBOA**

Young regrowth RE 11.11.15 following natural regeneration at the BBOA

Photo 8.15 **Scattered canopy recruits within the BBOA representing one of the better regrowth sites**

Regrowth site on the BBOA where canopy recruits (≈5cm DBH) have been felled

Photo 8.17 **Canopy recruits scattered throughout a paddock prescribed for restoration within the BBOA**

Giant rat's tail grass-dominated paddock without a single canopy recruit within the SEQOA

8.4.6.1 Restoration Objectives

Restoration objectives include the basic measurable improvements in vegetation structure and floristic composition over the 20-year offset timeframe to be measured within the Regrowth Recovery Assessments (**Table 8.11**). These structural and compositional targets directly support forecast habitat improvements and completion criteria for collared delma, greater glider, koala, SEVT TEC and Eucalypt Floodplain Forest TEC as measured within the HQAs.

Table 8.11 Restoration Objectives within each Patch

Attribute	Objective – 20 years	
	Eucalypt Woodland & Forest: MZ01, MZ02 & MZ03	SEVT TEC: MZ01
Median canopy height	≥10 m	≥5 m
Median canopy cover	≥20%	≥40%
Species composition	• Includes dominant canopy species characteristic of the benchmark RE • Includes native species in each stratum	

Attribute	Objective – 20 years	
	Eucalypt Woodland & Forest: MZ01, MZ02 & MZ03	SEVT TEC: MZ01
	• Exotic species do not dominate any stratum	

8.4.6.2 Regenerative Capacity and Restoration Planning

Restoration pathways have been informed by an assessment of regenerative capacity across the Offset Areas. Regenerative capacity reflects the ability of a site to recover towards its reference ecosystem following removal of disturbance pressures such as grazing, weed dominance and inappropriate fire regimes.

Factors influencing regenerative capacity include:

- Presence of existing native recruitment
- Proximity to viable seed sources
- Disturbance history and current vegetation condition.

Restoration areas within the BBOA generally retain moderate to high regenerative potential due to proximity to remnant vegetation and existing recruitment in parts of the landscape. In contrast, the restoration areas within the SEQOA are highly disturbed and exhibit limited natural regeneration potential due to prolonged land use, invasive grass dominance and evidence of seed bank depletion.

Likelihood of Natural Recovery Assessment

A spatial assessment of regenerative capacity has been undertaken to guide restoration planning (**Figure 8.11** to **Figure 8.12**) to classify restoration areas as:

- **Likely to recover naturally**: Assisted natural regeneration/ threat abatement
- **Potential to recover naturally:** Active restoration potentially required
- **Unlikely to recover naturally:** Active restoration likely required.

These classifications will be reviewed during years 1 – 5 throughout the BBOA as the restoration areas may respond with increased recruitment following cattle exclusion, regrowth management and threat abatement. In contrast, active restoration (planting or seeding) throughout the SEQOA restoration areas will be required by Year 1 to maximise canopy development within the offset timeframe.

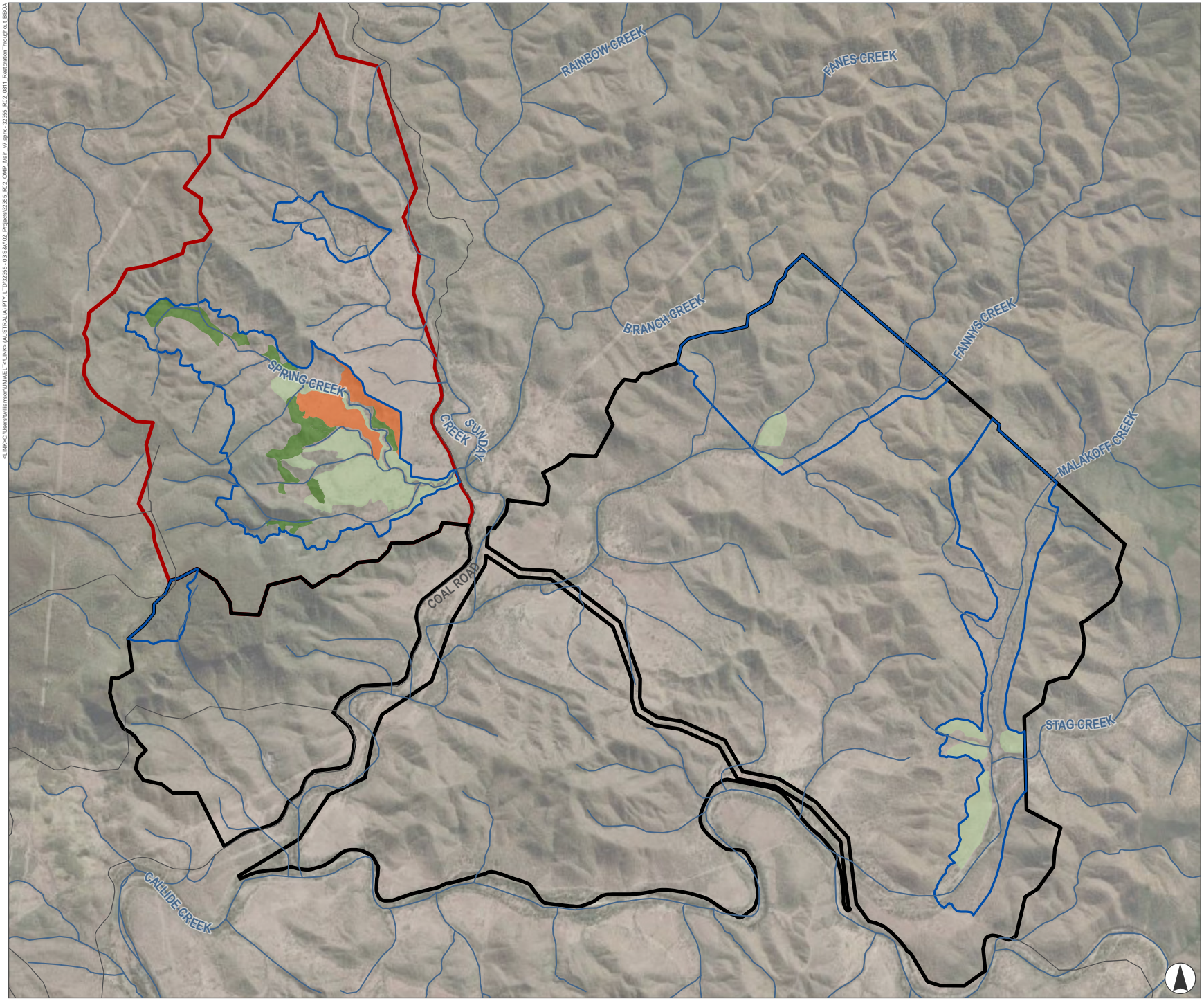


FIGURE 8.11

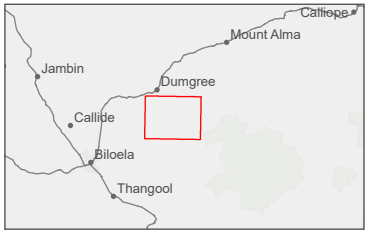
Restoration Throughout the BBOA

Legend

- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Natural Recovery Likelihood

- Likely to recover naturally
- Potential to recover naturally
- Unlikely to recover naturally



0 0.5 1

Kilometres

Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

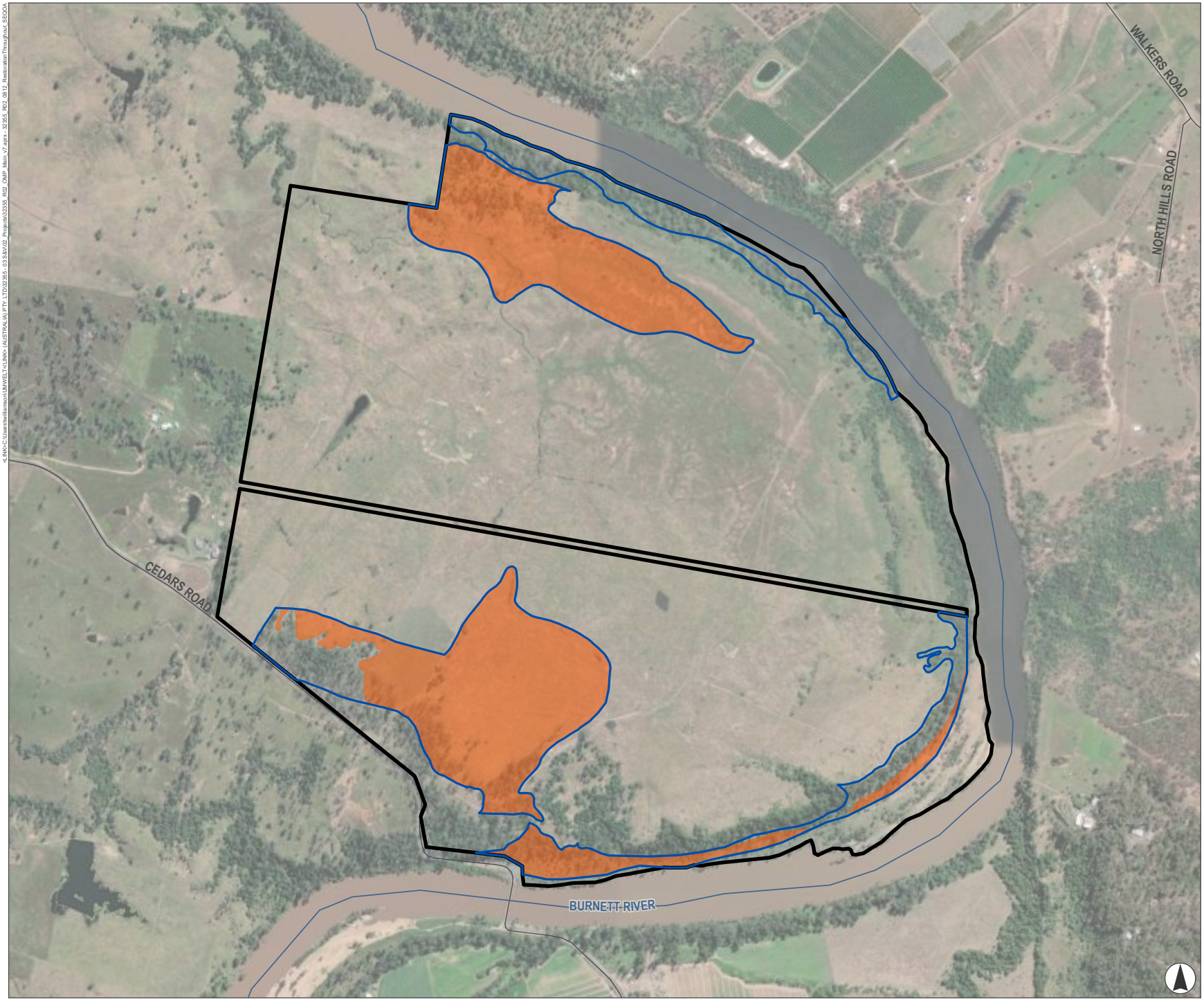


FIGURE 8.12

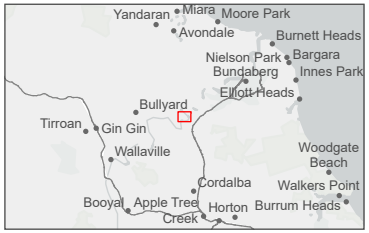
Restoration Throughout the SEQOA

Legend

- Road
- Watercourse
- South Kolan Boundary
- Offset Area

Natural Recovery Likelihood

- Unlikely to recover naturally



0 0.25 0.5

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

8.4.6.3 Restoration Approach

Restoration across the Offset Areas will follow two broad pathways depending on site condition and regenerative capacity.

Assisted Natural Regeneration

Where sites retain sufficient regenerative capacity, restoration will focus on assisted natural regeneration supported by threat abatement and removal of key constraints to vegetation recovery. This approach will be prioritised throughout the restoration areas of the BBOA.

Typical actions may include removal of grazing pressure, weed control and strategic disturbance where appropriate to stimulate recruitment.

Active Restoration

Where natural recovery is unlikely within the offset timeframe, active restoration will be implemented. This approach is elected as the immediate approach within the SEQOA whilst will only be triggered in the BBOA where natural regeneration is on a trajectory deemed insufficient to meet vegetation recovery targets.

Active restoration may include planting, seeding or other revegetation techniques designed to re-establish vegetation structure and species composition consistent with the relevant reference ecosystems.

Detailed restoration prescriptions, including site preparation, species selection and establishment methods, will be specified within the RMP.

8.4.6.4 Restoration Management Targets, Progressive Criteria and Corrective Actions

Restoration across the Offset Areas will be implemented through an adaptive management framework designed to support the recovery of native vegetation structure and habitat values for the Offset MNES. Within the BBOA, restoration will prioritise assisted natural regeneration where regenerative capacity is present, supported by threat abatement and removal of key disturbance pressures. In contrast, restoration within the SEQOA will initially rely on active restoration, including planting and/or seeding, due to the limited natural regeneration potential observed in these areas.

Restoration performance will be assessed through Regrowth Recovery Assessments and HQAs to ensure restored areas remain on a trajectory toward the structural and compositional characteristics of the relevant reference ecosystems and the forecast habitat outcomes for the Offset MNES. Where monitoring indicates that restoration areas are not progressing as expected, corrective actions such as supplementary planting, seeding or refinement of restoration approaches may be implemented.

Restoration will be designed to maximise habitat benefits for the Offset MNES by ensuring that restored vegetation includes key habitat species associated with the relevant reference ecosystems to be developed within the RMP. These may include canopy and midstorey species that provide important foraging, shelter or breeding resources for fauna species such as koala, greater glider and yellow-bellied glider.

Section 9.2 and Section 9.3 outline the restoration management targets, progressive criteria and corrective actions that will guide restoration management throughout the offset period.

8.4.6.5 Restoration Management Plan

A detailed RMP will be prepared by a SQP and implemented in Year 1 of the Offset to operationalise the restoration strategy outlined in this OMP. The RMP will provide the technical framework for implementing restoration across the Offset Areas and will include:

- Refinement of the 'Likelihood of natural recovery' spatial classification throughout the BBOA
- Restoration methods and staging
- Monitoring protocols and reporting requirements
- Adaptive management procedures.

8.4.7 Glider Hollow and Artificial Habitat Management

8.4.7.1 MNES Management Plan – Salvage and Install

The MNES Management Plan presents key mitigation commitments to avoid, minimise and reduce impact on MNES. This includes a commitment to compensate two of the target MNES (being the greater glider and the yellow-bellied glider) through the installation of hollows salvaged from the Disturbance Footprint and artificial denning features (i.e. glider-specific nest boxes and/or chainsaw carved hollows) within the offset area. The salvage and installation of these denning opportunities is a critical early step to ensure the target species can readily occupy, or expand current occupation, of the Offset Area while these habitat features continue to regenerate naturally with time. The primary objective of this management action is to have no net loss of hollows suitable for both glider species, across the Project's Disturbance Footprint.

Where suitable hollows are identified, these trees will be recorded as containing potential Threatened Glider Hollows and the Hollow Salvage Protocol will apply (as per Appendix B of the MNES Management Plan), including:

- Cataloguing of hollow salvage results and identification of the number of artificial den features required,
- Completion of installation planning, with consequent installation of all available den features within 3 months of salvage,
- Presence/absence monitoring methodology for installed den features confirmed and trialled,
- Targeting areas of suitable target glider habitat (dependent on nature of hollows salvaged from Disturbance Footprint) with low large tree density, including areas proximal to previous greater glider observations.
- All steps of the Hollow Salvage Protocol presented within Appendix B of the MNES Management Plan

The ecology of the threatened gliders coupled with complexities in assessing and scoring their habitat underpins the management actions proposed. Specifically, the additional information provided in **Section 8.4.7.3** has been considered in the development of habitat quality scoring criteria and will also inform the site suitability and installation planning, as necessary. This management action is intended to be adaptive, noting that there are multiple interacting factors that may influence a hollow's suitability for the target species and usage rates.

8.4.7.2 Offset Management Program – Monitoring and Maintenance

The ongoing monitoring, maintenance and adaptive management of salvaged and artificial hollows within the BBOA constitute an offset management action under the Offset Management Program sections: (**Section 9.1.3.6**), key performance criteria (**Section 9.2**) and corrective actions as part of a broader adaptive management strategy (**Section 9.3.1**). These actions ensure the persistence, functionality and utilisation of installed denning resources over time.

This includes inspection, repair or replacement of denning structures as required and integration with broader monitoring programs to assess occupancy and effectiveness. The management of these features contributes to habitat quality improvement by increasing the density and availability of denning resources within suitable habitat, supporting the long-term persistence of greater glider and yellow-bellied glider within the Offset Area.

8.4.7.3 Target Species Additional Information

The greater glider and the yellow-bellied glider are Australia's largest and second largest hollow-dependent marsupials. Based on existing scientific literature, the characteristics of the hollows occupied by both species are generally similar, although other habitat requirements do differ. Trees do not usually start producing hollows until they reach at least 50 cm diameter at breast height (DBH) (Goldingay 2011). It has been determined that the identification of hollow-bearing trees is not reliable via ground-based survey techniques, as described in the *Guide to Greater glider habitat in Queensland* (Eyre, Smith, et al. 2022). Noting this and following the completion of detailed study of the greater glider in Queensland, the size of trees is now used instead to infer potential usage, with trees > 30 cm DBH preferentially selected for foraging and > 50 cm DBH for denning. While the yellow-bellied glider has not been subject to similar detailed study, it is reported to preferably den in living trees that are > 100 cm in DBH.

As tree size has been used to identify habitat for both species, it is currently not possible to have an accurate understanding of true hollow presence and abundance within the Disturbance Footprint. Although tree age is a critical in the formation of hollows, it is not definitive. Some tree species form hollows more readily than others (Gibbons and Lindenmayer 2002) and most require other interacting conditions to facilitate the production of hollows such as damage (i.e. branch breakage due to wind or fire), natural decay from water entry and invertebrate activity (Baker et al. 2020). Nonetheless, there is a risk of potential impacts on denning opportunities for both threatened glider species due to the presence of habitat suitable for denning in the Disturbance Footprint. As live trees with a DBH of 1 m or greater were very rarely encountered during the field survey program, it is considered that this risk of impact is greater for the greater glider than it is for the yellow-bellied glider.

There are some ecological differences and similarities between the two species that will have implications for management. Greater gliders typically have small home ranges (1–4 ha), however these may increase up to 19 ha in forests on less fertile sites and in more open woodlands (Department of Climate Change, Energy, the Environment and Water 2022b). Individuals utilise between 2 and 18 hollows to den, hosted by either live or dead trees (McGregor et al. 2023). A minimum requirement of 2–4 hollows for every 2 ha of suitable habitat has been reported in southern Queensland (Eyre, 2002). Greater gliders prefer a relatively high density of den trees within retained clumps (Goldingay 2021). The probability that greater gliders utilise trees increases with size and so large den trees are likely to be preferred (Eyre, Smith, et al. 2022; Goldingay, 2021).

Yellow-bellied gliders have notably larger home ranges than greater gliders, typically 50–65 ha, which are exclusively used by small family groups of 2 to 6 individuals (commonly a pair and offspring)

(Department of Agriculture Water and the Environment 2022a). These family groups usually den together so they require a cavity sufficient in size for several individuals (Goldingay 2021). Within their home range, the group will also utilise multiple hollows and its likely they prefer den trees that are widely scattered across the area. As such, despite being dependent on hollows for denning and shelter, the species' occurrence is generally not influenced by hollow abundance (Goldingay 2025).

As detailed in their respective Conservation Advice documents, both threatened glider species have been recorded utilising nest boxes and their conservation and management priorities include the use of these features (as well as chainsaw hollows) to limit the adverse impacts of habitat loss, disturbance and modifications (including fire). Recent studies by Brown (2024) and Gracanin et al. (2025) have highlighted that nest boxes are an effective supplementary habitat option for the greater glider; however there is a preference for natural tree hollows when they are available and the conservation of these features should continue to be prioritised.

The glider hollow management proposed in the MNES Management Plan considers guidance developed by DCCEEW specifically for the greater glider ("*Greater Glider: artificial habitat guidance*"). For the purposes of impact mitigation and management, it was considered appropriate to broadly apply this guidance to both the greater glider and the yellow-bellied glider due to their shared large hollow dependency and likely capacity to successfully utilise artificial habitat. These species are also frequently grouped together in studies specific to the management of forests for hollow-dependent species (i.e. Wardell-Johnson and Robinson, 2023). With careful planning and consideration of the aforementioned factors, the management action is considered likely to have a high likelihood of success.

8.5 Offset Management Program

The Offset Management Program (**Table 8.12**) defines the management framework for implementation of the Offset over the 20-year timeframe, structured across establishment, early intervention, maintenance and completion phases. It differentiates management actions between the Offset Areas to reflect variation in ecological values, TEC presence, MNES habitat requirements and threat profiles. Where specified, management effort commitments represent the indicative effort required to control the threats and support improvement in HQS and MNES habitat function. Management effort is expected to transition from intensive, front-loaded interventions to a long-term maintenance and suppression model, contingent on the achievement of Progressive and Completion Criteria and evidence of a self-sustaining ecological state. The Program is adaptive and will be refined in response to monitoring outcomes, including performance against the Progressive Criteria (**Table** 9.4) and Completion criteria (**Table 9.5**).

Table 8.12 Management program throughout the Offset Area

Management Action	Offset Area	Management strategy	Establishment Years: 1 -2	Early Interventions: Years 2 - 5	Maintenance: Years 5 - 15	Completion: Years 15 - 20	Adaptive review
Weed Management	BBOA	**Priority 1** • Cat's claw creeper in riparian zones and SEVT TEC • Lantana in *Samadera bidwillii* habitat and riparian corridors • Parthenium, lantana and exotic forbs/grasses adjacent to SEVT TEC **Priority 2** • Creeping lantana in collared delma habitat working from the highest habitat quality	• Preparation and implementation of a WMP • Indicative baseline effort of 1,800 person-hours per annum (averaged across year, seasonal variability permitted) • Removal of cat's claw creeper throughout the canopy and subcanopy of the SEVT patch • Treatment of weeds within SEVT restoration area, particularly any surrounding native recruits	• Indicative baseline effort of 1,800 person-hours per annum (averaged across year, seasonal variability permitted) • Follow-up control to minimise cat's claw creeper emergence into the canopy whilst treating the understorey and ground layers • Font-loaded effort to reduce creeping lantana in collared delma habitat and lantana from *Samadera bidwillii* and riparian habitat • Treatment of weeds within all restoration areas, particularly any surrounding native recruits	• Indicative baseline effort of 1,200 person-hours per annum (averaged across year, seasonal variability permitted) • Maintains the canopy integrity of SEVT with low to absent cat's claw creeper cover in the canopy • Treatment of weeds within SEVT and Eucalypt woodland or forest restoration area, particularly any smothering native recruits • Ongoing but reducing effort to decrease creeping lantana and lantana cover • Treatment of weeds within all restoration areas, particularly any surrounding native recruits	• Indicative baseline effort of 900 person-hours per annum (averaged across year, seasonal variability permitted) • Maintains the canopy integrity of SEVT with low to absent cat's claw creeper cover in the canopy or understorey • Transition towards long-term suppression management model following achievement of completion criteria and evidence of self-sustaining state.	Annual review of effort based on weed cover trends, reinfestation rate, native recruitment response and fuel load dynamics
	SEQOA	**Priority 1:** • Giant rat's tail grass in Eucalypt Floodplain Forest TEC and 100 m buffer • Cat's claw creeper in riparian and TEC patches **Priority 2:** • Lantana within riparian corridors and TEC edges	• Preparation and implementation of a WMP • Indicative baseline effort of 1,800 person-hours per annum (averaged across year, seasonal variability permitted) • Removal of cat's claw creeper throughout the canopy and subcanopy of the Eucalypt Floodplain Forest TEC • Front-loaded effort to minimise giant rat's tail grass within Offset Area and 100 m buffer • Treatment of weeds within restoration areas, particularly any suffocating or directly surrounding plantings or native recruits	• Indicative baseline effort of 1,800 person-hours per annum (averaged across year, seasonal variability permitted) • Follow-up control to minimise cat's claw creeper emergence into the canopy whilst treating the understorey and ground layers • Front-loaded effort to minimise giant rat's tail grass and lantana within Offset Area and 100 m buffer according to the WMP • Short feedback loop between management and monitoring so an effective methodology can be established as soon as possible • Treatment of weeds within restoration areas, particularly any suffocating or directly surrounding plantings or native recruits	• Indicative baseline effort of 1,200 person-hours per annum (averaged across year, seasonal variability permitted) • Maintains the canopy integrity of Eucalypt Floodplain Forest TEC with low to absent cat's claw creeper cover in the canopy • Follow-up control to minimise cat's claw creeper emergence into the canopy whilst treating the understorey and ground layers • Ongoing but reducing effort to decrease giant rat's tail grass and lantana cover • Treatment of weeds within restoration areas, particularly any suffocating or directly surrounding plantings or native recruits	• Indicative baseline effort of 600 person-hours per annum (averaged across year, seasonal variability permitted) • Maintains the canopy integrity of Eucalypt Floodplain Forest TEC with low to absent cat's claw creeper cover in the canopy • Transition towards long-term suppression management model following achievement of completion criteria and evidence of self-sustaining state.	Annual review of effort relative to exotic cover trajectory, regeneration response and fire risk reduction outcomes

Management Action	Offset Area	Management strategy	Establishment Years: 1 -2	Early Interventions: Years 2 - 5	Maintenance: Years 5 - 15	Completion: Years 15 - 20	Adaptive review
Barbed-wire removal (top wire) or adaptation	BBOA	• Three patches in the BBOA where greater glider have been detected - Malakoff Creek, Fannys Creek on Lone Star and a tributary of Sunday Creek on The Cedars	• Adapt barbed wire throughout greater glider habitat where the species has been detected to 'wildlife friendly' • All newly installed fencing or repairs/ modifications to existing fencing in the Offset Area will be 'wildlife friendly' • Individual mortality within fencing will trigger a broader modification of fencing				
Bushfire Management	BBOA &SEQOA	• Protect SEVT TEC and fire exclusion REs • Retain ≥30% fire refugia in the landscape • ≥10-year interval in yellow-bellied glider habitat • Protect habitat features	• Preparation of a BMP • Annual FFLH assessments • Establishment of firebreaks and access tracks	• Finalisation and implementation of a BMP • Annual FFLH assessments • Establishment and refinement of firebreaks and access tracks	• Prescribed burns in accordance with the fire regimes, landscape-scale and fine-scale mosaic pattern within the BMP • Maintenance of firebreaks and access tracks • Annual FFLH assessments • Preparation and response to unplanned wildfire • Review and update BMP and fire regimes in response to wildfire events, extended drought or other unplanned circumstances.	• Continued prescribed burns in accordance with the fire regimes, landscape-scale and fine-scale mosaic pattern within the BMP • Maintenance of firebreaks and access tracks • Annual FFLH assessments • Preparation and response to unplanned wildfire • Review and update BMP and fire regimes in response to wildfire events, extended drought or other unplanned circumstances.	• Annual review of FFLH assessment data • Post-burn monitoring • HQS trajectory and interrogation of fire-responsive sub-attributes
Feral Pest Management	BBOA	Riparian corridors supporting koala, greater glider and restoration areas overlap of cat detections with high-value habitat	• Preparation and implementation of a FPMP **Feral pig:** • Minimum 1 trap site per 1.0 km of priority riparian corridor (≈5–7 active trap sites per deployment cycle) • ≥2 deployment cycles per annum (≥14 nights each) • ≥2 targeted ground-shooting control events per annum **Feral cat:** • Minimum 1 Felixer unit per 120–150 ha of areas where GG habitat and cat detections overlap • ≥2 targeted trapping campaigns per annum (5–10 trap nights per hotspot) • Cameras co-located with active control sites at the following proportion: ○ If ≤5 active control sites, 100% ○ If >5 active control sites, 50%	• Implementation of a FPMP • Comprehensive camera trapping program undertaken every five years in accordance with the FPMP **Feral pig:** • Minimum 1 trap site per 1.0 km of priority riparian corridor (≈5–7 active trap sites per deployment cycle) • ≥2 deployment cycles per annum (≥14 nights each) • ≥2 targeted ground-shooting control events per annum **Feral cat:** • Minimum 1 Felixer unit per 120–150 ha of areas where GG and cat detections overlap • ≥2 targeted trapping campaigns per annum (5–10 trap nights per hotspot) • Cameras co-located with active control sites at the following proportion: ○ If ≤5 active control sites, 100% ○ If >5 active control sites, 50%	• Feral pest management implemented in accordance with control and monitoring programs detailed in the FPMP • Comprehensive camera trapping program undertaken every five years in accordance with the FPMP • Maintain a long-term suppression management model • Short feedback loop between management and monitoring to understand efficacy of interventions and inform management effort, methodology and priority locations. • Increase effort and/ or adapt methodology if feral predation is observed on Offset MNES • Ensure all personnel are reporting direct observations or secondary evidence of feral pests including at a minimum, location and species	• Feral pest management implemented in accordance with control and monitoring programs detailed in the FPMP • Comprehensive camera trapping program undertaken every five years in accordance with the FPMP • Maintain a long-term suppression management model • Short feedback loop between management and monitoring to understand efficacy of interventions and inform management effort, methodology and priority locations. • Increase effort and/ or adapt methodology if feral predation is observed on Offset MNES • Ensure all personnel are reporting direct observations or secondary evidence of feral pests including at a minimum, location and species	• Review baseline management effort at Years 5, 10 and 15 and adapt total effort, control technique and/ or priority focus areas according to both the CPUE and broader feral animal monitoring results

Management Action	Offset Area	Management strategy	Establishment Years: 1 -2	Early Interventions: Years 2 - 5	Maintenance: Years 5 - 15	Completion: Years 15 - 20	Adaptive review
	SEQOA	Riparian corridors along the Burnett River	• Preparation and implementation of a FPMP **European fox:** • 1 control device (trap/ Felixer/ CPE) per 1 km of riparian corridor for a minimum of 14 nights per cycle and two control cycles per annum. • Cameras co-located with active control sites at the following proportion: ○ If ≤5 active control sites, 100% ○ If >5 active control sites, 50%	• Comprehensive camera trapping program undertaken every five years in accordance with the FPMP **European fox:** • 1 control device (trap/ Felixer/ CPE) per 1 km of riparian corridor for a minimum of 14 nights per cycle and two control cycles per annum. • Cameras co-located with active control sites at the following proportion: ○ If ≤5 active control sites, 100% ○ If >5 active control sites, 50%	• Maintain a long-term suppression management model as prescribed within the FPMP • Short feedback loop between management and monitoring to understand efficacy of interventions and inform management effort, methodology and priority locations. • Ensure all personnel are reporting direct observations or secondary evidence of feral pests including at a minimum, location and species	• Maintain a long-term suppression management model as prescribed within the FPMP • Short feedback loop between management and monitoring to understand efficacy of interventions and inform management effort, methodology and priority locations. • Ensure all personnel are reporting direct observations or secondary evidence of feral pests including at a minimum, location and species	• Review baseline management effort at Years 5, 10 and 15 and adapt total effort, control technique and/ or priority focus areas according to both the CPUE and broader feral animal monitoring results
Grazing Management	BBOA	• Maintain canopy recruitment • Prevent suppression of native understorey cover and richness • Manage near-surface fuels where appropriate	• Preparation of a GMP • Grazing excluded from SEVT TEC, MZ01, MZ02 and MZ05 • Conditional grazing in MZ03-MZ04 • 12 Month destocking period following offset commencement	• Review of grazing regime against any decrease in habitat quality attributes • Maintain grazing exclusion areas: SEVT TEC, MZ01, MZ02 and MZ05	• Conditional grazing in MZ03 and MZ04 in accordance with the GMP and broader offset objectives	• Review of the grazing regime against any decrease in habitat quality attributes	• Review of stocking rate against any decrease in habitat quality attributes
	SEQOA	• Protect Eucalypt Floodplain Forest regeneration and understorey recovery • Grazing excluded from entire SEQOA and 100 m buffer	• Grazing excluded from entire SEQOA and 100 m buffer	• Grazing excluded from entire SEQOA and 100 m buffer	• Grazing excluded from entire SEQOA and 100 m buffer	• Grazing excluded from entire SEQOA and 100 m buffer	• Ensure all personnel are recording any primary or secondary indication of cattle presence within the SEQOA and 100 m buffer • Monitoring and maintain fencing as required to exclude cattle from the SEQOA and 100 m buffer
Restoration: Assisted natural regeneration	BBOA	• Achieve ≥200 canopy/ T3 recruits per ha for restoration areas prescribed a woodland or open forest reference ecosystem • Achieve ≥400 canopy/ T3 recruits per ha for restoration areas prescribed a closed forest including SEVT TEC patch	• Preparation of a RMP • Threat abatement and trigger disturbance • Close monitoring of natural regeneration in response to offset management	• Threat abatement and trigger disturbance • Close monitoring of natural regeneration in response to offset management • Recruitment assessment in Year 5 to determine whether restoration is required: ○ ≥200 canopy/ T3 recruits per ha for woodland or open forest reference ecosystem	• Delineate areas assessed to likely recover naturally and maintain assisted natural regeneration pathway • Conduct infill planting if preferred foraging or shelter habitat species are not naturally emerging. • Maintain short feedback loop between management and monitoring with a focus on: ○ Canopy height and cover	• Reclassify the MZ of all restoration areas to guide ongoing bushfire, weed, feral and grazing management • Transition towards long-term management model following achievement of completion criteria and evidence of self-sustaining state.	• Transition to active restoration if thresholds unmet by Year 5 and implement by Year 6

Management Action	Offset Area	Management strategy	Establishment Years: 1 -2	Early Interventions: Years 2 - 5	Maintenance: Years 5 - 15	Completion: Years 15 - 20	Adaptive review
				○ ≥400 canopy/ T3 recruits per ha for closed forest including SEVT TEC patch • Repeat HQAs in years three and five to give a strong indication of habitat trajectory and inform early management.	○ Native species richness ○ Exotic cover		
Eucalypt Floodplain TEC Management	SEQOA	• Minimise exotic cover • Encourage the increase of native cover and species richness • Protect and maintain large trees and habitat features	• Preparation and implementation of a WMP and BMP • Removal of cat's claw creeper throughout the canopy and subcanopy of the Eucalypt Floodplain Forest TEC • Front-loaded effort to minimise giant rat's tail grass within Offset Area and 100 m buffer	• Follow-up control to minimise cat's claw creeper emergence into the canopy whilst treating the understorey and ground layers • Front-loaded effort to minimise giant rat's tail grass and lantana within Offset Area and 100 m buffer according to the WMP • Short feedback loop between management and monitoring so an effective methodology can be established as soon as possible	• Maintains the canopy integrity of Eucalypt Floodplain Forest TEC with low to absent cat's claw creeper cover in the canopy • Ongoing but reducing effort to decrease giant rat's tail grass and lantana cover • Monitor native understorey cover and ground native species richness and conduct infill planting should the Progressive criteria not be met.	• Maintains the canopy integrity of Eucalypt Floodplain Forest TEC with low to absent cat's claw creeper cover in the canopy • Transition towards long-term management model following achievement of completion criteria and evidence of self-sustaining state.	• Annual review of effort based on weed cover trends, reinfestation rate, native recruitment response and fuel load dynamics
Restoration: Active restoration	BBOA	• Revegetation • Preparation and maintenance as per RMP • Threat abatement • Vegetation thinning • Monitor native ground and shrub species emergence and consider infill planting as required	• Preparation of a RMP • Threat abatement and trigger disturbance	• Threat abatement and trigger disturbance • Close monitoring of natural regeneration in response to offset management • Plant/ direct seed should early monitoring results suggest an area is unlikely to naturally recover • Recruitment assessment in Year 5 to determine whether active restoration is required • Repeat HQAs in years three and five to give a strong indication of habitat trajectory and inform early management.	• Plant/ direct seed by Year 6 (at the latest) where natural regeneration fails to achieve thresholds • Preparation and maintenance of revegetation areas as per RMP • Ongoing threat abatement including cattle exclusion weed and bushfire management • Monitor native ground and shrub species emergence and consider infill planting as required • Vegetation thinning as required to encourage reference ecosystem structure	• Reclassify the MZ of all restoration areas to guide ongoing bushfire, weed, feral and grazing management following achievement of completion criteria • Ongoing threat abatement including cattle exclusion weed and bushfire management • Monitor native ground and shrub species emergence and consider infill planting as required • Vegetation thinning as required to encourage reference ecosystem structure	• Establishment-phase review in years 1 -3 post planting and conduct infill planting as required
	SEQOA		• Preparation of a RMP • Planting/ seeding conducted by Year 2	• Preparation and maintenance of revegetation areas as per RMP • Ongoing threat abatement including cattle exclusion weed and bushfire management • Vegetation thinning as required to encourage reference ecosystem structure	• Preparation and maintenance of revegetation areas as per RMP • Ongoing threat abatement including cattle exclusion weed and bushfire management • Monitor native ground and shrub species emergence and consider infill planting as required	• Ongoing threat abatement including cattle exclusion weed and bushfire management • Monitor native ground and shrub species emergence and consider infill planting as required	• Annual review of effort based on weed cover trends, reinfestation rate, native recruitment response and fuel load dynamics

Management Action	Offset Area	Management strategy	Establishment Years: 1 -2	Early Interventions: Years 2 - 5	Maintenance: Years 5 - 15	Completion: Years 15 - 20	Adaptive review
				• Repeat HQAs in years three and five to give a strong indication of habitat trajectory and inform early management.	• Vegetation thinning as required to encourage reference ecosystem structure		
Glider hollow and artificial habitat management	BBOA	Under the MNES Management Plan: • Salvage hollows which cannot be avoided and relocate them into the BBOA. • Install an artificial den within the BBOA for every suitable hollow that cannot be salvaged. Under Offset Management Plan: • Ongoing maintenance, monitoring and adaptive management of salvaged and artificial hollows.	• Installation of hollows salvaged from Disturbance Footprint • Installation of artificial denning features • Site suitability and installation planning will be informed by adaptive management to ensure the target species (i.e. greater glider, yellow-bellied glider) are considered during establishment.	• Implementation and continuation of yearly glider hollow and artificial habitat monitoring and maintenance. • Complete ad-hoc condition inspections following any severe weather event including storms and fire. • Remediate any installed den considered damaged or requiring maintenance (including the removal of invasive or native fauna). • If necessary, replace unviable installed dens with a different form of artificial den habitat (i.e nest box or chainsaw carved hollows).	• Implementation and continuation of yearly glider hollow and artificial habitat monitoring and maintenance. • Complete ad-hoc condition inspections following any severe weather event including storms and fire. • Remediate any installed den considered damaged or requiring maintenance (including the removal of invasive or native fauna). • If necessary, replace unviable installed dens with a different form of artificial den habitat (i.e nest box or chainsaw carved hollows).	• Implementation and continuation of yearly glider hollow and artificial habitat monitoring and maintenance. • Complete ad-hoc condition inspections following any severe weather event including storms and fire. • Remediate any installed den considered damaged or requiring maintenance (including the removal of invasive or native fauna). • If necessary, replace unviable installed dens with a different form of artificial den habitat (i.e nest box or chainsaw carved hollows).	• Maintenance of the glider hollows in response to incidental observations and annual glider hollow and artificial habitat monitoring

9.0 Monitoring Program and Evaluation Plan

9.1 Field Surveys and Condition Assessments

To ensure the objectives of this OMP are being met, and to provide adaptive management opportunities throughout the interim phases, a range of monitoring will be completed at various time intervals. These include habitat quality monitoring, targeted species monitoring and the assessment of management measures and current threats.

This monitoring is further detailed in the sections below, whilst an overview of all monitoring and associated timeframes is provided in **Table 9.2**. It is noted that a host of monitoring has been completed as part of this OMP. Where possible, this data will form the baseline data set, avoiding the need for repeat surveys as part of Year 1.

9.1.1 Habitat Quality Monitoring

Table 9.1outlines the monitoring schedule for habitat quality assessments. This ongoing program is designed to ensure that habitat quality scores remain on track to meet progressive completion criteria throughout the life of the offset. Regular evaluations provide a basis for adaptive management, supporting the achievement of restoration objectives and compliance with the relevant guidelines.

Table 9.1 Habitat Quality Monitoring

Target Matter/s	Method and Effort	Relevant Guideline/s
Frequency: Year 1, 3, 5, Year 10, Year 15, Year 20		
Offset MNES Habitat Quality	Habitat quality assessments will be front-loaded with early monitoring in years 1, 3 and 5 then monitored periodically (every five years) as per the methodology outlined in this OMP. The survey will revisit HQA sites as presented in this OMP, as well as any newly established sites. The objective of the surveys is to confirm they are on track to meet progressive completion criteria and inform adaptive management actions as required.	• As per the BioCondition Assessment Manual v2.2 (Eyre et al. 2015) • As per the Guide to Determining Terrestrial Habitat v1.2 (Department of Environment and Science 2020) • MHQA criteria developed within this OMP.

Table 9.2 Offset Monitoring and Reporting Program

Monitoring / Reporting Activity	Frequency (years)	Year																			
		Baseline	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Habitat Quality Assessments	5	+	✓		✓		✓					✓					✓					✓
Targeted MNES Monitoring	5	+					✓					✓					✓					✓
Collared delma relocation[1]	Yearly until Year 5[1], then 5 yearly.		✓	✓[1]	✓[1]	✓[1]	✓					✓					✓					✓
Glider hollow monitoring [2]	Presence/absence yearly until Year 5, then 5 yearly.		✓	✓	✓	✓	✓					✓					✓					✓
Weed Assessment	2 yearly	+	✓		✓		✓		✓		✓		✓		✓		✓		✓		✓	✓
Feral Animal Monitoring	5 yearly	+					✓					✓					✓					✓
Fire Fuel Load Hazard Assessment	2 yearly	+	✓		✓		✓		✓		✓		✓		✓		✓		✓		✓	✓
Post-fire event monitoring	After each prescribed burn																					
Regrowth Recovery Plots	Annually for first 5 years, biannually thereafter	+	✓	✓	✓	✓	✓		✓		✓		✓		✓		✓		✓		✓	✓
Annual Compliance Reporting	4 of 5 year cycles		✓[3]	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	
Five-Year Compliance Reporting to DCCEEW	5						✓[3]					✓[3]					✓[3]					✓[3]

+Completed as part of this OMP

[1] Monitoring event avoid if detected in a prior year

[2]Installed dens monitored for condition yearly irrespective of presence/absence monitoring

[3]Report to be published on Powerlink's website

9.1.2 Target MNES Monitoring

Targeted, periodic monitoring surveys will be conducted by suitably qualified ecologists to sample for the presence and monitor the on-going persistence of the Offset MNES. Several Offset MNES including *Cycas megacarpa*, *Samadera bidwillii,* greater glider and koala have been recently detected across the BBOA whilst neither the yellow-bellied glider nor collared delma have been detected. Targeted surveys will be conducted in years 5, 10, 15 and 20 to periodically assess for species presence throughout the 20-year offset timeframe. **Table 9.3** describes the methods, survey effort and seasonality requirements for target MNES monitoring.

Table 9.3 Targeted MNES Monitoring Methods

Target Matter/s	Method and Effort	Relevant Guideline/s
Frequency: Year 5, Year 10, Year 15, Year 20		
SEVT TEC and Eucalypt Floodplain Forest TECs	Patches of vegetation that are undergoing management to become or improve on existing SEVT TEC and Eucalypt Floodplain Forest TEC will be monitored using HQA and TEC field assessments. This will determine whether these patches are progressing towards the key diagnostic criteria and condition thresholds for each TEC.	**SEVT TEC:** Approved Conservation Advice for Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (Department of Climate Change, Energy, the Environment and Water 2023) **Eucalypt Floodplain Forest TEC:** Approved Conservation Advice for the Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions (Department of Climate Change, Energy, the Environment and Water 2022a)
C. megacarpa* and *S. bidwillii	Monitoring surveys for *C. megacarpa* and *S. bidwillii* will consist of targeted survey effort to track population size and health within the Offset Area relative to baseline levels (as presented in this OMP). Surveying for *S. bidwillii* will require ground-based surveys, however due to the distinct and recognisable nature of Cycads, survey effort for this species may be supplemented by use of drones. For *Cycas megacarpa*, monitoring may cease within areas of 'suspected/ suitable habitat' once they have been surveyed and found to not contain the species.	***Cycas megacarpa:*** In lieu of species specific survey guidelines, the species national recovery plan (Queensland Herbarium 2007b) will be used to inform survey information data requirements. ***Samadera bidwillii:*** In lieu of species specific survey guidelines, the species approved conservation advice (Department of the Environment, Water, Heritage and the Arts 2008b) will be used to inform survey information data requirements.

Target Matter/s	Method and Effort	Relevant Guideline/s
Collared delma	Monitoring surveys for this species will employ methods recommended in the relevant survey guidelines stated here or available at the time. **Seasonal and timing considerations** Optimal survey times are early morning within four hours of dawn and during the evening on warm nights.	**Collared delma:** • Survey guidelines for Australia's threatened reptiles (Department of Sustainability, Environment, Water 2011). • Draft Referral guidelines for the nationally listed Brigalow Belt reptiles (Department of Climate Change, Energy, the Environment and Water 2023) • Monitoring Priority Threatened Species: Overview of monitoring methods for the Collared Delma (*Delma torquata*) (TERN Australia 2024).
Greater glider, Yellow-bellied glider and Koala	A combination of monitoring survey techniques will be utilised in accordance with the literature to survey for greater glider, yellow-bellied glider and koala, including spotlighting, thermal drones, bioacoustics and call-playback (the latter to detect vocalising koalas and yellow-bellied gliders). Surveys will be conducted by at least one suitably qualified ecologist (with the second person an ecologist and/or drone pilot) for a minimum of four consecutive nights. Call play-back will be conducted simultaneously with spotlighting. Bioacoustic recorders will record for the maximum time possible during the monitoring event (for example deployed during the start of habitat quality assessments and collected as the last activity). **Seasonal considerations** For koala, the optimal time period for direct observation surveys occurs between September and March. Both the threatened gliders have high site fidelity so areas of previous detection should continue to be targeted. There are no specific seasonal considerations for both glider species. However, cooler months are optimal for thermal drone detection methods.	**Yellow-bellied glider:** In lieu of species-specific guidance, yellow-bellied glider will be surveyed in consideration of: • Survey guidelines for Australia's threatened mammals (Department of Sustainability, Environment, Water, Population and Communities 2011) • Terrestrial Vertebrate Fauna Survey Guidelines for Qld (Eyre, Ferguson, et al. 2022). **Greater glider:** In lieu of species-specific guidance, greater glider will be surveyed in consideration of: • Survey guidelines for Australia's threatened mammals (Department of Sustainability, Environment, Water, Population and Communities 2011). • Terrestrial Vertebrate Fauna Survey Guidelines for Qld (Eyre, Ferguson, et al. 2022). **Koala:** • A review of koala habitat assessment criteria and methods (Youngentob *et al.* 2021). • Survey guidelines for Australia's threatened mammals (Department of Sustainability, Environment, Water, Population and Communities 2011).

9.1.3 Monitoring of Management and Threats Towards Progressive Criteria

The monitoring of management implementation and threat abatement will be undertaken to evaluate progress toward the Progressive and Completion Criteria provided in sections below. The monitoring program is designed to verify that management actions are being delivered as committed, that key threats are declining in intensity and extent and that habitat condition is progressing toward the prescribed final HQS.

Management monitoring is structured around the five primary management themes: Bushfire Management, Weed Management, Feral Pest Management, Grazing Management and Restoration. Each theme includes implementation verification, threat reduction indicators and ecological response metrics. Together, these provide a defensible basis for adaptive management and long-term evaluation against completion criteria.

9.1.3.1 Bushfire Monitoring

Monitoring of bushfire management will be conducted in accordance with directions set out in the supporting BMP. The intent of monitoring is to assess both compliance with the prescribed ecological fire regime and its influence on habitat structure and condition.

Implementation monitoring will confirm that prescribed burns are undertaken within the intervals and intensity envelopes defined in the BMP and that fire exclusion requirements are adhered to for each MNES. Burn extent mapping and spatial records will be included within the five-year summary reporting to verify mosaic configuration and landscape-scale treatment limits (e.g., ≤30% per annum). In addition, vegetation response to bushfire influenced HQA sub-attributes including litter cover, native ground layer richness, and canopy recruitment will be analysed at five-year intervals as part of HQA monitoring program. The bushfire monitoring program will confirm that fire application is supporting, rather than suppressing, recruitment and understorey composition consistent with RE benchmarks.

Threat reduction will be assessed through annual FFLH assessments (**Section 4.2.1.2**) with particular focus on reduction of 'Very High' and 'Extreme' hazard classes consistent with the BMP. Post-fire monitoring will be conducted following the completion of a prescribed burn to assess the burnt patches against the offset objectives.

9.1.3.2 Weed Monitoring

Monitoring of weed management will quantify reductions in exotic species cover and assess the recovery of native vegetation strata.

Implementation monitoring will document spatial extent of treatment areas, intensity of control effort and seasonal timing of interventions under the WMP. Spatial extent and weed treatment logs will be retained and presented within quarterly and annual reports to provide a record of management delivery.

Weeds will be assessed through dedicated Weed Assessments (**Section 4.2.1.1**) and repeat measurement of non-native cover (%) at HQA sites (**Section 4.3**) and Regrowth Recovery Plots (**Section 4.2.1.4)**. Particular focus will be placed on priority species identified in , including cat's claw creeper, lantana, creeping lantana and giant rat's tail grass.

Ecological response will be measured through increases in native grass cover, shrub cover and overall species richness, as well as maintenance of canopy integrity within SEVT TEC and Eucalypt Floodplain Forest TEC. Monitoring outcomes will be interpreted relative to forecast HQS improvement and progressive criteria timelines.

9.1.3.3 Grazing Monitoring

Monitoring of grazing management will assess compliance with exclusion requirements and evaluate whether grazing pressure is compatible with habitat quality improvement objectives.

Implementation monitoring will confirm that grazing exclusion zones (SEVT TEC, MZ01, MZ02, MZ05 and the entire SEQOA) remain destocked and appropriately fenced, and that conditional grazing within MZ03–MZ04 complies with the GMP (**Section 8.4.5.2**). Spatial extent and grazing logs will be retained and presented within quarterly and annual reports to provide a record of management delivery.

Monitoring of the effects of grazing on habitat quality (throughout the BBOA only) will focus on analysing the vegetation sub-attributes recorded during the five-yearly HQAs that are expected to be influenced by grazing including native grass cover and richness, exotic cover, shrub density and EDL recruitment. Comparisons between grazed paddocks and designated reference (ungrazed) paddocks will provide an evidence-based assessment of grazing influence. Ecological response indicators will include stable or increasing native grass cover, maintenance or increase in EDL recruitment density and no decline in HQS attributable to grazing pressure. Where monitoring identifies negative trends, stocking rates, grazing duration or other aspects of the GMP will be reviewed and adapted accordingly.

9.1.3.4 Restoration Monitoring

Early monitoring during Years 1 - 5 of restoration areas will determine whether threat abatement and trigger disturbance are resulting in sufficient natural regeneration to meet progressive recruitment thresholds within the BBOA (**Section 8.4.6.3**).

Implementation monitoring will confirm delivery of assisted natural regeneration actions (cattle exclusion, weed management, trigger disturbance) and any active planting or direct seeding undertaken in accordance with the RMP. These restoration actions will be logged and reported within quarterly and annual reports.

Regrowth Recovery Plots (**Section 4.2.1.4**) will be the primary mechanism to monitor restoration areas and to be conducted annually from Years 1 - 5 and biannually thereafter. Moreover, regrowth recovery will be further measured within the formal HQAs (**Section 4.3**) including vegetation structure and composition sub-attributes.

9.1.3.5 Feral Pest Monitoring

Monitoring of feral pest management will assess whether control efforts are reducing pest activity and associated ecological impacts within priority habitats. Given the connectivity of the Offset Areas and the mobility of pest species, eradication is not considered realistic. Monitoring metrics and progressive criteria therefore focus on evidence of suppression and declining activity trends rather than complete absence.

Implementation monitoring will verify that control activities are delivered as committed to within **Section 8.4.3.4** including trap deployment, control campaign frequency and spatial targeting of riparian corridors and MNES hotspots.

Threat reduction will be evaluated using catch per unit effort (CPUE) and camera detection indices. CPUE (e.g. captures per trap-night or removals per control event) will be calculated annually within with declining trends indicating effective suppression. Camera traps will be co-located with active control sites to independently assess pest activity against control efficacy. Moreover, a comprehensive camera trap program (as per the methodology described in **Section 4.2.1.3**) will be undertaken every five years (**Table 9.2**) across the Offset Areas and broader property to assess landscape-scale trends. Incidental observations of individuals or their activity will also be recorded and reported on in the quarterly and annual reports.

9.1.3.6 Glider Hollow and Artificial Habitat Monitoring

The monitoring of the installed salvaged hollows and artificial dens is important to evaluate their performance and ensure broader Project commitments continue to be met, particularly the no net loss of suitable hollows for the threatened glider species. The monitoring program will have two main objectives, including:

- Determine the presence/absence of threatened glider species, native competitor species and invasive competitor species in salvaged hollows and artificial dens, across space and time.
- Track salvaged hollow and artificial den condition as well as host tree condition.
- To determine presence/absence, visual evidence of the internal space of the salvaged hollow or artificial den will be necessary. Both evidence of direct presence and indirect presence should be recorded. This information can be collected in a variety of ways including:
- Physical inspection by an appropriately trained ecologist or arborist able to safely access the feature in-situ, either by an elevated work platform or by rope system.
- Permanent or short-term (minimum 6-week period) installation of camera traps or nest cameras, facing the hollow entrance.
- Use of a scope camera on an extendable pole from the ground.

Condition inspections of host trees and installed den features will be done visually from the ground as part of routine property management activities. Additional information regarding the presence/absence of native and invasive predators will also be done at this time, as many of these species are likely to be diurnal and may be observed moving to and from the feature, such as exotic bees or hollow-dependent native birds. Binoculars will be used as necessary.

This monitoring program will initially occur yearly and coincide with other annual programs. Condition inspections will continue to occur yearly as part of routine property management activities, ensuring the availability of functional den features is maintained overtime which is the core priority. Condition inspections will also occur as required, post any force majeure event (i.e. extreme weather or bushfire). Following Year 5, presence/absence monitoring will reduce in frequency occurring from this point every 5-years (i.e. during Years 10, 15, 20).

9.2 Progressive and Completion Criteria

This OMP applies a structured evaluation framework to assess the progress and trajectory of the offset – 'Progressive criteria' towards the prescribed habitat quality improvements as indicated by the HQS of each Offset MNES – 'Completion criteria'.

9.2.1 Progressive Criteria

Progressive criteria are appropriate interim ecological indicators monitored to evaluate offset trajectory and guide adaptive management.

These criteria are presented within Table 9.4 and correspond to the management strategies (**Section 8.4**) and Offset Management Program (**Section 8.5)** presented within and designed as operational benchmarks for gauging whether threat abatement, regeneration and infrastructure objectives are being progressively achieved. These criteria are informed by results from regular and targeted monitoring activities, including:

- Regrowth recovery plots to measure natural regeneration, canopy development and species recruitment (**Section 4.2.1.4**).
- Weed monitoring to assess extent and severity of infestations, post-treatment recurrence and management effectiveness (**Section 4.2.1.1**).
- Feral animal monitoring to detect activity, management efficacy and high-use zones (**Section 4.2.1.3**).
- Fire management monitoring, including FFLH assessments (**Section 4.2.1.2**), pre- and post-burn assessments.
- Analysis of certain HQA sub-attributes forecast for improvement in response the threat abatement (**Section 4.3**).

Outcomes against the progressive criteria, including any instances of underperformance or early attainment will be documented in the following annual or five-yearly reporting (**Section 9.4**, together with the corresponding corrective actions and outcomes of any previously implemented. Progressive criteria apply throughout the offset period however, by Year 20, these are superseded by the Completion Criteria presented in **Table 9.5** for the purposes of offset compliance and sign-off.

Table 9.4 Progressive Criteria Relevant to Bushfire, Weeds, Feral Animals and Regrowth Recovery

Progressive criteria	Year 1	Year 5	Year 10	Year 15	Year 20	Corrective actions
Bushfire management (**Section 8.4.4**)	BMP delivered including baseline FFLH assessments and the establishment of firebreaks/ access tracks	• Fuel load is not as assessed as 'Extreme' under FFLH assessments unless within a designated 'Fire refugia' area. • No HQA site meets two or more of the following: ○ Native grass cover >200% of the RE benchmark ○ Organic litter cover >200% of RE benchmark ○ CWD >200% of the RE benchmark • Maintain fire regimes at both landscape-scale and fine-scale mosaic consistent with the BMP • Maintain habitat refugia and structural complexity for fire-sensitive fauna species as assessed within post-fire	• Fuel load is not as assessed as 'Extreme' under FFLH assessments unless within a designated 'Fire refugia' area. • No HQA site meets two or more of the following: ○ Native grass cover >200% of the RE benchmark ○ Organic litter cover >200% of RE benchmark ○ CWD >200% of the RE benchmark • HQA sub-attributes forecast to improve under appropriate fire regime is trending up • Maintain fire regimes at both landscape-scale and fine-scale mosaic consistent with the BMP • Maintain habitat refugia and structural complexity for fire-sensitive fauna species	• Fuel load is not as assessed as 'Extreme' under FFLH assessments unless within a designated 'Fire refugia' area. • No HQA site meets two or more of the following: ○ Native grass cover >200% of the RE benchmark ○ Organic litter cover >200% of RE benchmark ○ CWD >200% of the RE benchmark • HQA sub-attributes forecast to improve under appropriate fire regimes trending up • Maintain fire regimes at both landscape-scale and fine-scale mosaic consistent with the BMP • Maintain habitat refugia and structural complexity for fire-sensitive fauna species	• Fuel load is not as assessed as 'Extreme' under FFLH assessments unless within a designated 'Fire refugia' area. • No HQA site meets two or more of the following: ○ Native grass cover >200% of the RE benchmark ○ Organic litter cover >200% of RE benchmark ○ CWD >200% of the RE benchmark • HQA sub-attributes have improved as forecast under appropriate fire regimes • Maintain fire regimes at both landscape-scale and fine-scale mosaic consistent with the BMP • Maintain habitat refugia and structural complexity for fire-sensitive fauna species	Corrective actions described in **Section 9.3.1.1** • Respond to 'Extreme' FFLH classes by reducing fuel load within that patch or those surrounding • Review the fire regime within the BMP alongside the HQA sub-attributes and adapt fire regime or other aspects of the BMP accordingly • Modify fire management units/ patches or burn sequencing to restore appropriate fire intervals as close as practically possible • Review and adapt the prescribed burn strategy and the planned burn preparation and implementation to avoid burning or otherwise degrading key Offset MNES habitat features.
Weed management (**Section 8.4.2**)	WMP delivered and implemented. Conduct baseline weed management as per **Section .**	• 50% reduction of live Cat's claw creeper cover in the canopy and subcanopy layers relative to HQAs presented in this OMP. • Reduction in priority weed species infestations relative to Year 1 cover (%) as assessed in the 'Weed Assessment': ○ Lantana/ rubber vine ○ Creeping lantana ○ Cat's claw creeper ○ Giant rat's tail • Reduction in total non-native cover at ≥75% of sites relative to Year 1 as assessed in the HQAs	• Cat's claw creeper cover ≤10% in the canopy or subcanopy layers • Cat's claw creeper cover ≤50% in all layers • Reduction in priority weed species infestations relative to Year 1 and Year 5 cover (%) as assessed in the 'Weed Assessment': ○ Lantana/ rubber vine ○ Creeping lantana ○ Cat's claw creeper ○ Giant rat's tail • Reduction in total non-native cover at ≥75% of sites relative to Year 1 and Year 5 as assessed in the HQAs • Total non-native cover is on trajectory to achieve the forecast non-native cover with HQS () • ≥10% of Eucalypt Floodplain Forest total perennial understorey cover is native	• Cat's claw creeper cover ≤5% in the canopy or subcanopy layers • Cat's claw creeper cover ≤25% in all layers • Reduction in priority weed species infestations relative to Year 1, Year 5 and Year 10 cover (%) as assessed in the 'Weed Assessment': ○ Lantana/ rubber vine ○ Creeping lantana ○ Cat's claw creeper ○ Giant rat's tail • Reduction in total non-native cover at ≥75% of sites relative to Year 1, Year 5 and Year 10 as assessed in the HQAs • Total non-native cover is on trajectory to achieve the forecast non-native cover with HQS () • ≥20% of Eucalypt Floodplain Forest total perennial understorey cover is native	• Cat's claw creeper cover ≤5% in the canopy or subcanopy layers • Cat's claw creeper cover ≤15% in all layers • Reduction in priority weed species infestations relative to Year 1, Year 5 , Year 10 and Year 15 cover (%) as assessed in the 'Weed Assessment': ○ Lantana ○ Creeping lantana ○ Cat's claw creeper ○ Giant rat's tail • Reduction in total non-native cover at ≥75% of sites relative to Year 1, Year 5 , Year 10 and Year 15 as assessed in the HQAs • ≥30% of Eucalypt Floodplain Forest total perennial understorey cover is native	Corrective actions described in **Section 9.3.1.2** • Immediately increase targeted effort to control priority species to achieve the progressive criteria by the following year • Review weed management, adapt methodology and effort accordingly to achieve the progressive criteria by the following year • Increase follow-up where weeds rebound after disturbance • Increased monitoring frequency in underperforming sites

Progressive criteria	Year 1	Year 5	Year 10	Year 15	Year 20	Corrective actions
Feral pest management (**Section 8.4.3**)	• Conduct baseline management effort as per **Section**	• Declining catch per unit effort (CPUE) by Year 5 compared to Year 1 • Cameras co-located with control sites are not demonstrating the following at 3 or more sites: ○ Detecting the target feral on the camera trap ○ Not capturing the target feral detected on the associated control camera • Review control priority areas based on the Year 5 Feral Animal monitoring (camera traps)	• Declining CPUE compared to Year 5 • Cameras co-located with control sites are not demonstrating both: ○ Detecting the target feral on the camera trap ○ Not capturing the target feral detected on the associated control camera • Review control techniques and priority areas based on the Year 10 Feral Animal monitoring (camera traps)	• Declining CPUE compared to Year 10 • Cameras co-located with control sites are not demonstrating the following at 3 or more sites: ○ Detecting the target feral on the camera trap ○ Not capturing the target feral detected on the associated control camera • Review control techniques and priority areas based on the Year 15 Feral Animal monitoring (camera traps)	• Declining CPUE compared to Year 15 • Cameras co-located with control sites are not demonstrating the following at 3 or more sites: ○ Detecting the target feral on the camera trap ○ Not capturing the target feral detected on the associated control camera • Review control techniques and priority areas based on the Year 20 Feral Animal monitoring (camera traps)	Corrective actions described in **Section 9.3.1.3** • Increase effort or rotate/ combine methods where effectiveness declines • Update priorities and treatment zones as new data emerge • Seek specialist input where efficacy remains poor despite corrective actions or non-target risk is unacceptable
Regrowth recovery – BBOA (**Section 8.4.6**)	• RMP delivered including the permanent baseline Regrowth Recovery Assessment and HQA. • Cattle excluded from all restoration areas (MZ01, MZ02)	• Cattle excluded from all restoration areas (MZ01, MZ02) **Eucalypt woodland or forest** • Minimum density of canopy or T3 recruits at 200/ ha for Eucalypt Woodland • Minimum canopy/ sub-canopy species (in the final state) richness of 2 **SEVT** • Minimum density of canopy or T3 recruits at 400/ ha Minimum canopy/ sub-canopy species (in the final state) richness of 5.	• Includes dominant canopy species characteristic of the benchmark RE • Exotic species do not dominate any stratum • Cattle excluded from all restoration areas (MZ01, MZ02) **Eucalypt woodland or forest** • Median canopy height ≥3 m • Median canopy cover ≥15% **SEVT** • Median canopy height ≥3 m • Median canopy cover ≥15%	• • Includes dominant canopy species characteristic of the benchmark RE • Exotic species do not dominate any stratum • Cattle excluded from all restoration areas (MZ01, MZ02) **Eucalypt woodland or forest** • Median canopy height ≥6 m • Median canopy cover ≥15% • Median subcanopy height ≥2 m • Median subcanopy cover ≥20% **SEVT** • Median canopy height ≥5.5 m • Median canopy cover ≥25% • Median subcanopy height ≥2 m • Median subcanopy cover ≥20%	• Includes dominant canopy species characteristic of the benchmark RE • Exotic species do not dominate any stratum • Cattle excluded from all restoration areas (MZ01, MZ02) **Eucalypt woodland or forest** • Median canopy height ≥10 m • Median canopy cover ≥20% • Median subcanopy height ≥4.5 m • Median subcanopy cover ≥5% **SEVT** • Median canopy height ≥8 m • Median canopy cover ≥40% • Median subcanopy height ≥4 m • Median subcanopy cover ≥30%	Corrective actions described in **Section 9.3.1.4.** • Review and reinforce exclusion fencing or lock out cattle from a broader paddock **Year 5:** • Failure to meet recruit density or species richness will trigger revegetation through planting/ seeding as detailed in the RMP **Year 10, 15, 20:** • Infill planting to increase species richness ,cover or the presence of RE-characteristic species • Interrogate underperforming vegetation development then review, update and enact the RMP accordingly
Regrowth recovery – SEQOA (relevant to highly modified paddocks (AU21)) (**Section 8.4.6**)	• RMP delivered including the permanent baseline Regrowth Recovery Assessment and HQA • Cattle excluded from the SEQOA and 100 m buffer	• Median canopy height ≥3 m • Median canopy cover ≥10% • Includes dominant canopy species characteristic of the benchmark RE • Cattle excluded from the SEQOA and 100 m buffer	• Median canopy height ≥6 m • Median canopy cover ≥13% • Includes dominant canopy species characteristic of the benchmark RE • ≥10% of Eucalypt Floodplain Forest total perennial understorey cover is native • Minimum of two native species in the ground layer • Cattle excluded from the SEQOA and 100 m buffer	• Median canopy height ≥10 m • Median canopy cover ≥16% • Median subcanopy height ≥3 m • Median subcanopy cover 3% • Includes dominant canopy species characteristic of the benchmark RE • ≥20% of Eucalypt Floodplain Forest total perennial understorey cover is native • Minimum of three native species in the ground layer • Cattle excluded from the SEQOA and 100 m buffer	• Median canopy height ≥13 m • Median canopy cover ≥16% • Median subcanopy height ≥3 m • Median subcanopy cover 3% • Includes dominant canopy species characteristic of the benchmark RE • ≥30% of Eucalypt Floodplain Forest total perennial understorey cover is native • Minimum of four native species in the ground layer • Cattle excluded from the SEQOA and 100 m buffer	Corrective actions described in **Section 9.3.1.5.** • Review and reinforce exclusion fencing or lock out cattle from a broader paddock • Infill planting to increase species richness or cover • Interrogate underperforming vegetation development then review and update the RMP accordingly • Increase weed management and infill plant with competitive native species such as *Imperata cylindrica*

Progressive criteria	Year 1	Year 5	Year 10	Year 15	Year 20	Corrective actions
Eucalypt Floodplain TEC Management – SEQOA (relevant to pre-existing remnant or regrowth patches) (**Section 7.4.2.3**)	• Supporting Management Plans delivered including BMP, RMP and WMP • Cattle excluded from the SEQOA and 100 m buffer	• 50% reduction of live Cat's claw creeper cover in the canopy and subcanopy layers relative to HQAs presented in this OMP. • Reduction in total non-native cover at ≥75% of sites relative to Year 1 as assessed in the HQAs • Cattle excluded from the SEQOA and 100 m buffer	• Cat's claw creeper cover ≤10% in the canopy or subcanopy layers • Cat's claw creeper cover ≤50% in all layers • Giant rat's tail cover ≤50% • ≥10% of Eucalypt Floodplain Forest total perennial understorey cover is native • Cattle excluded from the SEQOA and 100 m buffer	• Cat's claw creeper cover ≤5% in the canopy or subcanopy layers • Cat's claw creeper cover ≤25% in all layers • Giant rat's tail cover ≤25% • Total weed cover ≤30% • ≥20% of Eucalypt Floodplain Forest total perennial understorey cover is native • Minimum of three native species in the ground layer • Cattle excluded from the SEQOA and 100 m buffer	• Cat's claw creeper cover ≤5% in the canopy or subcanopy layers • Cat's claw creeper cover ≤25% in all layers • Giant rat's tail cover ≤25% • Total weed cover <25% • ≥30% of Eucalypt Floodplain Forest total perennial understorey cover is native • Minimum of four native species in the ground layer • Cattle excluded from the SEQOA and 100 m buffer	Corrective actions described in **Section 9.3.1.6.** • Review and reinforce exclusion fencing or lock out cattle from a broader paddock • Infill planting to increase native species richness or cover • Increase weed management and infill plant with competitive native species such as *Imperata cylindrica*
Glider Hollow and Artificial Habitat Management (**Section 8.4.7**)	• No net loss of any installed den features (i.e. salvaged hollows and artificial dens). • No permanent occupation of installed den features by competitor native or invasive species. • Confirmation of the target glider[1] (depending on the nature of the habitat that receives the features) within one or more installed den feature.	• No net loss of any installed den features. • No permanent occupation of installed den features by competitor native or invasive species. • Confirmation of the target glider[1] (depending on the nature of the habitat that receives the features) within one or more installed salvaged hollows and/or artificial dens. • The number of unmodified large trees (i.e. trees >50 cm DBH that do not have an installed den) continues to increase, on average (by count, DBH trend or large tree score increase of 10% relative to baseline).		• No net loss of any installed den features. • No permanent occupation of installed den features by competitor native or invasive species. • Confirmation of the target glider[1] (depending on the nature of the habitat that receives the features) within one or more installed salvaged hollows and/or artificial dens.The average number of unmodified large trees within suitable target glider habitat in the BBOA exceeds the number of artificial features installed in Year 1.		Corrective actions described in **Section 9.3.1.7.** **Year 1:** • Increase frequency of targeted MNES surveying in areas of installed den features. **Year 5, 10, 15, 20:** • Utilise an alternative den inspection methodology if presence is not confirmed. • Increase frequency of den inspections if presence has not been confirmed (following above action). • Review locations, configuration and types of den features installed where presence of target glider has not been confirmed (following above 2 actions). • Investigate factors that may be leading to lack of large tree increase and consider additional management actions where appropriate. **All Years:** • Complete ad-hoc condition inspections following any severe weather event including storms and fire. • Remediate any installed den considered damaged or requiring maintenance (including the removal of invasive or native fauna). • Replace unviable installed dens with a different form of artificial den habitat (i.e nest box or chainsaw carved hollows).

[1]: Confirmation of yellow-bellied glider presence within an installed den feature would only be required where the species has been confirmed during targeted MNES monitoring and if features occur in areas of mapped suitable habitat.

9.2.2 Completion Criteria

Completion criteria define the measurable ecological outcomes required to demonstrate that the Offset has achieved its objectives. The HQS of Year 1 is presented along with the targets for Years 5, 10, 15 and 20 and reported in five-yearly summary reports and the final completion report.

The criteria reflect incremental improvement in site condition, site context and, where relevant, SSR components of the HQS, demonstrating sustained enhancement of habitat quality and functional habitat availability for each Offset MNES. For the Eucalypt Floodplain Forest TEC, additional condition attributes (e.g. native perennial understorey cover and ground layer richness) are included to confirm progression toward TEC status during the offset timeframe. **Table 9.5** presents the completion criteria for each Offset MNES across the 20-year Offset timeframe.

Table 9.5 Formal Offset Completion Criteria as Measured by the HQS

Offset MNES	HQS Component	HQS Target per Year				
		Year 1	Year 5	Year 10	Year 15	Year 20
SEVT TEC	Site Condition	4.68	4.79	4.90	5.02	5.13
	Site Context	2.16	2.24	2.32	2.40	2.48
	Area-weighted HQS	**6.84**	**7.03**	**7.23**	**7.42**	**7.61**
	Rounded HQS	**7**	**7**	**7**	**7**	**8**
Eucalypt Floodplain Forest (pre-existing remnant or regrowth patches)	Site Condition	3.08				4.20
	Site Context	1.13				1.48
	Area-weighted HQS	**4.20**				**5.68**
	Rounded HQS	**4**				
	Ground cover richness	**≥4**	**≥4**	**≥4**	**≥4**	**≥4**
	Proportion of total perennial understorey cover is native	**≥10%**	**≥20%**	**≥20%**	**≥30%**	**≥30%**
Eucalypt Floodplain Forest (highly modified paddocks (AU21))	Site Condition	**0.45**	**1.25**	**2.65**	**3.45**	**4.11**
	Site Context	**0.87**	**0.95**	**1.02**	**1.20**	**1.37**
	Area-weighted HQS	**1.32**	**2.20**	**3.67**	**4.65**	**5.48**
	Rounded HQS	**1**	**2**	**4**	**5**	**5**
	Ground cover richness	≥4	≥4	≥4	≥4	≥4
	Proportion of total perennial understorey cover is native	0%	≥5%	≥10%	≥20%	≥30%
C. megacarpa	Site Condition	2.25	2.29	2.33	2.37	2.41
	Site Context	2.21	2.25	2.29	2.33	2.37
	Species-stocking rate	2.48	2.48	2.78	2.78	2.78

Offset MNES	HQS Component	HQS Target per Year				
		Year 1	Year 5	Year 10	Year 15	Year 20
	Area-weighted HQS	**6.93**	**7.02**	**7.40**	**7.48**	**7.56**
	Rounded HQS	**7**	**7**	**7**	**7**	**8**
S. bidwillii	Site Condition	1.78	1.82	1.86	1.89	1.93
	Site Context	2.18	2.23	2.27	2.31	2.35
	Species-stocking rate	2.29	2.29	2.38	2.38	2.48
	Area-weighted HQS	**6.25**	**6.34**	**6.50**	**6.58**	**6.76**
	Rounded HQS	**6**	**6**	**7**	**7**	**7**
Collared delma	Site Condition	3.66	3.74	3.82	3.90	3.98
	Site Context	1.31	1.42	1.54	1.65	1.77
	Species-stocking rate	0.62	0.62	0.84	0.84	1.06
	Area-weighted HQS	**5.59**	**5.78**	**6.20**	**6.39**	**6.81**
	Rounded HQS	**6**	**6**	**6**	**6**	**7**
Greater glider	Site Condition	1.80	1.84	1.88	1.92	1.96
	Site Context	1.86	1.97	2.08	2.18	2.29
	Species-stocking rate	1.74	1.74	1.81	1.81	1.88
	Area-weighted HQS	**5.40**	**5.55**	**5.76**	**5.91**	**6.12**
	Rounded HQS	**5**	**6**	**6**	**6**	**6**
Koala	Site Condition	1.85	1.97	2.08	2.20	2.32
	Site Context	2.03	2.13	2.23	2.33	2.44
	Species-stocking rate	2.07	2.07	2.41	2.41	2.75
	Area-weighted HQS	**5.99**	**6.17**	**6.75**	**6.94**	**7.50**
	Rounded HQS	**6**	**6**	**7**	**7**	**8**

Offset MNES	HQS Component	HQS Target per Year				
		Year 1	Year 5	Year 10	Year 15	Year 20
Yellow-bellied glider	Site Condition	2.11	2.15	2.19	2.23	2.27
	Site Context	2.17	2.20	2.23	2.26	2.29
	Species-stocking rate	1.14	1.14	1.63	1.63	2.12
	Area-weighted HQS	**5.42**	**5.49**	**6.05**	**6.12**	**6.68**
	Rounded HQS	**5**	**5**	**6**	**6**	**7**

9.3 Adaptive Management

An adaptive management framework will be implemented across offset delivery to ensure that uncertainties are progressively reduced and that the outcomes defined in the OMP including progressive and completion criteria are reliably achieved and sustained over time. This approach acknowledges that the knowledge base, site conditions and threat dynamics will evolve throughout the 20-year period and provides a structured mechanism to respond effectively.

As performance and implementation monitoring is conducted over a 5-year cycle. The management and monitoring regime will be reviewed and adjusted to optimise ecological outcomes. These refinements may include the scaling of actions, adoption of new techniques or reallocation of effort toward emerging priorities particularly where early indicators suggest a risk of underperformance against progressive or completion criteria.

Amendments to the OMP that do not materially affect the approved environmental outcomes, progressive or completion criteria, management, monitoring or reporting programs may be made by Powerlink without formal notification to the regulator. However, where proposed changes are likely to alter the environmental outcomes or have a material effect on the delivery of offset obligations, the amendments and their justifications will be submitted to the regulator for review and approval. Where appropriate, contingency measures will be included.

Adaptive management will be applied throughout the OMP to accommodate changes in the following areas:

- **Integration of new information**: Including updates to conservation advice, recovery plans, or threat abatement plans relevant to the Offset MNES.
- **Coordination of management and monitoring activities:** To address unforeseen delays or constraints such as extreme weather events that affect scheduled restoration works.
- **Assessment of management effectiveness**: Monitoring results will be used to review the efficacy of on-ground actions. Where criteria are not being met, methods or frequency of intervention may be adjusted accordingly.
- **Contingency response to unplanned incidents:** Response to significant unplanned events such as wildfire, flooding or prolonged drought.

More specific examples to alter the management program, technique or effort are listed below (non-exhaustive):

- Prioritising management actions within and surrounding a patch where an Offset MNES was detected.
- Delaying planting or seeding due to a prolonged drought.
- Update the prescribed fire regime and landscape mosaic due to drought or other increased fire-risk conditions.
- Avoid or delay a prescribed burn due to a mass cycad fruiting event.
- Bushfire occurrence within or surrounding properties during offset timeframe.

This adaptive framework ensures that management actions remain fit-for-purpose throughout each phase, that resources are directed toward the most effective strategies and that the OMP remains aligned with best-practice ecological restoration and environmental management practices.

9.3.1 Corrective Actions

Corrective actions will be implemented where progressive criteria are not achieved within the nominated assessment period. Responses will be proportionate, evidence-based and adaptive, triggered through analysis of HQA data, Regrowth Recovery Assessments, FFLH monitoring, Weed Assessments and feral animal monitoring results.

Corrective measures will be initiated in the management year immediately following identification of non-compliance or trajectory failure and will not be deferred to the next five-year reporting period. Where failure to meet a progressive criterion persists for three consecutive years for the same management action, a formal review will be undertaken to assess implications for the forecast habitat quality outcomes and prescribed gains. The findings of this review will be reported to DCCEEW.

Through this structured corrective framework, management actions remain responsive to monitoring outcomes and ensure that any deviation from the forecast habitat trajectory is addressed as early as possible, maintaining alignment with the progressive and completion criteria.

9.3.1.1 Bushfire Corrective Actions

Where fuel hazard is assessed as 'Extreme' outside designated fire refugia or where HQA sub-attributes indicate excessive grass cover, litter or coarse woody debris exceeding >200% of the corresponding RE benchmark thresholds, one or more of the following actions will be implemented:

- Targeted fuel reduction within the affected patch and/or surrounding buffers.
- Adjustment of burn extent or sequencing to restore structural balance and protect habitat features.
- Integration of complementary tools (strategic grazing or mechanical fuel reduction) where prescribed burning alone is insufficient.

Moreover, where HQA sub-attributes forecast to improve under appropriate fire are not trending upward by year 10, the fire regime will be formally reviewed and the BMP updated accordingly.

9.3.1.2 Weed Management Corrective Actions

Where progressive weed reduction criteria are not achieved including persistence of cat's claw creeper in canopy layers, insufficient reduction in priority weed cover or failure to achieve native understorey trajectory targets; the following corrective actions will apply:

- Immediate increase in targeted effort toward the relevant priority species or infestation zone.
- Escalation of control methodology including follow-up treatment frequency, integration of mechanical and chemical control, post-disturbance treatment.
- Reprioritisation of areas based on updated weed assessment data.
- Increased monitoring frequency in underperforming sites.

For Eucalypt Floodplain Forest restoration areas, failure to achieve native perennial understorey cover targets will trigger intensified weed suppression and supplementary native ground-layer establishment where required.

9.3.1.3 Feral Pest Management Corrective Actions

Where CPUE is not declining relative to the previous assessment period or where camera traps co-located with control sites continue to detect feral animals without successful capture or control at three or more sites, management will be adapted with one or more of the following corrective actions:

- Reassessment of priority areas using updated camera trap data.
- Adjustment of control techniques and shifting between trapping, shooting, Felixer deployment or CPEs where appropriate.
- Increasing deployment frequency or duration in identified hotspots.

9.3.1.4 Regrowth Recovery Corrective Actions – BBOA

If Year 5 recruitment density or species richness thresholds are not achieved:

- Active restoration (planting and/or direct seeding) will be triggered and implemented by Year 6 in accordance with the RMP.

If Year 10 canopy height, cover or compositional targets are not met:

- Infill planting to increase structural density or species representation.
- Review and revision of the RMP to address limiting factors (e.g. weed competition, fire frequency, soil constraints).
- Reinforcement of fencing or exclusion of cattle from a broader paddock where grazing pressure is identified as a limiting factor.

9.3.1.5 Regrowth Recovery Corrective Actions – SEQOA

Where canopy development, floristic composition or native understorey cover thresholds are not met:

- Targeted infill planting to increase canopy density and dominant species representation.
- Intensified weed management to reduce competitive pressure from giant rat's tail grass and other exotic grasses.
- Supplementary planting of competitive native ground-layer species where required.
- Formal review and update of the RMP to address underperforming vegetation development.

9.3.1.6 Glider Hollow and Artificial Habitat Corrective Actions

To meet management objectives, the following corrective actions may be required following the findings of the respective monitoring events:

- If condition monitoring identifies any salvaged hollow or artificial den as damaged or otherwise requiring maintenance, these works will be completed within 30 business days.
- Where competitor pest or native species are identified within salvaged hollows or artificial dens during condition monitoring, removal of the species must be complete within 30 business days of detection. If not safe or appropriate to do so (i.e. requires additional State permits), installed feature will be deemed unviable (described further below).

- Where a pest or competitor native species is found to occupy the same installed den feature in three consecutive monitoring events, consider feature unviable (unable to function as a denning resource for the threatened gliders) and replace with a different artificial den option.
- If condition monitoring identifies any salvaged hollow or artificial den as unviable and attempts to adjust and/or repair have failed, it will be replaced within 45 business days. The feature must be replaced with a different form of artificial den (i.e nest box or chainsaw carved hollows).
- Investigate factors that may be leading to lack of large tree increase and consider additional management actions where appropriate.

If the target threatened glider has not been identified as present within any installed den feature (i.e. salvaged and relocated hollow and/or artificial features such as nest boxes or chainsaw carved hollow), the below actions will be taken, in order. It will only be required to continue moving through the below actions until presence has been established:

- Increase frequency of den inspections via a repeat inspection survey.
- Review the inspection methodology utilised to date (including timing and techniques) and any limitations. Develop and utilise an alternative methodology.

If presence continues to not be detected, review the locations, configuration and types of den features installed. Consider if additional insulation material is needed and/or adjustments to the orientation or hollow entrance are needed to maximise thermoregulation capabilities. Replace any salvaged hollow that could not be installed in a manner that replicated the original condition with a glider-specific nest box.

It is noted that during Year 1, only a small portion of the anticipated salvaged hollows and artificial dens may be installed due to the length of time required for construction of the Project. Therefore, in Year 1, if the target glider (depending on the nature of the habitat that receives the features) is not recorded present in an installed den, a targeted MNES survey should be conducted to confirm the continued presence of greater glider in the BBOA.

9.4 Compliance Reporting

Ongoing auditing, review, and reporting are central to the effective implementation of this OMP. These activities enable assessment of management delivery, track ecological change and determine whether offset targets are on track to meet their intended outcomes. A structured reporting framework has been adopted to ensure progress is measured regularly and evaluated against the progressive and completion criteria. The offset monitoring and reporting program is summarised in **Table 9.2** in **Section 9.4.**

9.4.1 Quarterly Reporting

Quarterly reports will be prepared throughout the 20-year offset delivery period to ensure internal visibility on offset management progress and compliance. These reports will summarise the management and monitoring actions undertaken during each quarter. This includes a log of management events/ effort for weed control, feral animal management, grazing management, fire management and restoration interventions. They will also note any adaptive management responses and assess operational progress against scheduled implementation targets. As an internal document, quarterly reports will not be distributed but will be used to inform the annual summary report for DCCEEW described below.

9.4.2 Annual Reporting

An annual summary report will be submitted at the end of each financial year (June 30) to DCCEEW. The report will consolidate quarterly activities and provide a broader evaluation of management performance including against any subplans. The results of any monitoring events conducted that year will be presented and discussed with reference to progressive criteria and associated corrective actions. The first annual report (Year 1) will also be published on Powerlink's website.

9.4.3 Five-Yearly Summary Reporting

At the conclusion of Years 5, 10, 15 and 20, a comprehensive Five-Year Summary Report will be prepared to document and interrogate the progress over each preceding phase of offset implementation against the progressive and completion criteria. These reviews replace the standard Annual Report in the relevant year and serve as formal checkpoints, with the reports provided to DCCEEW, for offset management evaluation against the ecological objectives and completion criteria. Five-yearly summary reports will also be published on Powerlink's website.

The reviews align with the monitoring program for HQAs and targeted MNES monitoring and will focus on the progressive and completion criteria outlined in, using compiled monitoring data to examine the condition of vegetation, habitat quality, and species-specific responses to management. Key aspects will include:

- Vegetation structure and regeneration trends across MZ01 and MZ02.
- Outcomes of threat abatement actions (fire, weeds, feral animals, and grazing).
- Verification of the landscape burn mosaic configuration and landscape-scale treatment limits (≤30% per annum) as per the BMP.
- Cyclical monitoring results (HQS, regrowth recovery, fauna detections).
- Comparison of current ecological trends against the prescribe habitat quality improvements.
- Presence/absence of threatened glider species within installed den features.
- These milestone reviews are intended to guide adaptive management by answering key questions:
- Are management actions delivering the expected ecological improvements?
- Are the Offset Areas on track to meet completion criteria by Year 20?
- What corrective actions are necessary to maintain/ achieve progress?

Each review will conclude with a summary of recommendations, including any updates to implementation schedules or technical strategies outlined in the specialised management plans.

The summary reports at Year 5 will conclude the Early Interventions Phase, the reviews at Years 10 and 15 will track progress throughout the Maintenance Phase whilst the review at Year 20 will present the final habitat quality and offset condition against the completion criteria. Collectively, these reviews provide a structured mechanism for aligning on-ground activities with offset performance targets and refining actions to ensure the long-term success of the Offset Area.

10.0 Risk Management Plan

This OMP has identified risks that may prevent achievement of the progressive and completion criteria stated in **Section 9.2**. The risk analysis:

- Identifies events and threats that may impact the achievement of expected environmental outcomes
- Assesses threat levels both before (initial risk rating) and after (residual risk rating) risk mitigation strategies are applied
- Identifies appropriate risk mitigation strategies with trigger criteria for corrective actions should risks eventuate.

Identified risks have been assessed against the risk matrix presented within **Table 10.1** and **Table 10.2** below. Risk mitigation strategies including monitoring mechanisms, management triggers and corrective actions are prescribed within the risk management plan (**Table 10.3**).

10.1 Force Majeure

The offset risk assessment identified several potential risks that could hinder progress toward achieving the OMP objectives and meeting the final completion criteria. For example, extreme weather events such as bushfires, cyclones, flooding or droughts could significantly impact the habitat values of the Offset Area. The purpose of the offset is to counterbalance the significant residual impacts of the Project, and in the event of a catastrophic event, Powerlink will notify DCCEEW as soon as it becomes aware the Offset Area has been affected by a Force Majeure event and will take all reasonable steps to limit and minimise the effects of the event on the habitat quality of the Offset Area. Depending on the severity of the event, the OMP may require a review and consultation with stakeholders/advisors (including experienced land managers or ecologist) to identify appropriate course of action (in accordance with the Offset Assessment Framework approach). Identification of alternative management strategies (and corresponding monitoring) will prompt an update to the OMP, the monitoring program, and the schedule of work orders. Updates would then be implemented in accordance with these changes.

Table 10.1 Risk Matrix Used within the Risk Management Plan

Likelihood (L): A qualitative measure of how likely it is that the event/circumstance will occur, applied both before and after mitigation strategies are implemented.	
1. Rare	May occur in exceptional circumstances
2. Unlikely	Could occur but considered unlikely or doubtful
3. Possible	Might occur during the life of the project
4. Likely	Will probably occur during the life of the project
5. Highly Likely	Is expected to occur in most circumstances

Consequence (C): A qualitative measure of what the consequence/result if the event or circumstances occur, applied both before and after management strategies are implemented.	
1. Minor	Minor incident of environmental damage that can be reversed (e.g. short-term delays to achieving plan objectives, implementing low-cost, well-characterised corrective actions)
2. Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts (e.g. short-term delays to achieving plan objectives, implementing well-characterised, high cost/effort corrective actions)
3. High	Substantial instances of environmental damage that could be reversed with intensive efforts (e.g. medium-long term delays to achieving plan objectives, implementing uncertain, high-cost/effort corrective actions)
4. Major	Major loss of environmental amenity and real danger of continuing (e.g. plan objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies)
5. Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage (e.g. plan objectives are unable to be achieved, with no evidenced mitigation strategies)

Table 10.2 Final Risk Rating based on the Likelihood and Consequence Ratings

Final Risk Rating (R): A function of multiplying the Likelihood (L) and Consequence (C).						
		Consequence				
Likelihood		**1 -Minor**	**2 -Moderate**	**3 - High**	**4 - Major**	**5 - Critical**
	1 - Rare	Low	Low	Low	Medium	High
	2 - Unlikely	Low	Low	Medium	High	High
	3 - Possible	Low	Medium	Medium	High	Severe
	4 - Likely	Low	Medium	High	High	Severe
	5 Highly Likely	Medium	High	High	Severe	Severe

The Risk Management Plan is presented in **Table 10.3** below and identifies potential risks that could affect the successful implementation and outcomes of the offset program across the Offset Areas. These risks include both force majeure events - unforeseeable circumstances such as natural disasters and standard risks associated with the offset site activities and management. Each risk is presented with an initial risk rating and a residual risk rating following management, mitigation and avoidance measures.

Force majeure events such as droughts, cyclones and long-term climate change can significantly impact offset outcomes by reducing vegetation growth, increasing mortality, promoting weed invasions and altering ecological conditions. While these risks cannot be entirely prevented, the plan outlines adaptive mitigation strategies, monitoring mechanisms and corrective actions to reduce their impacts and respond effectively when they occur.

Standard risks are those associated with the implementation, management and ongoing maintenance of the offset program. These risks are more predictable and manageable and mitigation actions have been developed accordingly. They include:

- Biodiversity threats:
    - Increased predation on Offset MNES due to or feral pest outbreaks
    - Competition or habitat damage from invasive feral animals
    - New or expanding weed infestations that degrade habitat condition.
- Operational and management risk:
    - Habitat destruction or disturbance from unauthorised clearing, spray drift, or off-track vehicle movement
    - Unsuitable grazing practices degrading habitat quality
    - Fire risks due to poorly timed burns or uncontrolled wildfire events
    - Mortality from vehicle strike
    - Budget shortfalls that limit delivery of management actions or contingencies
    - Failure to meet performance targets or long-term completion criteria.

Each risk is assessed for its initial likelihood and consequence and assigned a risk rating. The table then outlines the mitigation strategies to reduce or manage the risk, as well as the resulting residual risk after management. Management triggers specify when response is required, along with correct monitoring mechanisms to detect when these triggers are reached. Where necessary, corrective actions are described to enable timely intervention and ensure that offset objectives remain on track.

Table 10.3 Risk Management Plan

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
Force Majeure Events												
BBOA and SEQOA	Drought	Extended dry periods can diminish vegetation growth and increased risk of species mortality. Increase risk of high-intensity fire	3	3	M	RMP to specify appropriate planting/ seeding time and develop contingency plans for supplementary watering. Climate refugia zones in riparian corridors will be protected and enhanced with offset management. Increased focus on hazard reduction in bushfire management including fire breaks and reduced fuel loads.	3	2	M	Declaration of drought conditions by the Bureau of Meteorology in regions containing Offset Areas.	Regrowth recovery assessments, HQA, FFLH assessments, incidental observations.	Review and update the management program accordingly. Most likely changes will pertain to restoration and bushfire management.
BBOA and SEQOA	Climate Change	Changes to the climate which could affect the viability of the offset including extreme and more variable weather, increased bushfire risk and warmer temperature.	4	4	H	Co-ordinated strategy involving weed control, grazing and fire management. Climate refugia zones in riparian corridors will be protected and enhanced including increased connectivity to surrounding habitat.	4	2	M	Not applicable.	Continual review at least every five years in line with other completion criteria targets.	Research and knowledge continue and is ongoing. Models and predictions are continuously refined. Additional data and improved modelling are expected to reduce the uncertainty for the management of risks.

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
BBOA and SEQOA	Cyclone	Cyclones or tropical low systems can impact vegetation canopies and increase weed growth	3	3	M	Mitigation measures are limited to post-event context-specific management, likely involving weed control, fire management, and replenishing damaged vegetation.	3	3	M	Any incident of a cyclone impacting the Offset Areas.	Post-event surveys should be undertaken to assess the scale of damage and necessary corrective actions.	Damaged vegetation or lost habitat features will be actively restored through targeted planting or the provision of artificial habitat features.
SEQOA	Flood	A heavy rainfall event can lead to riverine flooding which may inundate and damage habitat within parts of the SEQOA	3	3	M	The lowest lying patch of regrowth vegetation has not been included within the formal Offset Area due to evidence of previous flooding disturbance. This reduces the offset's exposure to flood damage.	3	2	M	Any incident of a flooding event impacting the Offset Area.	Post-event surveys should be undertaken to assess the scale of damage and necessary corrective actions.	Damaged vegetation or lost habitat features will be actively restored through targeted planting or the provision of artificial habitat features.
Standard Risks												
BBOA and SEQOA	Increased predator abundance	Increased abundance of feral predators may result in higher mortality rates for Offset MNES	2	3	M	Ongoing targeted feral pest management that is adaptive to monitoring outcomes.	1	3	L		Routine targeted surveys to monitor predatory pest presence and abundance onsite.	Adapt management effort relative to baseline according to CPUE, feral animal monitoring and incidental

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
												observations throughout the Offset Areas Review control techniques and priority areas in Years 5, 10 and 15
BBOA and SEQOA	Accidental destruction or modification of habitat	Unplanned or illegal clearing, off-track vehicle use, and chemical spray drift from adjacent properties can result in loss of hollows and denning habitat, vegetation fragmentation, and reduced foraging and shelter opportunities.	3	3	M	No unapproved and/or intentional clearing of vegetation within the Offset Areas, except for clearing that is required for fencing, access, firebreaks, or public safety.	2	3	M	Any activities that are in contravention of the Conservation Covenant. Detection of prohibited clearing outside of established access tracks, fire control lines and fence lines.	Immediate surveys undertaken to measure the extent of impact and required amendments.	Conservation covenant developed as part of the Offset Areas will reduce the uncertainty of risk. Legal mechanisms will limit impacts on vegetation from current or future landholders.

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
BBOA and SEQOA	Direct mortality from vehicle strike	Offset Areas located near roads, or subject to increased traffic, may experience higher rates of vehicle strike for multiple species.	3	2	M	Redirect vehicle traffic away from Offset Areas boundaries, reduce speed limits in sensitive areas and limit access to the Offset Areas.	2	2	L	Any incident of a vehicle strike involving a native species within the Offset Areas.	Vehicle usage will be within the Offset Areas will be monitored and any vehicle-related mortality will be reported immediately.	Restricted access, adequate fencing and diverting traffic away from Offset Areas will reduce vehicle strike risk, with longer-term vehicle use limited to landholder activities and monitoring only.
BBOA	Habitat degradation by unsuitable grazing regimes	Inappropriate stock grazing destroys native grasses and shrubs, promotes weed spread and hinders vegetation regeneration.	3	3	M	Grazing will be incorporated to compliment or at the very least have no degraded impact of the Offset Areas as per the GMP.	2	2	L	Evidence of unauthorized or unmanaged grazing within the Offset Areas identified reduced habitat condition or livestock observed outside of approved areas.	Ongoing monitoring, including HQAs, will be routinely conducted throughout the Offset Areas and reference, ungrazed paddocks will be compared against grazed paddocks to demonstrate no measurable decline.	Adapt grazing management any conclusions derived from HQAs. This may include updates to stocking rate, grazing duration and exclusion areas.

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
BBOA and SEQOA	Inappropriate fire regimes causing habitat degradation	An uncontrolled bushfire may degrade habitat in the Offset Areas and increase potential for other risks (erosion or weed/pest invasion).	3	4	H	Implementation of fire management strategies for the Offset Areas in line with guidelines, firebreaks and appropriate fencing.	2	4	H	An unplanned fire becomes uncontrolled within the Offset Areas or there is a measurable increase in fuel load.	Fuel loads within the Offset Areas and broader regional fire and weather conditions will be routinely monitored.	Reviewing and updating fire management measures and increasing fuel reduction activities. Firebreaks and access controls will be reinforced.
BBOA and SEQOA	Disease	Presence of or increase in disease within populations within the Offset Areas (e.g., chlamydia/ retrovirus for koala)	2	3	M	Ongoing monitoring of species populations within the Offset Areas. Fostering resilience through implementation of pest, fire and weed management in the Offset Areas.	2	3	M	Observation or increased presence of diseased species within the Offset Areas.	Surveys to assess mortality, visible disease symptoms, or unusual behaviours in target species.	Some Offset species host diseases. While current impacts are low, habitat loss and other pressures may increase disease susceptibility over time.
BBOA and SEQOA	New weed and/or pest animal infestations	Feral animals and predators may degrade vegetation and increase mortality, while invasive weeds could establish or expand within the Offset Areas.	3	3	M	Pest and weed management will follow Queensland Government and Biosecurity Act 2014 guidelines, using best-practice chemical and mechanical controls. Weed hygiene checks will be required for all vehicles, and control measures will be coordinated with fire and grazing management.	2	3	M	Increased sightings or signs of known pest animals, detection of new feral species, or measured increases in weed	Habitat quality monitoring will be conducted routinely through the duration of the Offset, including monitoring of the presence, abundance or impacts of	Immediate chemical or mechanical removal of new weed or pest species, and continued implementatio n of established weed and pest

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
										abundance or cover within the Offset Areas observed during ongoing monitoring survey.	weeds and pest animals.	management plans.
BBOA and SEQOA	Offset fails to meet progression and/or completion criteria	The offset site may fail to meet policy requirements or the intended outcomes that justified approval of the Project.	2	4	H	Management and monitoring programs are driven and closely aligned with progressive and completion criteria. Adaptive management framework embedded into the Monitoring Program and Evaluation Plan.	2	3	M	Interim progression targets defined but not achieved or completion criteria not achieved.	Weed assessments, regrowth recovery pots, FFLH assessments, HQA.	Corrective actions are targeted at the specific progressive criteria (**Table** 9.5).
BBOA	No uptake of salvaged hollows or artificial habitat by threatened gliders	Following installation of salvaged hollows, no uptake is recorded by threatened gliders	3	2	M	Installation implemented as per salvage protocol which is grounded in scientific understanding. Deployed habitat structures within mapped habitat areas. Condition of habitat structures monitored.	2	2	L	Monitoring for presence / absence. Absence increases monitoring frequency. Unviable nest boxes replaced.	Glider hollow and artificial habitat monitoring.	Corrective actions as per **Section 9.3.1.6**.

Relevant Offset Area	Risk Event	Description	Initial Risk Rating			Mitigation Strategies	Residual Risk Rating			Management Triggers	Monitoring Mechanisms	Corrective Actions
			L	C	R		L	C	R			
SEQOA	Weed infestations fail to subside	Extensive infestations of cat's claw creeper and giant rat's tail grass may limit the Offset Area's ability to meet performance and completion criteria on schedule.	3	3	M	Experienced land managers will be engaged to implement intensive weed control in the first 5–10 years of the offset, supported by appropriate budget allocation.	2	3	M	Weed cover does not decline in line with performance criteria or increases between monitoring events.	Weed assessments, regrowth recovery plots, FFLH assessments, HQA.	Review weed management, adapt methodology and effort accordingly to achieve the progressive criteria by the following year

11.0 References

Chenoweth EPLA and Bushland Restoration Services. (2012). *South East Queensland Ecological Restoration Framework*.

Cropper, S. (1993). *Management of endangered plants*. CSIRO.

Department of Agriculture, Water and the Environment. (2022). *Conservation Advice for Phascolarctos cinereus (koala) combined populations of Queensland, New South Wales and the Australian Capital Territory*.

Department of Agriculture, Water and the Environment. (2022). *National Recovery Plan for the Koala (Phascolarctos cinereus)*.

Department of Climate Change, Energy, the Environment and Water. (2022). *Conservation Advice for Petauroides volans (greater glider (southern and central))*.

Department of Climate Change, Energy, the Environment and Water. (2023). *Approved Conservation Advice for Semi-evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions*.

Department of Climate Change, Energy, the Environment and Water. (2024). *Species Profile and Threats Database - Delma torquata, Collared delma*.

Department of Climate Change, Energy, the Environment and Water. (2025). *Draft National Recovery Plan for Greater Gliders*.

Department of Climate Change, Energy, the Environment and Water. (2026). *Species Profile and Threats Databaes: Samadera bidwillii*.

Department of Environment and Heritage Protection. (2017). *Guide to determining terrestrial habitat quality v1.2*.

Department of Environment and Science. (2020). *Guide to Determining Terrestrial Habitat Quality v1.3*.

Department of Sustainability, Environment, Water, Population and Communities. (2012). How to use the offsets assessment guide.

Department of Sustainability, Environment, Water, Population, Communities and Public Affairs. (2012). *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*.

Department of the Envirnoment, Water, Heritage and the Arts. (2008). *Approved Conservation Advice for Quassia bidwillii (Quassia)*.

Department of the Environment. (2013). *Significant Impact Guidelines 1.1: Matters of National Environmental Significance*. Canberra.

Department of the Environment, Water, Heritage and the Arts. (2008). *Approved Conservation Advice for Delma torquata (Collared delma)*.

Department of the Environment, Water, Heritage and the Arts. (2022). *Approved Conservation Advice for Petaurus australia australia (Yellow-bellied flider (south-eastern))*.

Elson, S. (2026). Personal communications.

Eyre, T. K. (2015). BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland.

Eyre, T., Ferguson, D., Smith, G., Mathieson, M., Venz, m., & Hogan, L. &. (2018). *Terrestrial Vertebrate Fauna Surey Guidelines for Queensland*. Queensland Government.

Eyre, T., Smith, G., Venz, M., Mathieson, M., Hogan, L., & Winter, J. a. (2022). *Guide to greater glider habitat in Queensland*. Queensland Herbarium.

Greening Australia. (2018). *A revegetation guide for eucalypt woodlands*.

Hines, F., Tolhurst, G. K., & Wilson, A. &. (2010). *Overall Fuel Hazard Assessment Guide*.

McDonald, W. (2010). *National Recovery Plan for the 'Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions' Ecological Community*.

McNaught, I., Thackway, R., & Brown, L. a. (2008). *A field manual for surveying and mapping nationally significant weeds (2nd edition)*.

Neldner, V., Wilson, B., Dillewaard, H., & Ryan, T. &. (2025). *Methodology for Surveying and Mapping Regional Ecosystems and Vegetation Communities in Queensland*.

Peeters, P., & Butler, D. (2014). *Eucalypt Woodlands Regrowth Benefits - Management Guideline*. Department of Science, Information Technology, Innovation and the Arts.

Queensland Herbarium. (2007). *National Multi-species Recovery Plan for the cycads, Cycas megacarpa, Cycas ophiolitica, Macrozamia cranei, Macrozamia lomandroides, Macrozamia pauli-guilielmi and Macrozamia platyrhachis*.

Queensland Herbarium. (2024). *Regional Ecosystem Description Database (v12)*.

Queensland Parks and Wildlife Service Enhanced Fire Management Team. (2012). *Planned Burn Guidelines: Brigalow Belt Bioregion of Queensland*.

Thomas, H., Simmonds, J., Ward, M., Eyre, T., & Maron, M. (2025). The Value of Regrowth Forests and Woodlands for Threatened Fauna Species. *Biological Conservation*.

Appendix A

MHQA Methodology

Default Scoring for Threatened Ecological Communities			
Site Condition		**Site Context**	
Recruitment of woody perennial species in ecologically dominant layer (EDL)	5	Size of patch	10
Native plant species richness – trees	5	Connectedness	5
Native plant species richness – shrubs	5	Context	5
Native plant species richness – grasses	5	Ecological corridors	6
Native plant species richness – forbs	5	Threats*	15
Tree canopy height	5	Role of the site location for the TEC presence in the state	5
Tree canopy cover	5	**Highest possible score**	**46**
Shrub canopy cover	5		
Native perennial grass cover	5		
Organic litter	5		
Large trees	15		
Coarse woody debris	5		
Non-native plant cover	10		
Highest possible score	**80**		

Threat Matrix							
			Severity				
			Very high	**High**	**Medium**	**Low**	**Very low**
			1	**2**	**3**	**4**	**5**
Scope	**Very high**	**1**	1	2	3	4	5
	High	**1.5**	1.5	3.5	4.5	6	7.5
	Medium	**2**	2	4	6	8	10
	Low	**2.5**	2.5	5	7.5	10	12.5
	Very low	**3**	3	6	9	12	15

** The threat scope and severity adapts the definitions and threat matix in Queensland Guide to determining terrestrial habitat quality (version 1.3) (Department of Environment and Heritage Protection, 2022) to the MHQA max score of 15. Both the scope and severity of the threat are scored using a five-point scale rating (between Very High (1) and Very Low (5)) which are then applied to a threat matrix (Table 2.4) of the Guide. Each threat is assessed at the Impact/ Offset Area level informed by on-ground field observations and threat-severity ratings presented in each MNES Conservation Advice and Recovery Plans. The lowest score/ most prevalent threat is applied to the final habitat quality score.

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Definition	Justification
Site Condition 70% (7/10)							**A Total Site Condition weighting of 70% (7/10) has been applied in line with MHQA defaults.**
Number of large native trees	15	80	BioCondition weightings are consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).				
Tree canopy height	5						
Recruitment of woody perennial species (in EDL) (%)	5						
Tree canopy cover	5						
Native shrub layer cover (%)	5						
Coarse woody debris	5						
Native tree species richness	5						
Native shrub species richness	5						
Native grass species richness	5						
Native forbs/other species richness	5						
Non-native plant cover (%)	10						
Native perennial grass cover (%)	5						
Organic litter cover (%)	5						
Site Context 30% (3/10)							**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of Subtropical Euc Floodplain TEC vegetation as well as the addition of all other directly connecting areas of mapped remnant vegetation.				
Connectedness	5		Proportion of the Subtropical Euc Floodplain TEC patch/assessment unit's boundary which is connected to regrowth or remnant vegetation.				
Context	5		Proportion of suitable Subtropical Euc Floodplain TEC within 1 km buffer.				
Ecological corridors	6		Whether the Subtropical Euc Floodplain TEC patch/assessment unit is within or sharing a common boundary to a state-wide ecological corridor.				
Role of the site location for the TEC presence in the state	1		Does not meet the key diagnostic criteria/ analogous RE.				The role of site location to the TEC overall in the state was informed by the TEC key diagnostic criteria and the condition classes as defined in the TEC's conservation advice (Department of Climate Change, Energy, the Environment and Water 2022a).
	4		Meets the key diagnostic criteria/ analogous RE but does not meet the TEC's minimum condition criteria.				
	5		Meets the key diagnostic criteria/ analogous RE and the TEC's minimum condition criteria.				
Threats	15 (reweighted from 25 as consisted with MHQA methodology)		Degradation from cattle grazing			**Scope and Severity**	The main identified threats to the Subtropical Eucalypt Floodplain TEC are clearing and hydrological changes as a result of a range of activities including agriculture, forestry, urban development and recreational activities (Approved conservation advice for Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions, 2022). Major potential threats to this TEC include fragmentation, inappropriate fire regimes and proliferation of exotic/weed species reducing the opportunity for recruitment and invasive fauna. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
			Degradation of habitat due to weed proliferation			Very High (Scope: 1, Severity: 1)	
			Inappropriate fire regime				
			Invasive Degradation from feral pest impacts			High (Scope: 1.5, Severity: 2)	
						Medium (Scope: 2, Severity: 3)	
						Low (Scope: 2.5, Severity: 4)	
						Very Low (Scope: 3, Severity: 5)	

Attribute	Sub-attribute maximum score	Maximum score	Indicator	Contribution to Attribute Weighting (%)	Score	Weighted Score	Definition	Justification
Site Condition 30% (3/10)								**A Total Site Condition weighting of 30% (3/10) has been applied in line with MHQA defaults. Within this, koala-specific foraging and shelter attributes have been given increased weighting to 25/100 each. This adjustment reflects the reliance and prefernce koalas have on a limited suite of species and the need for sufficient abundance, richness, recruitment, and mature trees for shelter and refuge. Unlike some generic vegetation metrics, these features directly influence habitat suitability and koala occupancy, and therefore warrant stronger influence in determining overall Site Condition value.**
Number of large native trees	15	50	Weightings are consistent with A guide to determining terrestrial habitat quality (Department of Environment, Science and Innovation, 2020) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).					The weighting of the BioCondition attribute of Site Condition has been reduced from 80% to 50% to reflect that overall vegetation integrity is not the sole driver of koala habitat suitability. While structurally intact forests with high condition values can support diverse ecological processes, koala persistence depends on the presence, abundance, and recruitment of preferred food trees, as well as on the availability of shelter and breeding resources (Department of Agriculture, Water and the Environment, 2022). Good vegetation may still provide lower-quality koala habitat if locally important browse species are absent or poorly represented, or if riparian features and large trees required for shelter and breeding are lacking. Conversely, areas with moderate overall site condition may provide high-quality habitat where these critical resources are abundant. Reducing the weighting of BioCondition ensures that the scoring system gives appropriate emphasis to the specific foraging, shelter, and breeding attributes that most directly affect koala habitat quality, rather than over-relying on general vegetation condition as a proxy for habitat quality.
Tree canopy height	5							
Recruitment of woody perennial species (in EDL) (%)	5							
Tree canopy cover	5							
Native shrub layer cover (%)	5							
Coarse woody debris	5							
Native tree species richness	5							
Native shrub species richness	5							
Native grass species richness	5							
Native forbs/other species richness	5							
Non-native plant cover (%)	10							
Native perennial grass cover (%)	5							
Organic litter cover (%)	5							
Quality and availability of food and habitat required for foraging	25		Species richness and canopy cover of locally important koala tree species	70%	0	0	Does not contain a locally important koala tree species	Koalas exhibit preferences for particular food tree species based on their nutritional quality and palatability (Youngentob, Marsh and Skewes, 2021). These preferences vary regionally and have been summarized in 'A review of koala habitat assessment criteria and methods as Locally important tree species' (Youngentob, Marsh and Skewes, 2021). The presence of preferred food trees in a landscape has been known to influence suitability for koalas (Youngentob, Marsh and Skewes, 2021). Because different tree species may produce more foliage at different times of the year, a diversity of preferred tree species (higher species richness) may result in consistent availability of suitable foraging resources (Department of Agriculture Water and the Environment, 2022d). However, species richness of preferred tree species alone does not dictate the ability of an area to support koalas (Youngentob, Marsh and Skewes, 2021). This also depends on the quality and abundance of forage provided by the trees in a patch, which can be assessed by using canopy cover as an estimate for forage provision. By assessing the species' richness and canopy cover of preferred food tree species, a holistic indicator of food availability for koala has been established. This attribute assesses the species richness from genera Angophora, Eucalyptus, Corymbia, Lophostemon and Melaleuca in which the species is known to forage. This provides an assessment of the availability of food resources, with highest scores awarded to patches with higher species richness (≥ 2 LIKTs) and canopy cover (> 50% canopy cover) of preferred feed trees.
					15	10.5	Contains 1 locally important koala tree species	
					25	17.5	Contains ≥2 locally important koala tree species, or 1 locally important koala tree species that alone accounts for >50% of the canopy	
			Proportion of koala foraging tree species within the ecologically dominant layer (EDL) that are recruiting (=<5cm DBH).	30%	0	0	No recruitment of EDL tree species	Koala habitat quality is influenced not only by the current abundance of mature food trees but also by the ongoing regeneration of those species. The National Recovery Plan for the Koala notes that koalas forage on a range of age classes, including juvenile trees, meaning that recruitment contributes directly to current foraging opportunities as well as to the long-term persistence of food resources. Recruitment of preferred tree species into the ecologically dominant layer (EDL) is therefore a key indicator of both immediate habitat value and future resilience. In areas where recruitment is limited, habitat quality may decline over time as mature trees senesce. Conversely, patches with higher recruitment of preferred food trees provide a more reliable and sustainable resource base, supporting koalas across multiple generations. Assessing the proportion of preferred tree species in the EDL that show recruitment allows this attribute to capture both present and future food availability. A recruit is defined as a tree that occurs in the EDL with a DBH =< 5cm as per the BioCondition Manual.
					5	1.5	<20% recruitment of EDL species present as regeneration	
					15	4.5	≥20% and <75% recruitment of EDL species present as regeneration	
					25	7.5	≥75% of canopy species present as regeneration	
Quality and availability of habitat required for shelter and breeding	25		Presence of large trees	33%	0	0	No large trees	Paddock trees are typically larger, remnant trees that are retained to provide shelter for livestock. They provide critical stepping stone shelter habitat for koalas (Department of Agriculture Water and the Environment, 2022b). By considering the presence of large trees (according to the BioCondition benchmark for the site), the presence of paddock trees has been taken into account to assess Quality and availability of habitat required for shelter and breeding.
					5	1.66	1 - 25 % of large tree benchmark	
					10	3.33	26 - 50 % of large tree benchmark	
					15	4.99	51 - 75 % large tree benchmark	
					20	6.66	76 - 99 % of large tree benchmark	
					25	8.33	≥100% of large tree benchmark	
			Presence of refugia (e.g., drainage lines, riparian zones, patches with favourable hydrological systems)	34%	0	0	Patch does not contain refugia	A population of koalas requires a sufficient total amount of resources within their habitat of adequate quality to support a viable biological population where mortality, survival, and recruitment are balanced or recruitment increases to optimal carrying capacity within the bounds of natural fluctuations (Department of Agriculture Water and the Environment, 2022b). Crucial habitat elements include patches and corridors for gene flow. Over longer-time frames, habitat critical to survival includes climate refugia such as drainage lines, riparian zones and patches that are resilient to drying conditions due to favourable hydrological systems (Department of Agriculture Water and the Environment, 2022b). Considering this, patches that contained refugia were awarded the highest score for Quality and availability of habitat required for shelter and breeding.
					15	5.1	Refugia occurs in close proximity to patch (within 1 km)	
					25	8.5	Refugia present within patch	
			Canopy/ Sub-canopy cover (%)	33%	0	0	<10%	Apart from Eucalyptus trees, koalas require a diverse range of tree species across their habitat for resting and shelter, especially in extreme weather conditions. Tree species that provide excellent shade and shelter and have suitable characteristics are used by koalas to fulfil their shelter requirements (Department of Environment and Heritage Protection, 2012). Therefore, canopy cover in koala habitat is identified as a key element to ensure the survival and well-being of this species and used to assess Quality and availability of habitat required for shelter and breeding. Areas that contained high canopy/sub-canopy cover (%) were scored higher than areas with lower canopy/sub-canopy cover (%).
					10	3.3	10-50%	
					17.5	5.775	>200%	
					25	8.25	>50-200%	
Site Context 30% (3/10)								**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.					
Connectedness	5		Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.					

Context	5	31	Proportion of koala habitat within 20 km buffer of the assessment unit. Buffer extended to 20 km to reflect the species mobility through the landscape.					
Ecological corridors	6		Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.					
Role of site location to species overall population in the state	1		Unlikely to be critical habitat					This scoring was informed by the definition of critical habitat in the Conservation Advice (Department of Agriculture Water and the Environment 2022b). Which identifies habitat supporting key life cycle functions (foraging, breeding and shelter), use during periods of environmental stress (drought or fire) and the maintenance of connectivity, genetic diversity and long-term population viability as critical to the persistence of koala populations.
	4		Meets critical habitat definition, no confirmation of species' presence/ use within patch					
	5		Meets critical habitat definition and confirmation of species' presence/ use within patch					
Threats (absence of threats)	15 (reweighted from 25 as consisted with MHQA methodology)		Increased intensity/ frequency of bushfire		**Scope and Severity**			Key threats are derived from the Conservation Advice for *Phascolarctos cinereus* (Koala) combined populations of Queensland, New South Wales and the Australian Capital Territory. These range from minor threats such as encounter mortality from vehicles and dogs to major threats such as habitat clearing and an increased frequency of high-intensity fires. The threat scope and severity utilises the definitions and scores in Queensland Guide to determining terrestrial habitat quality (version 1.3) (Department of Environment and Heritage Protection, 2022). Both the scope and severity of the threat are scored using a five-point scale rating (between Very High (1) and Very Low (5)) which are then applied to a threat matrix (Table 2.4) of the Guide. Each threat is assessed at the Impact/ Offset Area level informed by on-ground field observations and threat-severity ratings presented in the Conservation Advice. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
					Very High (Scope: 1, Severity: 1)			
					High (Scope: 1.5, Severity: 2)			
					Medium (Scope: 2, Severity: 3)			
			Encounter mortality with vehicles and dogs		Low (Scope: 2.5, Severity: 4)			
					Very Low (Scope: 3, Severity: 5)			
Quality and availability of habitat required for mobility	10		Patch isolation and ease of movement	50%	2	1	Severely restricted, patch greater than 3 km from any intact habitat / there are physical barriers to safe transit to the patch	Larger and interconnected habitat patches offer a safer passage for koalas during dispersal events, thereby reducing risks such as predation, car strikes and exposure to heat waves or drought (K. N. Youngentob et al., 2021). Therefore, this indicator was used to assess Quality and availability of habitat required for mobility, with areas with higher overall patch size scored higher than lower patch size.
					4	2	Highly restricted, patch greater than 1 km from any intact habitat, there are physical barriers to safe transit to the patch, stepping stone trees are sparse	
					7	3.5	Moderately restricted, e.g. stepping-stone trees are present at intervals of less than 100 m	
					10	5	Minor restriction, e.g. stepping-stone trees are abundant or a corridor of ancillary trees is present providing safe passage.	
			Presence of nearby vegetated watercourses	30%	0	0	>3 km from suitable vegetated water source	Studies published by the CSIRO found that koalas used riparian zones as dispersal corridors finding that vegetated watercourses are a crucial element to koala habitat required for mobility (K. N. Youngentob et al., 2021). Therefore, this indicator was used to assess Quality and availability of habitat required for mobility, with areas that were closer to vegetated watercourses scored higher than those further away (K. N. Youngentob et al. 2021).
					6	1.8	1 -3 km from suitable vegetated water source	
					8	2.4	<1 km from suitable vegetated water source	
					10	3	<500 m from suitable vegetated water source	
			Size of habitat patch	20%	1	0.2	<1 ha high- value regrowth or remnant patch, or patch is non-remnant and does not contain eucalypt trees	Larger and interconnected habitat patches offer a safer passage for koalas during dispersal events, thereby reducing risks such as predation, car strikes and exposure to heat waves or drought. Areas with higher overall patch size scored higher than lower patch size. Patch size is not measured for non-remnant dispersal habitat as the species does not permanently occupy those areas. High value regrowth is older than 15 years.
					4	0.8	1 - 50 high-value regrowth or remnant patch, or patch is non-remnant and contains scattered eucalypt trees	
					7	1.4	>50 - <250 ha high value regrowth or remnant patch	
					10	2	>250 ha high-value regrowth or remnant patch	
Species Stocking Rate 40% (4/10)								**The default SSR weightings of 40% (4/10) were applied as per the DCCEEW MHQA spreadsheet (current as Jan 2025).**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10		Detections of the species within or adjacent to the habitat patch	100%	0		No detections	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet (current as Jan 2025). All available field and database resources were reviewed to provide a thorough account of records. Habitat patches where an individual has been detected as well as those functionally connceted was assigned the max score of 10. Functionally connected habitat applies to all contiguous and connected breeding, foraging and refuge habitat types and does not include dispersal habitat.
					5		Yes - detection within Impact/ Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS).	
					10		Yes - detection within habitat patch or functionally connected, breeding, foraging or refuge habitat types.	
Species usage of the site (habitat type & evidenced usage)	15		Species utilisation reflective of habitat utilisation category	100%	0		Not habitat	Scores were prepared reflective of their relative importance in providing necessary resources for survival. While it's acknowledged that shelter and dispersal habitat (refer to definition of these habitat categories) are important components of a koala's life cycle, foraging/breeding habitat and climate refugia are more likely to influence the species presence and associated stocking rate given their broad inclusion of habitat features. Due to its importance, climate refugia was awarded the highest score due to the species tendency to contract towards this habitat type during times of drought. Drier environments, such as those included in the definition for foraging/breeding habitat, contain lower density populations in Central Queensland (Ellis et al., 2002; Adams-Hosking et al., 2011; Seabrook et al., 2011).
					5		Dispersal / shelter habitat	
					10		Foraging / breeding habitat	
					15		Climate refugia habitat	
					0		<0.0001 per ha (lowest estimates). Ie. <0.79 individuals across Lone Star & The Cedars (7,966.1 ha)	State-wide estimates of population size are limited, with data and survey effort skewed towards south-east Queensland. However, in 2012, expert elicitation estimated that there were 79,264 koalas in Queensland distributed across 8 bioregional areas (Adams-Hosking et al. 2016). The highest population estimates were reported for three bioregions: Brigalow Belt North (15,179), Mulga Lands (15,286) and Southeast Queensland (15,821). However, based on the same data, the bioregions with the highest density of koalas in Queensland included the Central Mackay Coast (0.006

Approximate density (per ha)	30	Approximately density based on regional studies on population estimates	100%	10	>0.0001-0.0005 ha (below mean across bioregions). Ie > 0.79 and <3.98 individuals across Lone Star & The Cedars (7,966.1 ha)	koalas/ha) and Southeast Queensland (0.002 koalas/ha). Across all eight bioregions in Qld, the mean density is 0.0005 koalas/ha. Therefore, high scores (30) were awarded to sites ≥0.006 koala/ha, moderate scores (20) were applied to sites equal to or above the Qld average (0.0005 koalas/ha). Low scores (10) were applied to sites below the mean average. Resources such as WildNet and Australian Koala Foundation (AKF) were utilised to determine site densities. Note that the two offset properties - Lone Star and The Cedars = 7,966.1 ha
				20	>0.0005 - <0.006 ha (above mean est. of bioregions). Ie > 3.98 and <47.8 individuals across Lone Star & The Cedars (7,966.1 ha)	
				30	>0.006 koala/ha (highest estimates for central Qld). Ie >47.8 individuals across Lone Star & The Cedars (7,966.1 ha	
Role/ Importance of species population on site*	15	Total from supplementary table	100%	0	Total from SSR supplementary table below	Determined from the SSR supplementary table as per the DCCEEW MHQA spreadsheet - current as Jan 2025.
				5–15		
				20–35		
				40–45		
*Supplementary table	10	Key source for population breeding	To inform the above	10		The SSR Supplementary Table prescribes indicators and scores that are to be applied to determine the role/importance of a population, based on the presence of a key source population for breeding or dispersal, a population necessary for maintaining genetic diversity and the site in relation to the species' distribution.
	5	Key source population for dispersal		5		
	15	Necessary for maintaining genetic diversity		15		
	15	Near the limit of the species range		15		

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Weighted Score	Definition	Justification
Site Condition 60% (6/10)								**Site Condition contributes 60% (6/10) of the total score, reflecting the collared delma's high site fidelity. Microhabitat conditions heavily influence the presence or absence of this species, as individuals rely on specific ground-level resources such as surface rocks, logs, litter, and dense grass cover for foraging, refuge, and thermoregulation. Because collared delma typically occupy and reuse the same microhabitats over time, the quality and abundance of these resources directly determines habitat suitability and population persistence. Assessing these features ensures that the scoring captures both the structural and functional elements critical to maintaining viable populations.**
Number of large native trees	15	40	BioCondition weightings consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).					The contribution of the BioCondition attribute to the overall Site Condition has been reduced from 80% to 40% to better represent the habitat features that most strongly influence collared delma occupancy. This adjustment recognises that specific microhabitat resources such as surface rocks, logs, litter, and grass cover which can disproportionately determine habitat suitability even when overall vegetation condition is moderate. The weighting of species-specific attributes has been increased, with foraging resources raised from 10 to 20 and shelter features to 40, reflecting the importance of abundant foraging substrates and suitable refuge sites for supporting viable populations.
Tree canopy height	5							
Recruitment of woody perennial species (in EDL) (%)	5							
Tree canopy cover	5							
Native shrub layer cover (%)	5							
Coarse woody debris	5							
Native tree species richness	5							
Native shrub species richness	5							
Native grass species richness	5							
Native forbs/other species richness	5							
Non-native plant cover (%)	10							
Native perennial grass cover (%)	5							
Organic litter cover (%)	5							
Quality and availability of food and habitat required for foraging	20		Presence of coarse woody debris for prey items	50%	0	0	Absent	The Collared Delma feeds on insects and spiders, with small cockroaches the most common prey item. (Davidson 1993; Porter 1998)SPRAT. Microhabitats, such as hollow logs, fallen timber, rocks, and coarse woody debris, play a crucial role in providing shelter and protection for prey species, increasing overall prey abundance and enhancing foraging habitat quality. Collared delma prey items also rely on organic litter for shelter (SPRAT). Therefore, the presence of suitable microhabitat features for collared delma prey species will influence habitat suitability.
					0	0	< 10% of benchmark number or total length of CWD	
					5	2.5	≥ 10 to <50% or >200% of benchmark number or total length of CWD	
					10	5	≥ 50% or ≤200% of benchmark number or total length of CWD	
			Presence of organic litter for prey items	50%	0	0	Absent	
					0	0	<10% of benchmark organic litter	
					5	2.5	≥10 to <50% or >200% of benchmark organic litter	
					10	5	≥50% or ≤200% of benchmark organic litter	
Quality and availability of habitat required for shelter and breeding	40		Presence of loose surface rocks	25%	0	0	Absent	Associated with suitable microhabitats (exposed rocky outcrops) (Department of the Environment, Water, Heritage and the Arts, 2008). Porter (1998) also recorded a preference of larger than average rocks is South East Queensland. All specimens found at Mount Crosby were on the soil surface, suggesting the species is not adapted to digging and life underground (Porter 1998), hence a need for rocks to have loose contact with the the soil surface, rather than those imbedded.
					2	0.5	Loose surface rocks larger than 10cm are absent, or rare (less than 10% cover)	
					4	1	Loose surface rocks larger than 10cm are present in moderate abundance (10 - 25% cover)	
					8	2	Loose surface rocks larger than 10cm are present in moderate abundance (25 - 50% cover)	
					10	2.5	Loose surface rocks larger than 10cm are common (more than 50% cover)	
			Native grass cover	25%	0	0	Absent	Survey effort by Porter (1998) recorded this species in association with several native grass species specifically Kangaroo Grass (*Themeda triandra*), Barbed-wire Grass (*Cymbopogon refractus*), balck spear grass (*Heteropogon contortus*). Other ground layer speices noted as being present when this species has been observed include Wiregrass (Aristida sp.) and Lomandra (Lomandra sp.)(SPRAT). Results for surveys completed by Porter (1998) identified as part of microhabitat, less than average associated vegetation cover, hence a greater focus given to average native grass cover percentage.
					1	0.25	<10% or >100% of benchmark grass cover	
					5	1.25	≥10 to <50% of benchmark grass cover	
					10	2.5	≥50% and ≤100% of benchmark grass cover	
			Organic litter cover	25%	0	0	Absent	Observations indicate that the collared delma is consistently found in microhabitats characterized by mats of leaf litter, typically measuring around 30-100 mm in thickness (Brigalow Belt Reptiles Workshop 2010; Davidson 1993 within SPRAT 2025). This particular type of habitat is considered essential for the species' survival and is consistently present wherever it occurs. Recent collections of specimens have been obtained through the manual raking of fine flood-washed humus and debris, as well as from the surface soil located directly beneath leaf litter and within thick grass tussocks (DERM unpubl. data) in Department of Sustainability, Environment, Water, Population and Communities (2011).
					2	0.5	Organic litter is >30% cover however less than 3cm thick	
					4	1	Mats of organic litter more than 3cm thick are present in moderate abundance at <25% cover	
					8	2	Mats of organic litter more than 3cm thick are present in moderate abundance at 25- 50% cover	
					10	2.5	Mats of organic litter more than 3cm thick are are dominant feature of	
			Presence of coarse woody debris	25%	0	0	Absent	Logs, bark and other coarse woody debris appear to be an essential characteristic of the Collared Delma microhabitat and are always present where the species occurs (Brigalow Belt Reptiles Workshop 2010; Davidson 1993). BioCondition benchmarks provide a measure of woody debris that should be present in each vegetation community.
					0	0	< 10% of benchmark number	
					5	1.25	≥ 10 to <50% or >200% of benchmark number	
					10	2.5	≥ 50% or ≤200% of benchmark number	
Site Context 20% (2/10)								**Given the limited range of this species movement and small home range as noted by Porter (1998). The Site Context scoring component for the species has been reduced. The relevance of landscape-level attributes such as patch size, context and connectedness is less influential to habitat quality than Site Condition due to this species preference for specific habitat conditions.**
Size of patch	10	Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.						
Connectedness	5	Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.						
Context	5	Proportion of collared delma habitat within 1 km buffer of the assessment unit. Buffer distance to 1 km to reflect the species mobility through the landscape.						
Ecological corridors	6	Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.						
Role of site location to species overall population in the state	1	Is not classified as suitable habitat and therefore not considered as as habitat critical to the survival of the species						All suitable habitat is considered necessary for the purposes of maintaining genetic diversity and providing movement and breeding opportunities at a landscape scale and therefore meets the definition of important habitat (Department of the Environment, Water, Heritage and the Arts 2008a) and therefore is likely considered as habitat critical to the survival of the species
	4	Considered critical habitat, no confirmation of species' presence/ use within patch						
	5	Considered critical habitat and confirmation of species' presence/ use within patch						
		Increased intensity/ frequency of bushfire		**Scope and Severity**				The collared delma faces a range of threats that contribute to its decline. Habitat loss through agricultural clearing is a major pressure, compounded by habitat degradation from overgrazing by stock. The removal of important structural elements such as rocks, coarse woody debris, and ground litter further reduces the availability of shelter and foraging habitat. The use of agricultural chemicals can also degrade habitat quality and impact the species directly. Predation by introduced species, particularly feral cats (Felis catus) and foxes (Vulpes vulpes), poses a significant risk to populations. In addition, weed invasion alters ground cover and ecosystem dynamics, while inappropriate fire regimes can further diminish habitat suitability and fragment populations. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
		Degradation of habitat quality due to invasive wee species creeping lantana		Very High (Scope: 1, Severity: 1)				
		Degradation of habitat from grazing		High (Scope: 1.5, Severity: 2)				

Threats	15 (reweighted from 25 as consisted with MHQA methodology)			Medium (Scope: 2, Severity: 3) Low (Scope: 2.5, Severity: 4) Very Low (Scope: 3, Severity: 5)		
Quality and availability of habitat required for mobility	0					As collared delma is a sedentary species, this attribuite is not relevant to determining the quality of habitat this species. Therefore, this attribute has been removed
Species Stocking Rate 20% (2/10)						**Similar to Site Context Species Stocking Rate has been reduced to favour Site Condition due to the species reliance on specific site attributes to persist.**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10	Detections of the species within or adjacent to the site	100%	0 5 10	Not detected Yes - detection within Impact/ Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS). Yes - detection within 100m	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet (current as Jan 2025). All available field and database resources were reviewed to provide a thorough account of records. Habitat patches where an individual has been detected was assigned the max score of 10. Species movement is little understood with very little data as to range. Porter (1998) noted a recaptured individual 18m from a first capture. The Collared Delma is known to typically occur in small isolated populations throughout its distribution, restricted to small areas of habitat in the order of 1 ha (100 x 100 m; Peck 2003). As such a 100m buffer was utilised to delineate proximity to detection of the species adjacent to a site.
Species usage of the site (habitat type & evidenced usage)	15	Species utilisation reflective of habitat utilisation category	100%	0 10 15	Not habitat Suitable habitat Important habitat	Suitable habitat is defined as "Eucalypt forests and woodlands with grassy ground layer that is predominantly native and supports a microhabitat matrix of suitable surface rocks (loose rocks that have a relatively flat surface to maintain good contact with the ground), coarse woody debris and leaf litter". Suitable habitat is considered to comprise Important habitat where the species has been recorded, or if the habitat is patch of a contiguous patch where the species has been recorded in areas adjacent.
Approximate density (per ha)	0	Approximately density based on regional studies on population estimates				The species does not exist in a large, continuous population but rather in many small disconnected populations which persist based on the presence of suitable microhabitat. In addition, records of collared delma are scarce and no studies have precisely quatified the total population of this species. Therefore, approximate density has been removed from the asessment.
Role/Importance of species population on site	15	Total from supplementary table	100%	0 5–15 20–35 40–45	Total from SSR supplementary table below	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet - current as Jan 2025.
Supplementary table	10	Key source for population breeding	To inform the above	10		The SSR Supplementary Table prescribes indicators and scores that are to be applied to determine the role/importance of a population, based on the presence of a key source population for breeding or dispersal, a population necessary for maintaining genetic diversity and the site in relation to the species' distribution.
	5	Key source population for dispersal		5		
	15	Necessary for maintaining genetic diversity		15		
	15	Near the limit of the species range		15		

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Weighted Score	Definition	Justification
Site Condition 60% (6/10)								**Site Condition contributes 60% (6/10) of the total score, reflecting the collared delma's high site fidelity. Microhabitat conditions heavily influence the presence or absence of this species, as individuals rely on specific ground-level resources such as surface rocks, logs, litter, and dense grass cover for foraging, refuge, and thermoregulation. Because collared delma typically occupy and reuse the same microhabitats over time, the quality and abundance of these resources directly determines habitat suitability and population persistence. Assessing these features ensures that the scoring captures both the structural and functional elements critical to maintaining viable populations.**
Number of large native trees	15	40	BioCondition weightings consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).					The contribution of the BioCondition attribute to the overall Site Condition has been reduced from 80% to 40% to better represent the habitat features that most strongly influence collared delma occupancy. This adjustment recognises that specific microhabitat resources such as surface rocks, logs, litter, and grass cover which can disproportionately determine habitat suitability even when overall vegetation condition is moderate. The weighting of species-specific attributes has been increased, with foraging resources raised from 10 to 20 and shelter features to 40, reflecting the importance of abundant foraging substrates and suitable refuge sites for supporting viable populations.
Tree canopy height	5							
Recruitment of woody perennial species (in EDL) (%)	5							
Tree canopy cover	5							
Native shrub layer cover (%)	5							
Coarse woody debris	5							
Native tree species richness	5							
Native shrub species richness	5							
Native grass species richness	5							
Native forbs/other species richness	5							
Non-native plant cover (%)	10							
Native perennial grass cover (%)	5							
Organic litter cover (%)	5							
Quality and availability of food and habitat required for foraging	20		Presence of coarse woody debris for prey items	50%	0	0	Absent	The Collared Delma feeds on insects and spiders, with small cockroaches the most common prey item. (Davidson 1993; Porter 1998)SPRAT. Microhabitats, such as hollow logs, fallen timber, rocks, and coarse woody debris, play a crucial role in providing shelter and protection for prey species, increasing overall prey abundance and enhancing foraging habitat quality. Collared delma prey items also rely on organic litter for shelter (SPRAT). Therefore, the presence of suitable microhabitat features for collared delma prey species will influence habitat suitability.
					0	0	< 10% of benchmark number or total length of CWD	
					5	2.5	≥ 10 to <50% or >200% of benchmark number or total length of CWD	
					10	5	≥ 50% or ≤200% of benchmark number or total length of CWD	
			Presence of organic litter for prey items	50%	0	0	Absent	
					0	0	<10% of benchmark organic litter	
					5	2.5	≥10 to <50% or >200% of benchmark organic litter	
					10	5	≥50% or ≤200% of benchmark organic litter	
Quality and availability of habitat required for shelter and breeding	40		Presence of loose surface rocks	25%	0	0	Absent	Associated with suitable microhabitats (exposed rocky outcrops) (Department of the Environment, Water, Heritage and the Arts, 2008). Porter (1998) also recorded a preference of larger than average rocks is South East Queensland. All specimens found at Mount Crosby were on the soil surface, suggesting the species is not adapted to digging and life underground (Porter 1998), hence a need for rocks to have loose contact with the the soil surface, rather than those imbedded.
					2	0.5	Loose surface rocks larger than 10cm are absent, or rare (less than 10% cover)	
					4	1	Loose surface rocks larger than 10cm are present in moderate abundance (10 - 25% cover)	
					8	2	Loose surface rocks larger than 10cm are present in moderate abundance (25 - 50% cover)	
					10	2.5	Loose surface rocks larger than 10cm are common (more than 50% cover)	
			Native grass cover	25%	0	0	Absent	Survey effort by Porter (1998) recorded this species in association with several native grass species specifically Kangaroo Grass (*Themeda triandra*), Barbed-wire Grass (*Cymbopogon refractus*), balck spear grass (*Heteropogon contortus*). Other ground layer speices noted as being present when this species has been observed include Wiregrass (Aristida sp.) and Lomandra (Lomandra sp.)(SPRAT). Results for surveys completed by Porter (1998) identified as part of microhabitat, less than average associated vegetation cover, hence a greater focus given to average native grass cover percentage.
					1	0.25	<10% or >100% of benchmark grass cover	
					5	1.25	≥10 to <50% of benchmark grass cover	
					10	2.5	≥50% and ≤100% of benchmark grass cover	
			Organic litter cover	25%	0	0	Absent	Observations indicate that the collared delma is consistently found in microhabitats characterized by mats of leaf litter, typically measuring around 30-100 mm in thickness (Brigalow Belt Reptiles Workshop 2010; Davidson 1993 within SPRAT 2025). This particular type of habitat is considered essential for the species' survival and is consistently present wherever it occurs. Recent collections of specimens have been obtained through the manual raking of fine flood-washed humus and debris, as well as from the surface soil located directly beneath leaf litter and within thick grass tussocks (DERM unpubl. data) in Department of Sustainability, Environment, Water, Population and Communities (2011).
					2	0.5	Organic litter is >30% cover however less than 3cm thick	
					4	1	Mats of organic litter more than 3cm thick are present in moderate abundance at <25% cover	
					8	2	Mats of organic litter more than 3cm thick are present in moderate abundance at 25- 50% cover	
					10	2.5	Mats of organic litter more than 3cm thick are are dominant feature of	
			Presence of coarse woody debris	25%	0	0	Absent	Logs, bark and other coarse woody debris appear to be an essential characteristic of the Collared Delma microhabitat and are always present where the species occurs (Brigalow Belt Reptiles Workshop 2010; Davidson 1993). BioCondition benchmarks provide a measure of woody debris that should be present in each vegetation community.
					0	0	< 10% of benchmark number	
					5	1.25	≥ 10 to <50% or >200% of benchmark number	
					10	2.5	≥ 50% or ≤200% of benchmark number	
Site Context 20% (2/10)								**Given the limited range of this species movement and small home range as noted by Porter (1998). The Site Context scoring component for the species has been reduced. The relevance of landscape-level attributes such as patch size, context and connectedness is less influential to habitat quality than Site Condition due to this species preference for specific habitat conditions.**
Size of patch	10	Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.						
Connectedness	5	Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.						
Context	5	Proportion of collared delma habitat within 1 km buffer of the assessment unit. Buffer distance to 1 km to reflect the species mobility through the landscape.						
Ecological corridors	6	Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.						
Role of site location to species overall population in the state	1	Is not classified as suitable habitat and therefore not considered as as habitat critical to the survival of the species						All suitable habitat is considered necessary for the purposes of maintaining genetic diversity and providing movement and breeding opportunities at a landscape scale and therefore meets the definition of important habitat (Department of the Environment, Water, Heritage and the Arts 2008a) and therefore is likely considered as habitat critical to the survival of the species
	4	Considered critical habitat, no confirmation of species' presence/ use within patch						
	5	Considered critical habitat and confirmation of species' presence/ use within patch						
		Increased intensity/ frequency of bushfire		**Scope and Severity**				The collared delma faces a range of threats that contribute to its decline. Habitat loss through agricultural clearing is a major pressure, compounded by habitat degradation from overgrazing by stock. The removal of important structural elements such as rocks, coarse woody debris, and ground litter further reduces the availability of shelter and foraging habitat. The use of agricultural chemicals can also degrade habitat quality and impact the species directly. Predation by introduced species, particularly feral cats (Felis catus) and foxes (Vulpes vulpes), poses a significant risk to populations. In addition, weed invasion alters ground cover and ecosystem dynamics, while inappropriate fire regimes can further diminish habitat suitability and fragment populations. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
		Degradation of habitat quality due to invasive wee species creeping lantana		Very High (Scope: 1, Severity: 1)				

Threats	15 (reweighted from 25 as consisted with MHQA methodology)	Degradation of habitat from grazing		High (Scope: 1.5, Severity: 2)		
				Medium (Scope: 2, Severity: 3)		
				Low (Scope: 2.5, Severity: 4)		
				Very Low (Scope: 3, Severity: 5)		
Quality and availability of habitat required for mobility	0					As collared delma is a sedentary species, this attribuite is not relevant to determining the quality of habitat this species. Therefore, this attribute has been removed
Species Stocking Rate 20% (2/10)						**Similar to Site Context Species Stocking Rate has been reduced to favour Site Condition due to the species reliance on specific site attributes to persist.**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10	Detections of the species within or adjacent to the site	100%	0	Not detected	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet (current as Jan 2025). All available field and database resources were reviewed to provide a thorough account of records. Habitat patches where an individual has been detected was assigned the max score of 10. Species movement is little understood with very little data as to range. Porter (1998) noted a recaptured individual 18m from a first capture. The Collared Delma is known to typically occur in small isolated populations throughout its distribution, restricted to small areas of habitat in the order of 1 ha (100 x 100 m; Peck 2003). As such a 100m buffer was utilised to delineate proximity to detection of the species adjacent to a site.
				5	Yes - detection within Impact/ Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS).	
				10	Yes - detection within 100m	
Species usage of the site (habitat type & evidenced usage)	15	Species utilisation reflective of habitat utilisation category	100%	0	Not habitat	Suitable habitat is defined as "Eucalypt forests and woodlands with grassy ground layer that is predominantly native and supports a microhabitat matrix of suitable surface rocks (loose rocks that have a relatively flat surface to maintain good contact with the ground), coarse woody debris and leaf litter". Suitable habitat is considered to comprise Important habitat where the species has been recorded, or if the habitat is patch of a contiguous patch where the species has been recorded in areas adjacent.
				10	Suitable habitat	
				15	Important habitat	
Approximate density (per ha)	0	Approximately density based on regional studies on population estimates				The species does not exist in a large, continuous population but rather in many small disconnected populations which persist based on the presence of suitable microhabitat. In addition, records of collared delma are scarce and no studies have precisely quatified the total population of this species. Therefore, approximate density has been removed from the asessment.
Role/Importance of species population on site	15	Total from supplementary table	100%	0 5–15 20–35 40–45	Total from SSR supplementary table below	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet - current as Jan 2025.
Supplementary table	10	Key source for population breeding	To inform the above	10		The SSR Supplementary Table prescribes indicators and scores that are to be applied to determine the role/importance of a population, based on the presence of a key source population for breeding or dispersal, a population necessary for maintaining genetic diversity and the site in relation to the species' distribution.
	5	Key source population for dispersal		5		
	15	Necessary for maintaining genetic diversity		15		
	15	Near the limit of the species range		15		

Attribute	Sub attribute maximum score	Maximum score	Indicator	Contribution to Attribute Weighting (%)	Score	Weighted Score	Definition	Justification
Site Condition 30% (3/10)								**A total Site Condition weighting of 30% (3/10) has been applied in line with MHQA defaults. Yellow-bellied glider-specific foraging and shelter attributes have been up-weighted from the standard 10/100 to ensure critical microhabitat features drive habitat scores. Foraging quality is weighted at 20, reflecting reliance on preferred eucalypt species and the abundance of foraging trees for a year-round diet. Shelter quality is weighted at 30, recognising dependence on large, mature trees for denning and refuge. These attributes are directly limiting for yellow-bellied gliders and therefore strongly influence habitat occupancy and persistence.**
Number of large native trees	15	50	Weightings consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).					The weighting of the BioCondition attribute of Site Condition has been reduced from 80% to 50% of the overall Site Condition component to better reflect the limiting habitat quality factors for yellow-bellied glider (southeastern) and better capture the disproportionate importance of specific resources (such as known sap trees and hollow-bearing trees) in sites despite their overall condition. Additional weighting (from 10 to 20 for foraging and 30 for shelter) has been attributed to the foraging and shelter attributes which measure the abundance of foraging resources and denning features.
Tree canopy height	5							
Recruitment of woody perennial species (in EDL) (%)	5							
Tree canopy cover	5							
Native shrub layer cover (%)	5							
Coarse woody debris	5							
Native tree species richness	5							
Native shrub species richness	5							
Native grass species richness	5							
Native forbs/other species richness	5							
Non-native plant cover (%)	10							
Native perennial grass cover (%)	5							
Organic litter cover (%)	5							
Quality and availability of food and habitat required for foraging	20		Canopy cover (%) (do not include sub-canopy)	50%	0	0	<10% of canopy cover benchmark	The species depends on a reliable supply of sap and nectar from eucalypts, and the density and continuity of canopy strongly influence the abundance, accessibility, and seasonal availability of these resources (Department of Agriculture, Water and the Environment, 2022). Higher canopy cover generally reflects greater tree density, more foraging substrates, and better connectivity between feed trees whilst lower canopy cover indicates fewer foraging resources and/ or more fragmented or open habitat where gliders must travel further between foraging trees, increasing energetic costs and predation risk.
					5	2.5	=>10% to <50% of canopy cover benchmark	
					7.5	3.75	>200% of the canopy cover benchmark	
					10	5	>50% to <200% of the canopy cover benchmark	
			Floristic diversity in EDL	50%	0	0	No smooth bark or half-bark eucalypts in EDL	Yellow-bellied gliders require some level of floristic diversity to provide a year-round food supply, and they are unlikely to persist in forests dominated by only one or two tree species (Kavanagh 1987a). Many tree species are found in the subspecies' habitat, with some used for sap-feeding. A list of trees known to be used for sap-feeding is provided in the Conservation Advice and areas that had a higher floristic diversity of these tree species were assigned a higher score
					2	1	1-2 smooth bark or half-bark eucalypt species in EDL but neither are known sap trees	
					6	3	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	
					10	5	3 or more eucalypt species in EDL and at least one is a known sap tree OR there is evidence of sap scars	
Quality and availability of habitat required for shelter and breeding	30		Density of live hollow-bearing trees	50%	0	0	0 suitable hollow-bearing trees per ha	Stags (standing dead trees) account for only two percent of den trees in certain forest types (Goldingay 2011)(SPRAT). Studies conducted by P. Gibbson et. Al., found that the yellow bellied glider had a minimum hollow entrance size of 5cm in width. Areas with a higher density of live trees with a hollow width of 5cm scored higher than areas of lower densities.
					2	1	1 suitable hollow-bearing trees per ha	
					4	2	2 suitable hollow-bearing trees per ha	
					6	3	3 - 5 suitable hollow-bearing trees per ha	
					8	4	6 - 9 suitable hollow-bearing trees per ha	
					10	5	≥10 suitable hollow-bearing trees per ha	
			Presence of large (> 50cm dbh) smooth bark or half-bark eucalypt species	50%	0	0	No large trees or large trees do not include any suitable tree species	Hollow-bearing trees used by the yellow-bellied glider (south-eastern) are primarily living, smooth-barked eucalypts of multiple species. Trees do not usually start producing hollows until they reach at least 50 cm diameter at chest height (Goldingay 2011). Age is critical in the formation of hollows, as trees above 50 cm in diameter at chest height are usually above 100 years of age (Mackowski 1984; Wormington & Lamb 1999; Wormington et al. 2003; Koch et al. 2008)During the day, the yellow-bellied glider (south-eastern) shelters in hollows found in large, old trees, usually more than one metre in diameter (Kambouris et al. 2013). Hollow-bearing trees are a critical habitat feature for the yellow-bellied glider (south-eastern) (Goldingay 2011; Goldingay et al. 2019) due to their usage as dens.
					8	4	Large trees present and suitable	
					10	5	Large trees present and suitable AND there is at least one tree with dbh 100 cm or greater	
Site Context 30% (3/10)								**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10	Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.						
Connectedness	5	Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.						
Context	5	Proportion of yellow bellied glider habitat within 20 km buffer of the assessment unit. Buffer extended to 20 km to reflect the species mobility through the landscape.						
Ecological corridors	6	Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.						
Role of site location to species overall population in the state	1	Unlikely to be critical habitat						Scoring informed by definitions of habitat critical to the subspecies (Department of Agriculture Water and the Environment 2022a).which includes large, contiguous and floristically diverse eucalypt forests containing mature hollow-bearing trees and sap trees, as well as habitat corridors, post-fire refuges and areas that support movement, recolonisation and persistence under changing environmental conditions (Department of Agriculture Water and the Environment 2022a).
	4	Meets critical habitat definition, no confirmation of species' presence/ use within patch						
	5	Meets critical habitat definition and confirmation of species' presence/ use within patch						
Threats			Predation from feral cats and red foxes		**Scope and Severity**			Inappropriate fire regimes (wildfires and severe/too frequent planned burns) can result in the modification, loss and disturbance of habitat for greater glider (southern and central) (Department of Climate Change Energy the Environment and Water, 2022). It can also lead to direct mortality of individuals due to lethal heating/suffocation from smoke. Habitat clearing and fragmentation are also a key threat to the species, due to its low dispersal ability without the presence of tall canopy species (Department of Climate Change Energy the Environment and Water, 2022). Weightings of the threats are based on the risk matrix in the Conservation Advice. Although multiple threats are

	15 (reweighted from 25 as consisted with MHQA methodology)			Very High (Scope: 1, Severity: 1)			assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
		Barbed wire fence entanglement		High (Scope: 1.5, Severity: 2)			
		Increased intensity/ frequency of bushfire		Medium (Scope: 2, Severity: 3)			
				Low (Scope: 2.5, Severity: 4)			
				Very Low (Scope: 3, Severity: 5)			
Quality and availability of habitat required for mobility	10	Size of habitat patch	33%	0	0	Patch 25 ha or less	Home ranges are necessarily large, because the trees used as foraging substrates are dispersed and use of trees can vary through time and space (Woinarski et al. 2014). These ranges are defended territories and are advertised by vocalisations (Goldingay 1994; Goldingay et al. 2011). Due to these large home ranges, large areas of forests are required to maintain subpopulation viability. Areas with larger connected habitat patches were scored higher than lower habitat patches
				2	0.66	Patch 25.5 ha to 50 ha	
				6	1.98	Patch 50.5 to 85 ha	
				10	3.3	Patch > 85 ha	
		Presence of tall trees (median canopy height relative to BioCondition benchmark)	67%	0	0	<25% of benchmark height	The subspecies has very low dispersal capabilities over spaces larger than its gliding distance. The maximum gliding distance may be up to 120 m–140m (Kavanagh & Rohan-Jones 1982; Kambouris et al. 2013; Goldingay 2014), though management should be informed by average gliding performance (Goldingay 2014). Average performance in low-canopy forest has been documented at 25.2 m, and it is suggested a glide ratio (horizontal distance/height dropped) of 2.0 should be used to estimate gliding distance for management decisions (Goldingay 2014). Areas with taller canopy densities were scored higher than lower densities.
				6	4.02	>25% to 70% of benchmark height	
				10	6.7	>70% of benchmark height	
Species Stocking Rate 40% (4/10)							**The default SSR weightings of 40% (4/10) were applied as per the DCCEEW MHQA spreadsheet (current as Jan 2025).**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	10	Detections of the species within or adjacent to the site	100%	0		Not detected	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet (current as Jan 2025). All available field and database resources were reviewed to provide a thorough account of records. Functionally connected habitat applies to all contiguous and connected 'denning, foraging and dispersal' habitat where individuals have the potential to disperse through the landscape.
				5		Yes - detection within the Impact / Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS).	
				10		Yes - detection within habitat patch or functionally connected, denning, foraging and dispersal habitat	
Species usage of the site (habitat type & evidenced usage)	15	Species utilisation and patch size	100%	10		Denning, foraging and dispersal within patch 50-<85 ha	As only a single habitat type is defined for this species on the Project, patch size was used to differentiate between species utilisation types. Patch size of 85 ha or greater is scored higher than 50–<85 ha because it more closely aligns with the upper limit of the documented home range for a single yellow-bellied glider group (50–65 ha, plausible range 25–85 ha) (Department of Climate Change Energy the Environment and Water, 2022). Patches at or above 85 ha are therefore more likely to support at least one entire family group without overlap or boundary constraints, while also providing additional buffering and resource availability for group persistence. By contrast, patches between 50–<85 ha may support a single group but are more vulnerable to edge effects, seasonal variability in food resources, and competitive pressures. Larger patches contribute disproportionately to long-term habitat security by sustaining complete territories and improving the likelihood of multiple group occupancy within connected landscapes (Department of Climate Change Energy the Environment and Water, 2022).
				15		Denning, foraging and dispersal within patch =>85 ha	
Approximate density (per ha)	30	Approximately density based on groups/ 100 ha	100%	0		No groups detected throughout Impact/ Offset Area	This attribute uses the detection of groups rather than individuals, as yellow-bellied gliders occur in family groups of three to four individuals that maintain and defend an exclusive territory (Craig 1985; Goldingay 1992; Goldingay & Kavanagh 1993). Measuring density by groups provides a more ecologically meaningful indicator of population presence and persistence, given that group territories reflect habitat carrying capacity rather than fluctuating individual counts. Density values are standardised to a per 100 ha basis to enable comparison across different patch sizes and survey areas. This approach accounts for the species' large home range (typically 50–65 ha, with a plausible range of 25–85 ha) and ensures that detection data are normalised relative to available habitat area. Standardisation allows consistent scoring and avoids bias where survey areas differ in extent. The scoring thresholds of 0 (no groups detected), 15 (>0–1.5 groups/100 ha), and 30 (>1.5 groups/100 ha) reflect increasing confidence that habitat is supporting a viable density of family groups relative to the expected home range size. As noted by Goldingay et al. (2017), long surveys can cause the same group to be recorded multiple times as they move between feed trees. To reduce this, surveys are kept short (e.g. 20 minutes over 200 m). In practice, one cluster of calls/movements within a ~50–65 ha zone = 1 group. Two or more spatially distinct clusters (separated by ≥500–800 m or consistently different across nights) = 2 groups.
				15		>0.1 to 1.5 groups per 100 ha	
				30		>1.5 groups per 100 ha	
Role/Importance of species population on site	15	Total from supplementary table	100%	0		Total from SSR table	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet - current as Jan 2025.
				5–15		Total from SSR table	
				20–35		Total from SSR table	
				40–45		Total from SSR table	
Supplementary table	10	Key source for population breeding	To inform the above	10			The SSR Supplementary Table prescribes indicators and scores that are to be applied to determine the role/importance of a population, based on the presence of a key source population for breeding or dispersal, a population necessary for maintaining genetic diversity and the site in relation to the species' distribution.
	5	Key source population for dispersal		5			
	15	Necessary for maintaining genetic diversity		15			
	15	Near the limit of the species range		15			

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Definition	Justification
Site Condition 30% (3/10)							**A Total Site Condition weighting of 30% (3/10) has been applied in line with MHQA defaults.**
Number of large native trees	15	80	Weightings are consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).				
Tree canopy height	5						
Recruitment of woody perennial species (in EDL) (%)	5						
Tree canopy cover	5						
Native shrub layer cover (%)	5						
Coarse woody debris	5						
Native tree species richness	5						
Native shrub species richness	5						
Native grass species richness	5						
Native forbs/other species richness	5						
Non-native plant cover (%)	10						
Native perennial grass cover (%)	5						
Organic litter cover (%)	5						
Site Context 30% (3/10)							**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.				
Connectedness	5		Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.				
Context	5		Proportion of *C. megacarpa* habitat within 1 km buffer of the assessment unit.				
Ecological corridors	6		Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.				
Role of site location to species overall population in the state	5		All known habitat assigned a score of 5 as based on the definition of critical habitat which states all habitat supoorting remaining viable populations is considered critical to the survival of the species as provided in the National Multi-species Recovery Plan for the cycads, *Cycas megacarpa, Cycas ophiolitica, Macrozamia cranei, Macrozamia lomandroides, Macrozamia pauli-guilielmi and Macrozamia platyrhachis* . (2007)				
Threats	15 (reweighted from 25 as consisted with MHQA methodology)		Destruction of habitat and individuals		**Scope and Severity**		Destruction of habitat and individuals due to land clearing, legal and illegal harvesting, loss of genetic variation and inappropriate land management practices (e.g. grazing, fire, timber harvesting) are listed as the key threats to Cycas megacarpa in the National Multi-species Recovery Plan (Queensland Herbarium, 2007b). Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
					Very High (Scope: 1, Severity: 1)		
			Inappropriate fire regimes		High (Scope: 1.5, Severity: 2)		
					Medium (Scope: 2, Severity: 3)		
					Low (Scope: 2.5, Severity: 4)		
					Very Low (Scope: 3, Severity: 5)		
Species Stocking Rate 40% (4/10)							**The default SSR weightings of 40% (4/10) were applied as per the DCCEEW MHQA spreadsheet (current as Jan 2025).**
Presence detected on or adjacent to site	10		Has the species been detected on or adjacent to site?	100% of 10	0	Not detected on or adjacent to site	Documenting whether the species has been detected on or adjacent to the site. Adjacent refers to the directly adjacent land parcel.
					5	Yes - detection within Impact/ Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS).	
					10	Yes - detection within habitat patch	
					0	<500	The National Recovery Plan states a minimal viable population constitutes 3500-4500 individuals, dependent on the number of reproductive individuals >1m
					10	500–1,499	

Number of plants on site	30	Number of plants found within Impact/ Offset Area	100% of 30	15	1,500–3,499	(Queensland Herbarium, 2007). Sites containing a viable population (≥3,500) received higher scores (either 20 or 30), whilst sites where a population was below the viable population threshold of <3,500 received lower scores (either 10 or 15). Where sites occurred with a low population size (<500 individuals), a score of 0 was applied as the population is well below viable and at risk of genetic loss, therefore unlikely to be sustainable.
				20	≥ 3,500–4,499	
				30	≥ 4,500	
Extent of population on site (ha)	30	What is the extent of occupied known - confirmed habitat of the species within the Impact/Offset Study Area?	100% of 30	0	<10	Appendix A of the National Recovery Plan (Queensland Herbarium, 2007) provides population statistics. The 'Projected occupancy of the population (ha)' column was utilised to determine the extent of population on site (ha) based on regional data. Populations ranged from 1 to >850. Therefore, highest scores (30) were awarded to sites >850 and lower scores (10) were awarded to sites with lower counts (10-300).
				10	10–300	
				15	301–500	
				20	501–850	
				30	>850 ha	
Approximate density (per ha) over suitable habitat within Project area	20	Estimate of the local population density within Known habitat (or known suspected habitta) Impact/ Offset Area.	100% of 20	0	0 plants	Calculated based on the field survey results (number of plants found divided by the area (ha) of suitable habitat). Intervals of 10 were deemed suitable based on the examination of distribution records and associated plant counts per ha in relation to known habitat. The spread of the data aligned with the population statistics provided in Appendix A of the National Recovery Plan (Queensland Herbarium, 2007). The 'No. plants per ha' column was utilised to determine an appropriate score per ha.
				5	1 – 10 plants per ha	
				10	11 – 20 plants per ha	
				15	21– 30 plants per ha	
				20	>30 plants per hectare	
Role/Importance of species population on site	15	Presence of an important population	100% of 15	0	Not an important population	SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet - current as Jan 2025.
				5	Potentially an important population	
				10	Likely to be an important population	
				15	Important population is present	
Supplementary Table	10	Key source population for germination and seed/gamete dispersal	To inform the below	10		The SSR Supplementary Table prescribes indicators and scores that are to be applied to determine the role/importance of a population, based on the presence of a key source population for breeding or dispersal, a population necessary for maintaining genetic diversity and the site in relation to the species' distribution.
	15	Necessary for maintaining genetic diversity		15		
	15	Near the limit of the species range		15		
	40	SSR Supplementary table total		40		Total of above attributes

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Definition	Justification
Site Condition 30% (3/10)							**A Total Site Condition weighting of 30% (3/10) has been applied in line with MHQA defaults.**
Number of large native trees	15	80	BioCondition weightings are consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).				
Tree canopy height	5						
Recruitment of woody perennial species (in EDL) (%)	5						
Tree canopy cover	5						
Native shrub layer cover (%)	5						
Coarse woody debris	5						
Native tree species richness	5						
Native shrub species richness	5						
Native grass species richness	5						
Native forbs/other species richness	5						
Non-native plant cover (%)	10						
Native perennial grass cover (%)	5						
Organic litter cover (%)	5						
Site Context 30% (3/10)							**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of vegetation in which the assessment unit is contained, and add on all other directly connecting areas of mapped remnant vegetation.				
Connectedness	5		Proportion of the assessment unit's boundary which is connected to regrowth or remnant vegetation.				
Context	5		Proportion of suitable *S. bidwillii* habitat within 1 km buffer of the assessment unit.				
Ecological corridors	6		Whether the assessment unit is within or sharing a common boundary to a state-wide ecological corridor.				
Role of site location to species overall population in the state	5		All known habitat assigned a score of 5 noting that habitat critical to the survival of the species is not explicitly defined in the Conservation Advice however, it recognises that any occupied (known) habitat is inherently important for maintaining genetic diversity and long-term evolutionary processes (Department of the Envirnoment, Water, Heritage and the Arts, 2008).				
Threats	nted from 25 as consisted with MHQA m		Inappropriate fire regimes		**Scope and Severity**		The main identified threats to Quassia are soil erosion and habitat clearing as a result of a range of activities including agriculture, forestry, urban development and recreational activities (Approved conservation advice for Quassia bidwillii, 2008). Potential threats to this species include inappropriate fire regimes and proliferation of exotic/weed spcies reducing the opportunity for recruitment. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
			Degradation of habitat due to weed proliferation		Very High (Scope: 1, Severity: 1)		
					High (Scope: 1.5, Severity: 2)		
					Medium (Scope: 2, Severity: 3)		
					Low (Scope: 2.5, Severity: 4)		
					Very Low (Scope: 3, Severity: 5)		
Species Stocking Rate 40% (4/10)							**SSR rate scores were utilised as per the DCCEEW MHQA spreadsheet (current as Jan 2025). All available field and database resources were reviewed to provide a thorough account of records. Species movement is little understood with very little data as to range. Porter (1998) noted a recaptured individual 18m from a first capture. A conservative factor of 5 was included to delineate proximity to detection.**
Presence detected on or adjacent to site	10		Has the species been detected on or adjacent to Impact/Offset Area?	100% of 10	0	Not detected on or adjacent to Impact/Offset Site	Documenting whether the species has been detected on or adjacent to the site. Adjacent refers to the directly adjacent land parcel.
					5	Detected adjacent to Impact/ Offset Area. (Impact and Offset Area assessed separetly eg. Detection of the species within the Impact area does not affect the offset HQS).	
					10	Detected on Impact/Offset Site	
Number of plants on site	30		Number of stems found within the known habitat throughout Impact/Offset Area	100% of 30	0	0	Calculated based on the field survey results (number of stems observed in Impact/Offset Area). There is no recovery plan for this species; however, studies completed for this species by Naik (2016) on genetics and propagation (including the populations recorded at the Callide Timber Reserve and Callide mine) estimated the number of stems at 11 populations to be between 220-14285 stems. . Therefore, highest scores (30) were awarded to sites >10,000 stems and lower scores (10) were awarded to sites with lower counts (≥1-100). Without a defined minimum viable population, delination of scoring was based on an increase in an order of magnitude.
					10	≥ 1-100	
					15	≥ 101–1,000	
					20	≥ 1,000–9,999	
					30	≥ 10,000	

Extent of population on site (ha)	30	What is the extent of known habitat within Impact / Offset Area	100% of 30	0	0	Calculated based on mapped extent of known habitat in the Impact/Offset Site. Surveys by Naik (2016) examined 11 populations of this species across southern and central Queensland with extent of populations ranging from 0.35 to 6.67ha. In the absence of minimum patch size for this species, the range of population size detailed in Naik (2016) has been used a the basis of the scoring parameters for this attribute. Therefore, highest scores (30) were awarded to locations >6 hectare in size and lower scores (10) were awarded to locations with sizes 0.1-1 hectare.
				10	0.1-1ha	
				15	1.1-3ha	
				20	3.1-6ha	
				30	>6ha	
Approximate density (per ha) over suitable habitat	20	Estimate of the local population density.	100% of 20	0	0	Calculated based on the field survey results (number of stems observed/ divided by hectare of known habitat). There is no recovery plan for this species; however, conservation, genetics and propagation studies (Naik, 2016) have been completed for this species including the populations recorded at the Callide Timber Reserve and Callide mine. Based on the stem count per hectare of the eleven populations noted by Naik (2016), species populations ranged from 640 - 3720 stems per hectare. In the absence of defined population densities, the stem count/hectare detailed by Naik (2016) has been used a the base parameters of scoring this criteria. Therefore, highest scores (30) were awarded to locations >3000 stems/hectare and lower scores (10) were awarded to locations with lower counts (≥1-100)
				5	≥ 1-100	
				10	≥ 101–1,000	
				15	≥ 1,000–2,999	
				20	≥ 3,000	
Role/Importance of species population on site	15	Presence of an important population	100% of 15	0	Not an important population	SSR supplementary scores were utilised to idnentify an important population
				5	Potentially an important population	
				10	Likely to be an important population	
				15	Important population is present	
Supplementary Table	10	Key source population for germination and seed/gamete dispersal	To inform the below	10	Source populations have not been defined for this species, however, Naik (2016) suggest geography is a determinate in delinating broader population groups. For this species the broader groups are defined as the Callide populations, Mary River populations and Hervey Bay populations	The population is likely to be a key source population for germination and seed/gamete dispersal, therefore receiving the highest score.
	15	Necessary for maintaining genetic diversity		15	In the absence of Conservation advice detailing genetic diveristy, a review of Naik (2016) suggests that there is genetic differentiation across populations. In particular, the populations in the Callide area are genetically distinct from other populations of this species	The population is likely to be necessary for maintaining genetic diversity as the popultations in the Callide Timber Reserve appear not to seed rather reproduce via coppicing, therefore receiving the highest score.
	15	Near the limit of the species range		15	At the northern, eastern ,southern, or western edge of the species range	Samadera bidwillii is endemic to south-east and central Queensland. The species is currently known to occur in several localities between Scawfell Island, near Mackay, and Goomboorian, north of Gympie (Queensland Herbarium 2007). The Project Area is at the western limit of the species range.
	40	SSR Supplementary table total		40		Total of above attributes

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Definition	Justification
Site Condition 70% (7/10)							**A Total Site Condition weighting of 70% (7/10) has been applied in line with MHQA defaults.**
Number of large native trees	15	80	BioCondition weightings are consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).				
Tree canopy height	5						
Recruitment of woody perennial species (in EDL) (%)	5						
Tree canopy cover	5						
Native shrub layer cover (%)	5						
Coarse woody debris	5						
Native tree species richness	5						
Native shrub species richness	5						
Native grass species richness	5						
Native forbs/other species richness	5						
Non-native plant cover (%)	10						
Native perennial grass cover (%)	5						
Organic litter cover (%)	5						
Site Context 30% (3/10)							**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of SEVT vegetation as well as the addition of all other directly connecting areas of mapped remnant vegetation.				
Connectedness	5		Proportion of the SEVT patch/assessment unit's boundary which is connected to regrowth or remnant vegetation.				
Context	5		Proportion of suitable *SEVT* within 1 km buffer.				
Ecological corridors	6		Whether the SEVT patch/assessment unit is within or sharing a common boundary to a state-wide ecological corridor.				
Role of site location to TEC overall population in the state	0		Non-remnant patches that do not meet the definition of the TEC.				Conservation Advice states that, given the restricted and fragmented distribution of SEVT, all areas that meet the definition of this ecological community are considered habitat critical to its long-term survival (Department of Climate Change, Energy, the Environment and Water, 2023). As there are no condition classes for this TEC, only two potential scores can be assigned.
	5		Remnant or regrowth patches that meet the definition of the TEC.				
Threats	15 (reweighted from 25 as consisted with MHQA methodology)		Fire damage		**Scope and Severity**		The main identified threats to Central SEVT are weed proliferation, fire and potentially climate change. (Approved conservation advice for SEVT, 2023). Other potential threats to this community include clearing, grazing and other pest species. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
			Degradation of habitat due to weed proliferation		Very High (Scope: 1, Severity: 1)		
			Degradation of habitat from grazing		High (Scope: 1.5, Severity: 2)		
					High (Scope: 1.5, Severity: 2)		
					Medium (Scope: 2, Severity: 3)		
					Low (Scope: 2.5, Severity: 4)		
					Low (Scope: 2.5, Severity: 4)		

Attribute	Sub attribute maximum score	Maximum Score	Indicator	Contribution to Attribute Weighting (%)	Score	Definition	Justification
Site Condition 70% (7/10)							**A Total Site Condition weighting of 70% (7/10) has been applied in line with MHQA defaults.**
Number of large native trees	15	80	BioCondition weightings are consistent with Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) and BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.2 (Eyre, 2015).				
Tree canopy height	5						
Recruitment of woody perennial species (in EDL) (%)	5						
Tree canopy cover	5						
Native shrub layer cover (%)	5						
Coarse woody debris	5						
Native tree species richness	5						
Native shrub species richness	5						
Native grass species richness	5						
Native forbs/other species richness	5						
Non-native plant cover (%)	10						
Native perennial grass cover (%)	5						
Organic litter cover (%)	5						
Site Context 30% (3/10)							**Total Site Context weighting of 30% (3/10) as per the default MHQA methodology. The landscape scoring attributes and definitions for 'fragmented landscapes' presented in Queensland Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017) is adopted. Any adaptations are presented in the sub-attributes below.**
Size of patch	10		Area of Subtropical Euc Floodplain TEC vegetation as well as the addition of all other directly connecting areas of mapped remnant vegetation.				
Connectedness	5		Proportion of the Subtropical Euc Floodplain TEC patch/assessment unit's boundary which is connected to regrowth or remnant vegetation.				
Context	5		Proportion of suitable Subtropical Euc Floodplain TEC within 1 km buffer.				
Ecological corridors	6		Whether the Subtropical Euc Floodplain TEC patch/assessment unit is within or sharing a common boundary to a state-wide ecological corridor.				
Role of the site location for the TEC presence in the state	1		Does not meet the key diagnostic criteria/ analogous RE.				The role of site location to the TEC overall in the state was informed by the TEC key diagnostic criteria and the condition classes as defined in the TEC's conservation advice (Department of Climate Change, Energy, the Environment and Water 2022a).
	4		Meets the key diagnostic criteria/ analogous RE but does not meet the TEC's minimum condition criteria.				
	5		Meets the key diagnostic criteria/ analogous RE and the TEC's minimum condition criteria.				
Threats	15 (reweighted from 25 as consisted with MHQA methodology)		Degradation from cattle grazing			**Scope and Severity**	The main identified threats to the Subtropical Eucalypt Floodplain TEC are clearing and hydrological changes as a result of a range of activities including agriculture, forestry, urban development and recreational activities (Approved conservation advice for Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions, 2022). Major potential threats to this TEC include fragmentation, inappropriate fire regimes and proliferation of exotic/weed species reducing the opportunity for recruitment and invasive fauna. Although multiple threats are assessed, the lowest score/ most prevalent threat is applied globally to the final habitat quality score. See Appendix F of the OMP for the threat matrix.
			Degradation of habitat due to weed proliferation			Very High (Scope: 1, Severity: 1)	
			Inappropriate fire regime				
			Invasive Degradation from feral pest impacts			High (Scope: 1.5, Severity: 2)	
						Medium (Scope: 2, Severity: 3)	
						Low (Scope: 2.5, Severity: 4)	
						Very Low (Scope: 3, Severity: 5)	

Appendix B

Offset Assessment Guide

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	Collared delma
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	Collared delma	**Area**	48.97	Hectares	
			Quality	7	Scale 0-10	
			Total quantum of impact	34.28	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	34.28	Adjusted hectares	Lone Star / The Cedars	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	916.4	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	79.25	231.18%	Yes		
									Future area without offset (adjusted hectares)	916.4	**Future area with offset (adjusted hectares)**	916.4									
					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	90%	0.90	0.86					
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	34.279	79.25	231.18%	**Yes**	$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	Cycas megacarpa
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Cycas megacarpa	**Area**	23.7	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	14.22	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	14.22	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	433.3	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	30.72	216.03%	Yes		
									Future area without offset (adjusted hectares)	433.3	**Future area with offset (adjusted hectares)**	433.3									
					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	90%	0.90	0.71					
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	14.22	30.72	216.03%	**Yes**	$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	Cycas megacarpa
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Cycas megacarpa	**Area**	29.8	Hectares	
			Quality	**2**	Scale 0-10	
			Total quantum of impact	5.96	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	5.96	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	433.3	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	30.72	515.44%	Yes	
									Future area without offset (adjusted hectares)	433.3	**Future area with offset (adjusted hectares)**	433.3								
					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	90%	0.90	0.71				
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	5.96	30.72	515.44%	**Yes**	$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	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Greater Glider	**Area**	141.5	Hectares	
			Quality	**4**	Scale 0-10	
			Total quantum of impact	56.60	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	56.60	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	1489.2	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	186.54%	Yes		
									Future area without offset (adjusted hectares)	1489.2	**Future area with offset (adjusted hectares)**	1489.2				105.58				
					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	90%	0.90	0.71				
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	56.6	105.58	186.54%	**Yes**	$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	Koala
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Koala	**Area**	153.8	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	92.28	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	92.28	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	1495.3	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	188.47	204.24%	Yes		
									Future area without offset (adjusted hectares)	1495.3	**Future area with offset (adjusted hectares)**	1495.3								
					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	80%	1.60	1.26				
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	92.28	188.47	204.24%	**Yes**	$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	Samadera bidwillii
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	Samadera bidwillii	**Area**	0.2	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	0.12	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	0.12	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	1.4	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	0.12	100.89%	Yes	
									Future area without offset (adjusted hectares)	1.4	**Future area with offset (adjusted hectares)**	1.4								
					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	90%	0.90	0.86				
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	0.12	0.12	100.89%	**Yes**	$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	SEFFW
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Yes	SEFFW	**Area**	16.6	Hectares	
			Quality	**6**	Scale 0-10	
			Total quantum of impact	9.96	Adjusted hectares	
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	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	Yes	9.96	Adjusted hectares		**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	70.2	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	13.27	133.25%	Yes		
									Future area without offset (adjusted hectares)	70.2	**Future area with offset (adjusted hectares)**	70.2									
					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	80%	2.40	1.89					
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)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
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	0				$0.00		$0.00
Area of community	9.96	13.27	133.25%	**Yes**	$0.00	N/A	$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	SEVT
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

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	Yes	SEVT	**Area**	2.2	Hectares	
			Quality	**5**	Scale 0-10	
			Total quantum of impact	1.10	Adjusted hectares	
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	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	Yes	1.10	Adjusted hectares	BBOA	**Risk-related time horizon (max. 20 years)**	20	**Start area (hectares)**	15.8	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	1.12	101.83%	Yes		
									Future area without offset (adjusted hectares)	15.8	**Future area with offset (adjusted hectares)**	15.8									
					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	90%	0.90	0.71					
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)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**										
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	0				$0.00		$0.00
Area of community	1.1	1.12	101.83%	**Yes**	$0.00	N/A	$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	Yellow-bellied 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	Yellow-bellied Glider	**Area**	20.9	Hectares	
			Quality	**5**	Scale 0-10	
			Total quantum of impact	10.45	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	10.45	Adjusted hectares	BBOA	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	322.5	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	100%	0.00	0.00	27.89	266.87%	Yes	
									Future area without offset (adjusted hectares)	322.5	**Future area with offset (adjusted hectares)**	322.5								
					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	90%	0.90	0.86				
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	10.45	27.89	266.87%	**Yes**	$0.00	N/A	$0.00
Area of community	0				$0.00		$0.00
					$0.00	**$0.00**	**$0.00**

Appendix C

Habitat Quality Score Results – Impact

IMPACT - TEC

SEFFW

Assessment Unit - Regional Ecosystem		AU15 - 12.3.3 remnant												
Site Reference		Benchmark 12.3.3	32			33			34			Average % benchmark	Average Score	Total average % benchmark	Total average score
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Site Condition	**Max Score**														
Recruitment of woody perennial species in EDL	80	100	66	66%	3	66	66%	3	75	75%	5	69%	3.7	69%	3.7
Native plant species richness - trees		5	6	120%	5	7	140%	5	9	180%	5	147%	5	147%	5
Native plant species richness - shrubs		5	5	100%	5	2	40%	2.5	11	220%	5	120%	4.2	120%	4.2
Native plant species richness - grasses		9	3	33%	2.5	1	11%	0	4	44%	2.5	30%	1.7	30%	1.7
Native plant species richness - forbes		25	2	8%	0	3	12%	0	12	48%	2.5	23%	0.8	23%	0.8
Emergent height		na	0	na		0	na		0	na		na		na	
Tree canopy height		25	16	64%	4	12	48%	4	22	88%	5	67%	4.3	67%	4.3
Tree subcanopy height		9	10	111%		7	78%		15	167%		119%		119%	
Emergent cover		na	0	na		0	na		0	na		na		na	
Tree canopy cover		40	31.2	78%	4	38.1	95%	4	38.9	97%	4	90%	4	90%	4
Tree subcanopy cover		8	20.8	260%		18.8	235%		25.6	320%		272%		272%	
Shrub canopy cover		4	9.9	248%	3	5.7	143%	5	7.6	190%	5	193%	4.3	193%	4.3
Native grass cover		52	0	0%	0	0	0%	0	39.4	76%	3	25%	1	25%	1
Organic litter		20	41	205%	3	68.6	343%	3	39.6	198%	5	249%	3.7	249%	3.7
Large trees (euc plus non-euc)		14	2	14%	5	4	29%	5	6	43%	5	29%	5	29%	5
Coarse woody debris		588	190	32%	2	0	0%	0	360	61%	5	31%	2.3	31%	2.3
Non-native plant cover		0	0.00%	na	10	70.00%	na	0	15.00%	na	5	na	5	na	5
Site Condition Score					46.5			31.5			57		45		45
MAX Site Condition Score					*80*			*80*			*80*		*80*		*80*
Site Condition Score - out of 3					**4.07**			**2.76**			**4.99**		**3.94**		**3.94**
Site Context															
Size of patch	46	10	5	50%	5	5	50%	5	5	50%	5	50%	5	50%	5
Connectedness		5	2	40%	2	2	40%	2	4	80%	4	53%	2.7	53%	2.7
Context		5	4	80%	4	4	80%	4	4	80%	4	80%	4	80%	4
Ecological Corridors		6	6	100%	6	6	100%	6	6	100%	6	100%	6	100%	6
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	5	100%	5	100%	5	100%	5
Threats to the species		15	3	20%	3	3	20%	3	3	20%	3	20%	3	20%	3
Site Context Score					25			25			27		26		26
MAX Site Context Score					*46*			*46*			*46*		*46*		*46*
Site Context Score - out of 3					**1.63**			**1.63**			**1.76**		**1.67**		**1.67**

Final habitat quality score (weighted)	**AU15**	**Average/Final**
Site Condition score (out of 3)	3.94	3.94
Site Context Score (out of 3)	1.67	1.67
Habitat Quality score (out of 10)	*5.61*	5.61
Assessment Unit area (ha) in disturbance footprint	10.40	
Total impact area (ha) for this MNES	10.40	
Size Weighting	1.00	
Weighted Habitat Quality Score	***5.61***	***5.61***

IMPACT - TEC

SEVT

Assessment Unit - Regional Ecosystem		AU19 - 11.11.18 remnant										
Site Reference		**Benchmark 11.11.5a**	48			50			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Site Condition	**Max Score**											
Recruitment of woody perennial species in EDL	80	100	50	50%	3	75	75%	5	63%	4	63%	4
Native plant species richness - trees		20	10	50%	2.5	12	60%	2.5	55%	2.5	55%	2.5
Native plant species richness - shrubs		15	11	73%	2.5	12	80%	2.5	77%	2.5	77%	2.5
Native plant species richness - grasses		2	1	50%	2.5	5	250%	5	150%	3.75	150%	3.75
Native plant species richness - forbes		21	10	48%	2.5	11	52%	2.5	50%	2.5	50%	2.5
Emergent height		21	15	71%		0	0%		36%		36%	
Tree canopy height		14	7	50%	3.66	15	107%	3.33	79%	3.495	79%	3.5
Tree subcanopy height		8	3	38%		9	113%		75%		75%	
Emergent cover		5	2.9	58%		0	0%		29%		29%	
Tree canopy cover		62	51.5	83%	4.33	45	73%	2.66	78%	3.495	78%	3.5
Tree subcanopy cover		28	90.4	323%		65	232%		278%		278%	
Shrub canopy cover		21	32.5	155%	5	0	0%	0	77%	2.5	77%	2.5
Native grass cover		3	0	0%	0	5	167%	5	83%	2.5	83%	2.5
Organic litter		39	85	218%	3	34.4	88%	5	153%	4	153%	4
Large trees (euc plus non-euc)		60	0	0%	0	0	0%	0	0%	0	0%	0
Coarse woody debris		377	405	107%	5	26	7%	0	57%	2.5	57%	2.5
Non-native plant cover		0	0%	na	10	35%	na	3	na	6.5	na	6.5
Site Condition Score					43.99			36.49		40.24		40.24
MAX Site Condition Score					80			80		80		80
Site Condition Score - out of 7					**3.85**			**3.19**		**3.52**		**3.52**
Site Context												
Size of patch	46	10	10	100%	10	7	70%	7	85%	8.5	85%	8.5
Connectedness		5	5	100%	5	0	0%	0	50%	2.5	50%	2.5
Context		5	4	80%	4	4	80%	4	80%	4	80%	4
Ecological Corridors		6	4	67%	4	0	0%	0	33%	2	33%	2
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	100%	5
Threats to the TEC		15	3	20%	3	3	20%	3	20%	3	20%	3
Site Context Score					31			19		25		25
MAX Site Context Score					46			46		46		46
Site Context Score - out of 3					**2.02**			**1.24**		**1.63**		**1.63**

Final habitat quality score (weighted)	**AU19**	**Average/Final**
Site Condition score (out of 7)	3.52	3.52
Site Context Score (out of 3)	1.63	1.63
Habitat Quality score (out of 10)	5.15	5.15
Assessment Unit area (ha) in disturbance footprint	2.13	
Total impact area (ha) for this MNES	2.13	
Size Weighting	1	
Weighted Habitat Quality Score	***5.15***	***5.15***

IMPACT - Flora

Samadera bidwillii

Assessment Unit - Regional Ecosystem		AU17 - 11.10.13 remnant						AU18 - 11.10.13 regrowth							
Site Reference		**Benchmark 11.10.13**	41			Average % benchmark	Average Score	**Benchmark 11.10.13**	46			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
Site Condition	**Max Score**														
Recruitment of woody perennial species in EDL		100	100	100%	5	100%	5	100	50	50%	3	50%	3	75%	4
Native plant species richness - trees		7	4	57%	2.5	57%	2.5	7	5	71%	2.5	71%	2.5	64%	2.5
Native plant species richness - shrubs		10	6	60%	2.5	60%	2.5	10	6	60%	2.5	60%	2.5	60%	2.5
Native plant species richness - grasses		6	3	50%	2.5	50%	2.5	6	1	17%	0	17%	0	33%	1.25
Native plant species richness - forbes		7	2	29%	2.5	29%	2.5	7	0	0%	0	0%	0	14%	1.25
Emergent height		na	22	na		na		na	0	na		na		na	
Tree canopy height		22	14	64%	4	64%	4	22	9	41%	4	41%	4	52%	4
Tree subcanopy height		7	8	114%		114%		7	6	86%		86%		100%	
Emergent cover	80	na	0	na		na		na	0	na		na		na	
Tree canopy cover		25	79.8	319%	3	319%	3	25	10	40%	2.5	40%	2.5	180%	2.75
Tree subcanopy cover		4	29.4	735%		735%		4	78.2	1955%		1955%		1345%	
Shrub canopy cover		15	1.5	10%	3	10%	3	15	47.8	319%	3	319%	3	164%	3
Native grass cover		20	7.6	38%	1	38%	1	20	2.4	12%	1	12%	1	25%	1
Organic litter		40	71	178%	5	178%	5	40	68	170%	5	170%	5	174%	5
Large trees (euc plus non-euc)		20	6	30%	5	30%	5	20	0	0%	0	0%	0	15%	2.5
Coarse woody debris		204	895	439%	2	439%	2	204	332	163%	5	163%	5	301%	3.5
Non-native plant cover		0	100%	na	0	na	0	0	0%	na	10	na	10	na	5
Site Condition Score (weighted to species-specific)					38		38				38.5		38.5		38.25
MAX Site Condition Score					*80*		*80*				*80*		*80*		*80*
Site Condition Score - out of 3					**1.43**		**1.43**				**1.44**		**1.44**		**1.43**
Site Context															
Size of patch		10	10	100%	10	100%	10	10	10	100%	10	100%	10	100%	10
Connectedness		5	2	40%	2	40%	2	5	5	100%	5	100%	5	70%	3.5
Context		5	4	80%	4	80%	4	5	4	80%	4	80%	4	80%	4
Ecological Corridors	46	6	6	100%	6	100%	6	6	6	100%	6	100%	6	100%	6
Role of site location to species overall population in the state		5	5	100%	5	100%	5	5	5	100%	5	100%	5	100%	5
Threats to the species		15	3	20%	3	20%	3	15	3	20%	3	20%	3	20%	3
Site Context Score					30		30				33		33		31.5
MAX Site Context Score					*46*		*46*				*46*		*46*		*46*
Site Context Score - out of 3					**1.96**		**1.96**				**2.15**		**2.15**		**2.05**
Species Stocking Rate (SSR)															
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	10	100%	10	100%	10	10	10	100%	10	100%	10	100%	10
Number of plants on site		30	10	33%	10	33%	10	30	10	33%	10	33%	10	33%	10
Extent of population on site (ha)	105	30	15	50%	15	50%	15	30	15	50%	15	50%	15	50%	15
Approximate density		20	10	50%	10	50%	10	20	10	50%	10	50%	10	50%	10
Role/importance of species population on site*		15	15	100%	15	100%	15	15	15	100%	15	100%	15	100%	15
SSR Score					60		60				60		60		60
MAX SSR Score					*105*		*105*				*105*		*105*		*105*
SSR Score - out of 4					**2.29**		**2.29**				**2.29**		**2.29**		**2.29**

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0		5		10
		No		Yes - detection within Impact/ Offset Area		Yes - detection within habitat patch
Number of plants on site	Score	0	10	15	20	30
		<500	500-1499	1500-3499	3500-4499	>4500
Exent of population on site (ha)	Score	0	10	15	20	30
		0	01-1 ha	1.1-3 ha	3.1-6 ha	>6ha
Approximate density (per ha) over suitable habitat within project area	Score	0	5	10	15	20
		0	1-100	101-1000	1001-2999	=>3,000
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15
		0	10	25 - 35		40
Total SRR score (out of 105)	60					
SRR Score (out of 4)	2.3					

***SSR Supplementary Table**			
*Key source population for germination and seed/gamete dispersal	Score	0	10
		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

Final habitat quality score (weighted)	**AU17**	**AU18**	**Average/Final**
Site Condition score (out of 3)	1.43	1.44	1.43
Site Context Score (out of 3)	1.96	2.15	2.05
Species Stocking Rate Score (out of 4)	2.29	2.29	2.29
Habitat Quality score (out of 10)	*5.67*	*5.88*	
Assessment Unit area (ha) in disturbance footprint	0.22	0.00	
Total impact area (ha) for this MNES	0.22	0.22	
Size Weighting	0.99	0.01	
Weighted Habitat Quality Score	***5.63***	***0.04***	***5.67***

IMPACT - Flora

Cycas megacarpa

Assessment Unit - Regional Ecosystem		AU10 - 11.8.4 remnant						AU11 - 11.11.15 remnant						AU16 - 11.10.3 remnant						AU21 - Non-re
Site Reference		**Benchmark 11.8.4**	18			Average % benchmark	Average Score	**Benchmark 11.11.15**	47			Average % benchmark	Average Score	**Benchmark 11.10.13**	36			Average % benchmark	Average Score	**Benchmark 11.12.1**	11			**Benchmark 11.11.15**
			Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	
Site Condition	**Max Score**																							
Recruitment of woody perennial species in EDL		100	75	75%	5	75%	5	100	60	60%	3	60%	3	100	0	0%	0	0%	0	100	100	100%	5	100
Native plant species richness - trees		4	9	225%	5	225%	5	4	15	375%	5	375%	5	3	5	167%	5	167%	5	3	4	133%	5	4
Native plant species richness - shrubs		6	18	300%	5	300%	5	3	12	400%	5	400%	5	3	14	467%	5	467%	5	6	10	167%	5	3
Native plant species richness - grasses		5	10	200%	5	200%	5	7	3	43%	2.5	43%	2.5	6	0	0%	0	0%	0	8	2	25%	2.5	7
Native plant species richness - forbes		6	6	100%	5	100%	5	12	15	125%	5	125%	5	10	7	70%	2.5	70%	2.5	13	1	8%	0	12
Emergent height		na	0	na		na		na	14	na		na		na	16	na		na		na	0	na		na
Tree canopy height		14	15	107%	5	107%	5	18	9	50%	3	50%	3	18	5	28%	3	28%	3	15	16	107%	5	18
Tree subcanopy height		8	9	113%		113%		10	5	50%		50%		8	3	38%		38%		10	10	100%		10
Emergent cover	80	na	0	na		na		na	0	na		na		na	8.2	na		na		na	0	na		na
Tree canopy cover		27	24.9	92%	4	92%	4	35	72.9	208%	3	208%	3	44	20.5	47%	3.5	47%	3.5	35	9.9	28%	3.5	35
Tree subcanopy cover		7	31.3	447%		447%		5	42.9	858%		858%		14	20.7	148%		148%		7	3.7	53%		5
Shrub canopy cover		2	13.3	665%	3	665%	3	3	5.8	193%	5	193%	5	8	1.6	20%	3	20%	3	4	15.8	395%	3	3
Native grass cover		53	13	25%	1	25%	1	45	1.2	3%	0	3%	0	35	0	0%	0	0%	0	41	35	85%	3	45
Organic litter		24	46.6	194%	5	194%	5	23	91.2	397%	3	397%	3	46	55.4	120%	5	120%	5	28	3	11%	3	23
Large trees (euc plus non-euc)		14	2	14%	5	14%	5	17	0	0%	0	0%	0	30	0	0%	0	0%	0	20	4	20%	5	17
Coarse woody debris		128	107	84%	5	84%	5	441	217	49%	2	49%	2	615	78	13%	2	13%	2	408	59	14%	2	441
Non-native plant cover		0	25.00%	na	3	na	3	0	10%	na	5	na	5	0	0.00%	na	10	na	10	0	15.00%	na	5	0
Site Condition Score (weighted to species-specific)					56		56				41.5		41.5				39		39				47	
MAX Site Condition Score					*80*		*80*				*80*		*80*				*80*		*80*				*80*	
Site Condition Score - out of 3					**2.10**		**2.10**				**1.56**		**1.56**				**1.46**		**1.46**				**1.76**	
Site Context																								
Size of patch		10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	0	0%	0	0%	0	10	0	0%	0	10
Connectedness		5	2	40%	2	40%	2	5	5	100%	5	100%	5	5	0	0%	0	0%	0	5	0	0%	0	5
Context		5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	5
Ecological Corridors	46	6	6	100%	6	100%	6	6	0	0%	0	0%	0	6	6	100%	6	100%	6	6	0	0%	0	6
Role of site location to species overall population in the state		5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5
Threats to the species		15	3	20%	3	20%	3	3	3	100%	3	100%	3	15	3	20%	3	20%	3	15	3	20%	3	15
Site Context Score					30		30				27		27				18		18				12	
MAX Site Context Score					*46*		*46*				*46*		*46*				*46*		*46*				*46*	
Site Context Score - out of 3					**1.96**		**1.96**				**1.76**		**1.76**				**1.17**		**1.17**				**0.78**	
Species Stocking Rate (SSR)																								
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	10	0%	10	0%	10	10	10	100%	10	10
Number of plants on site		30	10	33%	10	33%	10	30	10	33%	10	33%	10	30	10	17%	10	17%	10	30	15	50%	15	30
Extent of population on site (ha)	105	30	30	100%	30	100%	30	30	30	100%	30	100%	30	30	30	47%	30	47%	30	30	20	67%	20	30
Approximate density		20	5	25%	5	25%	5	20	5	25%	5	25%	5	20	5	0%	5	0%	5	20	5	25%	5	20
Role/importance of species population on site*		15	10	67%	10	67%	10	15	10	67%	10	67%	10	15	10	47%	10	47%	10	15	10	67%	10	15
SSR Score					65		65				65		65				65		65				60	
MAX SSR Score					*105*		*105*				*105*		*105*				*105*		*105*				*105*	
SSR Score - out of 4					**2.48**		**2.48**				**2.48**		**2.48**				**2.48**		**2.48**				**2.29**	

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	
		No	Yes - detection within Impact/ Offset Area		Yes - detection within habitat patch	
Number of plants on site	Score	0	10	15	20	30
		<500	500-1499	1500-3499	3500-4499	>4500
Exent of population on site (ha)	Score	0	10	15	20	30
		0	10-300	301-500	507-800	>800
Approximate density (per ha) over suitable habitat within project area	Score	0	5	10	15	20
		0	1-10	11-20	21-30	>30
Role/importance of species population on site*	Score (*Total from supplementary*	0	5		10	15
		0	10	25 - 35		40
Total SRR score (out of 105)	64.5					
SRR Score (out of 4)	2.46					

***SSR Supplementary Table**			
*Key source population for germination and seed/gamete dispersal	Score	0	10
		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

Final habitat quality score (weighted)	**AU10**	**AU11**	**AU16**	**AU21**	**AU22**	**Average/Final**
Site Condition score (out of 3)	2.10	1.56	1.46	1.53	2.23	1.78
Site Context Score (out of 3)	1.96	1.76	1.17	0.95	1.57	1.48
Species Stocking Rate Score (out of 4)	2.48	2.48	2.48	2.38	2.48	2.46
Habitat Quality score (out of 10)	*6.53*	*5.79*	*5.11*	*4.85*	*6.27*	
Assessment Unit area (ha) in disturbance footprint	1.87	17.37	0.50	12.80	7.80	
Total impact area (ha) for this MNES	40.34	40.34	40.34	40.34	40.34	
Size Weighting	0.05	0.43	0.01	0.32	0.19	
Weighted Habitat Quality Score	***0.30***	***2.49***	***0.06***	***1.54***	***1.21***	***5.61***

mnant					AU22 - 11.12.6 remnant							
16			Average % benchmark	Average Score	**Benchmark 11.12.6**	10			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
66	66%	3	83%	4	100	100	100%	5	100%	5	64%	3
4	100%	5	117%	5	4	8	200%	5	200%	5	217%	5
7	233%	5	200%	5	5	8	160%	5	160%	5	305%	5
5	71%	2.5	48%	2.5	8	4	50%	2.5	50%	2.5	68%	3
3	25%	2.5	16%	1.25	15	9	60%	2.5	60%	2.5	74%	3
17	na		na		0	22	na		na		na	
9	50%	1.5	78%	3.25	25	16	64%	4	64%	4	65%	4
0	0%		50%		9	11	122%		122%		74%	
0	na		na		0	0	na		na		na	
2	6%	0	17%	1.75	44	16.1	37%	3.5	37%	3.5	80%	3
0	0%		26%		15	9.9	66%		66%		309%	
4.6	153%	5	274%	4	4	2.3	58%	5	58%	5	242%	4
29.4	65%	3	75%	3	26	46	177%	5	177%	5	56%	2
35.8	156%	5	83%	4	44	36	82%	5	82%	5	175%	4
0	0%	0	10%	2.5	13	8	62%	10	62%	10	17%	4
210	48%	2	31%	2	819	236	29%	2	29%	2	41%	3
50.00%	na	0	na	2.5	0	10%	na	5	na	5	na	5
		34.5		40.75				59.5		59.5		47
		80		*80*				*80*		*80*		*80*
		1.29		**1.53**				**2.23**		**2.23**		**1.78**
0	0%	0	0%	0	10	10	100%	10	100%	10	60%	6
0	0%	0	0%	0	5	2	40%	2	40%	2	36%	1.8
4	80%	4	80%	4	5	4	80%	4	80%	4	80%	4
6	100%	5	50%	2.5	6	0	0%	0	0%	0	50%	2.9
5	100%	5	100%	5	5	5	100%	5	100%	5	100%	5
3	20%	3	20%	3	15	3	20%	3	20%	3	36%	3
		17		14.5				24		24		22.7
		46		*46*				*46*		*46*		*46*
		1.11		**0.95**				**1.57**		**1.57**		**1.48**
10	100%	10	100%	10	10	10	100%	10	100%	10	80%	10
15	50%	10	50%	12.5	30	10	33%	10	33%	10	33%	10.5
20	67%	30	67%	25	30	30	100%	30	100%	30	83%	29
5	25%	5	25%	5	20	5	25%	5	25%	5	20%	5
10	67%	10	67%	10	15	10	67%	10	67%	10	63%	10
		65		62.5				65		65		64.5
		105		*105*				*105*		*105*		*105*
		2.48		**2.38**				**2.48**		**2.48**		**2.46**

IMPACT - Fauna

Collared delma

Assessment Unit - Regional Ecosystem		AU02 - 12.11.6 remnant									AU03 - 11.11.3/c remnant						AU04 - 11.11.4 remnant							
Site Reference		**Benchmark 12.11.6**	7			12			Average % benchmark	Average Score	**Benchmark 11.11.3**	13			Average % benchmark	Average Score	**Benchmark 11.11.4**	38			Average % benchmark	Average Score	**Benchmark 11.8.4**	
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data
Site Condition	**Species specific attribute score and multiplier**																							
Recruitment of woody perennial species in EDL		100	100	100%	5	60	60%	3	80%	4	100	100	100%	5	100%	5	100	66.6	67%	3	67%	3	100	100
Native plant species richness - trees		4	5	125%	5	12	300%	5	213%	5	3	4	133%	5	133%	5	4	7	175%	5	175%	5	4	3
Native plant species richness - shrubs		6	8	133%	5	10	167%	5	150%	5	6	9	150%	5	150%	5	9	10	111%	5	111%	5	6	8
Native plant species richness - grasses		11	4	36%	2.5	3	27%	2.5	32%	2.5	6	7	117%	5	117%	5	9	5	56%	2.5	56%	2.5	5	6
Native plant species richness - forbes		29	6	21%	0	12	41%	2.5	31%	1.25	14	8	57%	2.5	57%	2.5	21	7	33%	2.5	33%	2.5	6	6
Emergent height		na	0	na		27	na		na		na	0	na		na		na	0	na		na		na	0
Tree canopy height		21	21	100%	5	20	95%	5	98%	5	28	14	50%	3	50%	3	21	24	114%	5	114%	5	14	11
Tree subcanopy height		11	14	127%		12	109%		118%		15	8	53%		53%		12	12	100%		100%		8	6
Emergent cover	40 (0.5 multiplier)	na	0	na		0	na		na		na	0	na		na		na	0	na		na		na	0
Tree canopy cover		32	29.7	93%	2.5	70.2	219%	4	156%	3.25	45	46.7	104%	4	104%	4	48	72.2	150%	4	150%	4	27	23.7
Tree subcanopy cover		10	28.8	288%		13.9	139%		214%		6	19.2	320%		320%		7	30.7	439%		439%		7	14.61
Shrub canopy cover		12	15.9	133%	5	9.9	83%	5	108%	5	9	3.2	36%	3	36%	3	17	7	41%	3	41%	3	2	2.4
Native grass cover		25	53	212%	5	13.2	53%	3	132%	4	17	10	59%	3	59%	3	25	30.2	121%	5	121%	5	53	15.4
Organic litter		45	29.4	65%	5	48	107%	5	86%	5	50	79.2	158%	5	158%	5	28	60	214%	3	214%	3	24	39.8
Large trees (euc plus non-euc)		12	12	100%	15	8	67%	10	83%	12.5	17	4	24%	5	24%	5	20	28	140%	15	140%	15	14	0
Coarse woody debris		320	188	59%	5	200	63%	5	61%	5	642	435	68%	5	68%	5	496	510	103%	5	103%	5	128	250
Non-native plant cover		0	1.00%	na	10	10.00%	na	5	na	7.5	0	20%	na	5	na	5	0	65.00%	na	0	na	0	0	30.00%
Quality and availability of food and foraging habitat	20 (2 multiplier)	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	7.5	75%	7.5	75%	7.5	10	10
Quality and availability of shelter	40 (4 multiplier)	10	8.5	85%	8.5	8.3	83%	8.3	84%	8.4	10	8.5	85%	8.5	85%	8.5	10	8.5	85%	8.5	85%	8.5	10	6.8
Site Condition Score (weighted to species-specific)					89			83.2		86.1				81.75		81.75				78		78		
MAX Site Condition Score					*100*			*100*		*100*				*100*		*100*				*100*		*100*		
Site Condition Score - out of 6					**5.34**			**4.99**		**5.17**				**4.91**		**4.91**				**4.68**		**4.68**		
Site Context																								
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	10
Connectedness		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	4	80%	4	80%	4	5	4
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2
Ecological Corridors	46	6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0%	0	6	4	67%	4	67%	4	6	6
Role of site location to species overall population in the state		5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4
Threats to the species		15	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	30%	4.5	15	4.5
Site Context Score					28.5			28.5		28.5				22.5		22.5				28.5		28.5		
MAX Site Context Score					*46*			*46*		*46*				*46*		*46*				*46*		*46*		
Site Context Score - out of 2					**1.24**			**1.24**		**1.24**				**0.98**		**0.98**				**1.24**		**1.24**		
Species Stocking Rate (SSR)																								
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		25	5	20%	5	5	20%	5	20%	5	25	5	20%	5	20%	5	25	5	20%	5	20%	5	25	5
Species usage of the site (habitat type & evidenced usage)	70	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	67%	10	15	10
Approximate density		15	30	200%	30	30	200%	30	200%	30	15	30	200%	30	200%	30	15	30	200%	30	200%	30	15	30
Role/importance of species population on site*		15	5	33%	5	5	33%	5	33%	5	15	5	33%	5	33%	5	15	5	33%	5	33%	5	15	5
SSR Score					50			50		50				50		50				50		50		
MAX SSR Score					*70*			*70*		*70*				*70*		*70*				*70*		*70*		
SSR Score - out of 2					**1.43**			**1.43**		**1.43**				**1.43**		**1.43**				**1.43**		**1.43**		

Species Stocking Rate (SSR)					
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0		5	10
		No		Yes - detection within Impact/ Offset Area	Yes - detection within 100m
Species usage of the site (habitat type & evidenced usage)	Score	0		10	15
		Not habitat		Suitable habitat	Important habitat (presence confirmed)
Approximate density (per ha)	Score	0	10	20	30
		0%			
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)	47.6				
SRR Score (out of 2)	1.36				

***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

Final habitat quality score (weighted)	**AU02**	**AU03**	**AU04**	**AU10**	**AU11**	**AU17**	**AU19**	**Average/Final**
Site Condition score (out of 3)	5.2	4.9	4.7	4.3	3.7	3.6	3.5	4.27
Site Context Score (out of 3)	1.2	1.0	1.2	1.3	1.1	1.2	1.3	1.20
Species Stocking Rate Score (out of 4)	1.4	1.4	1.4	1.4	1.5	1.1	1.1	1.36
Habitat Quality score (out of 10)	*7.8*	*7.3*	*7.3*	*7.1*	*6.3*	*6.0*	*6.0*	
Assessment Unit area (ha) in disturbance footprint	10.5	10.9	3.6	0.6	8.8	6.7	0.7	
Total impact area (ha) for this MNES	41.7	41.7	41.7	41.7	41.7	41.7	41.7	
Size Weighting	0.25	0.26	0.09	0.01	0.21	0.16	0.02	
Weighted Habitat Quality Score	***1.96***	***1.91***	***0.64***	***0.10***	***1.33***	***0.96***	***0.10***	***6.99***

AU10 - 11.8.4 remnant				AU11 - 11.11.15 remnant												AU17 - 11.10.13 remnant						AU19 - 11.11.18 remnant							
23		Average % benchmark	Average Score	**Benchmark 11.11.15**	40			47			B80			Average % benchmark	Average Score	**Benchmark 11.10.13**	41			Average % benchmark	Average Score	**Benchmark 11.11.5a**	48			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
100%	5	100%	5	100	100	100%	5	60	60%	3	100	100.00%	5	87%	4.33	100	100	100%	5	100%	5	100	50	50%	3	50%	3	83%	4.19
75%	2.5	75%	2.5	4	5	125%	5	15	375%	5	2	50.00%	2.5	183%	4.17	7	4	57%	2.5	57%	2.5	20	10	50%	2.5	50%	2.5	127%	3.81
133%	5	133%	5	3	6	200%	5	12	400%	5	7	233.33%	5	278%	5.00	10	6	60%	2.5	60%	2.5	15	11	73%	2.5	73%	2.5	137%	4.29
120%	5	120%	5	7	5	71%	2.5	3	43%	2.5	10	142.86%	5	86%	3.33	6	3	50%	2.5	50%	2.5	2	1	50%	2.5	50%	2.5	73%	3.33
100%	5	100%	5	12	3	25%	2.5	15	125%	5	14	116.67%	5	89%	4.17	7	2	29%	2.5	29%	2.5	21	10	48%	2.5	48%	2.5	55%	2.92
na		na		na	0	na		14	na		na	na		na		na	22	na		na		21	15	71%		71%		71%	
79%	5	79%	5	18	14	78%	5	9	50%	3	15	83.33%	5	70%	4.33	22	14	64%	4	64%	4	14	7	50%	3.66	50%	3.66	75%	4.28
75%		75%		10	8	80%		5	50%		9	90.00%		73%		7	8	114%		114%		8	3	38%		38%		82%	
na		na		na	0	na		0	na		na	na		na		na	0	na		na		5	2.9	58%		58%		58%	
88%	4	88%	4	35	18	51%	4	72.9	208%	3	68.5	195.71%	4	152%	3.67	25	79.8	319%	3	319%	3	62	51.5	83%	4.33	83%	4.33	150%	3.75
209%		209%		5	15.2	304%		42.9	858%		34.8	696.00%		619%		4	29.4	735%		735%		28	90.4	323%		323%		408%	
120%	5	120%	5	3	1	33%	3	5.8	193%	5	2.2	73.33%	5	100%	4.33	15	1.5	10%	3	10%	3	21	32.5	155%	5	155%	5	81%	4.05
29%	1	29%	1	45	31	69%	3	1.2	3%	0	13.6	30.22%	1	34%	1.33	20	7.6	38%	1	38%	1	3	0	0%	0	0%	0	59%	2.19
166%	5	166%	5	23	48.6	211%	3	91.2	397%	3	41.4	180.00%	5	263%	3.67	40	71	178%	5	178%	5	39	85	218%	3	218%	3	183%	4.24
0%	0	0%	0	17	4	24%	5	0	0%	0	12	70.59%	10	31%	5.00	20	6	30%	5	30%	5	60	0	0%	0	0%	0	44%	6.07
195%	5	195%	5	441	373	85%	5	217	49%	2	305	69.16%	5	68%	4.00	204	895	439%	2	439%	2	377	405	107%	5	107%	5	149%	4.43
na	3	na	3	0	12.00%	na	5	10	na	0	35	na	0	na	1.67	0	100.00%	na	0	na	0	0	0.00%	na	10	na	10	na	3.88
100%	10	100%	10	10	7.5	75%	7.5	5	50%	5	10	100%	10	75%	7.50	10	7.5	75%	7.5	75%	7.5	10	7.5	75%	7.5	75%	7.5	86%	8.57
68%	6.8	68%	6.8	10	5.8	58%	5.8	4.8	48%	4.8	5.8	58%	5.8	55%	5.47	10	6.5	65%	6.5	65%	6.5	10	5.5	55%	5.5	55%	5.5	71%	7.10
	72.45		72.45				64.7			47.45			71.95		61.37				60		60				59.00		59.00		71.24
	100		*100*				*100*			*100*			*100*		*100*				*100*		*100*				*100*		*100*		*100*
	4.35		**4.35**				**3.88**			**2.85**			**4.32**		**3.68**				**3.60**		**3.60**				**3.54**		**3.54**		**4.27**
100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	10	100%	10	100%	10	100%	10.00
80%	4	80%	4	5	4	80%	4	5	100%	5	4	80%	4	87%	4.33	5	2	40%	2	40%	2	5	5	100%	5	100%	5	67%	3.33
40%	2	40%	2	5	2	40%	2	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	40%	2	40%	2.00
100%	6	100%	6	6	0	0%	0	0	0%	0	0	0%	0	0%	0	6	6	100%	6	100%	6	6	4	67%	4	67%	4	62%	3.71
80%	4	80%	4	5	5	100%	5	4	80%	4	5	100%	5	93%	4.67	5	4	80%	4	80%	4	5	4	80%	4	80%	4	82%	4.10
30%	4.5	30%	4.5	15	4.5	30%	4.5	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	30%	4.5	30%	4.50
	30.5		30.5				25.5			25.5			25.5		25.5				28.5		28.5				29.5		29.5		27.6
	46		*46*				*46*			*46*			*46*		*46*				*46*		*46*				*46*		*46*		*46*
	1.33		**1.33**				**1.11**			**1.11**			**1.11**		**1.11**				**1.24**		**1.24**				**1.28**		**1.28**		**1.20**
20%	5	20%	5	25	10	40%	10	5	20%	5	10	40%	10	33%	8.33	25	5	20%	5	20%	5	25	5	20%	5	20%	5	22%	5.5
67%	10	67%	10	15	15	100%	15	10	67%	10	15	100%	15	89%	13.33	15	10	67%	10	67%	10	15	10	67%	10	67%	10	70%	10.5
200%	30	200%	30	15	20	133%	20	20	133%	20	30	200%	30	156%	23.33	15	20	133%	20	133%	20	15	20	133%	20	133%	20	175%	26.2
33%	5	33%	5	15	10	67%	10	5	33%	5	10	67%	10	56%	8.33	15	5	33%	5	33%	5	15	5	33%	5	33%	5	37%	5.5
	50		50				55			40			65		53.33				40		40				40		40		47.6
	70		*70*				*70*			*70*			*70*		*70*				*70*		*70*				*70*		*70*		*70*
	1.43		**1.43**				**1.57**			**1.14**			**1.86**		**1.52**				**1.14**		**1.14**				**1.14**		**1.14**		**1.36**

IMPACT - Fauna

Greater glider

Assessment Unit - Regional Ecosystem		AU02 - 12.11.6 remnant						AU03 - 11.11.3/c remnant						AU04 - 11.11.4 remnant						AU07 - 11.3.25 remnant					
Site Reference		**Benchmark 12.11.6**	7			Average % benchmark	Average Score	**Benchmark 11.11.3**	9			Average % benchmark	Average Score	**Benchmark 11.11.4**	38			Average % benchmark	Average Score	**Benchmark 11.3.25**	17			29			
			Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data
Site Condition	**Species specific attribute score and multiplier**																										
Recruitment of woody perennial species in EDL		100	100	100%	5	100%	5	100	100	100%	5	100%	5	100	66.6	67%	3	67%	3	100	66.6	67%	3	0	0%	0	100
Native plant species richness - trees		4	5	125%	5	125%	5	3	3	100%	5	100%	5	4	7	175%	5	175%	5	4	7	175%	5	8	200%	5	7
Native plant species richness - shrubs		6	8	133%	5	133%	5	6	5	83%	2.5	83%	2.5	9	10	111%	5	111%	5	4	2	50%	2.5	7	175%	5	1
Native plant species richness - grasses		11	4	36%	2.5	36%	2.5	6	6	100%	5	100%	5	9	5	56%	2.5	56%	2.5	8	2	25%	2.5	2	25%	2.5	0
Native plant species richness - forbes		29	6	21%	0	21%	0	14	7	50%	2.5	50%	2.5	21	7	33%	2.5	33%	2.5	13	6	46%	2.5	3	23%	0	4
Emergent height		na	0	na		na		na	0	na		na		na	0	na		na		na	0	na		0	na		32
Tree canopy height		21	21	100%	5	100%	5	28	21	75%	5	75%	5	21	24	114%	5	114%	5	23	21	91%	4	15	65%	4	25
Tree subcanopy height		11	14	127%		127%		15	14	93%		93%		12	12	100%		100%		11	7	64%		8	73%		16
Emergent cover	50 (0.625 multiplier)	na	0	na		na		na	0	na		na		na	0	na		na		na	0	na		0	na		0
Tree canopy cover		32	29.7	93%	2.5	93%	2.5	45	34.7	77%	5	77%	5	48	72.2	150%	4	150%	4	34	49.8	146%	5	46.3	136%	5	24.4
Tree subcanopy cover		10	28.8	288%		288%		6	9.1	152%		152%		7	30.7	439%		439%		12	13	108%		14.8	123%		6.1
Shrub canopy cover		12	15.9	133%	5	133%	5	9	0.8	9%	0	9%	0	17	7	41%	3	41%	3	7	1.3	19%	3	4	57%	5	0
Native grass cover		25	53	212%	5	212%	5	17	16.4	96%	5	96%	5	25	30.2	121%	5	121%	5	35	0	0%	0	0	0%	0	0
Organic litter		45	29.4	65%	5	65%	5	50	53.8	108%	5	108%	5	28	60	214%	3	214%	3	21	44.2	210%	3	64	305%	3	72.8
Large trees (euc plus non-euc)		12	12	100%	15	100%	15	17	2	12%	5	12%	5	20	28	140%	15	140%	15	32	60	188%	15	34	106%	15	36
Coarse woody debris		320	188	59%	5	59%	5	642	332	52%	5	52%	5	496	510	103%	5	103%	5	473	199	42%	2	122	26%	2	51
Non-native plant cover		0	1.00%	na	10	na	10	0	18%	na	5	na	5	0	65.00%	na	0	na	0	0	80%	na	0	50%	na	0	95%
Quality and availability of food and foraging habitat	20 (2 multiplier)	10	10	100%	10	100%	10	10	8.68	87%	8.68	87%	8.68	10	10	100%	10	100%	10	10	10	100%	10	6.6	66%	6.6	7.36
Quality and availability of shelter	30 (3 multiplier)	10	5	50%	5	50%	5	10	0	0%	0	0%	0	10	4.3	43%	4.3	43%	4.3	10	2.9	29%	2.9	3.5	35%	3.5	3.6
Site Condition Score (weighted to species-specific)					78.75		78.75				51.74		51.74				69.15		69.15				58.39			52.76	
MAX Site Condition Score					*100*		*100*				*100*		*100*				*100*		*100*				*100*			*100*	
Site Condition Score - out of 3					**2.36**		**2.36**				**1.55**		**1.55**				**2.07**		**2.07**				**1.75**			**1.58**	
Site Context																											
Size of patch		10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	10	100%	10	100%	10	10	0	0%	0	0	0%	0	0
Connectedness		5	2	40%	2	40%	2	5	2	40%	2	40%	2	5	4	80%	4	80%	4	5	4	80%	4	0	0%	0	2
Context		5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4
Ecological Corridors	56	6	6	100%	6	100%	6	6	0	0%	0	0%	0	6	4	67%	4	67%	4	6	6	100%	6	0	0%	0	6
Role of site location to species overall population in the state		5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5
Threats to the species		15	3	20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3
Species mobility capacity		10	6.2	62%	6.2	62%	6.2	10	6.1	61%	6.1	61%	6.1	10	7	70%	7	70%	7	10	5.7	57%	5.7	5.3	53%	5.3	4.2
Site Context Score					36.20		36.20				30.10		30.10				37.00		37.00				27.70			17.30	
MAX Site Context Score					*56*		*56*				*56*		*56*				*56*		*56*				*56*			*56*	
Site Context Score - out of 3					**1.94**		**1.94**				**1.61**		**1.61**				**1.98**		**1.98**				**1.48**			**0.93**	
Species Stocking Rate (SSR)																											
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	0	0%	0	0%	0	10	0	0%	0	0%	0	10	0	0%	0	0%	0	10	0	0%	0	0	0%	0	0
Species usage of the site (habitat type & evidenced usage)	70	15	15	100%	15	100%	15	15	10	67%	10	67%	10	15	10	67%	10	67%	10	15	15	100%	15	10	67%	10	15
Approximate density		30	0	0%	0	0%	0	30	0	0%	0	0%	0	30	0	0%	0	0%	0	30	0	0%	0	0	0%	0	0
Role/importance of species population on site*		15	5	33%	5	33%	5	15	5	33%	5	33%	5	15	5	33%	5	33%	5	15	5	33%	5	5	33%	5	0
SSR Score					20.00		20.00				15.00		15.00				15.00		15.00				20.00			15.00	
MAX SSR Score					*70*		*70*				*70*		*70*				*70*		*70*				*70*			*70*	
SSR Score - out of 4					**1.14**		**1.14**				**0.86**		**0.86**				**0.86**		**0.86**				**1.14**			**0.86**	

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%				
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)	16.56					
SRR Score (out of 2)	**0.95**					

***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

Final habitat quality score (weighted)	**AU02**	**AU03**	**AU04**	**AU07**	**AU09**	**AU11**	**AU12**	**AU14**	**AU15**	**AU18**	**Average/Final**
Site Condition score (out of 3)	2.36	1.55	2.07	1.65	1.08	1.63	2.13	1.16	1.86	1.02	1.65
Site Context Score (out of 3)	1.94	1.61	1.98	1.24	1.21	1.12	0.93	2.05	1.53	2.07	1.57
Species Stocking Rate Score (out of 4)	1.14	0.86	0.86	1.05	0.86	0.86	1.14	0.64	0.86	0.86	0.91
Habitat Quality score (out of 10)	*5.44*	*4.02*	*4.91*	*3.93*	*3.14*	*3.61*	*4.20*	*3.85*	*4.25*	*3.95*	
Assessment Unit area (ha) in disturbance footprint	9.91	14.90	7.50	2.00	7.28	26.90	2.49	0.80	9.66	1.925518	
Total impact area (ha) for this MNES	83.36	83.36	83.36	83.36	83.36	83.36	83.36	83.36	83.36	83.36	
Size Weighting	0.12	0.18	0.09	0.02	0.09	0.32	0.03	0.01	0.12	0.02	
Weighted Habitat Quality Score	***0.65***	***0.72***	***0.44***	***0.09***	***0.27***	***1.16***	***0.13***	***0.04***	***0.49***	***0.09***	***4.09***

				AU09 - 11.12.1 regrowth						AU11 - 11.11.15 remnant															AU12 - 11.3.4 regrowth									
30		Average % benchmark	Average Score	**Benchmark 11.12.1**	45			Average % benchmark	Average Score	**Benchmark 11.11.15**	24			39			40			42			Average % benchmark	Average Score	**Benchmark 11.3.4**	25			35			Average % benchmark	Average Score	**Benchmark 11.3.26**	
% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data
100%	5	56%	2.7	100	100	100%	5	100%	5	100	67	67%	3	50	50%	3	100	100%	5	100	100%	5	79%	4	100	100	100%	5	100	100%	5	100%	5	100	50
175%	5	183%	5	3	3	100%	5	100%	5	4	4	100%	5	9	225%	5	5	125%	5	6	150%	5	150%	5	4	4	100%	5	4	100%	5	100%	5	3	6
25%	2.5	83%	3.3	6	2	33%	2.5	33%	2.5	3	4	133%	5	8	267%	5	6	200%	5	3	100%	5	175%	5	3	6	200%	5	4	133%	5	167%	5	3	7
0%	0	17%	1.7	8	3	38%	2.5	38%	2.5	7	5	71%	2.5	5	71%	2.5	5	71%	2.5	4	57%	2.5	68%	2.5	11	2	18%	0	7	64%	2.5	41%	1.3	13	2
31%	2.5	33%	1.7	13	2	15%	0	15%	0	12	5	42%	2.5	7	58%	2.5	3	25%	2.5	4	33%	2.5	40%	2.5	17	8	47%	2.5	4	24%	0	35%	1.3	14	3
na		na		na	0	na		na		na	0	na		0	na		0	na		18	na		na		na	0	na		0	na		na		na	0
109%	5	88%	4.3	15	7	47%	1.5	47%	1.5	18	15	83%	5	15	83%	5	14	78%	5	14	78%	5	81%	5	24	18	75%	5	25	104%	5	90%	5	23	26
145%		94%		10	0	0%		0%		10	9	90%		10	100%		8	80%		9	90%		90%		14	11	79%		18	129%		104%		10	12
na		na		na	0	na		na		na	0	na		0	na		0	na		0	na		na		na	0	na		0	na		na		na	0
72%	5	118%	5	35	19	54%	2.5	54%	2.5	35	34.2	98%	2.5	35.8	102%	4	18	51%	4	36.8	105%	4	89%	3.6	30	35.7	119%	5	22.5	75%	5	97%	5	47	10
51%		94%		7	0.2	3%		3%		5	0	0%		21.1	422%		15.2	304%		14	280%		252%		15	17.3	115%		8.7	58%		87%		13	35
0%	0	25%	2.7	4	1.4	35%	3	35%	3	3	0.2	7%	0	5.7	190%	5	1	33%	3	0.6	20%	3	63%	2.8	3	3.3	110%	5	0.5	17%	3	63%	4	2	3.6
0%	0	0%	0	41	30	73%	3	73%	3	45	28.2	63%	3	35	78%	3	31	69%	3	82.6	184%	5	98%	3.5	55	6	11%	1	42	76%	3	44%	2	36	7
347%	3	287%	3	28	56.6	202%	3	202%	3	23	60.2	262%	3	50.2	218%	3	48.6	211%	3	13.8	60%	5	188%	3.5	37	71.6	194%	5	41	111%	5	152%	5	32	48
113%	15	135%	15	20	0	0%	0	0%	0	17	12	71%	10	0	0%	0	4	24%	5	0	0%	0	24%	3.8	19	20	105%	15	12	63%	10	84%	12.5	16	0
11%	2	26%	2	408	87	21%	2	21%	2	441	430	98%	5	416	94%	5	373	85%	5	241	55%	5	83%	5	509	0	0%	0	816	160%	5	80%	2.5	535	376
na	0	na	0	0	15.00%	na	5	na	5	0	8.00%	na	5	20.00%	na	5	12.00%	na	5	2.00%	na	10	na	6.3	0	40.00%	na	3	10.00%	na	5	na	4	0	50.00%
74%	7.36	80%	8.0	10	7.03	70%	7.03	70%	7.0	10	10	100%	10	10	100%	10	7.67	77%	7.67	6.02	60%	6.02	84%	8.4	10	10	100%	10	10	100%	10	100%	10	10	4.06
36%	3.6	33%	3.3	10	0	0%	0	0%	0	10	3.6	36%	3.6	0	0%	0	2.6	26%	2.6	0	0%	0	16%	1.6	10	5	50%	5	5	50%	5	50%	5	10	2.6
	53.65		54.93				35.94		35.94				62.99			50.00			56.27			47.67		54.23				70.31			71.56		70.94		
	100		*100*				*100*		*100*				*100*			*100*			*100*			*100*		*100*				*100*			*100*		*100*		
	1.61		**1.65**				**1.08**		**1.08**				**1.89**			**1.50**			**1.69**			**1.43**		**1.63**				**2.11**			**2.15**		**2.13**		
0%	0	0%	0	10	0	0%	0	0%	0	10	2	20%	2	5	50%	5	10	100%	10	2	20%	2	48%	4.8	10	2	20%	2	2	20%	2	20%	2	10	10
40%	2	40%	2	5	0	0%	0	0%	0	5	0	0%	0	0	0%	0	4	80%	4	0	0%	0	20%	1.0	5	0	0%	0	0	0%	0	0%	0	5	4
80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	4	80%	4	80%	4.0	5	4	80%	4	4	80%	4	80%	4	5	4
100%	6	67%	4	6	5	83%	5	83%	5	6	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0%	0.0	6	0	0%	0	0	0%	0	0%	0	6	6
100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	5	100%	5	100%	5.0	5	5	100%	5	5	100%	5	100%	5	5	5
20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3	20%	3	3	20%	3	20%	3.0	15	3	20%	3	3	20%	3	20%	3	15	3
42%	4.2	51%	5.1	10	5.5	55%	5.5	55%	5.5	10	3	30%	3	3	30%	3	6.2	62%	6..2	6.7	67%	6.7	47%	4.2	10	3.6	36%	3.6	3.1	31%	3.1	34%	3.35	10	6.2
	24.20		23.07				22.50		22.50				17.00			20.00			26.00			20.70		21.98				17.60			17.10		17.35		
	56		*56*				*56*		*56*				*56*			*56*			*56*			*56*		*56*				*56*			*56*		*56*		
	1.30		**1.24**				**1.21**		**1.21**				**0.91**			**1.07**			**1.39**			**1.11**		**1.18**				**0.94**			**0.92**		**0.93**		
0%	0	0%	0	10	0	0%	0	0%	0	10	0	0%	0	0	0%	0	0	0%	5	0	0%	0	0%	1.3	10	0	0%	0	0	0%	0	0%	0	10	0
100%	15	89%	13.3	15	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	5	33%	5	58%	8.8	15	15	100%	15	15	100%	15	100%	15	15	10
0%	0	0%	0	30	0	0%	0	0%	0	30	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0%	0.0	30	0	0%	0	0	0%	0	0%	0	30	0
0%	5	22%	5	15	5	33%	5	33%	5	15	5	33%	5	5	33%	5	5	33%	5	5	33%	5	33%	5.0	15	5	33%	5	5	33%	5	33%	5	15	5
	20.00		18.33				15.00		15.00				15.00			15.00			20.00			10.00		15.00				20.00			20.00		20.00		
	70		*70*				*70*		*70*				*70*			*70*			*70*			*70*		*70*				*70*			*70*		*70*		
	1.14		**1.05**				**0.86**		**0.86**				**0.86**			**0.86**			**1.14**			**0.57**		**0.86**				**1.14**			**1.14**		**1.14**		

AU14 - 11..3.26 remnant				AU15 - 12.3.3 remnant						AU18 - 11.10.13 regrowth						Total average % benchmark	Total average score
28		Average % benchmark	Average Score	Benchmark 12.3.3	32			Average % benchmark	Average Score	Benchmark 11.10.13	46			Average % benchmark	Average Score		
% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
50%	3	50%	3	100	66	66%	3	66%	3	100	50	50%	3	50%	3	76%	3.8
200%	5	200%	5	5	6	120%	5	120%	5	7	5	71%	2.5	71%	2.5	140%	4.8
233%	5	233%	5	5	5	100%	5	100%	5	10	6	60%	2.5	60%	2.5	127%	4.2
15%	0	15%	0	9	3	33%	2.5	33%	2.5	6	1	17%	0	17%	0	44%	2.0
21%	0	21%	0	25	2	8%	0	8%	0	7	0	0%	0	0%	0	30%	1.4
na		na		na	0	na		na		na	0	na		na		na	
113%	5	113%	5	25	16	64%	4	64%	4	22	9	41%	4	41%	4	83%	4.5
120%		120%		9	10	111%		111%		7	6	86%		86%		93%	
na		na		na	0	na		na		na	0	na		na		na	
21%	2.5	21%	2.5	40	31.2	78%	4	78%	4	25	10	40%	2.5	40%	2.5	89%	3.9
269%		269%		8	20.8	260%		260%		4	78.2	1955%		1955%		302%	
180%	5	180%	5	4	9.9	248%	3	248%	3	15	47.8	319%	3	319%	3	89%	3.1
19%	1	19%	1	52	0	0%	0	0%	0	20	2.4	12%	1	12%	1	63%	2.4
150%	5	150%	5	20	41	205%	3	205%	3	40	68	170%	5	170%	5	189%	3.9
0%	0	0%	0	14	2	14%	5	14%	5	20	0	0%	0	0%	0	58%	7.8
70%	5	70%	5	588	190	32%	2	32%	2	204	332	163%	5	163%	5	67%	3.8
na	0	na	0	0	0.00%	na	10	na	10	0	0.00%	na	10	na	10	na	4.6
41%	4.06	41%	4.1	10	10	100%	10	100%	10	10	5.05	51%	5.1	51%	5.05	83%	8.3
26%	2.6	26%	2.6	10	4.3	43%	4.3	43%	4.3	10	0	0%	0	0%	0	27%	2.7
	38.73		38.73				61.96		61.96				34.16		34.16		55.88
	100		*100*				*100*		*100*				*100*		*100*		*100*
	1.16		**1.16**				**1.85888**		**1.86**				**1.02**		**1.02**		**1.68**
100%	10	100%	10	10	5	50%	5	50%	5	10	10	100%	10	100%	10	49%	4.9
80%	4	80%	4	5	2	40%	2	40%	2	5	5	100%	5	100%	5	36%	1.8
80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	80%	4	80%	4
100%	6	100%	6	6	6	100%	6	100%	6	6	6	100%	6	100%	6	47%	2.8
100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	100%	5	100%	5
20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	20%	3	20%	3
62%	6.2	62%	6.2	10	3.6	36%	3.6	36%	3.6	10	5.6	56%	5.6	56%	5.6	51%	5
	38.20		38.20				28.60		28.60				38.60		38.60		26.49
	56		*56*				*56*		*56*				*56*		*56*		*56*
	2.05		**2.05**				**1.53**		**1.53**				**2.07**		**2.07**		**1.42**
0%	0	0%	0	10	10	100%	0	100%	0	10	0	0%	0	0%	0	6%	0.3
67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	67%	10	75%	11.3
0%	0	0%	0	30	0	0%	0	0%	0	30	0	0%	0	0%	0	0%	0
33%	5	33%	5	15	5	33%	5	33%	5	15	5	33%	5	33%	5	31%	5.0
	15		15.00				15.00		15.00				15.00		15.00		16.56
	70		*70*				*70*		*70*				*70*		*70*		*70*
	0.64		**0.86**				**0.86**		**0.86**				**0.86**		**0.86**		**0.95**

IMPACT - Fauna

Koala

Assessment Unit - Regional Ecosystem		AU02 - 12.11.6 remnant									AU03 - 11.11.3/c remnant											AU04 - 11.11.4				
Site Reference		**Benchmark 12.11.6**	7			12			Average % benchmark	Average Score	**Benchmark 11.11.3**	9			13			20			Average % benchmark	Average Score	**Benchmark 11.11.4**	14			
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data
Site Condition	**Species specific attribute score and multiplier**																										
Recruitment of woody perennial species in EDL		100	100	100%	5	60	60%	3	80%	4	100	100	100%	5	100	100%	5	100	100%	5	100%	5	100	66.6	67%	3	66.6
Native plant species richness - trees		4	5	125%	5	12	300%	5	213%	5	3	3	100%	5	4	133%	5	4	133%	5	122%	5	4	6	150%	5	7
Native plant species richness - shrubs		6	8	133%	5	10	167%	5	150%	5	6	5	83%	2.5	9	150%	5	9	150%	5	128%	4.2	9	7	78%	2.5	10
Native plant species richness - grasses		11	4	36%	2.5	3	27%	2.5	32%	2.5	6	6	100%	5	7	117%	5	7	117%	5	111%	5	9	8	89%	2.5	5
Native plant species richness - forbes		29	6	21%	0	12	41%	2.5	31%	1.25	14	7	50%	2.5	8	57%	2.5	8	57%	2.5	55%	2.5	21	6	29%	2.5	7
Emergent height		na	0	na		27	na		na		na	0	na		0	na		0	na		na		na	0	na		0
Tree canopy height		21	21	100%	5	20	95%	5	98%	5	28	21	75%	5	14	50%	3	14	50%	3	58%	3.7	21	20	95%	5	24
Tree subcanopy height		11	14	127%		12	109%		118%		15	14	93%		8	53%		8	53%		67%		12	12	100%		12
Emergent cover	50 (0.625 multiplier)	na	0	na		0	na		na		na	0	na		0	na		0	na		na		na	0	na		0
Tree canopy cover		32	29.7	93%	2.5	70.2	219%	4	156%	3.25	45	34.7	77%	5	46.7	104%	4	46.7	104%	4	95%	4.3	48	73.4	153%	4	72.2
Tree subcanopy cover		10	28.8	288%		13.9	139%		214%		6	9.1	152%		19.2	320%		19.2	320%		264%		7	24	343%		30.7
Shrub canopy cover		12	15.9	133%	5	9.9	83%	5	108%	5	9	0.8	9%	0	3.2	36%	3	3.2	36%	3	27%	2	17	1.9	11%	3	7
Native grass cover		25	53	212%	5	13.2	53%	3	132%	4	17	16.4	96%	5	10	59%	3	10	59%	3	71%	3.7	25	5.2	21%	1	30.2
Organic litter		45	29.4	65%	5	48	107%	5	86%	5	50	53.8	108%	5	79.2	158%	5	79.2	158%	5	141%	5	28	71.2	254%	3	60
Large trees (euc plus non-euc)		12	12	100%	15	8	67%	10	83%	12.5	17	2	12%	5	4	24%	5	4	24%	5	20%	5	20	14	70%	10	28
Coarse woody debris		320	188	59%	5	200	63%	5	61%	5	642	332	52%	5	435	68%	5	435	68%	5	62%	5	496	485	98%	5	510
Non-native plant cover		0	1.00%	na	10	10.00%	na	5	na	7.5	0	18%	na	5	20%	na	5	5%	na	5	na	5	0	65.00%	na	0	65.00%
Quality and availability of food and foraging habitat	25 (2.5 multiplier)	10	10	100%	10	8.8	88%	8.8	94%	9.4	10	7.2	72%	7.2	7.2	72%	7.2	7.2	72%	7.2	72%	7.2	10	8.8	88%	8.8	8.8
Quality and availability of shelter	25 (2.5 multiplier)	10	4.6	46%	4.6	6	60%	6	53%	5.3	10	2.7	27%	2.7	4	40%	4	2	20%	2	29%	2.9	10	6.7	67%	6.7	6.7
Site Condition Score (weighted to species-specific)					80.25			74.50		77.38				59.13			62.69			57.69		59.83				67.81	
MAX Site Condition Score					*100*			*100*		*100*				*100*			*100*			*100*		*100*				*100*	
Site Condition Score - out of 3					**2.41**			**2.24**		**2.32**				**1.77**			**1.88**			**1.73**		**1.80**				**2.03**	
Site Context																											
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	7	70%	7	10
Connectedness		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	4	80%	4	53%	2.7	5	2	40%	2	4
Context		5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4
Ecological Corridors		6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0	0%	0	0	0%	0	0%	0	6	0	0%	0	4
Role of site location to species overall population in the state	56	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5
Threats to the species		15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3
Species mobility capacity		10	8.8	88%	8.8	10	100%	10	94%	9.4	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	9.4
Site Context Score					38.8			40		39.4				34			34			36		34.67				31	
MAX Site Context Score					*56*			*56*		*56*				*56*			*56*			*56*		*56*				*56*	
Site Context Score - out of 3					**2.08**			**2.14**		**2.11**				**1.82**			**1.82**			**1.93**		**1.86**				**1.66**	
Species Stocking Rate (SSR)																											
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	5	50%	5	5	50%	5	50%	5	10	5	50%	5	5	50%	5	5	50%	5	50%	5	10	5	50%	5	5
Species usage of the site (habitat type & evidenced usage)	70	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10
Approximate density		30	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10
Role/importance of species population on site*		15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10
SSR Score					35			35		35				35			35			35		35				35	
MAX SSR Score					*70*			*70*		*70*				*70*			*70*			*70*		*70*				*70*	
SSR Score - out of 4					**2.00**			**2.00**		**2.00**				**2.00**			**2.00**			**2.00**		**2.00**				**2.00**	

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%			
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)		36.82			
SRR Score (out of 4)		2.10			

***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

Final habitat quality score (weighted)	**AU02**	**AU03**	**AU04**	**AU05**	**AU06**	**AU07**	**AU08**	**AU09**	**AU10**	**AU11**	**AU12**	**AU13**	**AU14**	**AU15**	**AU16**	**AU17**	**AU18**	**Average/Final**
Site Condition score (out of 3)	2.32	1.80	2.11	1.87	1.22	1.77	2.13	1.45	2.03	1.81	2.23	1.53	1.60	1.65	1.14	1.61	1.42	1.75
Site Context Score (out of 3)	2.11	1.86	1.89	1.66	1.41	1.43	2.06	1.56	2.15	1.52	1.21	0.77	2.25	1.68	1.36	2.11	2.24	1.72
Species Stocking Rate Score (out of 4)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.29	2.06	2.29	2.00	2.29	2.29	2.00	2.29	2.29	2.10
Habitat Quality score (out of 10)	*6.43*	*5.65*	*6.00*	*5.53*	*4.63*	*5.19*	*6.19*	*5.02*	*6.46*	*5.39*	*5.72*	*4.31*	*6.14*	*5.62*	*4.50*	*6.00*	*5.94*	
Assessment Unit area (ha) in disturbance footprint	11.19	16.77	7.97	0.78	0.20	2.06	0.57	8.85	1.25	27.15	2.49	0.51	0.81	10.17	0.50	9.89	2.33	
Total impact area (ha) for this MNES	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	103.48	
Size Weighting	0.11	0.16	0.08	0.01	0.00	0.02	0.01	0.09	0.01	0.26	0.02	0.00	0.01	0.10	0.00	0.10	0.02	
Weighted Habitat Quality Score	***0.70***	***0.92***	***0.46***	***0.04***	***0.01***	***0.10***	***0.03***	***0.43***	***0.08***	***1.41***	***0.14***	***0.02***	***0.05***	***0.55***	***0.02***	***0.57***	***0.13***	***5.67***

remnant				AU05 - 11.11.4c regrowth						AU06 - 11.10.4 regrowth									AU07 - 11.3.25 remnant											AU08 - 11.3.25 r		
38		Average % benchmark	Average Score	Benchmark 11.11.4c	21			Average % benchmark	Average Score	Benchmark 11.10.4	15			43			Average % benchmark	Average Score	Benchmark 11.3.25	17			29			30			Average % benchmark	Average Score	Benchmark 11.3.25	37	
% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark
67%	3	67%	3	100	67	67%	3	67%	3	100	100	100%	5	100	100%	5	100%	5	100	66.6	67%	3	0	0%	0	100	100%	5	56%	2.7	100	100	100%
175%	5	163%	5	5	7	140%	5	140%	5	4	4	100%	5	3	75%	2.5	88%	3.8	4	7	175%	5	8	200%	5	7	175%	5	183%	5	4	10	250%
111%	5	94%	3.75	5	4	80%	2.5	80%	2.5	6	3	50%	2.5	7	117%	5	83%	3.8	4	2	50%	2.5	7	175%	5	1	25%	2.5	83%	3.3	4	5	125%
56%	2.5	72%	2.5	11	4	36%	2.5	36%	2.5	5	3	60%	2.5	0	0%	0	30%	1.3	8	2	25%	2.5	2	25%	2.5	0	0%	0	17%	1.7	8	2	25%
33%	2.5	31%	2.5	20	2	10%	0	10%	0	5	4	80%	2.5	6	120%	5	100%	3.8	13	6	46%	2.5	3	23%	0	4	31%	2.5	33%	1.7	13	4	31%
na		na		na	21	na		na		na	0	na		16	na		na		na	0	na		0	na		32	na		na		na	0	na
114%	5	105%	5	46	15	33%	3	33%	3	20	11	55%	3	8	40%	3	48%	3	23	21	91%	4	15	65%	4	25	109%	5	88%	4.3	23	25	109%
100%		100%		17	8	47%		47%		na	6	na		3	na		na		11	7	64%		8	73%		16	145%		94%		11	15	136%
na		na		na	13	na		na		na	0	na		0	na		na		na	0	na		0	na		0	na		na		na	0	na
150%	4	152%	4	26	8.6	33%	2	33%	2	27	53.4	198%	5	29.1	108%	5	153%	5	34	49.8	146%	5	46.3	136%	5	24.4	72%	5	118%	5	34	32.3	95%
439%		391%		13	1.4	11%		11%		na	41.3	na		3.8	na		na		12	13	108%		14.8	123%		6.1	51%		94%		12	11	92%
41%	3	26%	3	1	1.2	120%	5	120%	5	4	9.1	228%	3	3.6	90%	5	159%	4	7	1.3	19%	3	4	57%	5	0	0%	0	25%	2.7	7	0.3	4%
121%	5	71%	3	37	85.4	231%	5	231%	5	23	1.2	5%	0	0	0%	0	3%	0	35	0	0%	0	0	0%	0	0	0%	0	0%	0	35	44.2	126%
214%	3	234%	3	39	11	28%	3	28%	3	30	80.6	269%	3	22.6	75%	5	172%	4	21	44.2	210%	3	64	305%	3	72.8	347%	3	287%	3	21	46.4	221%
140%	15	105%	12.5	16	2	13%	5	13%	5	21	2	10%	5	4	19%	5	14%	5	32	60	188%	15	34	106%	15	36	113%	15	135%	15	32	30	94%
na	2	98%	3.5	537	249	46%	2	46%	2	410	442	108%	5	65	16%	2	62%	3.5	473	199	42%	2	122	26%	2	51	11%	2	26%	2	473	0	0%
na	0	na	0	0	2.00%	na	10	na	10	0	55%	na	0	80%	na	0	na	0	0	80%	na	0	50%	na	0	95%	na	0	na	0	0	15%	na
88%	8.8	88%	8.8	10	8.8	88%	8.8	88%	8.8	10	7.2	72%	7.2	3	30%	3	51%	5.1	10	6	60%	6	0	0%	0	7.2	72%	7.2	44%	4.4	10	7.2	72%
67%	6.7	67%	6.7	10	4.1	41%	4.1	41%	4.1	10	1.3	13%	1.3	0	0%	0	7%	0.7	10	8	80%	8	8	80%	8	6.7	67%	6.7	76%	7.6	10	8	80%
	73.13		70.47				62.25		62.25				47.19			34.06		40.63				64.69			49.06			62.88		58.88			
	100		*100*				*100*		*100*				*100*			*100*		*100*				*100*			*100*			*100*		*100*			
	2.19		**2.11**				**1.87**		**1.87**				**1.42**			**1.02**		**1.22**				**1.94**			**1.47**			**1.89**		**1.77**			
100%	10	85%	8.5	10	7	70%	7	70%	7	10	2	20%	2	2	20%	2	20%	2	10	0	0%	0	0	0%	0	0	0%	0	0%	0.0	10	7	70%
80%	4	60%	3	5	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	4	80%	4	0	0%	0	2	40%	2	40%	2.0	5	4	80%
80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	80%	4.0	5	4	80%
67%	4	33%	2	6	0	0%	0	0%	0	6	6	100%	6	0	0%	0	50%	3	6	6	100%	6	0	0%	0	6	100%	6	67%	4.0	6	6	100%
100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	100%	5.0	5	5	100%
20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3	20%	3	20%	3.0	15	3	20%
94%	9.4	97%	9.7	10	10	100%	10	100%	10	10	7.4	74%	7.4	7.4	74%	7.4	74%	7.4	10	9.4	94%	9.4	8.6	86%	8.6	7.9	79%	7.9	86%	8.6	10	9.4	94%
	39.4		35.2				31		31				29.4			23.4		7.4				31.4			20.6			27.9		26.63			
	56		*56*				*56*		*56*				*56*			*56*		*56*				*56*			*56*			*56*		*56*			
	2.11		**1.89**				**1.66**		**1.66**				**1.58**			**1.25**		**1.41**				**1.68**			**1.10**			**1.49**		**1.43**			
50%	5	50%	5	10	5	50%	5	50%	5	10	5	50%	5	5	50%	5	50%	5	10	5	50%	5	5	50%	5	5	50%	5	50%	5.0	10	5	50%
67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	67%	10.0	15	10	67%
33%	10	33%	10	30	10	33%	10	33%	10	30	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10	33%	10	10	33%	10	33%	10.0	30	10	33%
67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	67%	10.0	15	10	67%
	35		35				35		35				35			35		35				35			35			35		92.43			
	70		*70*				*70*		*70*				*70*			*70*		*70*				*70*			*70*			*70*		*56*			
	2.00		**2.00**				**2.00**		**2.00**				**2.00**			**2.00**		**2.00**				**2.00**			**2.00**			**2.00**		**4.95**			

egrowth			AU09 - 11.12.1 regrowth									AU10 - 11.8.4 remnant									AU11 - 11.11.15 remnant																	
	Average % benchmark	Average Score	**Benchmark 11.12.1**	22			45			Average % benchmark	Average Score	**Benchmark 11.8.4**	23			18			Average % benchmark	Average Score	**Benchmark 11.11.15**	24			39			40			42			47		
Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark		
5	100%	5	100	66	66%	3	100	100%	5	83%	4	100	100	100%	5	75	75%	5	88%	5	100	67	67%	3	50	50%	3	100	100%	5	100	100%	5	60	60%		
5	250%	5	3	6	200%	5	3	100%	5	150%	5	4	3	75%	2.5	9	225%	5	150%	3.8	4	4	100%	5	9	225%	5	5	125%	5	6	150%	5	15	375%		
5	125%	5	6	9	150%	5	2	33%	2.5	92%	3.75	6	8	133%	5	18	300%	5	217%	5	3	4	133%	5	8	267%	5	6	200%	5	3	100%	5	12	400%		
2.5	25%	2.5	8	3	38%	2.5	3	38%	2.5	38%	2.5	5	6	120%	5	10	200%	5	160%	5	7	5	71%	2.5	5	71%	2.5	5	71%	2.5	4	57%	2.5	3	43%		
2.5	31%	2.5	13	10	77%	2.5	2	15%	0	46%	1.25	6	6	100%	5	6	100%	5	100%	5	12	5	42%	2.5	7	58%	2.5	3	25%	2.5	4	33%	2.5	15	125%		
	na		na	23	na		0	na		na		na	0	na		0	na		na		na	0	na		0	na		0	na		18	na		14	na		
5	109%	5	15	15	100%	5	7	47%	1.5	73%	3.25	14	11	79%	5	15	107%	5	93%	5	18	15	83%	5	15	83%	5	14	78%	5	14	78%	5	9	50%		
	136%		10	11	110%		0	0%		55%		8	6	75%		9	113%		94%		10	9	90%		10	100%		8	80%		9	90%		5	50%		
	na		na	0	na		0	na		na		na	0	na		0	na		na		na	0	na		0	na		0	na		0	na		0	na		
5	95%	5	35	8.3	24%	2	19	54%	2.5	39%	2.25	27	23.7	88%	4	24.9	92%	4	90%	4	35	34.2	98%	2.5	35.8	102%	4	18	51%	4	36.8	105%	4	72.9	208%		
	92%		7	2	29%		0.2	3%		16%		7	14.61	209%		31.3	447%		328%		5	0	0%		21.1	422%		15.2	304%		14	280%		42.9	858%		
0	4%	0	4	4.2	105%	5	1.4	35%	3	70%	4	2	2.4	120%	5	13.3	665%	3	393%	4	3	0.2	7%	0	5.7	190%	5	1	33%	3	0.6	20%	3	5.8	193%		
5	126%	5	41	0	0%	0	30	73%	3	37%	1.5	53	15.4	29%	1	13	25%	1	27%	1	45	28.2	63%	3	35	78%	3	31	69%	3	82.6	184%	5	1.2	3%		
3	221%	3	28	29.6	106%	5	56.6	202%	3	154%	4	24	39.8	166%	5	46.6	194%	5	180%	5	23	60.2	262%	3	50.2	218%	3	48.6	211%	3	13.8	60%	5	91.2	397%		
10	94%	10	20	0	0%	0	0	0%	0	0%	0	14	0	0%	0	2	14%	5	7%	2.5	17	12	71%	10	0	0%	0	4	24%	5	0	0%	0	0	0%		
0	0%	0	408	578	142%	5	87	21%	2	81%	3.5	128	250	195%	5	107	84%	5	139%	5	441	430	98%	5	416	94%	5	373	85%	5	241	55%	5	217	49%		
5	na	5	0	70.00%	na	0	15.00%	na	5	na	2.5	0	30.00%	na	3	25.00%	na	3	na	3	0	8.00%	na	5	20.00%	na	5	12.00%	na	5	2.00%	na	10	10	na		
7.2	72%	7.2	10	6	60%	6	10	100%	10	80%	8	10	10	100%	10	10	100%	10	100%	10	10	8.8	88%	8.8	6	60%	6	10	100%	10	7.2	72%	10	6	60%		
8	80%	8	10	2	200%	2	2	20%	2	110%	2	10	3.4	34%	3.4	4	40%	4	37%	3.7	10	2	20%	2	4.7	47%	4.7	4	40%	4	4.7	47%	4	3.4	34%		
71.13		71.13				45.00			51.88		48.44				65.06			70.00		67.53				59.19			56.75			68.13			70.63			
100		*100*				*100*			*100*		*100*				*100*			*100*		*100*				*100*			*100*			*100*			*100*			
2.13		**2.13**				**1.35**			**1.56**		**1.45**				**1.95**			**2.10**		**2.03**				**1.78**			**1.70**			**2.04**			**2.12**			
7	70%	7	10	10	100%	10	0	0%	0	50%	5	10	10	100%	10	10	100%	10	100%	10	10	2	20%	2	5	50%	5	10	100%	10	2	20%	2	10	100%		
4	80%	4	5	2	40%	2	0	0%	0	20%	1	5	4	80%	4	2	40%	2	60%	3	5	0	0%	0	0	0%	0	4	80%	4	0	0%	0	5	100%		
4	80%	4	5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	4	80%	4	4	80%		
6	100%	6	6	0	0%	0	5	83%	5	42%	2.5	6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%		
5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	5	100%	5	5	100%		
3	20%	3	15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3	20%	3	3	20%	3	3	20%		
9.4	94%	9.4	10	10	100%	10	7.4	74%	7.4	87%	8.7	10	8.8	88%	8.8	9.4	94%	9.4	91%	9.1	10	7.4	74%	7.4	9.4	94%	9.4	10	100%	10	8	80%	8	9.4	94%		
38.4		38.4				34			24.4		29.2				40.8			39.4		40.1				21.4			26.4			36			22			
56		*56*				*56*			*56*		*56*				*56*			*56*		*56*				*56*			*56*			*56*			*56*			
2.06		**2.06**				**1.82**			**1.31**		**1.56**				**2.19**			**2.11**		**2.15**				**1.15**			**1.41**			**1.93**			**1.18**			
5	50%	5	10	5	50%	5	5	50%	5	50%	5	10	10	100%	10	10	100%	10	100%	10	10	5	50%	5	5	50%	5	10	100%	10	5	50%	5	5	50%		
10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	10	67%	10	10	67%		
10	33%	10	30	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10	33%	10	10	33%	10	10	33%	10	10	33%		
10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	10	67%	10	10	67%		
35		35				35			35		35				40			40		40				35			35			40			35			
70		*70*				*70*			*70*		*70*				*70*			*70*		*70*				*70*			*70*			*70*			*70*			
2.00		**2.00**				**2.00**			**2.00**		**2.00**				**2.29**			**2.29**		**2.29**				**2.00**			**2.00**			**2.29**			**2.00**			

			AU12 - 11.3.4 regrowth									AU13 - 11.11.10 regrowth						AU14 - 11..3.26 remnant						AU15 - 12.3.3 remnant									
	Average % benchmark	Average Score	Benchmark 11.3.4	25			35			Average % benchmark	Average Score	Benchmark 11.11.10	27			Average % benchmark	Average Score	Benchmark 11.3.26	28			Average % benchmark	Average Score	Benchmark 12.3.3	32			33			34			Average % benchmark	Average Score
Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
3	75%	3.8	100	100	100%	5	100	100%	5	100%	5	100	100	100%	5	100%	5	100	50	50%	3	50%	3	100	66	66%	3	66	66%	3	75	75%	5	69%	3.7
5	195%	5	4	4	100%	5	4	100%	5	100%	5	4	7	175%	5	175%	5	3	6	200%	5	200%	5	5	6	120%	5	7	140%	5	9	180%	5	147%	5.0
5	220%	5	3	6	200%	5	4	133%	5	167%	5	5	6	120%	5	120%	5	3	7	233%	5	233%	5	5	5	100%	5	2	40%	2.5	11	220%	5	120%	4.2
2.5	63%	2.5	11	2	18%	0	7	64%	2.5	41%	1.3	9	7	78%	2.5	78%	2.5	13	2	15%	0	15%	0	9	3	33%	2.5	1	11%	0	4	44%	2.5	30%	1.7
5	57%	3	17	8	47%	2.5	4	24%	0	35%	1.3	15	4	27%	2.5	27%	2.5	14	3	21%	0	21%	0	25	2	8%	0	3	12%	0	12	48%	2.5	23%	0.8
	na		na	0	na		0	na		na		na	0	na		na		na	0	na		na		na	0	na		0	na		0	na		na	
3	74%	4.6	24	18	75%	5	25	104%	5	90%	5	16	15	94%	5	94%	5	23	26	113%	5	113%	5	25	16	64%	4	12	48%	4	22	88%	5	67%	4.3
	82%		14	11	79%		18	129%		104%		na	10	na		na		10	12	120%		120%		9	10	111%		7	78%		15	167%		119%	
	na		na	0	na		0	na		na		na	0	na		na		na	0	na		na		na	0	na		0	na		0	na		na	
3	113%	3.5	30	35.7	119%	5	22.5	75%	5	97%	5	32	3.3	10%	2	10%	2	47	10	21%	2.5	21%	2.5	40	31.2	78%	4	38.1	95%	4	38.9	97%	4	90%	4.0
	373%		15	17.3	115%		8.7	58%		87%		na	0	na		na		13	35	269%		269%		8	20.8	260%		18.8	235%		25.6	320%		272%	
5	89%	3.2	3	3.3	110%	5	0.5	17%	3	63%	4	12	0.4	3%	0	3%	0	2	3.6	180%	5	180%	5	4	9.9	248%	3	5.7	143%	5	7.6	190%	5	193%	4.3
0	79%	2.8	55	6	11%	1	42	76%	3	44%	2	50	74.4	149%	5	149%	5	36	7	19%	1	19%	1	52	0	0%	0	0	0%	0	39.4	76%	3	25%	1.0
3	230%	3.4	37	71.6	194%	5	41	111%	5	152%	5	20	7.2	36%	3	36%	3	32	48	150%	5	150%	5	20	41	205%	3	68.6	343%	3	39.6	198%	5	249%	3.7
0	19%	3	19	20	105%	15	12	63%	10	84%	12.5	19	0	0%	0	0%	0	16	0	0%	0	0%	0	14	2	14%	5	4	29%	5	6	43%	5	29%	5.0
2	76%	4.4	509	0	0%	0	816	160%	5	80%	2.5	402	255	63%	5	63%	5	535	376	70%	5	70%	5	588	190	32%	2	0	0%	0	360	61%	5	31%	2.3
0	na	5	0	40.00%	na	3	10.00%	na	5	na	4	0	10.00%	na	5	na	5	0	50.00%	na	0	na	0	0	0.00%	na	10	70.00%	na	0	15.00%	na	5	na	5.0
6	76%	8.2	10	7.2	72%	7.2	10	100%	10	86%	8.6	10	7.2	72%	7.2	72%	7.2	10	8.8	88%	8.8	88%	8.8	10	4.2	42%	4.2	4.2	42%	4.2	7.2	72%	7.2	52%	5.2
3.4	38%	3.6	10	6.7	67%	6.7	6.7	67%	6.7	67%	6.7	10	2	20%	2	20%	2	10	3.4	34%	3.4	34%	3.4	10	5.4	54%	5.4	5.4	54%	5.4	6	60%	6	56%	5.6
46.31		60.20				70.06			78.31		74.19				51.13		51.13				53.31		53.31				53.06			43.69			68.63		55.13
100		*100*				*100*			*100*		*100*				*100*		*100*				*100*		*100*				*100*			*100*			*100*		*100*
1.39		**1.81**				**2.10**			**2.35**		**2.23**				**1.53**		**1.53**				**1.60**		**1.60**				**1.59**			**1.31**			**2.06**		**1.65**
10	58%	5.8	10	2	20%	2	2	20%	2	20%	2	10	0	0%	0	0%	0	10	10	100%	10	100%	10	10	5	50%	5	5	50%	5	5	50%	5	50%	5.0
5	36%	1.8	5	0	0%	0	0	0%	0	0%	0	5	0	0%	0	0%	0	5	4	80%	4	80%	4	5	2	40%	2	2	40%	2	4	80%	4	53%	2.7
4	80%	4	5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	80%	4.0
0	0%	0	6	0	0%	0	0	0%	0	0%	0	6	0	0%	0	0%	0	6	6	100%	6	100%	6	6	6	100%	6	6	100%	6	6	100%	6	100%	6.0
5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	100%	5.0
3	20%	3	15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	20%	3	15	3	20%	3	3	20%	3	3	20%	3	20%	3.0
9.4	88%	8.8	10	8.6	86%	8.6	8.6	86%	8.6	86%	8.6	10	2.4	24%	2.4	24%	2.4	10	10	100%	10	100%	10	10	4.6	46%	4.6	3.6	36%	3.6	8.8	88%	8.8	57%	5.7
36.4		28.44				22.6			22.6		22.6				14.4		14.4				42		42				29.6			28.6			35.8		31.33
56		*56*				*56*			*56*		*56*				*56*		*56*				*56*		*56*				*56*			*56*			*56*		*56*
1.95		**1.52**				**1.21**			**1.21**		**1.21**				**0.77**		**0.77**				**2.25**		**2.25**				**1.59**			**1.53**			**1.92**		**1.68**
5	60%	6.0	10	5	50%	5	5	50%	5	50%	5	10	5	50%	5	50%	5	10	10	100%	10	100%	10	10	5	50%	5	5	50%	5	5	50%	5	50%	5.0
10	67%	10.0	15	15	100%	15	15	100%	15	100%	15	15	10	67%	10	67%	10	15	10	67%	10	67%	10	15	15	100%	15	15	100%	15	15	100%	15	100%	15.0
10	33%	10.0	30	10	33%	10	10	33%	10	33%	10	30	10	33%	10	33%	10	30	10	33%	10	33%	10	30	10	33%	10	10	33%	10	10	33%	10	33%	10.0
10	67%	10.0	15	10	67%	10	10	67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	67%	10	15	10	67%	10	10	67%	10	10	67%	10	67%	10.0
35		36				40			40		40				35		35				40		40				40			40			40		40.00
70		*70*				*70*			*70*		*70*				*70*		*70*				*70*		*70*				*70*			*70*			*70*		*70*
2.00		**2.06**				**2.29**			**2.29**		**2.29**				**2.00**		**2.00**				**2.29**		**2.29**				**2.29**			**2.29**			**2.29**		**2.29**

AU16 - 11.10.3 remnant						AU17 - 11.10.13 remnant						AU18 - 11.10.13 regrowth					Total average % benchmark	Total average score
Benchmark 11.10.3	36			Average % benchmark	Average Score	Benchmark 11.10.13	41			Average % benchmark	Average Score	46			Average % benchmark	Average Score		
	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score			Raw Data	% Benchmark	Score				
100	0	0%	0	0%	0	100	100	100%	5	100%	5	50	50%	3	50%	3	76%	3.8
3	5	167%	5	167%	5	7	4	57%	2.5	57%	2.5	5	71%	2.5	71%	2.5	151%	4.6
3	14	467%	5	467%	5	10	6	60%	2.5	60%	2.5	6	60%	2.5	60%	2.5	147%	4.1
6	0	0%	0	0%	0	6	3	50%	2.5	50%	2.5	1	17%	0	17%	0	48%	2.1
10	7	70%	2.5	70%	2.5	7	2	29%	2.5	29%	2.5	0	0%	0	0%	0	41%	1.9
na	16	na		na		na	22	na		na		0	na		na		na	
18	5	28%	3	28%	3	22	14	64%	4	64%	4	9	41%	4	41%	4	75%	4.2
8	3	38%		38%		7	8	114%		114%		6	86%		86%		92%	
na	8.2	na		na		na	0	na		na		0	na		na		na	
44	20.5	47%	3.5	47%	3.5	25	79.8	319%	3	319%	3	10	40%	2.5	40%	2.5	98%	3.6
14	20.7	148%		148%		4	29.4	735%		735%		78.2	1955%		1955%		350%	
8	1.6	20%	3	20%	3	15	1.5	10%	3	10%	3	47.8	319%	3	319%	3	106%	3.2
35	0	0%	0	0%	0	20	7.6	38%	1	38%	1	2.4	12%	1	12%	1	63%	2.2
46	55.4	120%	5	120%	5	40	71	178%	5	178%	5	68	170%	5	170%	5	164%	4.1
30	0	0%	0	0%	0	20	6	30%	5	30%	5	0	0%	0	0%	0	37%	5.5
615	78	13%	2	13%	2	204	895	439%	2	439%	2	332	163%	5	163%	5	89%	3.4
0	0.00%	na	10	na	10	0	100.00%	na	0	na	0	0.00%	na	10	na	10	na	4.2
10	4.2	42%	4.2	42%	4.2	10	7.2	72%	7.2	72%	7.2	6	60%	6	60%	6	73%	7.3
10	1.3	13%	1.3	13%	1.3	10	4.7	47%	4.7	47%	4.7	3.3	33%	3.3	33%	3.3	47%	4.2
			38.13		38.13				53.50		53.50			47.31		47.31		58.20
			100		*100*				*100*		*100*			*100*		*100*		*100*
			1.14		**1.14**				**1.61**		**1.61**			**1.42**		**1.42**		**1.75**
10	0	0%	0	0%	0.0	10	10	100%	10	100%	10	10	100%	10	100%	10	60%	6.0
5	0	0%	0	0%	0.0	5	2	40%	2	40%	2	5	100%	5	100%	5	44%	2.2
5	4	80%	4	80%	4.0	5	4	80%	4	80%	4	4	80%	4	80%	4	80%	4.0
6	6	100%	6	100%	6.0	6	6	100%	6	100%	6	6	100%	6	100%	6	58%	3.5
5	5	100%	5	100%	5.0	5	5	100%	5	100%	5	5	100%	5	100%	5	100%	5.0
15	3	20%	3	20%	3.0	15	3	20%	3	20%	3	3	20%	3	20%	3	20%	3.0
10	7.4	74%	7.4	74%	7.4	10	9.4	94%	9.4	94%	9.4	8.8	88%	8.8	88%	8.8	84%	8.4
			25.4		25.4				39.4		39.4			41.8		41.8		32.14
			56		*56*				*56*		*56*			*56*		*56*		*56*
			1.36		**1.36**				**2.11**		**2.11**			**2.24**		**2.24**		**1.72**
10	5	50%	5	50%	5.0	10	10	100%	10	100%	10	10	100%	10	100%	10	62%	6.2
15	10	67%	10	67%	10.0	15	10	67%	10	67%	10	10	67%	10	67%	10	71%	10.6
30	10	33%	10	33%	10.0	30	10	33%	10	33%	10	10	33%	10	33%	10	33%	10.0
15	10	67%	10	67%	10.0	15	10	67%	10	67%	10	10	67%	10	67%	10	67%	10.0
			35		35				40		40			40		40		36.82
			70		*70*				*70*		*70*			*70*		*70*		*70*
			2.00		**2.00**				**2.29**		**2.29**			**2.29**		**2.29**		**2.10**

IMPACT - Fauna

Yellow-bellied glider

Assessment Unit - Regional Ecosystem		AU02 - 12.11.6 remnant									AU03 - 11.11.3/c remnant									AU07 - 11.3.25 remnant					
Site Reference		**Benchmark 12.11.6**	7			12			Average % benchmark	Average Score	**Benchmark 11.11.3**	13			20			Average % benchmark	Average Score	**Benchmark 11.3.25**	17			30	
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark
Site Condition	**Species specific attribute score and multiplier**																								
Recruitment of woody perennial species in EDL		100	100	100%	5	60	60%	3	80%	4	100	100	100%	5	100	100%	5	100%	5	100	66.6	67%	3	100	100%
Native plant species richness - trees		4	5	125%	5	12	300%	5	213%	5	3	4	133%	5	4	133%	5	133%	5	4	7	175%	5	7	175%
Native plant species richness - shrubs		6	8	133%	5	10	167%	5	150%	5	6	9	150%	5	9	150%	5	150%	5	4	2	50%	2.5	1	25%
Native plant species richness - grasses		11	4	36%	2.5	3	27%	2.5	32%	2.5	6	7	117%	5	7	117%	5	117%	5	8	2	25%	2.5	0	0%
Native plant species richness - forbes		29	6	21%	0	12	41%	2.5	31%	1.25	14	8	57%	2.5	8	57%	2.5	57%	2.5	13	6	46%	2.5	4	31%
Emergent height		na	0	na		27	na		na		na	0	na		0	na		na		na	0	na		32	na
Tree canopy height		21	21	100%	5	20	95%	5	98%	5	28	14	50%	3	14	50%	3	50%	3	23	21	91%	4	25	109%
Tree subcanopy height		11	14	127%		12	109%		118%		15	8	53%		8	53%		53%		11	7	64%		16	145%
Emergent cover	50 (0.625 multiplier)	na	0	na		0	na		na		na	0	na		0	na		na		na	0	na		0	na
Tree canopy cover		32	29.7	93%	2.5	70.2	219%	4	156%	3.25	45	46.7	104%	4	46.7	104%	4	104%	4	34	49.8	146%	5	24.4	72%
Tree subcanopy cover		10	28.8	288%		13.9	139%		214%		6	19.2	320%		19.2	320%		320%		12	13	108%		6.1	51%
Shrub canopy cover		12	15.9	133%	5	9.9	83%	5	108%	5	9	3.2	36%	3	3.2	36%	3	36%	3	7	1.3	19%	3	0	0%
Native grass cover		25	53	212%	5	13.2	53%	3	132%	4	17	10	59%	3	10	59%	3	59%	3	35	0	0%	0	0	0%
Organic litter		45	29.4	65%	5	48	107%	5	86%	5	50	79.2	158%	5	79.2	158%	5	158%	5	21	44.2	210%	3	72.8	347%
Large trees (euc plus non-euc)		12	12	100%	15	8	67%	10	83%	12.5	17	4	24%	5	4	24%	5	24%	5	32	60	188%	15	36	113%
Coarse woody debris		320	188	59%	5	200	63%	5	61%	5	642	435	68%	5	435	68%	5	68%	5	473	199	42%	2	51	11%
Non-native plant cover		0	1.00%	na	10	10.00%	na	5	na	7.5	0	20%	na	5	5%	na	5	na	5	0	80%	na	0	95%	na
Quality and availability of food and foraging habitat	20 (2 multiplier)	10	8	80%	8	8	80%	8	80%	8	10	8	80%	8	10	100%	10	90%	9	10	8	80%	8	8	80%
Quality and availability of shelter	30 (3 multiplier)	10	4.5	45%	4.5	2.5	25%	2.5	35%	3.5	10	0	0%	0	2	20%	2	10%	1	10	7	70%	7	2.5	25%
Site Condition Score (weighted to species-specific)					73.25			61.00		67.13				50.69			60.69		55.69				66.69		
MAX Site Condition Score					*100*			*100*		*100*				*100*			*100*		*100*				*100*		
Site Condition Score - out of 3					**2.20**			**1.83**		**2.01**				**1.52**			**1.82**		**1.67**				**2.00**		
Site Context																									
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	100%	10	10	0	0%	0	0	0%
Connectedness		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	4	80%	4	60%	3	5	4	80%	4	2	40%
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%
Ecological Corridors	56	6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0	0%	0	0%	0	6	6	100%	6	6	100%
Role of site location to species overall population in the state		5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%
Threats to the species		15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%	3	20%	3	15	3	20%	3	3	20%
Species mobility capacity		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	100%	10	10	7.36	74%	7.36	7.36	74%
Site Context Score					37			37		37				31.00			33.00		32.00				26.36		
MAX Site Context Score					*56*			*56*		*56*				*56*			*56*		*56*				*56*		
Site Context Score - out of 3					**1.98**			**1.98**		**1.98**				**1.66**			**1.77**		**1.71**				**1.41**		
Species Stocking Rate (SSR)																									
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	0	0%	0	0	0%	0	0%	0	10	0	0%	0	0	0%	0	0%	0	10	0	0%	0	0	0%
Species usage of the site (habitat type & evidenced usage)	70	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	15	100%
Approximate density		30	0	0%	0	0	0%	0	0%	0	30	0	0%	0	0	0%	0	0%	0	30	0	0%	0	0	0%
Role/importance of species population on site*		15	5	33%	5	5	33%	5	33%	5	15	5	33%	5	5	33%	5	33%	5	15	5	33%	5	5	33%
SSR Score					20			20		20				20.00			20.00		20.00				20.00		
MAX SSR Score					*70*			*70*		*70*				*70*			*70*		*70*				*70*		
SSR Score - out of 4					**1.14**			**1.14**		**1.14**				**1.14**			**1.14**		**1.14**				**1.14**		

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		10		15
		Not habitat		Denning, foraging and dispersal within patch 50-<85 ha		Denning, foraging and dispersal within patch =>85 ha
Approximate density (per ha)	Score	0	10	20		30
		0%				
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)	20					
SRR Score (out of 2)	1.14					

***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

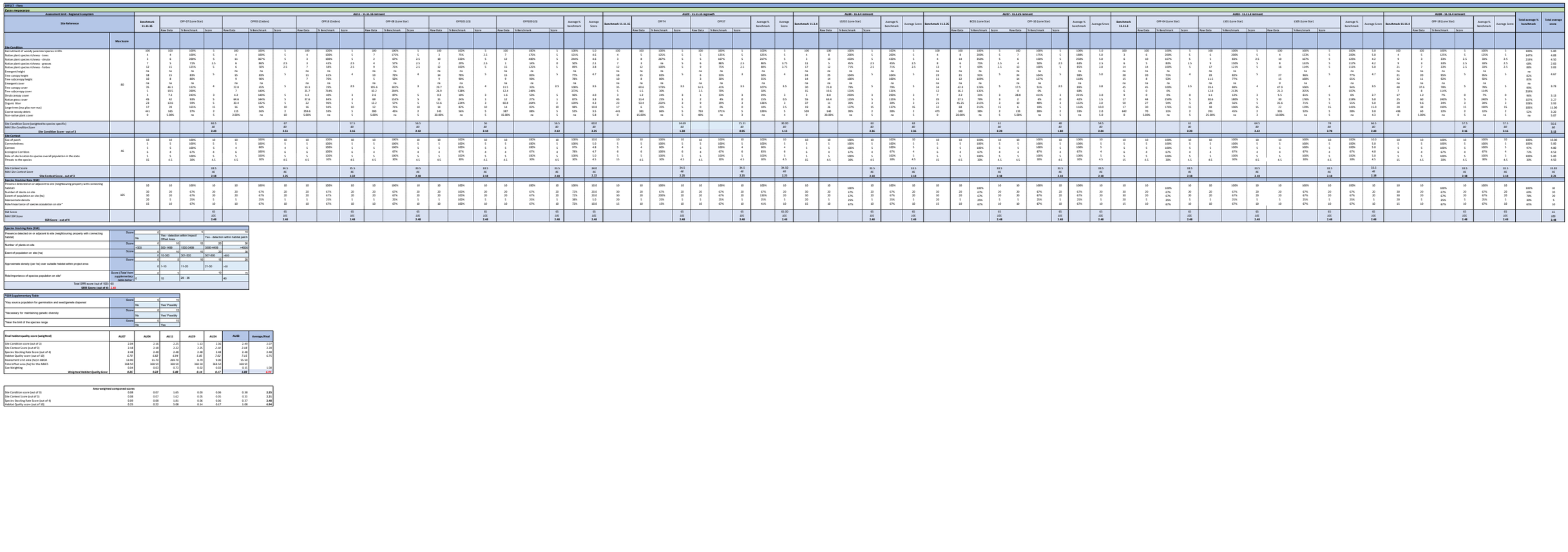
Final habitat quality score (weighted)	**AU02**	**AU03**	**AU07**	**Average/Final**
Site Condition score (out of 3)	2.01	1.67	1.77	1.82
Site Context Score (out of 3)	1.98	1.71	1.36	1.69
Species Stocking Rate Score (out of 4)	1.14	1.14	1.14	1.14
Habitat Quality score (out of 10)	*5.14*	*4.53*	*4.28*	
Assessment Unit area (ha) in disturbance footprint	10.70	12.55	1.21361	
Total impact area (ha) for this MNES	24.46	24.46	24.46	
Size Weighting	0.44	0.51	0.05	
Weighted Habitat Quality Score	***2.25***	***2.32***	***0.21***	***4.78***

Score	Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
5	83%	4	88%	4.3
5	175%	5	174%	5
2.5	38%	2.5	113%	4.2
0	13%	1.25	54%	2.9
2.5	38%	2.5	42%	2.1
	na		na	
5	100%	4.5	83%	4.2
	105%		92%	
	na		na	
5	109%	5	123%	4.1
	80%		204%	
0	9%	1.5	51%	3.2
0	0%	0	64%	2.3
3	279%	3	174%	4.3
15	150%	15	86%	10.8
2	26%	2	52%	4
0	na	0	na	4.2
8	80%	8	83%	8.3
2.5	48%	4.75	31%	3.1
51.63		59.16		60.66
100		*100*		*100*
1.55		**1.77**		**1.82**
0	0%	0	67%	6.7
2	60%	3	53%	2.7
2	40%	2	40%	2
6	100%	6	67%	4
4	80%	4	80%	4
3	20%	3	20%	3
7.36	74%	7.36	91%	9.1
24.36		25.36		31.45
56		*56*		*56*
1.31		**1.36**		**1.69**
0	0%	0	0%	0
15	100%	15	100%	15
0	0%	0	0%	0
5	33%	5	33%	5
20.00		20.00		20.00
70		*70*		*70*
1.14		**1.14**		**1.14**

Appendix D

Habitat Quality Score Results – Offset

| | | |

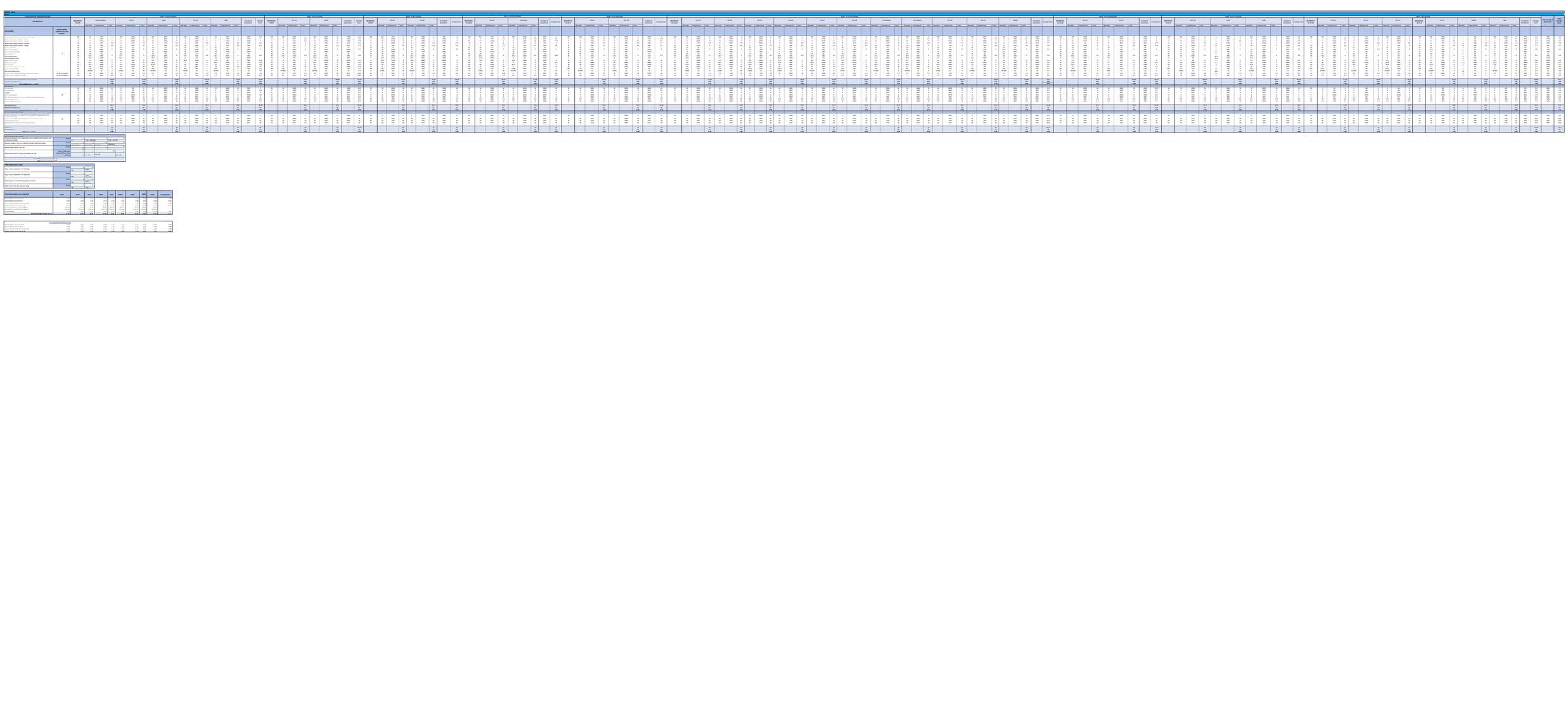


DATSET - Flora

Cyrus megacarpa

| Assessment Unit - Regional Ecosystem | | AU11 - 11.11.11 remnant | | |

| Wahl-Ergebnisse | | |



| Data Not Found | | |

OFFSET - Flora

Samadera bidwillii

Assessment Unit - Regional Ecosystem		AU17 - 11.10.13 remnant										
Site Reference		**Benchmark 11.10.13**	OFF01(LS) (Lone Star)			OFF06 (The Cedars)			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Site Condition	**Max Score**											
Recruitment of woody perennial species in EDL		100	100	100%	5	66.7	67%	3	100%	4	83%	4.00
Native plant species richness - trees		7	4	57%	2.5	5	71%	2.5	57%	2.5	64%	2.50
Native plant species richness - shrubs		10	5	50%	2.5	11	110%	5	50%	3.75	80%	3.75
Native plant species richness - grasses		6	0	0%	0	0	0%	0	0%	0	0%	0.00
Native plant species richness - forbes		7	2	29%	2.5	2	29%	2.5	29%	2.5	29%	2.50
Emergent height		na	na	na		na	na		na		na	
Tree canopy height		22	18	82%	5	19	86%	5	82%	5	84%	5.00
Tree subcanopy height		7	10	143%		12	171%		143%		157%	
Emergent cover	80	na	na	na		na	na		na		na	
Tree canopy cover		25	30.7	123%	2.5	48.6	194%	4	123%	3.25	159%	3.25
Tree subcanopy cover		4	0	0%		10.6	265%		0%		133%	
Shrub canopy cover		15	19.8	132%	5	9.8	65%	5	132%	5	99%	5.00
Native grass cover		20	0	0%	0	2	10%	1	0%	0.5	5%	0.50
Organic litter		40	69.4	174%	5	88	220%	3	174%	4	197%	4.00
Large trees (euc plus non-euc)		20	0	0%	0	22	110%	15	0%	7.5	55%	7.50
Coarse woody debris		204	1908	935%	2	35	17%	2	935%	2	476%	2.00
Non-native plant cover		0	20.00%	na	5	0.00%	na	10	na	7.5	na	7.50
Site Condition Score (weighted to species-specific)					37			58		47.5		47.50
MAX Site Condition Score					*80*			*80*		*80*		*80*
Site Condition Score - out of 3					**1.39**			**2.18**		**1.78**		**1.78**
Site Context												
Size of patch		10	10	100%	10	10	100%	10	100%	10	100%	10.00
Connectedness		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Context		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Ecological Corridors	46	6	4	67%	4	4	67%	4	67%	4	67%	4.00
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Threats to the species		15	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	30%	4.50
Site Context Score					33.5			33.5		33.5		33.50
MAX Site Context Score					*46*			*46*		*46*		*46*
Site Context Score - out of 3					**2.18**			**2.18**		**2.18**		**2.18**
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	10	100%	10	10	100%	10	100%	10	100%	10.00
Number of plants on site		30	15	50%	15	15	50%	15	50%	15	50%	15.00
Extent of population on site (ha)	105	30	15	50%	15	15	50%	15	50%	15	50%	15.00
Approximate density		20	10	50%	10	10	50%	10	50%	10	50%	10.00
Role/importance of species population on site*		10	10	100%	10	10	100%	10	100%	10	100%	10.00
SSR Score					60			60		60		60.00
MAX SSR Score					*105*			*105*		*105*		*105*
SSR Score - out of 4					**2.29**			**2.29**		**2.29**		**2.29**

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5			10
		No	Yes - detection within Impact/ Offset Area			Yes - detection within habitat patch
Number of plants on site	Score	0	10	15	20	30
Exent of population on site (ha)	Score	0	10	15	20	30
		0	01-1 ha	1.1-3 ha	3.1-6 ha	>6ha
Approximate density (per ha) over suitable habitat within project area	Score	0	5	10	15	20
		0	1-100	101-1000	1001-2999	=>3,000
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15
		0	10	25 - 35		40
Total SRR score (out of 105)	60					
SRR Score (out of 4)	2.29					

***SSR Supplementary Table**			
*Key source population for germination and seed/gamete dispersal	Score	0	10
		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

Final habitat quality score (weighted)	**AU17**	**Average/Final**
Site Condition score (out of 3)	1.78	1.78
Site Context Score (out of 3)	2.18	2.18
Species Stocking Rate Score (out of 4)	2.29	2.29
Habitat Quality score (out of 10)	*6.25*	
Assessment Unit area (ha) in BBOA	1.90	
Total offset area (ha) for this MNES	1.90	
Size Weighting	1.00	
Weighted Habitat Quality Score	***6.25***	***6.25***

OFFSET - TEC

SEVT

Assessment Unit - Regional Ecosystem		AU22 - 11.8.3 remnant									AU23 - 11.11.18 remnant						AU21 - non-remnant							
Site Reference		**Benchmark 11.8.3**	OFF76 (The Cedars)			OFF101 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.11.5a**	OFF70 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.8.3**	OFF100 (The Cedars)			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
Site Condition	**Max Score**																							
Recruitment of woody perennial species in EDL		100	54.5	55%	3	100	100%	5	77%	4.0	100	66.7	67%	3	67%	3.00	100	0	0%	0	0%	0.0	55%	2.8
Native plant species richness - trees		15	13	87%	2.5	10	67%	2.5	77%	2.5	20	9	45%	2.5	45%	2.50	20	1	5%	0	5%	0.0	51%	1.9
Native plant species richness - shrubs		15	15	100%	5	10	67%	2.5	83%	3.8	15	14	93%	5	93%	5.00	15	8	53%	2.5	53%	2.5	78%	3.8
Native plant species richness - grasses		2	3	150%	5	3	150%	5	150%	5.0	2	2	100%	5	100%	5.00	2	2	100%	5	100%	5.0	125%	5.0
Native plant species richness - forbes		14	10	71%	2.5	9	64%	2.5	68%	2.5	21	7	33%	2.5	33%	2.50	21	1	5%	0	5%	0.0	43%	1.9
Emergent height		na	13	na		12	na		na		21	12	na		na		21	na	na		na		na	
Tree canopy height		7	8	114%	5	8	114%	2.5	114%	3.8	14	7	50%	3	50%	3.00	14	5	36%	3	36%	3.0	79%	3.4
Tree subcanopy height		3	4	133%		0	0%		67%		8	2	25%		25%		8	2	25%		25%		46%	
Emergent cover	80	na	10	na		12	na		na		5	2	na		na		5	na	na		na		na	
Tree canopy cover		62	78	126%	2.5	73	118%	2.5	122%	2.5	62	23.4	38%	1	38%	1.00	62	2.9	5%	0	5%	0.0	71%	1.5
Tree subcanopy cover		17	0	0%		0	0%		0%		28	0	0%		0%		28	0	0%		0%		0%	
Shrub canopy cover		27	78	289%	3	25	93%	5	191%	4.0	21	35.6	170%	5	170%	5.00	21	5	24%	3	24%	3.0	144%	4.0
Native grass cover		5	0	0%	0	7	140%	5	70%	2.5	3	0	0%	0	0%	0.00	3	0	0%	0	0%	0.0	35%	1.3
Organic litter		45	0	0%	0	36	80%	5	40%	2.5	39	0	0%	0	0%	0.00	39	12	31%	3	31%	3.0	28%	2.0
Large trees (euc plus non-euc)		180	280	156%	15	130	72%	10	114%	12.5	60	22	37%	5	37%	5.00	60	2	3%	5	3%	5.0	67%	8.8
Coarse woody debris		944	141	15%	2	525	56%	5	35%	3.5	377	359	95%	5	95%	5.00	377	0	0%	0	0%	0.0	41%	3.0
Non-native plant cover		0	1.00%	na	10	2.00%	na	10	na	10.0	0	1.00%	na	10	na	10.00	0	55.00%	na	0	na	0.0	na	7.5
Site Condition Score					55.5			62.5		59.00				47		47.0				21.5		21.5		46.6
MAX Site Condition Score					80			80		80				80		80				80		80		80
Site Condition Score - out of 7					**4.86**			**5.47**		**5.16**				**4.11**		**4.11**				**1.88**		**1.88**		**4.08**
Site Context																								
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	100%	10.00	10	0	0%	0	0%	0	75%	7.5
Connectedness		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	0	0%	0	0%	0	75%	3.8
Context		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	5	100%	5	100%	5	100%	5.0
Ecological Corridors	46	6	6	100%	6	6	100%	6	100%	6	6	6	100%	6	100%	6.00	6	6	100%	6	100%	6	100%	6.0
Role of site location to TEC overall in the state		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	0	0%	0	0%	0	75%	3.8
Threats to the TEC		15	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	30%	4.50	15	4.5	30%	4.5	30%	4.5	30%	4.5
Site Context Score					35.5			35.5		35.5				35.5		35.50				15.5		15.5		30.50
MAX Site Context Score					46			46		46				46		46				46		46		46
Site Context Score - out of 3					**2.32**			**2.32**		**2.32**				**2.32**		**2.32**				**1.01**		**1.01**		**1.99**

Final habitat quality score (weighted)	**AU22**	**AU23**	**AU21**	**Average/Final**
Site Condition score (out of 7)	5.16	4.11	1.88	4.08
Site Context Score (out of 3)	2.32	2.32	1.01	1.99
Habitat Quality score (out of 10)	7.48	6.43	2.89	
Assessment Unit area (ha) in BBOA	12.36	1.57	1.84	
Total offset area (ha) for this MNES	15.77	15.77	15.77	
Size Weighting	0.78	0.10	0.12	
Weighted Habitat Quality Score	***5.86***	***0.64***	***0.34***	***6.84***

Area-weighted componed scores				
Site Condition score (out of 7)	4.05	0.41	0.22	**4.68**
Site Context Score (out of 3)	1.81	0.23	0.12	**2.16**
Habitat Quality score (out of 10)	5.86	0.64	0.34	**6.84**

OFFSET - Fauna

Yellow-bellied glider

Assessment Unit - Regional Ecosystem		AU24 - 11.3.4 remnant									AU07 -11.3.25 remnant										AU17 - 11.10.13 remnant										AU03 - 11.11.3 remnant										AU04 - 11.11.4 remnant											
Site Reference		**Benchmark 11.3.4**	OFF-11 (Lone Star)			LS202 (Lone Star)			Average % benchmark	Average Score	**Benchmark 11.3.25**	BC01 (Lone Star)			BC02 (Lone Star)			OFF-10			Average % benchmark	Average Score	**Benchmark 11.10.13**	OFF01(LS) (Lone Star)			OFF06 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.11.3**	OFF-04 (Lone Star)			LS01 (Lone Star)			LS05 (Lone Star)			Average % benchmark	Average Score	**Benchmark 11.11.4**	OFF-18 (Lone Star)			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
Site Condition	**Species specific attribute score and multiplier**																																															
Recruitment of woody perennial species in EDL		100	100	100%	5	100	100%	5	100%	5.0	100	100	100%	5	50	50%	3	100	100%	5	75%	4.3	100	100	100%	5	66.7	67%	3	83%	4.0	100	100	100%	5	100	100%	5	100%	5.0	100	100	100%	5	100%	5.0	92%	4.6
Native plant species richness - trees		4	2	50%	2.5	8	200%	5	125%	3.8	4	8	200%	5	7	175%	5	6	150%	5	188%	5.0	7	4	57%	2.5	5	71%	2.5	64%	2.5	3	6	200%	5	8	200%	5	4	133%	5	178%	5.0	4	5	125%	5	125%	5.0	141%	4.3
Native plant species richness - shrubs		3	2	67%	2.5	13	433%	5	250%	3.8	4	14	350%	5	7	175%	5	6	150%	5	263%	5.0	10	5	50%	2.5	11	110%	5	80%	3.8	6	10	167%	5	5	83%	2.5	10	167%	5	139%	4.2	9	3	33%	2.5	33%	2.5	164%	4.0
Native plant species richness - grasses		11	2	18%	0	5	45%	2.5	32%	1.3	8	6	75%	2.5	5	63%	2.5	4	50%	2.5	69%	2.5	6	0	0%	0	0	0%	0	0%	0.0	6	6	83%	2.5	9	150%	5	8	133%	5	122%	4.2	9	3	33%	2.5	33%	2.5	60%	2.3
Native plant species richness - forbes		17	2	12%	0	12	71%	2.5	41%	1.3	13	9	69%	2.5	4	31%	2.5	13	100%	5	50%	3.3	7	2	29%	2.5	2	29%	2.5	29%	2.5	14	14	100%	5	17	121%	5	16	114%	5	112%	5.0	21	7	33%	2.5	33%	2.5	61%	3.0
Emergent height		na	na	na		na	na		na	na	na	na	na		na	na		na	na		na	na	na	na	na		na	na		na	na	na	na	na		na	na		na	na	na	na	na		na	na		na	na
Tree canopy height		24	24	100%	4	25	104%	5	102%	4.5	23	21	91%	5	24	104%	5	24	104%	5	98%	5.0	22	18	82%	5	19	86%	5	84%	5.0	28	20	71%	4	23	82%	5	27	96%	5	83%	4.7	21	20	95%	5	95%	5.0	91%	4.8
Tree subcanopy height		14	5	36%		14	100%		68%		11	12	109%		14	127%		14	127%		118%		7	10	143%		12	171%		157%		15	8	53%		11.5	77%		15	100%		77%		12	11	92%		92%		101%	
Emergent cover	50 (0.625 multiplier)	na	na	na		na	na		na	na	na	na	na		na	na		na	na		na	na	na	na	na		na	na		na	na	na	na	na		na	na		0	na		na	3.5	na	na		na	na
Tree canopy cover		30	33.5	112%	2.5	23.8	79%	5	96%	3.8	34	42.8	126%	5	44.2	130%	5	17.5	51%	2.5	128%	4.2	25	30.7	123%	2.5	48.6	194%	4	159%	3.3	45	45	100%	2.5	39.4	88%	4	47.9	106%	4	98%	3.5	48	37.6	78%	5	78%	5.0	114%	4.0
Tree subcanopy cover		15	0	0%		19.6	131%		65%		12	16.2	135%		16	133%		0	0%		134%		4	0	0%		10.6	265%		133%		6	0	0%		12.8	213%		21.3	355%		189%		7	8	114%		114%		135%	
Shrub canopy cover		3	0	0%	0	8.8	293%	3	147%	1.5	7	2.2	31%	3	0.3	4%	0	28.8	411%	3	18%	2.0	15	19.8	132%	5	9.8	65%	5	99%	5.0	9	0	0%	0	1.1	12%	3	5.5	61%	5	24%	2.7	17	1.2	7%	0	7%	0.0	61%	2.4
Native grass cover		55	8	15%	1	63.4	115%	5	65%	3.0	35	27.5	79%	3	60.2	172%	5	2	6%	0	115%	2.7	20	0	0%	0	2	10%	1	5%	0.5	17	44	259%	5	30.6	180%	5	30	176%	5	205%	5.0	25	60	240%	5	240%	5.0	125%	3.5
Oneanic litter		37	17	46%	3	11	30%	3	38%	3.0	21	45.25	215%	3	15	71%	5	10	48%	3	143%	3.7	40	69.4	174%	5	88	220%	3	197%	4.0	50	27	54%	5	28	56%	5	35.6	71%	5	60%	5.0	28	9.6	34%	3	34%	3.0	97%	4.0
Large trees (acc plus non-acc)		19	12	63%	10	26	137%	15	100%	12.5	32	68	213%	15	18	56%	10	6	19%	5	134%	10.0	20	0	0%	0	22	110%	15	55%	7.5	17	30	176%	15	18	106%	15	22	129%	15	137%	15.0	20	38	190%	15	190%	15.0	118%	12.5
Coarse woody debris		509	610	120%	5	140	28%	2	74%	3.5	473	180	38%	2	560	118%	5	133	28%	2	78%	3.0	204	1908	935%	2	35	17%	2	476%	2.0	642	70	11%	2	291	45%	2	335	52%	5	36%	3.0	496	60	12%	2	12%	2.0	138%	2.9
Non-native plant cover		0	50.00%	na	0	20.00%	na	5	na	2.5	0	20.00%	na	5	10.00%	na	5	5.00%	na	5	0.00%	5.0	0	20.00%	na	5	0.00%	na	10	na	7.5	0	5.00%	na	5	25%	na	3	10.00%	na	5	na	4.3	0	5.00%	na	5	na	5.0	na	4.8
Quality and availability of food and foraging habitat	20 (2 multiplier)	10	8	80%	8	10	100%	10	90%	9.0	10	8	80%	8	8	80%	8	8	80%	8	80%	8.0	10	6	60%	6	8	80%	8	70%	7.0	10	6	60%	6	8	80%	8	8	80%	8	73%	7.3	10	5	50%	5	50%	5.0	75%	7.5
Quality and availability of shelter	30 (3 multiplier)	10	7	70%	7	10	100%	10	85%	8.5	10	9	90%	9	10	100%	10	6	60%	6	95%	8.3	10	4	40%	4	8	80%	8	60%	6.0	10	0	0%	0	9	90%	9	8	80%	8	57%	5.7	10	6	60%	6	60%	6.0	71%	7.1
Site Condition Score (weighted to species-specific)						59.1875			89.38						81.13			82.25			64.00	75.79					47.13			76.25			61.69			50.13			73.23						63.94		71.89	
MAX Site Condition Score						*100*			*100*						*100*			*100*			*100*	*100*					*100*			*100*			*100*			*100*			*100*						*100*		*100*	
Site Condition Score - out of 3						**1.78**			**2.68**	**2.23**					**2.43**			**2.47**			**1.92**	**2.27**					**1.41**			**2.29**			**1.85**			**1.50**			**2.20**						**1.92**		**2.16**	
Site Context																																																
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10.0	10	100%	10	100%	10.0	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	100%	10	100%	10.0	100%	10.0
Connectedness		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5.0	5	100%	5	100%	5.0	5	5	100%	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.0	100%	5.0
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	4	80%	4	40%	2.6666666667	5	2	40%	2	4	80%	4.0	60%	3.0	5	2	40%	2	2	40%	2	2	40%	2	40%	2	2	40%	2	40%	2.0	40%	2.2
Ecological Corridors	56	6	6	100%	6	6	100%	6	100%	6	6	4	67%	4	4	67%	4	4	67%	4	67%	4	6	6	100%	6.0	6	100%	6.0	100%	6.0	6	4	67%	4	4	67%	4	4	67%	4	67%	4	4	67%	4	67%	4.0	80%	4.8
Role of site location to species overall population in the state		5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	80%	4.0	5	4	80%	4	4	80%	4	4	80%	4	80%	4	4	80%	4	80%	4.0	80%	4.0
Threats to the species		15	4.5	30%	4.5	4.5	30%	4.5	30%	5	15	4.5	30%	4.5	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	4.5	30%	4.5	30%	4.5	15	4.5	30%	4.5	4.5	30%	4.5	4.5	30%	4.5	30%	5	15	4.5	30%	4.5	30%	4.5	30%	4.5
Species mobility capacity		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	8.7	87%	8.7	94%	9.4	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	6.7	67%	6.7	67%	6.7	95%	9.5
Site Context Score						41.5			41.5						39.50			39.50			41.50	40.17					41.5			42.2			41.9			39.50			39.50						36.20		40.04	
MAX Site Context Score						*56*			*56*						*56*			*56*			*56*	*56*					*56*			*56*			*56*			*56*			*56*						*56*		*56*	
Site Context Score - out of 3						**2.22**			**2.22**	**2.23**					**2.12**			**2.12**			**2.22**	**2.15**					**2.26**			**2.24**			**2.24**			**2.12**			**2.12**						**1.94**		**2.15**	
Species Stocking Rate (SSR)																																																
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	0	0%	0	0	0%	0	0%	0.00	10	0	0%	0	0	0%	0	0	0%	0	0%	0	10	0	0%	0	0	0%	0	0%	0.0	10	0	0%	0	0	0%	0	0	0%	0	0%	0	10	0	0%	0	0%	0.0	0%	0.0
Species usage of the site (habitat type & evidenced usage)	70	15	15	100%	15	15	100%	15	100%	15.00	15	15	100%	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	100%	15.0	100%	15.0
Approximate density		30	0	0%	0	0	0%	0	0%	0.00	30	0	0%	0	0	0%	0	0	0%	0	0%	0	30	0	0%	0	0	0%	0	0%	0.0	30	0	0%	0	0	0%	0	0	0%	0	0%	0	30	0	0%	0	0%	0.0	0%	0.0
Role/importance of species population on site*		15	5	33%	5	5	33%	5	33%	5.00	15	5	33%	5	5	33%	5	5	33%	5	33%	5	15	5	33%	5	5	33%	5	33%	5.0	15	5	33%	5	5	33%	5	5	33%	5	33%	5	15	5	33%	5	33%	5.0	33%	5.0
SSR Score						20			20						20.00			20.00			20.00						20.00			20			20.00			20.00			20.00						20.00		20.00	
MAX SSR Score						*70*			*70*						*70*			*70*			*70*						*70*			*70*			*70*			*70*			*70*						*70*		*70*	
SSR Score - out of 4						**1.14**			**1.14**						**1.14**			**1.14**			**1.14**						**1.14**			**1.14**			**1.14**			**1.14**			**1.14**						**1.14**		**1.14**	

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		10	15
		Not habitat		Denning, foraging and dispersal within patch 50->85 ha	Denning, foraging and dispersal within patch =>85 ha
Approximate density (per ha)	Score	0	10	20	30
		0%			
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)	20				
SRR Score (out of 2)	1.14				

***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	

Final habitat quality score (weighted)	**AU24**	**AU07**	**AU17**	**AU03**	**AU04**	**Average/Final**
Site Condition score (out of 3)	2.23	2.27	1.85	2.20	1.92	2.16
Site Context Score (out of 3)	2.22	2.15	2.24	2.12	1.94	2.15
Species Stocking Rate Score (out of 4)	1.14	1.14	1.14	1.14	1.14	1.14
Habitat Quality score (out of 10)	5.59	5.57	5.24	5.46	5.00	
Assessment Unit area (ha) in BBOA	68.50	93.90	34.30	55.50	30.40	
Total offset area (ha) for this MNES	282.60	282.60	282.60	282.60	282.60	
Sse Weighting	0.24	0.33	0.12	0.20	0.11	
Weighted Habitat Quality Score	***1.36***	***1.85***	***0.64***	***1.07***	***0.54***	***5.45***

Area-weighted componed scores					
Site Condition score (out of 3)	0.54	0.76	0.22	0.43	0.21	**2.16**
Site Context Score (out of 3)	0.54	0.71	0.27	0.42	0.21	**2.15**
Species Stocking Rate Score (out of 4)	0.28	0.38	0.14	0.22	0.12	**1.14**
Habitat Quality score (out of 10)	1.36	1.85	0.64	1.07	0.54	**5.45**

OFFSET - Sth Kolan

SEFPW

Assessment Unit - Regional Ecosystem		AU15 - 12.3.3 remnant									AU25 - 12.3.3 regrowth									AU26 - 12.3.7 remnant									AU27 - 12.3.3d remnant									AU28 - 12.3.7 regrowth									AU21 - non-remnant												
Site Reference		**Benchmark 12.3.3**	SK12			SK13			Average Benchmark	Average Score	**Benchmark 12.3.3**	SK01			Average Benchmark	Average Score	**Benchmark 12.3.7**	SK05			SK02			Average Benchmark	Average Score	**Benchmark 12.3.3d**	SK16			SK17			Average Benchmark	Average Score	**Benchmark 12.3.7**	SK14			Average Benchmark	Average Score	**Benchmark 12.3.3**	SK03			SK11			SK15			Average Benchmark	Average Score	**Total Average Benchmark**	**Total Average Score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Site Condition	**Max Score**																																																				
Recruitment of woody perennial species in EDL		100	25	25%	3	20	20%	3	23%	3.0	100	66	66%	3	66%	3	100	100	100%	5	66	66%	3	83%	4	100	0	0%	0	100	100%	5	50%	2.5	100	50	50%	3	50%	3	100	0	0%	0	0	0%	0	0	0%	0	0%	0.0	39%	2.3
Native plant species richness - trees		5	7	140%	5	2	40%	2.5	90%	3.8	5	4	80%	2.5	80%	2.5	6	11	183%	5	12	200%	5	192%	5	5	9	180%	5	10	200%	5	190%	5	6	6	100%	5	100%	5	5	2	40%	2.5	0	0%	0	0	0%	0	13%	0.8	106%	3.4
Native plant species richness - shrubs		5	4	80%	2.5	1	20%	0	50%	1.3	5	7	140%	5	140%	5	8	4	50%	2.5	8	100%	5	75%	3.75	6	1	17%	0	6	100%	5	58%	2.5	8	2	25%	2.5	25%	2.5	5	1	20%	0	0	0%	0	1	20%	0	13%	0.0	52%	2.0
Native plant species richness - erasses		9	0	0%	0	0	0%	0	0%	0.0	9	1	11%	0	11%	0	6	0	0%	0	0	0%	0	0%	0	9	1	11%	0	0	0%	0	6%	0	6	1	17%	0	17%	0	9	0	0%	0	1	11%	0	0	0%	0	4%	0.0	5%	0.0
Native plant species richness - forbes		25	9	36%	2.5	1	4%	0	20%	1.3	25	4	16%	0	16%	0	17	2	12%	0	4	24%	0	18%	0	22	5	23%	0	6	27%	2.5	25%	1.25	17	2	12%	0	12%	0	25	5	20%	0	6	24%	0	4	16%	0	20%	0.0	19%	0.5
Emergent height		na	na	na		na	na		na		na	na	na		na		na	na	na		na	na		na		na	0	na		na	na		na		na	na		na		na	20	na		na	na		na				na	
Tree canopy height		25	23	92%	5	25	100%	5	96%	5.0	25	23	92%	5	92%	5	22	25	114%	5	21	95%	4	105%	4.5	27	23	85%	5	25	93%	5	89%	5	22	10	45%	3	45%	3	25	0	0%	0	0	0%	0	0	0%	0	0%	0.0	65%	3.4
Tree subcanopy height		9	13	144%		13	144%		144%		9	13	144%		144%		12	12	100%		8	67%		83%		11	15	136%		15	136%		136%		12	4	33%		33%		9	0	0%		0	0%		0	0%		0%		82%	
Emergent cover	80	na	0	na		0	na		na		na	0	na		na		na	0	na		0	na		na		na	0	na		0	na		na		na	0	na		na		na	0	na		0	na		0	na		na	
Tree canopy cover		40	51.5	129%	5	38.6	97%	4	113%	4.5	40	23.5	59%	5	59%	5	31	10	32%	3.5	52.7	170%	4	101%	3.75	50	19.2	38%	1	20.6	41%	2	40%	1.5	31	0	0%	2.5	0%	2.5	40	0	0%	0	0	0%	0	0	0%	0	0%	0.0	51%	2.5
Tree subcanopy cover		8	12.2	153%		55.6	695%		424%		8	9	113%		113%		23	24.8	108%		15	47.8	208%	158%		20	1.7	9%		5.3	27%		18%		23	18.9	82%		82%		8	0	0%		0	0%		0	0%		0%		127%	
Shrub canopy cover		4	1.3	33%	3	1.6	40%	3	36%	3.0	4	8.1	203%	3	203%	3	22	0	0%	0	0.9	4%	0	2%	0	11	17.4	158%	5	1.2	11%	3	85%	4	22	1.9	9%	0	9%	0	4	2.2	55%	5	0	0%	0	0	0%	0	18%	1.7	47%	2.0
Native grass cover		52	0	0%	0	0	0%	0	0%	0.0	52	0	0%	0	0%	0	8	0	0%	0	0	0%	0	0%	0	30	0	0%	0	0	0%	0	0%	0	8	0	0%	0	0%	0	52	0	0%	0	0	0%	0	0	0%	0	0%	0.0	0%	0.0
Oreanic litter		20	59.4	297%	3	65.2	326%	3	312%	3.0	20	16.25	81%	5	81%	5	27	18	67%	5	47.2	175%	5	121%	5	50	23	46%	3	7	14%	3	30%	3	27	19	70%	5	70%	5	20	0.6	3%	0	3	15%	3	0	0%	0	6%	1.0	99%	3.2
Large trees (exc plus non-exc)		14	22	157%	15	24	171%	15	166%	15.0	14	4	29%	5	29%	5	60	22	37%	5	34	57%	10	47%	7.5	22	16	73%	10	12	55%	10	64%	10	60	0	0%	0	0%	0	14	2	14%	5	0	0%	0	0	0%	0	5%	1.7	54%	6.8
Coarse woody debris		588	256	44%	2	362	62%	5	53%	3.5	588	48	8%	0	8%	0	667	20	3%	0	225	34%	2	18%	1	453	693	153%	5	254	56%	5	105%	5	667	194	29%	2	29%	2	588	0	0%	0	0	0%	0	0	0%	0	0%	0.0	35%	1.9
Non-native plant cover		0	55.00%	na	0	60.00%	na	0	na	0.0	0	70.00%	na	0	na	0	0	60.00%	na	0	40.00%	na	3	na	1.5	0	60.00%	na	0	85.00%	na	0	na	0	0	60.00%	na	0	na	0	0	75.00%	na	0	75.00%	na	0	90.00%	na	0	80%	0.0	66%	2.7%
Site Condition Score					46			40.5		43.3					33.5		33.5				31			41		36.0				34			45.5		39.8				23		23.0				12.5			3			0		5.2		28.2
MAX Site Condition Score					80			80		80.0					80		80				80			80		80				80			80		80				80		80				80			80			0		80		80
Site Condition Score - out of 7					**4.03**			**3.54**		**3.8**					**2.93**		**2.93**				**2.71**			**3.59**		**3.2**				**2.98**			**3.98**		**3.5**				**2.01**		**2.01**				**1.09**			**0.26**			**0.00**		**0.45**		**2.47**
Site Context																																																					
Size of patch		10	0	0%	0	2	20%	2	10%	1	10	2	20%	2	20%	2	10	2	20%	2	2	20%	2	20%	2	10	2	20%	2	2	20%	2	20%	2	10	2	20%	2	20%	2	10	0	0%	0	0	0%	0	0	0%	0	0%	0	13%	1.3
Connectedness		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	0	0%	0	0	0%	0	0	0%	0	0%	0	29%	1.5
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	0	0%	0	40%	2	5	0	0%	0	0	0%	0	0%	0	5	2	40%	2	40%	2	5	0	0%	0	0	0%	0	0	0%	0	0%	0	18%	0.9
Ecological Corridors	46	6	0	0%	0	0	0%	0	0%	0	6	6	100%	6	100%	6	6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0	0%	0	0%	0	6	6	100%	6	100%	6	6	6	100%	6	0	0%	0	0	0%	0	67%	4	55%	3.3
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	5	4	80%	4	80%	4	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	4	80%	4	80%	4	5	0	0%	0	0	0%	0	0	0%	0	0%	0	69%	3.5
Threats to the species		15	2	13%	2	2	13%	2	13%	2	15	2	13%	2	13%	2	15	2	13%	2	2	13%	2	13%	2	15	2	13%	2	2	13%	2	13%	2	15	2	13%	2	13%	2	15	2	13%	2	2	13%	2	2	13%	2	13%	2	13%	2.0
Site Context Score					11			13		12					18		18				19			17		18				11			11		11				18		18				8			2			8		6		12.4
MAX Site Context Score					46			46		46					46		46				46			46		46				46			46		46				46		46				46			46			46		46		46
Site Context Score - out of 3					**0.72**			**0.85**		**0.78**					**1.17**		**1.17**				**1.24**			**1.11**		**1.17**				**0.72**			**0.72**		**0.72**				**1.17**		**1.17**				**0.52**			**0.13**			**0.52**		**0.39**		**0.81**

Final habitat quality score (weighted)	**AU15**	**AU25**	**AU26**	**AU27**	**AU28**	**AU21**	**Average/Final**
Site Condition score (out of 7)	3.78	2.93	3.15	3.48	2.01	0.45	2.47
Site Context Score (out of 3)	0.78	1.17	1.17	0.72	1.17	0.81	0.81
Habitat Quality score (out of 10)	4.57	4.11	4.32	4.20	3.19	1.26	
Assessment Unit area (ha) in offset area	5.50	9.10	12.60	4.30	4.90	33.80	
Total offset area (ha) for this MNES	70.20	70.20	70.20	70.20	70.20	70.20	
Size Weighting	0.08	0.13	0.18	0.06	0.07	0.48	
Weighted Habitat Quality Score	**0.36**	**0.53**	**0.78**	**0.26**	**0.22**	**0.61**	**2.75**

Area-weighted componed scores							
Site Condition score (out of 7)	0.30	0.38	0.57	0.21	0.14	0.22	**1.81**
Site Context Score (out of 3)	0.06	0.15	0.21	0.04	0.08	0.39	**0.94**
Habitat Quality score (out of 10)	0.36	0.53	0.78	0.26	0.22	0.61	**2.75**

Appendix E

Forecasted Habitat Quality Scores

OFFSET - 5th Kolan

Master

Assessment Unit - Regional Ecosystem		AU15 - 12.3.3 remnant								AU25 - 12.3.3 regrowth								AU26 - 12.3.7 remnant								AU27 - 12.3.5d remnant								AU28 - 12.3.7 regrowth								AU21 - non-remnant									
Site Reference		Benchmark 12.3.3	SK12			SK13			Average Benchmark	Average Score	Benchmark 12.3.3	SK01			Average Benchmark	Average Score	Benchmark 12.3.7	SK05			SK02			Average Benchmark	Average Score	Benchmark 12.3.3d	SK16			SK17			Average Benchmark	Average Score	Benchmark 12.3.7	SK14			Average Benchmark	Average Score	Benchmark 12.3.3	SK03			SK11			SK15			Average Benchmark	Average Score	Total Average Benchmark	Total Average Score
Site Condition	Max Score		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Recruitment of woody perennial species in EDL		100	75	75%	5	20	20%	3	48%	4	100	100	100%	5	100%	5	100	100	100%	5	100	100%	5	100%	5	100	100	100%	5	100	100%	5	100%	5	100	100	100%	5	100	100%	5	100	100%	5	100%	5	90%	4.8
Native plant species richness - trees		5	7	140%	5	2	40%	2.5	90%	3.75	5	4	80%	2.5	80%	2.5	6	11	183%	5	12	200%	5	192%	5	5	9	180%	5	10	200%	5	190%	5	6	6	100%	5	100%	5	5	4	80%	2.5	4	80%	2.5	80%	2.5	124%	3.9
Native plant species richness - shrubs		5	4	80%	2.5	1	20%	0	50%	1.25	5	7	140%	5	140%	5	8	4	50%	2.5	8	100%	5	75%	3.75	6	1	17%	0	6	100%	5	58%	2.5	8	2	25%	2.5	25%	2.5	5	4	80%	2.5	4	80%	2.5	80%	2.5	70%	2.7
Native plant species richness - grasses		9	3	33%	2.5	3	33%	2.5	33%	2.5	9	3	33%	2.5	33%	2.5	6	3	50%	2.5	3	50%	2.5	50%	2.5	9	3	33%	2.5	3	33%	2.5	33%	2.5	6	3	50%	2.5	50%	2.5	9	3	33%	2.5	3	33%	2.5	33%	2.5	38%	2.5
Native plant species richness - forbes		25	9	36%	2.5	7	28%	2.5	32%	2.5	25	7	28%	2.5	28%	2.5	17	5	29%	2.5	5	29%	2.5	29%	2.5	22	6	27%	2.5	6	27%	2.5	27%	2.5	17	6	35%	2.5	35%	2.5	25	7	28%	2.5	7	28%	2.5	28%	2.5	30%	2.5
Emergent height		na		na			na				na		na				na		na						na		na						na						20	na								#DIV/0!	
Tree canopy height		25	23	92%	5	25	100%	5	96%	5	25	23	92%	5	92%	5	22	25	114%	5	21	95%	4	105%	4.5	27	23	85%	5	25	93%	5	89%	5	22	16	73%	5	73%	5	25	13	52%	4	13	52%	4	52%	4	82%	4.6
Tree subcanopy height		9	13	144%		13	144%		144%		9	13	144%		144%		12	12	100%		8	67%		83%		11	15	136%		15	136%		136%		12	8.5	71%		71%		9	6.5	72%		6.5	72%		72%		105%	
Emergent cover	80	na	0	na		0	na				na	0	na				na	0	na		0	na			na	0	na		0	na				na	0	na				na	0	na		0	na				70%	
Tree canopy cover		40	51.5	129%	5	38.6	97%	4	113%	4.5	40	23.5	59%	5	59%	5	31	10	32%	3.5	52.7	170%	4	101%	3.75	50	19.2	38%	1	20.6	41%	2	40%	1.5	31	15.5	50%	5	50%	5	40	20	50%	5	20	50%	5	50%	5	70%	4.0
Tree subcanopy cover		8	12.2	153%		55.6	695%		424%		8	9	113%		113%		23	24.8	108%		47.8	208%		158%		20	1.7	9%		5.3	27%		18%		23	18.9	82%		82%		8	15	188%		15	188%		188%		178%	4.0
Shrub canopy cover		4	1.3	33%	3	1.6	40%	3	36%	3	4	8.1	203%	3	203%	3	22	0	0%	0	0.9	4%	0	2%	0	11	17.4	158%	5	1.2	11%	3	85%	4	22	1.9	9%	0	9%	0	4	2.2	55%	5	2.2	55%	5	55%	5	57%	2.9
Native grass cover		52	20	38%	1	0	0%	0	19%	0.5	52	0	0%	0	0%	0	8	3	38%	1	3	38%	1	38%	1	30	0	0%	0	0	0%	0	0%	0	8	3	38%	1	38%	1	52	20	38%	1	20	38%	1	38%	1	24%	0.6
Organic litter		20	30	150%	5	30	150%	5	150%	5	20	16.25	81%	5	81%	5	27	18	67%	5	47.2	175%	5	121%	5	50	23	46%	3	7	14%	3	30%	3	27	19	70%	5	70%	5	20	20	100%	5	20	100%	5	100%	5	96%	4.6
Large trees (euc plus non-euc)		14	22	157%	15	24	171%	15	164%	15	14	4	29%	5	29%	5	60	22	37%	5	34	57%	10	47%	7.5	22	16	73%	10	12	55%	10	64%	10	60	0	0%	0	0%	0	14	2	14%	5	2	14%	5	14%	5	56%	7.7
Coarse woody debris		588	315	54%	5	362	62%	5	58%	5	588	60	10%	2	10%	2	667	20	3%	0	225	34%	2	18%	1	453	693	153%	5	254	56%	5	105%	5	667	194	29%	2	29%	2	588	200	34%	2	200	34%	2	34%	2	46%	2.9
Non-native plant cover		0	24.00%	na	5	24.00%	na	5		5	0	24.00%	na	5		5	0	24.00%	na	5	24.00%	na	5		5	0	24.00%	na	5	24.00%	na	5		5	0	24.00%	na	5		5	0	24.00%	na	5	24.00%	na	5		5		5.0
Site Condition Score					61.5			52.5		57				47.5		47.5				42			51		46.5				49			51					40.5		40.5				47			47		47		48.90909091
MAX Site Condition Score					*80*			*80*		*80*				*80*		*80*				*80*			*80*		*80*				*80*			*80*					*80*		*80*				*80*			*80*		*80*		*80*	
Site Condition Score - out of 7					**5.38**			**4.59**		**4.99**				**4.16**		**4.16**				**3.68**			**4.46**		**4.07**				**4.29**			**4.64**					**3.54**		**3.54**				**4.11**			**4.11**		**4.11**		**4.28**	
Site Context																																																				
Size of patch		10	0	0%	0	2	20%	2	10%	1	10	2	20%	2	20%	2	10	2	20%	2	2	20%	2	20%	2	10	2	20%	2	2	20%	2	20%	2	10	2	20%	2	20%	2	10	2	20%	2	2	20%	2	20%	2	18%	1.8
Connectedness		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	40%	2.0
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	5	0	0%	0	0	0%	0	0%	0	18%	0.9
Ecological Corridors	46	6	0	0%	0	0	0%	0	0%	0	6	6	100%	6	100%	6	6	6	100%	6	6	100%	6	100%	6	6	0	0%	0	0	0%	0	0%	0	6	6	100%	6	100%	6	6	6	100%	6	0	0%	0	67%	4	55%	3.3
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	100%	5	100%	5.0
Threats to the species		15	8	53%	8	8	100%	8	77%	8	15	8	53%	8	53%	8	15	8	53%	8	8	100%	8	77%	8	15	8	53%	8	8	100%	8	77%	8	15	8	53%	8	53%	8	15	8	53%	8	8	100%	8	84%	8	75%	8.0
Site Context Score					17			19		18				25		25				25			23		24				17			17					25		25				17			23		21		21	
MAX Site Context Score					*46*			*46*		*46*				*46*		*46*				*46*			*46*		*46*				*46*			*46*					*46*		*46*				*46*			*46*		*46*		*46*	
Site Context Score - out of 3					**1.11**			**1.24**		**1.17**				**1.63**		**1.63**				**1.63**			**1.50**		**1.57**				**1.11**			**1.11**					**1.63**		**1.63**				**1.11**			**1.37**		**1.37**		**1.37**	

Final habitat quality score (weighted)	**AU15**	**AU25**	**AU26**	**AU27**	**AU28**	**AU21**	**Average/final**
Site Condition score (out of 7)	5.0	4.2	4.1	4.5	3.5	4.1	4.3
Site Context Score (out of 3)	1.2	1.6	1.6	1.1	1.6	1.4	1.4
Habitat Quality score (out of 10)	*6.2*	*5.8*	*5.6*	*5.6*	*5.2*	*5.5*	
Assessment Unit area (ha) in offset area	5.5	9.1	12.6	4.3	4.9	33.8	
Total offset area (ha) for this MNES	70.2	70.2	70.2	70.2	70.2	70.2	
Size Weighting	0.1	0.1	0.2	0.1	0.1	0.5	
Weighted Habitat Quality Score	**0.5**	**0.8**	**1.0**	**0.3**	**0.4**	**2.6**	***5.6***

Area-weighted componed scores

Site Condition score (out of 7)	0.4	0.5	0.7	0.3	0.2	2.0	**4.16**
Site Context Score (out of 3)	0.1	0.2	0.3	0.1	0.1	0.7	**1.43**
Habitat Quality score (out of 10)	0.5	0.8	1.0	0.3	0.4	2.6	**5.59**

Context - Fauna	
Cultural assets	

| Assessment Unit - Regional Ecosystem | | AU17 - 11.10.12 Vulnerable | | | | | | AU21 - 11.11.11 Vulnerable | | | | | | | | | | | | | | | | | | AU25 - 11.11.12 Vulnerable | | | | | | | | | | | | | | AU63 - 11.11.3 Least concern | | | | | | | | | | | | | | AU64 - 11.11.4 Least concern | | | | | | | | | | | | | | AU19 - 11.11.11 Vulnerable | | | | | | | | | | | | | | AU20 - Not Assessed | | | | | | | | | | | | | | | |
|---|---|---

OFFSET - Flora

Cycas megacarpa

| Assessment Unit - Regional Ecosystem | | AU11 - 11.11.35 remnant | | |

| | | |

Appendix

Appendix 1 - Detailed Results

Appendix 1A - Detailed Results - Men

Appendix 1B - Detailed Results - Women

Appendix 1C - Detailed Results - Mixed

Appendix 1D - Detailed Results - Open

Appendix 1E - Detailed Results - Para

Appendix 1F - Detailed Results - Deaf

Appendix 1G - Detailed Results - Wheelchair

Appendix 1H - Detailed Results - Intellectual Impairment

Appendix 1I - Detailed Results - Visual Impairment

Appendix 1J - Detailed Results - Standing

Appendix 1K - Detailed Results - Seated

Appendix 1L - Detailed Results - Prone

Appendix 1M - Detailed Results - Kneeling

Appendix 1N - Detailed Results - Para Archery

Appendix 1O - Detailed Results - Deaf Archery

Appendix 1P - Detailed Results - Wheelchair Archery

Appendix 1Q - Detailed Results - Intellectual Impairment Archery

Appendix 1R - Detailed Results - Visual Impairment Archery

Appendix 1S - Detailed Results - Standing Archery

Appendix 1T - Detailed Results - Seated Archery

Appendix 1U - Detailed Results - Prone Archery

Appendix 1V - Detailed Results - Kneeling Archery

Appendix 1W - Detailed Results - Open Archery

Appendix 1X - Detailed Results - Mixed Archery

Appendix 1Y - Detailed Results - Men Archery

Appendix 1Z - Detailed Results - Women Archery

Appendix 1AA - Detailed Results - Open Archery

Appendix 1AB - Detailed Results - Mixed Archery

Appendix 1AC - Detailed Results - Men Archery

Appendix 1AD - Detailed Results - Women Archery

Appendix 1AE - Detailed Results - Open Archery

Appendix 1AF - Detailed Results - Mixed Archery

Appendix 1AG - Detailed Results - Men Archery

Appendix 1AH - Detailed Results - Women Archery

Appendix 1AI - Detailed Results - Open Archery

Appendix 1AJ - Detailed Results - Mixed Archery

Appendix 1AK - Detailed Results - Men Archery

Appendix 1AL - Detailed Results - Women Archery

Appendix 1AM - Detailed Results - Open Archery

Appendix 1AN - Detailed Results - Mixed Archery

Appendix 1AO - Detailed Results - Men Archery

Appendix 1AP - Detailed Results - Women Archery

Appendix 1AQ - Detailed Results - Open Archery

Appendix 1AR - Detailed Results - Mixed Archery

Appendix 1AS - Detailed Results - Men Archery

Appendix 1AT - Detailed Results - Women Archery

Appendix 1AU - Detailed Results - Open Archery

Appendix 1AV - Detailed Results - Mixed Archery

Appendix 1AW - Detailed Results - Men Archery

Appendix 1AX - Detailed Results - Women Archery

Appendix 1AY - Detailed Results - Open Archery

Appendix 1AZ - Detailed Results - Mixed Archery

Appendix 1BA - Detailed Results - Men Archery

Appendix 1BB - Detailed Results - Women Archery

Appendix 1BC - Detailed Results - Open Archery

Appendix 1BD - Detailed Results - Mixed Archery

Appendix 1BE - Detailed Results - Men Archery

Appendix 1BF - Detailed Results - Women Archery

Appendix 1BG - Detailed Results - Open Archery

Appendix 1BH - Detailed Results - Mixed Archery

Appendix 1BI - Detailed Results - Men Archery

Appendix 1BJ - Detailed Results - Women Archery

Appendix 1BK - Detailed Results - Open Archery

Appendix 1BL - Detailed Results - Mixed Archery

Appendix 1BM - Detailed Results - Men Archery

Appendix 1BN - Detailed Results - Women Archery

Appendix 1BO - Detailed Results - Open Archery

Appendix 1BP - Detailed Results - Mixed Archery

Appendix 1BQ - Detailed Results - Men Archery

Appendix 1BR - Detailed Results - Women Archery

Appendix 1BS - Detailed Results - Open Archery

Appendix 1BT - Detailed Results - Mixed Archery

Appendix 1BU - Detailed Results - Men Archery

Appendix 1BV - Detailed Results - Women Archery

Appendix 1BW - Detailed Results - Open Archery

Appendix 1BX - Detailed Results - Mixed Archery

Appendix 1BY - Detailed Results - Men Archery

Appendix 1BZ - Detailed Results - Women Archery

Appendix 1CA - Detailed Results - Open Archery

Appendix 1CB - Detailed Results - Mixed Archery

Appendix 1CC - Detailed Results - Men Archery

Appendix 1CD - Detailed Results - Women Archery

Appendix 1CE - Detailed Results - Open Archery

Appendix 1CF - Detailed Results - Mixed Archery

Appendix 1CG - Detailed Results - Men Archery

Appendix 1CH - Detailed Results - Women Archery

Appendix 1CI - Detailed Results - Open Archery

Appendix 1CJ - Detailed Results - Mixed Archery

Appendix 1CK - Detailed Results - Men Archery

Appendix 1CL - Detailed Results - Women Archery

Appendix 1CM - Detailed Results - Open Archery

Appendix 1CN - Detailed Results - Mixed Archery

Appendix 1CO - Detailed Results - Men Archery

Appendix 1CP - Detailed Results - Women Archery

Appendix 1CQ - Detailed Results - Open Archery

Appendix 1CR - Detailed Results - Mixed Archery

Appendix 1CS - Detailed Results - Men Archery

Appendix 1CT - Detailed Results - Women Archery

Appendix 1CU - Detailed Results - Open Archery

Appendix 1CV - Detailed Results - Mixed Archery

Appendix 1CW - Detailed Results - Men Archery

Appendix 1CX - Detailed Results - Women Archery

Appendix 1CY - Detailed Results - Open Archery

Appendix 1CZ - Detailed Results - Mixed Archery

Appendix 1DA - Detailed Results - Men Archery

Appendix 1DB - Detailed Results - Women Archery

Appendix 1DC - Detailed Results - Open Archery

Appendix 1DD - Detailed Results - Mixed Archery

Appendix 1DE - Detailed Results - Men Archery

Appendix 1DF - Detailed Results - Women Archery

Appendix 1DG - Detailed Results - Open Archery

Appendix 1DH - Detailed Results - Mixed Archery

Appendix 1DI - Detailed Results - Men Archery

Appendix 1DJ - Detailed Results - Women Archery

Appendix 1DK - Detailed Results - Open Archery

Appendix 1DL - Detailed Results - Mixed Archery

Appendix 1DM - Detailed Results - Men Archery

Appendix 1DN - Detailed Results - Women Archery

Appendix 1DO - Detailed Results - Open Archery

Appendix 1DP - Detailed Results - Mixed Archery

Appendix 1DQ - Detailed Results - Men Archery

Appendix 1DR - Detailed Results - Women Archery

Appendix 1DS - Detailed Results - Open Archery

Appendix 1DT - Detailed Results - Mixed Archery

Appendix 1DU - Detailed Results - Men Archery

Appendix 1DV - Detailed Results - Women Archery

Appendix 1DW - Detailed Results - Open Archery

Appendix 1DX - Detailed Results - Mixed Archery

Appendix 1DY - Detailed Results - Men Archery

Appendix 1DZ - Detailed Results - Women Archery

Appendix 1EA - Detailed Results - Open Archery

Appendix 1EB - Detailed Results - Mixed Archery

Appendix 1EC - Detailed Results - Men Archery

Appendix 1ED - Detailed Results - Women Archery

Appendix 1EE - Detailed Results - Open Archery

Appendix 1EF - Detailed Results - Mixed Archery

Appendix 1EG - Detailed Results - Men Archery

Appendix 1EH - Detailed Results - Women Archery

Appendix 1EI - Detailed Results - Open Archery

Appendix 1EJ - Detailed Results - Mixed Archery

Appendix 1EK - Detailed Results - Men Archery

Appendix 1EL - Detailed Results - Women Archery

Appendix 1EM - Detailed Results - Open Archery

Appendix 1EN - Detailed Results - Mixed Archery

Appendix 1EO - Detailed Results - Men Archery

Appendix 1EP - Detailed Results - Women Archery

Appendix 1EQ - Detailed Results - Open Archery

Appendix 1ER - Detailed Results - Mixed Archery

Appendix 1ES - Detailed Results - Men Archery

Appendix 1ET - Detailed Results - Women Archery

Appendix 1EU - Detailed Results - Open Archery

Appendix 1EV - Detailed Results - Mixed Archery

Appendix 1EW - Detailed Results - Men Archery

Appendix 1EX - Detailed Results - Women Archery

Appendix 1EY - Detailed Results - Open Archery

Appendix 1EZ - Detailed Results - Mixed Archery

Appendix 1FA - Detailed Results - Men Archery

Appendix 1FB - Detailed Results - Women Archery

Appendix 1FC - Detailed Results - Open Archery

Appendix 1FD - Detailed Results - Mixed Archery

Appendix 1FE - Detailed Results - Men Archery

Appendix 1FF - Detailed Results - Women Archery

Appendix 1FG - Detailed Results - Open Archery

Appendix 1FH - Detailed Results - Mixed Archery

Appendix 1FI - Detailed Results - Men Archery

Appendix 1FJ - Detailed Results - Women Archery

Appendix 1FK - Detailed Results - Open Archery

Appendix 1FL - Detailed Results - Mixed Archery

Appendix 1FM - Detailed Results - Men Archery

Appendix 1FN - Detailed Results - Women Archery

Appendix 1FO - Detailed Results - Open Archery

Appendix 1FP - Detailed Results - Mixed Archery

Appendix 1FQ - Detailed Results - Men Archery

Appendix 1FR - Detailed Results - Women Archery

Appendix 1FS - Detailed Results - Open Archery

Appendix 1FT - Detailed Results - Mixed Archery

Appendix 1FU - Detailed Results - Men Archery

Appendix 1FV - Detailed Results - Women Archery

Appendix 1FW - Detailed Results - Open Archery

Appendix 1FX - Detailed Results - Mixed Archery

Appendix 1FY - Detailed Results - Men Archery

Appendix 1FZ - Detailed Results - Women Archery

Appendix 1GA - Detailed Results - Open Archery

Appendix 1GB - Detailed Results - Mixed Archery

Appendix 1GC - Detailed Results - Men Archery

Appendix 1GD - Detailed Results - Women Archery

Appendix 1GE - Detailed Results - Open Archery

Appendix 1GF - Detailed Results - Mixed Archery

Appendix 1GG - Detailed Results - Men Archery

Appendix 1GH - Detailed Results - Women Archery

Appendix 1GI - Detailed Results - Open Archery

Appendix 1GJ - Detailed Results - Mixed Archery

Appendix 1GK - Detailed Results - Men Archery

Appendix 1GL - Detailed Results - Women Archery

Appendix 1GM - Detailed Results - Open Archery

Appendix 1GN - Detailed Results - Mixed Archery

Appendix 1GO - Detailed Results - Men Archery

Appendix 1GP - Detailed Results - Women Archery

Appendix 1GQ - Detailed Results - Open Archery

Appendix 1GR - Detailed Results - Mixed Archery

Appendix 1GS - Detailed Results - Men Archery

Appendix 1GT - Detailed Results - Women Archery

Appendix 1GU - Detailed Results - Open Archery

Appendix 1GV - Detailed Results - Mixed Archery

Appendix 1GW - Detailed Results - Men Archery

Appendix 1GX - Detailed Results - Women Archery

Appendix 1GY - Detailed Results - Open Archery

Appendix 1GZ - Detailed Results - Mixed Archery

Appendix 1HA - Detailed Results - Men Archery

Appendix 1HB - Detailed Results - Women Archery

Appendix 1HC - Detailed Results - Open Archery

Appendix 1HD - Detailed Results - Mixed Archery

Appendix 1HE - Detailed Results - Men Archery

Appendix 1HF - Detailed Results - Women Archery

Appendix 1HG - Detailed Results - Open Archery

Appendix 1HH - Detailed Results - Mixed Archery

Appendix 1HI - Detailed Results - Men Archery

Appendix 1HJ - Detailed Results - Women Archery

Appendix 1HK - Detailed Results - Open Archery

Appendix 1HL - Detailed Results - Mixed Archery

Appendix 1HM - Detailed Results - Men Archery

Appendix 1HN - Detailed Results - Women Archery

Appendix 1HO - Detailed Results - Open Archery

Appendix 1HP - Detailed Results - Mixed Archery

Appendix 1HQ - Detailed Results - Men Archery

Appendix 1HR - Detailed Results - Women Archery

Appendix 1HS - Detailed Results - Open Archery

Appendix 1HT - Detailed Results - Mixed Archery

Appendix 1HU - Detailed Results - Men Archery

Appendix 1HV - Detailed Results - Women Archery

Appendix 1HW - Detailed Results - Open Archery

Appendix 1HX - Detailed Results - Mixed Archery

Appendix 1HY - Detailed Results - Men Archery

Appendix 1HZ - Detailed Results - Women Archery

Appendix 1IA - Detailed Results - Open Archery

Appendix 1IB - Detailed Results - Mixed Archery

Appendix 1IC - Detailed Results - Men Archery

Appendix 1ID - Detailed Results - Women Archery

Appendix 1IE - Detailed Results - Open Archery

Appendix 1IF - Detailed Results - Mixed Archery

Appendix 1IG - Detailed Results - Men Archery

Appendix 1IH - Detailed Results - Women Archery

Appendix 1II - Detailed Results - Open Archery

Appendix 1IJ - Detailed Results - Mixed Archery

Appendix 1IK - Detailed Results - Men Archery

Appendix 1IL - Detailed Results - Women Archery

Appendix 1IM - Detailed Results - Open Archery

Appendix 1IN - Detailed Results - Mixed Archery

Appendix 1IO - Detailed Results - Men Archery

Appendix 1IP - Detailed Results - Women Archery

Appendix 1IQ - Detailed Results - Open Archery

Appendix 1IR - Detailed Results - Mixed Archery

Appendix 1IS - Detailed Results - Men Archery

Appendix 1IT - Detailed Results - Women Archery

Appendix 1IU - Detailed Results - Open Archery

Appendix 1IV - Detailed Results - Mixed Archery

Appendix 1IW - Detailed Results - Men Archery

Appendix 1IX - Detailed Results - Women Archery

Appendix 1IY - Detailed Results - Open Archery

Appendix 1IZ - Detailed Results - Mixed Archery

Appendix 1JA - Detailed Results - Men Archery

Appendix 1JB - Detailed Results - Women Archery

Appendix 1JC - Detailed Results - Open Archery

Appendix 1JD - Detailed Results - Mixed Archery

Appendix 1JE - Detailed Results - Men Archery

Appendix 1JF - Detailed Results - Women Archery

Appendix 1JG - Detailed Results - Open Archery

Appendix 1JH - Detailed Results - Mixed Archery

Appendix 1JI - Detailed Results - Men Archery

Appendix 1JJ - Detailed Results - Women Archery

Appendix 1JK - Detailed Results - Open Archery

Appendix 1JL - Detailed Results - Mixed Archery

Appendix 1JM - Detailed Results - Men Archery

Appendix 1JN - Detailed Results - Women Archery

Appendix 1JO - Detailed Results - Open Archery

Appendix 1JP - Detailed Results - Mixed Archery

Appendix 1JQ - Detailed Results - Men Archery

Appendix 1JR - Detailed Results - Women Archery

Appendix 1JS - Detailed Results - Open Archery

Appendix 1JT - Detailed Results - Mixed Archery

Appendix 1JU - Detailed Results - Men Archery

Appendix 1JV - Detailed Results - Women Archery

Appendix 1JW - Detailed Results - Open Archery

Appendix 1JX - Detailed Results - Mixed Archery

Appendix 1JY - Detailed Results - Men Archery

Appendix 1JZ - Detailed Results - Women Archery

Appendix 1KA - Detailed Results - Open Archery

Appendix 1KB - Detailed Results - Mixed Archery

Appendix 1KC - Detailed Results - Men Archery

Appendix 1KD - Detailed Results - Women Archery

Appendix 1KE - Detailed Results - Open Archery

Appendix 1KF - Detailed Results - Mixed Archery

Appendix 1KG - Detailed Results - Men Archery

Appendix 1KH - Detailed Results - Women Archery

Appendix 1KI - Detailed Results - Open Archery

Appendix 1KJ - Detailed Results - Mixed Archery

Appendix 1KK - Detailed Results - Men Archery

Appendix 1KL - Detailed Results - Women Archery

Appendix 1KM - Detailed Results - Open Archery

Appendix 1KN - Detailed Results - Mixed Archery

Appendix 1KO - Detailed Results - Men Archery

Appendix 1KP - Detailed Results - Women Archery

Appendix 1KQ - Detailed Results - Open Archery

Appendix 1KR - Detailed Results - Mixed Archery

Appendix 1KS - Detailed Results - Men Archery

Appendix 1KT - Detailed Results - Women Archery

Appendix 1KU - Detailed Results - Open Archery

Appendix 1KV - Detailed Results - Mixed Archery

Appendix 1KW - Detailed Results - Men Archery

Appendix 1KX - Detailed Results - Women Archery

Appendix 1KY - Detailed Results - Open Archery

Appendix 1KZ - Detailed Results - Mixed Archery

Appendix 1LA - Detailed Results - Men Archery

Appendix 1LB - Detailed Results - Women Archery

Appendix 1LC - Detailed Results - Open Archery

Appendix 1LD - Detailed Results - Mixed Archery

Appendix 1LE - Detailed Results - Men Archery

Appendix 1LF - Detailed Results - Women Archery

Appendix 1LG - Detailed Results - Open Archery

Appendix 1LH - Detailed Results - Mixed Archery

Appendix 1LI - Detailed Results - Men Archery

Appendix 1LJ - Detailed Results - Women Archery

Appendix 1LK - Detailed Results - Open Archery

Appendix 1LL - Detailed Results - Mixed Archery

Appendix 1LM - Detailed Results - Men Archery

Appendix 1LN - Detailed Results - Women Archery

Appendix 1LO - Detailed Results - Open Archery

Appendix 1LP - Detailed Results - Mixed Archery

Appendix 1LQ - Detailed Results - Men Archery

Appendix 1LR - Detailed Results - Women Archery

Appendix 1LS - Detailed Results - Open Archery

Appendix 1LT - Detailed Results - Mixed Archery

Appendix 1LU - Detailed Results - Men Archery

Appendix 1LV - Detailed Results - Women Archery

Appendix 1LW - Detailed Results - Open Archery

Appendix 1LX - Detailed Results - Mixed Archery

Appendix 1LY - Detailed Results - Men Archery

Appendix 1LZ - Detailed Results - Women Archery

Appendix 1MA - Detailed Results - Open Archery

Appendix 1MB - Detailed Results - Mixed Archery

Appendix 1MC - Detailed Results - Men Archery

Appendix 1MD - Detailed Results - Women Archery

Appendix 1ME - Detailed Results - Open Archery

Appendix 1MF - Detailed Results - Mixed Archery

Appendix 1MG - Detailed Results - Men Archery

Appendix 1MH - Detailed Results - Women Archery

Appendix 1MI - Detailed Results - Open Archery

Appendix 1MJ - Detailed Results - Mixed Archery

Appendix 1MK - Detailed Results - Men Archery

Appendix 1ML - Detailed Results - Women Archery

Appendix 1MM - Detailed Results - Open Archery

Appendix 1MN - Detailed Results - Mixed Archery

Appendix 1MO - Detailed Results - Men Archery

Appendix 1MP - Detailed Results - Women Archery

Appendix 1MQ - Detailed Results - Open Archery

Appendix 1MR - Detailed Results - Mixed Archery

Appendix 1MS - Detailed Results - Men Archery

Appendix 1MT - Detailed Results - Women Archery

Appendix 1MU - Detailed Results - Open Archery

Appendix 1MV - Detailed Results - Mixed Archery

Appendix 1MW - Detailed Results - Men Archery

Appendix 1MX - Detailed Results - Women Archery

Appendix 1MY - Detailed Results - Open Archery

Appendix 1MZ - Detailed Results - Mixed Archery

Appendix 1NA - Detailed Results - Men Archery

Appendix 1NB - Detailed Results - Women Archery

Appendix 1NC - Detailed Results - Open Archery

Appendix 1ND - Detailed Results - Mixed Archery

Appendix 1NE - Detailed Results - Men Archery

Appendix 1NF - Detailed Results - Women Archery

Appendix 1NG - Detailed Results - Open Archery

Appendix 1NH - Detailed Results - Mixed Archery

Appendix 1NI - Detailed Results - Men Archery

Appendix 1NJ - Detailed Results - Women Archery

Appendix 1NK - Detailed Results - Open Archery

Appendix 1NL - Detailed Results - Mixed Archery

Appendix 1NM - Detailed Results - Men Archery

Appendix 1NN - Detailed Results - Women Archery

Appendix 1NO - Detailed Results - Open Archery

Appendix 1NP - Detailed Results - Mixed Archery

Appendix 1NQ - Detailed Results - Men Archery

Appendix 1NR - Detailed Results - Women Archery

Appendix 1NS - Detailed Results - Open Archery

Appendix 1NT - Detailed Results - Mixed Archery

Appendix 1NU - Detailed Results - Men Archery

Appendix 1NV - Detailed Results - Women Archery

Appendix 1NW - Detailed Results - Open Archery

Appendix 1NX - Detailed Results - Mixed Archery

Appendix 1NY - Detailed Results - Men Archery

Appendix 1NZ - Detailed Results - Women Archery

Appendix 1OA - Detailed Results - Open Archery

Appendix 1OB - Detailed Results - Mixed Archery

Appendix 1OC - Detailed Results - Men Archery

Appendix 1OD - Detailed Results - Women Archery

Appendix 1OE - Detailed Results - Open Archery

Appendix 1OF - Detailed Results - Mixed Archery

Appendix 1OG - Detailed Results - Men Archery

Appendix 1OH - Detailed Results - Women Archery

Appendix 1OI - Detailed Results - Open Archery

Appendix 1OJ - Detailed Results - Mixed Archery

Appendix 1OK - Detailed Results - Men Archery

Appendix 1OL - Detailed Results - Women Archery

Appendix 1OM - Detailed Results - Open Archery

Appendix 1ON - Detailed Results - Mixed Archery

Appendix 1OO - Detailed Results - Men Archery

Appendix 1OP - Detailed Results - Women Archery

Appendix 1OQ - Detailed Results - Open Archery

Appendix 1OR - Detailed Results - Mixed Archery

Appendix 1OS - Detailed Results - Men Archery

Appendix 1OT - Detailed Results - Women Archery

Appendix 1OU - Detailed Results - Open Archery

Appendix 1OV - Detailed Results - Mixed Archery

Appendix 1OW - Detailed Results - Men Archery

Appendix 1OX - Detailed Results - Women Archery

Appendix 1OY - Detailed Results - Open Archery

Appendix 1OZ - Detailed Results - Mixed Archery

Appendix 1PA - Detailed Results - Men Archery

Appendix 1PB - Detailed Results - Women Archery

Appendix 1PC - Detailed Results - Open Archery

Appendix 1PD - Detailed Results - Mixed Archery

Appendix 1PE - Detailed Results - Men Archery

Appendix 1PF - Detailed Results - Women Archery

Appendix 1PG - Detailed Results - Open Archery

Appendix 1PH - Detailed Results - Mixed Archery

Appendix 1PI - Detailed Results - Men Archery

Appendix 1PJ - Detailed Results - Women Archery

Appendix 1PK - Detailed Results - Open Archery

Appendix 1PL - Detailed Results - Mixed Archery

Appendix 1PM - Detailed Results - Men Archery

Appendix 1PN - Detailed Results - Women Archery

Appendix 1PO - Detailed Results - Open Archery

Appendix 1PP - Detailed Results - Mixed Archery

Appendix 1PQ - Detailed Results - Men Archery

Appendix 1PR - Detailed Results - Women Archery

Appendix 1PS - Detailed Results - Open Archery

Appendix 1PT - Detailed Results - Mixed Archery

Appendix 1PU - Detailed Results - Men Archery

Appendix 1PV - Detailed Results - Women Archery

Appendix 1PW - Detailed Results - Open Archery

Appendix 1PX - Detailed Results - Mixed Archery

Appendix 1PY - Detailed Results - Men Archery

Appendix 1PZ - Detailed Results - Women Archery

Appendix 1QA - Detailed Results - Open Archery

Appendix 1QB - Detailed Results - Mixed Archery

Appendix 1QC - Detailed Results - Men Archery

Appendix 1QD - Detailed Results - Women Archery

Appendix 1QE - Detailed Results - Open Archery

Appendix 1QF - Detailed Results - Mixed Archery

Appendix 1QG - Detailed Results - Men Archery

Appendix 1QH - Detailed Results - Women Archery

Appendix 1QI - Detailed Results - Open Archery

Appendix 1QJ - Detailed Results - Mixed Archery

Appendix 1QK - Detailed Results - Men Archery

Appendix 1QL - Detailed Results - Women Archery

Appendix 1QM - Detailed Results - Open Archery

Appendix 1QN - Detailed Results - Mixed Archery

Appendix 1QO - Detailed Results - Men Archery

Appendix 1QP - Detailed Results - Women Archery

Appendix 1QQ - Detailed Results - Open Archery

Appendix 1QR - Detailed Results - Mixed Archery

Appendix 1QS - Detailed Results - Men Archery

Appendix 1QT - Detailed Results - Women Archery

Appendix 1QU - Detailed Results - Open Archery

Appendix 1QV - Detailed Results - Mixed Archery

Appendix 1QW - Detailed Results - Men Archery

Appendix 1QX - Detailed Results - Women Archery

Appendix 1QY - Detailed Results - Open Archery

Appendix 1QZ - Detailed Results - Mixed Archery

Appendix 1RA - Detailed Results - Men Archery

Appendix 1RB - Detailed Results - Women Archery

Appendix 1RC - Detailed Results - Open Archery

Appendix 1RD - Detailed Results - Mixed Archery

Appendix 1RE - Detailed Results - Men Archery

Appendix 1RF - Detailed Results - Women Archery

Appendix 1RG - Detailed Results - Open Archery

Appendix 1RH - Detailed Results - Mixed Archery

Appendix 1RI - Detailed Results - Men Archery

Appendix 1RJ - Detailed Results - Women Archery

Appendix 1RK - Detailed Results - Open Archery

Appendix 1RL - Detailed Results - Mixed Archery

Appendix 1RM - Detailed Results - Men Archery

Appendix 1RN - Detailed Results - Women Archery

Appendix 1RO - Detailed Results - Open Archery

Appendix 1RP - Detailed Results - Mixed Archery

Appendix 1RQ - Detailed Results - Men Archery

Appendix 1RR - Detailed Results - Women Archery

Appendix 1RS - Detailed Results - Open Archery

Appendix 1RT - Detailed Results - Mixed Archery

Appendix 1RU - Detailed Results - Men Archery

Appendix 1RV - Detailed Results - Women Archery

Appendix 1RW - Detailed Results - Open Archery

Appendix 1RX - Detailed Results - Mixed Archery

Appendix 1RY - Detailed Results - Men Archery

Appendix 1RZ - Detailed Results - Women Archery

Appendix 1SA - Detailed Results - Open Archery

Appendix 1SB - Detailed Results - Mixed Archery

Appendix 1SC - Detailed Results - Men Archery

Appendix 1SD - Detailed Results - Women Archery

Appendix 1SE - Detailed Results - Open Archery

Appendix 1SF - Detailed Results - Mixed Archery

Appendix 1SG - Detailed Results - Men Archery

Appendix 1SH - Detailed Results - Women Archery

Appendix 1SI - Detailed Results - Open Archery

Appendix 1SJ - Detailed Results - Mixed Archery

Appendix 1SK - Detailed Results - Men Archery

Appendix 1SL - Detailed Results - Women Archery

Appendix 1SM - Detailed Results - Open Archery

Appendix 1SN - Detailed Results - Mixed Archery

Appendix 1SO - Detailed Results - Men Archery

Appendix 1SP - Detailed Results - Women Archery

Appendix 1SQ - Detailed Results - Open Archery

Appendix 1SR - Detailed Results - Mixed Archery

Appendix 1SS - Detailed Results - Men Archery

Appendix 1ST - Detailed Results - Women Archery

Appendix 1SU - Detailed Results - Open Archery

Appendix 1SV - Detailed Results - Mixed Archery

Appendix 1SW - Detailed Results - Men Archery

Appendix 1SX - Detailed Results - Women Archery

Appendix 1SY - Detailed Results - Open Archery

Appendix 1SZ - Detailed Results - Mixed Archery

Appendix 1TA - Detailed Results - Men Archery

Appendix 1TB - Detailed Results - Women Archery

Appendix 1TC - Detailed Results - Open Archery

Appendix 1TD - Detailed Results - Mixed Archery

Appendix 1TE - Detailed Results - Men Archery

Appendix 1TF - Detailed Results - Women Archery

Appendix 1TG - Detailed Results - Open Archery

Appendix 1TH - Detailed Results - Mixed Archery

Appendix 1TI - Detailed Results - Men Archery

Appendix 1TJ - Detailed Results - Women Archery

Appendix 1TK - Detailed Results - Open Archery

Appendix 1TL - Detailed Results - Mixed Archery

Appendix 1TM - Detailed Results - Men Archery

Appendix 1TN - Detailed Results - Women Archery

Appendix 1TO - Detailed Results - Open Archery

Appendix 1TP - Detailed Results - Mixed Archery

Appendix 1TQ - Detailed Results - Men Archery

Appendix 1TR - Detailed Results - Women Archery

Appendix 1TS - Detailed Results - Open Archery

Appendix 1TT - Detailed Results - Mixed Archery

Appendix 1TU - Detailed Results - Men Archery

Appendix 1TV - Detailed Results - Women Archery

Appendix 1TW - Detailed Results - Open Archery

Appendix 1TX - Detailed Results - Mixed Archery

Appendix 1TY - Detailed Results - Men Archery

Appendix 1TZ - Detailed Results - Women Archery

Appendix 1UA - Detailed Results - Open Archery

Appendix 1UB - Detailed Results - Mixed Archery

Appendix 1UC - Detailed Results - Men Archery

Appendix 1UD - Detailed Results - Women Archery

Appendix 1UE - Detailed Results - Open Archery

Appendix 1UF - Detailed Results - Mixed Archery

Appendix 1UG - Detailed Results - Men Archery

Appendix 1UH - Detailed Results - Women Archery

Appendix 1UI - Detailed Results - Open Archery

Appendix 1UJ - Detailed Results - Mixed Archery

Appendix 1UK - Detailed Results - Men Archery

Appendix 1UL - Detailed Results - Women Archery

Appendix 1UM - Detailed Results - Open Archery

Appendix 1UN - Detailed Results - Mixed Archery

Appendix 1UO - Detailed Results - Men Archery

Appendix 1UP - Detailed Results - Women Archery

Appendix 1UQ - Detailed Results - Open Archery

Appendix 1UR - Detailed Results - Mixed Archery

Appendix 1US - Detailed Results - Men Archery

Appendix 1UT - Detailed Results - Women Archery

Appendix 1UU - Detailed Results - Open Archery

Appendix 1UV - Detailed Results - Mixed Archery

Appendix 1UW - Detailed Results - Men Archery

Appendix 1UX - Detailed Results - Women Archery

Appendix 1UY - Detailed Results - Open Archery

Appendix 1UZ - Detailed Results - Mixed Archery

Appendix 1VA - Detailed Results - Men Archery

Appendix 1VB - Detailed Results - Women Archery

Appendix 1VC - Detailed Results - Open Archery

Appendix 1VD - Detailed Results - Mixed Archery

Appendix 1VE - Detailed Results - Men Archery

Appendix 1VF - Detailed Results - Women Archery

Appendix 1VG - Detailed Results - Open Archery

Appendix 1VH - Detailed Results - Mixed Archery

Appendix 1VI - Detailed Results - Men Archery

Appendix 1VJ - Detailed Results - Women Archery

Appendix 1VK - Detailed Results - Open Archery

Appendix 1VL - Detailed Results - Mixed Archery

Appendix 1VM - Detailed Results - Men Archery

Appendix 1VN - Detailed Results - Women Archery

Appendix 1VO - Detailed Results - Open Archery

Appendix 1VP - Detailed Results - Mixed Archery

Appendix 1VQ - Detailed Results - Men Archery

Appendix 1VR - Detailed Results - Women Archery

Appendix 1VS - Detailed Results - Open Archery

Appendix 1VT - Detailed Results - Mixed Archery

Appendix 1VU - Detailed Results - Men Archery

Appendix 1VV - Detailed Results - Women Archery

Appendix 1VW - Detailed Results - Open Archery

Appendix 1VX - Detailed Results - Mixed Archery

Appendix 1VY - Detailed Results - Men Archery

Appendix 1VZ - Detailed Results - Women Archery

Appendix 1WA - Detailed Results - Open Archery

Appendix 1WB - Detailed Results - Mixed Archery

Appendix 1WC - Detailed Results - Men Archery

Appendix 1WD - Detailed Results - Women Archery

Appendix 1WE - Detailed Results - Open Archery

Appendix 1WF - Detailed Results - Mixed Archery

Appendix 1WG - Detailed Results - Men Archery

Appendix 1WH - Detailed Results - Women Archery

Appendix 1WI - Detailed Results - Open Archery

Appendix 1WJ - Detailed Results - Mixed Archery

Appendix 1WK - Detailed Results - Men Archery

Appendix 1WL - Detailed Results - Women Archery

Appendix 1WM - Detailed Results - Open Archery

Appendix 1WN - Detailed Results - Mixed Archery

Appendix 1WO - Detailed Results - Men Archery

Appendix 1WP - Detailed Results - Women Archery

Appendix 1WQ - Detailed Results - Open Archery

Appendix 1WR - Detailed Results - Mixed Archery

Appendix 1WS - Detailed Results - Men Archery

Appendix 1WT - Detailed Results - Women Archery

Appendix 1WU - Detailed Results - Open Archery

Appendix 1WV - Detailed Results - Mixed Archery

Appendix 1WW - Detailed Results - Men Archery

Appendix 1WX - Detailed Results - Women Archery

Appendix 1WY - Detailed Results - Open Archery

Appendix 1WZ - Detailed Results - Mixed Archery

Appendix 1XA - Detailed Results - Men Archery

Appendix 1XB - Detailed Results - Women Archery

Appendix 1XC - Detailed Results - Open Archery

Appendix 1XD - Detailed Results - Mixed Archery

Appendix 1XE - Detailed Results - Men Archery

Appendix 1XF - Detailed Results - Women Archery

Appendix 1XG - Detailed Results - Open Archery

Appendix 1XH - Detailed Results - Mixed Archery

Appendix 1XI - Detailed Results - Men Archery

Appendix 1XJ - Detailed Results - Women Archery

Appendix 1XK - Detailed Results - Open Archery

Appendix 1XL - Detailed Results - Mixed Archery

Appendix 1XM - Detailed Results - Men Archery

Appendix 1XN - Detailed Results - Women Archery

Appendix 1XO - Detailed Results - Open Archery

Appendix 1XP - Detailed Results - Mixed Archery

Appendix 1XQ - Detailed Results - Men Archery

Appendix 1XR - Detailed Results - Women Archery

Appendix 1XS - Detailed Results - Open Archery

Appendix 1XT - Detailed Results - Mixed Archery

Appendix 1XU - Detailed Results - Men Archery

Appendix 1XV - Detailed Results - Women Archery

Appendix 1XW - Detailed Results - Open Archery

Appendix 1XX - Detailed Results - Mixed Archery

Appendix 1XY - Detailed Results - Men Archery

Appendix 1XZ - Detailed Results - Women Archery

Appendix 1YA - Detailed Results - Open Archery

Appendix 1YB - Detailed Results - Mixed Archery

Appendix 1YC - Detailed Results - Men Archery

Appendix 1YD - Detailed Results - Women Archery

Appendix 1YE - Detailed Results - Open Archery

Appendix 1YF - Detailed Results - Mixed Archery

Appendix 1YG - Detailed Results - Men Archery

Appendix 1YH - Detailed Results - Women Archery

Appendix 1YI - Detailed Results - Open Archery

Appendix 1YJ - Detailed Results - Mixed Archery

Appendix 1YK - Detailed Results - Men Archery

Appendix 1YL - Detailed Results - Women Archery

Appendix 1YM - Detailed Results - Open Archery

Appendix 1YN - Detailed Results - Mixed Archery

Appendix 1YO - Detailed Results - Men Archery

Appendix 1YP - Detailed Results - Women Archery

Appendix 1YQ - Detailed Results - Open Archery

Appendix 1YR - Detailed Results - Mixed Archery

Appendix 1YS - Detailed Results - Men Archery

Appendix 1YT - Detailed Results - Women Archery

Appendix 1YU - Detailed Results - Open Archery

Appendix 1YV - Detailed Results - Mixed Archery

Appendix 1YW - Detailed Results - Men Archery

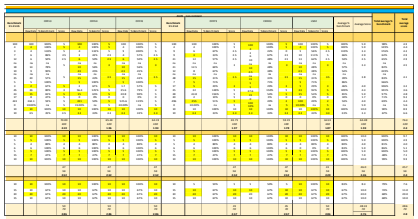
Appendix 1YX - Detailed Results - Women Archery

Appendix 1YY - Detailed Results - Open Archery

Appendix 1YZ - Detailed Results - Mixed Archery

Appendix 1ZA - Detailed Results - Men Archery

Appendix



OFFSET - Flora

Samadera bidwillii

Assessment Unit - Regional Ecosystem		AU17 - 11.10.13 remnant										
Site Reference		**Benchmark 11.10.13**	OFF01(LS) (Lone Star)			OFF06 (The Cedars)			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				
Site Condition	**Max Score**											
Recruitment of woody perennial species in EDL		100	100	100%	5	66.7	67%	3	100%	4	83%	4.00
Native plant species richness - trees		7	4	57%	2.5	5	71%	2.5	57%	2.5	64%	2.50
Native plant species richness - shrubs		10	5	50%	2.5	11	110%	5	50%	3.75	80%	3.75
Native plant species richness - grasses		6	2	33%	2.5	2	33%	2.5	33%	2.5	33%	2.50
Native plant species richness - forbes		7	2	29%	2.5	2	29%	2.5	29%	2.5	29%	2.50
Emergent height		na	na	na		na	na		na		na	
Tree canopy height		22	18	82%	5	19	86%	5	82%	5	84%	5.00
Tree subcanopy height		7	10	143%		12	171%		143%		157%	
Emergent cover	80	na	na	na		na	na		na		na	
Tree canopy cover		25	30.7	123%	2.5	48.6	194%	5	123%	3.75	159%	3.75
Tree subcanopy cover		4	0	0%		7	175%		0%		88%	
Shrub canopy cover		15	19.8	132%	5	9.8	65%	5	132%	5	99%	5.00
Native grass cover		20	0	0%	0	2	10%	1	0%	0.5	5%	0.50
Organic litter		40	69.4	174%	5	50	125%	5	174%	5	149%	5.00
Large trees (euc plus non-euc)		20	0	0%	0	22	110%	15	0%	7.5	55%	7.50
Coarse woody debris		204	1908	935%	2	60	29%	2	935%	2	482%	2.00
Non-native plant cover		0	20.00%	na	5	0.00%	na	10	na	7.5	na	7.50
Site Condition Score (weighted to species-specific)					39.5			63.5		51.5		51.50
MAX Site Condition Score					*80*			*80*		*80*		*80*
Site Condition Score - out of 3					**1.48**			**2.38**		**1.93**		**1.93**
Site Context												
Size of patch		10	10	100%	10	10	100%	10	100%	10	100%	10.00
Connectedness		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Context		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Ecological Corridors	46	6	4	67%	4	4	67%	4	67%	4	67%	4.00
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	100%	5.00
Threats to the species		15	7	47%	7	7	47%	7	47%	7	47%	7.00
Site Context Score					36			36		36		36.00
MAX Site Context Score					*46*			*46*		*46*		*46*
Site Context Score - out of 3					**2.35**			**2.35**		**2.35**		**2.35**
Species Stocking Rate (SSR)												
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	10	100%	10	10	100%	10	100%	10	100%	10.00
Number of plants on site		30	15	50%	15	15	50%	15	50%	15	50%	15.00
Extent of population on site (ha)	105	30	15	50%	15	15	50%	15	50%	15	50%	15.00
Approximate density		20	10	50%	10	10	50%	10	50%	10	50%	10.00
Role/importance of species population on site*		15	15	100%	15	15	100%	15	100%	15	100%	15.00
SSR Score					65			65		65		65.00
MAX SSR Score					*105*			*105*		*105*		*105*
SSR Score - out of 4					**2.48**			**2.48**		**2.48**		**2.48**

Species Stocking Rate (SSR)						
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5			10
		No	Yes - detection within Impact/ Offset Area			Yes - detection within habitat patch
Number of plants on site	Score	0	10	15	20	30
Exent of population on site (ha)	Score	0	10	15	20	30
		0	01-1 ha	1.1-3 ha	3.1-6 ha	>6ha
Approximate density (per ha) over suitable habitat within project area	Score	0	5	10	15	20
		0	1-100	101-1000	1001-2999	=>3,000
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15
		0	10	25 - 35		40
Total SRR score (out of 105)	65					
SRR Score (out of 4)	2.48					

***SSR Supplementary Table**			
*Key source population for germination and seed/gamete dispersal	Score	0	10
		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

Final habitat quality score (weighted)	**AU17**	**Average/Final**
		Known
Site Condition score (out of 3)	1.93	1.9313
Site Context Score (out of 3)	2.35	2.3478
Species Stocking Rate Score (out of 4)	2.48	2.4762
Habitat Quality score (out of 10)	*6.76*	
Assessment Unit area (ha) in disturbance footprint	1.40	
Total impact area (ha) for this MNES	1.40	
Size Weighting	1.00	
Weighted Habitat Quality Score	***6.76***	***6.8***

OFFSET - TEC

SEVT

Assessment Unit - Regional Ecosystem		AU22 - 11.8.3 remnant								AU23 - 11.11.18 remnant						AU21 - non-remnant							
Site Reference		**Benchmark 11.8.3**	OFF76 (The Cedars)			OFF101 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.11.5a**	OFF70 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.8.3**	OFF100 (The Cedars)			Average % benchmark	Average Score	**Total average % benchmark**	**Total average score**
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchm	Score				Raw Data	% Benchmark	Score				
Site Condition	**Max Score**																							
Recruitment of woody perennial species in EDL		100	54.5	55%	3	100	100%	5	77%	4.0	100	66.7	67%	3	67%	3.00	100	65	65%	3	65%	3.0	72%	3.5
Native plant species richness - trees		15	13	87%	2.5	10	67%	2.5	77%	2.5	20	9	45%	2.5	45%	2.50	20	10	50%	2.5	50%	2.5	62%	2.5
Native plant species richness - shrubs		15	15	100%	5	10	67%	2.5	83%	3.8	15	14	93%	5	93%	5.00	15	10	67%	2.5	67%	2.5	82%	3.8
Native plant species richness - grasses		2	3	150%	5	3	150%	5	150%	5.0	2	2	100%	5	100%	5.00	2	2	100%	5	100%	5.0	125%	5.0
Native plant species richness - forbes		14	10	71%	2.5	9	64%	2.5	68%	2.5	21	7	33%	2.5	33%	2.50	21	6	29%	2.5	29%	2.5	49%	2.5
Emergent height		na	13	na		12	na		na		21	12	na		na		21	na	na		na		na	
Tree canopy height		7	8	114%	5	8	114%	2.5	114%	3.8	14	8	57%	4	57%	4.00	14	8	57%	5	57%	5.0	86%	4.1
Tree subcanopy height		3	4	133%		3	100%		117%		8	3	38%		38%		8	4	50%		50%		80%	
Emergent cover	80	na	10	na		12	na		na		5	2	na		na		5	na	na		na		na	
Tree canopy cover		62	78	126%	2.5	73	118%	5	122%	3.8	62	32	52%	3.5	52%	3.50	62	40	65%	4	65%	4.0	90%	3.8
Tree subcanopy cover		17	0	0%		10	59%		29%		28	5	18%		18%		28	40	143%		143%		55%	
Shrub canopy cover		27	78	289%	3	25	93%	5	191%	4.0	21	35.6	170%	5	170%	5.00	21	10	48%	3	48%	3.0	150%	4.0
Native grass cover		5	0	0%	0	7	140%	5	70%	2.5	3	0	0%	0	0%	0.00	3	0	0%	0	0%	0.0	35%	1.3
Organic litter		45	5	11%	3	36	80%	5	46%	4.0	39	10	26%	3	26%	3.00	39	35	90%	5	90%	5.0	52%	4.0
Large trees (euc plus non-euc)		180	280	156%	15	130	72%	10	114%	12.5	60	22	37%	5	37%	5.00	60	2	3%	5	3%	5.0	67%	8.8
Coarse woody debris		944	141	15%	2	525	56%	5	35%	3.5	377	359	95%	5	95%	5.00	377	10	3%	0	3%	0.0	42%	3.0
Non-native plant cover		0	1.00%	na	10	2.00%	na	10	na	10.0	0	1.00%	na	10	na	10.00	0	20.00%	na	5	na	5.0	na	8.8
Site Condition Score					58.5			65.0		61.75				53.5		53.5				42.5		42.5		54.9
MAX Site Condition Score					80			80		80				80		80				80		80		80
Site Condition Score - out of 7					**5.12**			**5.69**		**5.40**				**4.68**		**4.68**				**3.72**		**3.72**		**4.80**
Site Context																								
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	100%	10.00	10	10	100%	10	100%	10	100%	10.0
Connectedness		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	5	100%	5	100%	5	100%	5.0
Context		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	5	100%	5	100%	5	100%	5.0
Ecological Corridors	46	6	6	100%	6	6	100%	6	100%	6	6	6	100%	6	100%	6.00	6	6	100%	6	100%	6	100%	6.0
Role of site location to species overall population in the state		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	100%	5.00	5	5	100%	5	100%	5	100%	5.0
Threats to the TEC		15	7	47%	7	7	47%	7	47%	7	15	7	47%	7	47%	7.00	15	7	47%	7	47%	7	47%	7.0
Site Context Score					38			38		38				38		38.00				38		38		38.00
MAX Site Context Score					46			46		46				46		46				46		46		46
Site Context Score - out of 3					**2.48**			**2.48**		**2.48**				**2.48**		**2.48**				**2.48**		**2.48**		**2.48**

Final habitat quality score (weighted)	**AU22**	**AU23**	**AU21**	**Average/Final**
Site Condition score (out of 7)	5.40	4.68	3.72	4.80
Site Context Score (out of 3)	2.48	2.48	2.48	2.48
Habitat Quality score (out of 10)	7.88	7.16	6.20	
Assessment Unit area (ha) in BBOA	12.36	1.57	1.84	
Total offset area (ha) for this MNES	15.77	15.77	15.77	
Size Weighting	0.78	0.10	0.12	
Weighted Habitat Quality Score	***6.18***	***0.71***	***0.72***	***7.61***

Area-weighted componed scores

Site Condition score (out of 7)	4.2	0.5	0.4	**5.13**
Site Context Score (out of 3)	1.9	0.2	0.3	**2.48**
Habitat Quality score (out of 10)	6.2	0.7	0.7	**7.61**

OFFSET - Fauna

Yellow-bellied glider

Assessment Unit - Regional Ecosystem		AU24 - 11.3.4 remnant								AU07 - 11.3.25 remnant									AU17 - 11.10.13 remnant										AU03 - 11.11.3 remnant										AU04 - 11.11.4 remnant										Total average % benchmark	Total average score
Site Reference	**Species specific attribute score and multiplier**	**Benchmark 11.3.4**	OFF-11 (Lone Star)			LS202 (Lone Star)			Average % benchmark	Average Score	**Benchmark 11.3.25**	BC01 (Lone Star)			BC02 (Lone Star)			OFF-10			Average % benchmark	Average Score	**Benchmark 11.10.13**	OFF01(LS) (Lone Star)			OFF06 (The Cedars)			Average % benchmark	Average Score	**Benchmark 11.11.3**	OFF-04 (Lone Star)			LS01 (Lone Star)			LS05 (Lone Star)			Average % benchmark	Average Score	**Benchmark 11.11.4**	OFF-18 (Lone Star)			Average % benchmark	Average Score		
			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score				Raw Data	% Benchmark	Score				
Site Condition																																																		
Recruitment of woody perennial species in EDL		100	100	100%	5	100	100%	5	100%	5.0	100	100	100%	5	50	50%	3	100	100%	5	75%	4.0	100	100	100%	5	66.7	67%	3	83%	4.0	100	100	100%	5	100	100%	5	100%	5.0	100	100	100%	5	100%	5.0	92%	4.6
Native plant species richness - trees		4	5	125%	5	8	200%	5	163%	5.0	4	8	200%	5	7	175%	5	7	175%	5	188%	5.0	7	4	57%	2.5	5	71%	2.5	64%	2.5	3	6	200%	5	6	200%	5	4	133%	5	178%	5.0	4	5	125%	5	125%	5.0	149%	4.5
Native plant species richness - shrubs		3	2	67%	2.5	13	433%	5	250%	3.8	4	14	350%	5	7	175%	5	6	150%	5	263%	5.0	10	5	50%	2.5	11	110%	5	80%	3.8	6	10	167%	5	5	83%	2.5	10	167%	5	139%	4.2	9	3	33%	2.5	33%	2.5	164%	4.0
Native plant species richness - grasses		11	2	18%	0	5	45%	2.5	32%	1.3	8	6	75%	2.5	5	63%	2.5	4	50%	2.5	69%	2.5	6	2	33%	2.5	2	33%	2.5	33%	2.5	6	5	83%	2.5	9	150%	5	8	133%	5	122%	4.2	9	3	33%	2.5	33%	2.5	67%	2.8
Native plant species richness - forbes		17	5	29%	2.5	12	71%	2.5	50%	2.5	13	9	69%	2.5	4	31%	2.5	13	100%	5	50%	2.5	7	2	29%	2.5	2	29%	2.5	29%	2.5	14	14	100%	5	17	121%	5	16	114%	5	112%	5.0	21	7	33%	2.5	33%	2.5	63%	3.3
Emergent height		na	na	na		na	na		na	na	na	na	na		na	na		na	na		na	na	na	na	na		na	na		na	na	na	na	na		na	na		na	na	na	na		na	na		na	na
Tree canopy height		24	24	100%	4	25	104%	5	102%	4.5	23	21	91%	5	24	104%	5	24	104%	5	98%	5.0	22	18	82%	5	19	86%	5	84%	5.0	28	20	71%	4	23	82%	5	27	96%	5	83%	4.7	21	20	95%	5	95%	5.0	91%	4.8
Tree subcanopy height		14	5	36%		14	100%		68%		11	12	109%		14	127%		14	127%		118%		7	10	143%		12	171%		157%		15	8	53%		11.5	77%		15	100%		77%		12	11	92%		92%		101%	
Emergent cover	0 (0.625 multiplier)	na	na	na		na	na		na		na	na	na		na	na		na	na		na		na	na	na		na	na		na		na	na	na		na	na		0	na		na		na	na		na	
Tree canopy cover		30	33.5	112%	2.5	23.8	79%	5	96%	3.8	34	42.8	126%	5	44.2	130%	5	17.5	51%	2.5	128%	5.0	25	30.7	123%	2.5	48.6	194%	4	159%	3.3	45	45	100%	2.5	39.4	88%	4	47.9	106%	4	98%	3.5	48	37.6	78%	5	78%	5.0	114%	4.0
Tree subcanopy cover		15	0	0%		19.6	131%		65%		12	16.2	135%		16	133%		0	0%		134%		4	0	0%		10.6	265%		133%		6	0	0%		12.8	213%		21.3	355%		189%		7	8	114%		114%		155%	
Shrub canopy cover		3	3	100%	5	8.8	293%	3	197%	4.0	7	5	71%	5	5	71%	5	28.8	411%	3	71%	5.0	15	19.8	132%	5	9.8	65%	5	99%	5.0	9	2	22%	3	1.1	12%	3	5.5	61%	5	32%	3.7	17	3	18%	3	18%	3.0	85%	4.2
Native grass cover		55	30	55%	3	63.4	115%	5	85%	4.0	35	27.5	79%	3	60.2	172%	5	2	6%	0	125%	4.0	20	10	50%	3	10	50%	3	50%	3.0	17	44	259%	5	30.4	180%	5	30	176%	5	205%	5.0	25	60	240%	5	240%	5.0	138%	4.2
Organic litter		37	17	46%	3	11	30%	3	38%	3.0	21	45.25	215%	3	15	71%	5	10	48%	3	143%	4.0	40	69.4	174%	5	88	220%	3	197%	4.0	50	27	54%	5	28	56%	5	35.6	71%	5	60%	5.0	28	9.6	34%	3	34%	3.0	97%	4.0
Large trees (euc plus non-euc)		19	12	63%	10	26	137%	15	100%	12.5	32	68	213%	15	18	56%	10	6	19%	5	134%	12.5	20	0	0%	0	22	110%	15	55%	7.5	17	30	176%	15	18	106%	15	22	129%	15	137%	15.0	20	38	190%	15	190%	15.0	118%	12.5
Coarse woody debris		509	610	120%	5	140	28%	2	74%	3.5	473	180	38%	2	560	118%	5	133	28%	2	78%	3.5	204	1908	935%	2	50	25%	2	480%	2.0	642	70	11%	2	291	45%	2	335	52%	5	36%	3.0	496	60	12%	2	12%	2.0	138%	2.9
Non-native plant cover		0	20.00%	na	5	20.00%	na	5	na	5.0	0	20.00%	na	5	10.00%	na	5	5.00%	na	5	na	5.0	0	20.00%	na	5	0.00%	na	10	na	7.5	0	5.00%	na	5	20%	na	5	10.00%	na	5	na	5.0	0	5.00%	na	5	na	5.0	na	5.5
Quality and availability of food and foraging habitat	20 (2 multiplier)	10	8	80%	8	10	100%	10	90%	9.0	10	8	80%	8	8	80%	8	8	80%	8	80%	8.0	10	6.5	65%	6.5	8	80%	8	73%	7.3	10	6.5	65%	6.5	7.5	75%	7.5	8	80%	8	73%	7.3	10	5	50%	5	50%	5.0	76%	7.6
Quality and availability of shelter	30 (3 multiplier)	10	4	40%	4	10	100%	10	70%	7.0	10	9	90%	9	10	100%	10	6	60%	6	95%	9.5	10	4	40%	4	8	80%	8	60%	6.0	10	0	0%	0	9	90%	9	8	80%	8	57%	5.7	10	6	60%	6	60%	6.0	68%	6.8
Site Condition Score (weighted to species-specific)					60.8125				89.38						82.38			85.38			64.00	83.88					51.56			79.0625					65.31					53.00					74.27			65.81		65.81		73.72	
MAX Site Condition Score					*100*				*100*						*100*			*100*			*100*	*100*					*100*			*100*					*100*					*100*					*100*			*100*		*100*		*100*	
Site Condition Score - out of 3					**1.82**				**2.68**						**2.47**			**2.56**			**1.92**	**2.32**					**1.55**			**2.37**					**1.96**					**1.59**					**2.23**			**1.97**		**1.97**		**2.21**	
Site Context																																																		
Size of patch		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	100%	10.0	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	100%	10	100%	10	100%	10.0
Connectedness		5	5	100%	5	5	100%	5	100%	5	5	5	100%	5	5	100%	5	5	100%	5	100%	5	5	5	100%	5.0	5	100%	5	100%	5.0	5	5	100%	5	5	100%	5	5	100%	5	100%	5	5	100%	5	100%	5	100%	5.0
Context		5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	2	40%	2	4	80%	4	40%	2	5	2	40%	2	4	80%	4	80%	4.0	6	3	60%	3.0	5	2	40%	2	2	40%	2	40%	2	5	2	40%	2	40%	2	44%	2.2
Ecological Corridors	56	6	6	100%	6	6	100%	6	100%	6	6	4	67%	4	4	67%	4	4	67%	4	67%	4	6	6	100%	6	6	100%	6	100%	6.0	6	4	67%	4	4	67%	4	4	67%	4	67%	4	4	67%	4	67%	4	80%	4.8
Role of site location to species overall population in the state		5	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	4	80%	4	80%	4	5	4	80%	4	4	80%	4	80%	4.0	5	4	80%	4	4	80%	4	4	80%	4	80%	4	4	80%	4	80%	4	80%	4.0
Threats to the species		15	7	47%	7	7	47%	7	47%	7	15	7	47%	7	7	47%	7	7	47%	7	47%	7	15	7	47%	7	7	47%	7.0	47%	7.0	15	7	47%	7	7	47%	7	7	47%	7	47%	7	7	47%	7	47%	7	47%	7.0
Species mobility capacity		10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	10	100%	10	10	100%	10	8.7	87%	8.7	10	10	100%	10	10	100%	10	10	100%	10	100%	10	10	100%	10	100%	10	99%	9.9
Site Context Score					44				44						42.00			44.00			44.00	42.00					44.00			44.7					44.35					42.00					42.00			42.00		42.87	
MAX Site Context Score					*56*				*56*						*56*			*56*			*56*	*56*					*56*			*56*					*56*					*56*					*56*			*56*		*56*		*56*	
Site Context Score - out of 3					**2.36**				**2.36**						**2.25**			**2.36**			**2.36**	**2.29**					**2.36**			**2.39**					**2.38**					**2.25**					**2.25**			**2.25**		**2.25**		**2.30**	
Species Stocking Rate (SSR)																																																		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)		10	10	100%	10	10	100%	10	100%	10.00	10	5	50%	5	10	100%	10	10	100%	10	75%	8.3	10	5	50%	5	5	50%	5	50%	5	10	5	50%	5	5	50%	5	5	50%	5	50%	5	10	5	50%	5	50%	5	65%	6.5
Species usage of the site (habitat type & evidenced usage)	70	15	15	100%	15	15	100%	15	100%	15.00	15	15	100%	15	15	100%	15	15	100%	15	100%	15	15	15	100%	15	15	100%	15	100%	15.0	15	15	100%	15	15	100%	15	15	100%	15	100%	15	15	100%	15	100%	15	100%	15.0
Approximate density		30	10	33%	10	0	0%	10	17%	10.00	30	10	33%	10	10	33%	10	10	33%	10	33%	10	30	10	33%	10	10	33%	10	33%	10.0	30	10	33%	10	10	33%	10	10	33%	10	33%	10	30	10	33%	10	33%	10	30%	10.0
Role/importance of species population on site*		15	5	33%	5	5	33%	5	33%	5.00	15	5	33%	5	5	33%	5	5	67%	10	33%	5	15	5	33%	5	5	33%	5	33%	5.0	15	5	33%	5	5	33%	5	5	33%	5	33%	5	15	5	33%	5	33%	5	33%	5.0
SSR Score					40				40						35.00			40.00			45.00	37.50					35.00			35					35.00					35.00					35.00			35.00		36.50	
MAX SSR Score					*70*				*70*						*70*			*70*			*70*	*70*					*70*			*70*					*70*					*70*					*70*			*70*		*70*		*70*	
SSR Score - out of 4					**2.29**				**2.29**						**2.00**			**2.29**			**2.57**	**2.29**					**2.00**			**2.00**					**2.00**					**2.00**					**2.00**			**2.00**		**2.09**	

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		Denning, foraging and dispersal within patch 50–<85 ha	Denning, foraging and dispersal within patch >=85 ha
Approximate density (per ha)	Score	0	10	20	30
		0%			
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)	37				
SRR Score (out of 2)	**2.09**				

***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	

Final habitat quality score (weighted)	**AU24**	**AU07**	**AU17**	**AU03**	**AU04**	**Average/Final**
Site Condition score (out of 3)	2.3	2.5	2.0	2.2	2.0	2.21
Site Context Score (out of 3)	2.4	2.3	2.4	2.3	2.3	2.30
Species Stocking Rate Score (out of 4)	2.3	2.1	2.0	2.0	2.0	2.09
Habitat Quality score (out of 10)	6.9	6.9	6.3	6.5	6.7	
Assessment Unit area (ha) in BBOA	68.5	93.9	34.3	55.5	30.4	
Total offset area (ha) for this MNES	282.6	282.6	282.6	282.6	282.6	
Size Weighting	0.24	0.33	0.12	0.20	0.11	
Weighted Habitat Quality Score	***1.7***	***2.3***	***0.8***	***1.3***	***0.7***	***7***
			Area-weighted componed scores			
Site Condition score (out of 3)	0.5	0.8	0.2	0.4	0.2	**2.2699**
Site Context Score (out of 3)	0.6	0.7	0.3	0.4	0.2	**2.2913**
Species Stocking Rate Score (out of 4)	0.6	0.7	0.2	0.4	0.2	**2.1167**
Habitat Quality score (out of 10)	1.7	2.3	0.8	1.3	0.7	6.6779

Appendix F

HQA Raw Data

umwelt

HQA Raw Data – Impact

Greater glider (southern and central)

Appendix Table F.1 Greater glider (southern and central) – Quality of Habitat for Foraging – Raw Scores

AU	Site ID	Density of large trees (>30 cm dbh)	Species richness of recognised habitat trees	Canopy cover % (does not include sub-canopy)	Total score (out of 10)	Weighted quality of habitat for foraging score (out of 20)
		Weighted Score (33%)	Weighted Score (34%)	Weighted Score (33%)		
AU02	**7**	1.65	1.7	1.65	10	**20**
AU03	**9**	0.99	1.7	1.65	8.68	**17.36**
AU04	**38**	1.65	1.7	1.65	10	**20**
AU07	**17**	1.65	1.7	1.65	10	**20**
	29	1.65	0	1.65	6.6	**13.2**
	30	0.33	1.7	1.65	7.36	**14.72**
AU09	**45**	0.99	1.7	0.825	7.03	**14.06**
AU11	**24**	1.65	1.7	1.65	10	**20**
	39	1.65	1.7	1.65	10	**20**
	40	1.65	1.36	0.825	7.67	**15.34**
	42	0	1.36	1.65	6.02	**12.04**
AU12	**25**	1.65	1.7	1.65	10	**20**
	35	1.65	1.7	1.65	10	**20**
AU14	**28**	0	1.7	0.33	4.06	**8.12**
AU15	**32**	1.65	1.7	1.65	10	**20**
AU18	**46**	0	1.7	0.825	5.05	**10.1**

Appendix Table F.2 Greater glider (southern and central) – Quality of Habitat for Shelter and Breeding – Raw Scores

AU	Site ID	Density of large denning trees (>50 cm dbh)	Presence of habitat tree species (large trees >50 cm dbh)	Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 30)
		Weighted Score (70%)	Weighted Score (30%)		
AU02	7	3.5	1.5	5	**15**
AU03	9	0	0	0	**0**
AU04	**38**	2.8	1.5	4.3	**12.9**
AU07	**17**	1.4	1.5	2.9	**8.7**
	29	3.5	0	3.5	**10.5**
	30	2.1	1.5	3.6	**10.8**
AU09	**45**	0	0	0	**0**
AU11	**24**	2.1	1.5	3.6	**10.8**
	39	0	0	0	**0**
	40	1.4	1.2	2.6	**7.8**
	42	0	0	0	**0**
AU12	**25**	3.5	1.5	5	**15**
	35	3.5	1.5	5	**15**
AU14	**28**	1.4	1.2	2.6	**7.8**
AU15	**32**	2.8	1.5	4.3	**12.9**
AU18	**46**	0	0	0	**0**

Appendix Table F.3 **Greater glider (southern and central) – Quality of Habitat for Mobility – Raw Scores**

AU	Site ID	Size of habitat patch	Tree height and canopy structure	Proximity to riparian corridor	Connectivity of suitable habitat	Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Weighted Score (20%)	Weighted Score (35%)	Weighted Score (10%)	Weighted Score (35%)		
AU02	**7**	1	0.7	1	3.5	6.2	**6.2**
AU03	**9**	1	1.2	0.4	3.5	6.1	**6.1**
AU04	**38**	1	1.8	0.7	3.5	7	**7**
AU07	**17**	1	1.2	1	2.45	5.7	**5.7**
	29	0.6	1.2	1	2.45	5.3	**5.3**
	30	0	0.7	1	2.45	4.2	**4.2**
AU09	**45**	0.6	0.4	1	3.5	5.5	**5.5**
AU11	**24**	1	1.2	0.4	0.35	3	**3**
	39	1	1.2	0.4	0.35	3	**3**
	40	1	0.7	1	3.5	6.2	**6.2**
	42	1	1.2	1	3.5	6.7	**6.7**
AU12	**25**	1	1.2	1	0.35	3.6	**3.6**
	35	1	0.7	1	0.35	3.1	**3.1**
AU14	**28**	1	0.7	1	3.5	6.2	**6.2**
AU15	**32**	1	1.2	1	0.35	3.6	**3.6**
AU18	**46**	1	0.4	0.7	3.5	5.6	**5.6**

Koala

Appendix Table F.4 **Koala – Quality of Habitat for Foraging – Raw Scores**

AU	Site ID	Richness and canopy cover of locally important koala trees	Proportion of koala foraging tree species within the EDL that are recruiting (<5cm dbh)	Total score (out of 10)	Weighted quality of habitat for foraging score (out of 25)
		Weighted Score (70%)	Weighted Score (30%)		
AU02	**7**	7	3	10	**25**
	12	7	1.8	8.8	**22**
AU03	**9**	4.2	3	7.2	**18**
	13	4.2	3	7.2	**18**
	20	4.2	3	7.2	**18**
AU04	**14**	7	1.8	8.8	**22**
	38	7	1.8	8.8	**22**
AU05	**21**	7	1.8	8.8	**22**
AU06	**15**	4.2	3	7.2	**18**
	43	0	3	3	**7.5**
AU07	**17**	4.2	1.8	6	**15**
	29	0	0	0	**0**
	30	4.2	3	7.2	**18**
AU08	**37**	4.2	3	7.2	**18**
AU09	**22**	4.2	1.8	6	**15**
	45	7	3	10	**25**
AU10	**23**	7	3	10	**25**
	18	7	3	10	**25**
AU11	**24**	7	1.8	8.8	**22**
	39	4.2	1.8	6	**15**
	40	7	3	10	**25**
	42	4.2	3	7.2	**18**
	47	4.2	1.8	6	**15**
AU12	**25**	4.2	3	7.2	**18**
	35	7	3	10	**25**

AU	Site ID	Richness and canopy cover of locally important koala trees	Proportion of koala foraging tree species within the EDL that are recruiting (<5cm dbh)	Total score (out of 10)	Weighted quality of habitat for foraging score (out of 25)
		Weighted Score (70%)	Weighted Score (30%)		
AU13	**27**	4.2	3	7.2	**18**
AU14	**28**	7	1.8	8.8	**22**
AU15	**32**	4.2	0	4.2	**10.5**
	33	4.2	0	4.2	**10.5**
	34	4.2	3	7.2	**18**
AU16	**36**	4.2	0	4.2	**10.5**
AU17	**41**	4.2	3	7.2	**18**
AU18	**46**	4.2	1.8	6	**15**

Appendix Table F.5 Koala – Quality of Habitat for Shelter and Breeding – Raw Scores

AU	Site ID	Presence of large trees	Presence of refugia within patch	Canopy and sub-canopy cover	Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 25)
		Weighted Score (33%)	Weighted Score (34%)	Weighted Score (33%)		
AU02	**7**	1.65	0	0.66	4.6	**11.5**
	12	1.32	1.02	0.66	6	**15**
AU03	**9**	0.33	1.02	0	2.7	**6.75**
	13	0.33	1.02	0.66	4	**10**
	20	0.33	1.02	0.66	4	**10**
AU04	**14**	0.99	1.7	0.66	6.7	**16.75**
	38	1.65	1.02	0.66	6.7	**16.75**
AU05	**21**	0.33	1.7	0	4.1	**10.25**
AU06	**15**	0	0	0.66	1.3	**3.25**
	43	0	0	0	0	**0**
AU07	**17**	1.65	1.7	0.66	8	**20**
	29	1.65	1.7	0.66	8	**20**
	30	1.65	1.7	0	6.7	**16.75**
AU08	**37**	1.65	1.7	0.66	8	**20**
AU09	**22**	0	1.02	0	2	**5**
	45	0	1.02	0	2	**5**
AU10	**23**	0	1.02	0.66	3.4	**8.5**
	18	0.33	1.02	0.66	4	**10**
AU11	**24**	0.99	0	0	2	**5**
	39	0	1.7	0.66	4.7	**11.75**
	40	0.33	1.02	0.66	4	**10**
	42	0	1.02	0.66	3.4	**8.5**
	47	0	1.02	0.66	3.4	**8.5**
AU12	**25**	0.99	1.7	0.66	6.7	**16.75**
	35	1.65	1.7	0	6.7	**16.75**
AU13	**27**	0	1.02	0	2	**5**
AU14	**28**	0	1.02	0.66	3.4	**8.5**
AU15	**32**	0.33	1.7	0.66	5.4	**13.5**
	33	0.33	1.7	0.66	5.4	**13.5**
	34	0.66	1.7	0.66	6	**15**
AU16	**36**	0	0	0.66	1.3	**3.25**
AU17	**41**	0.66	1.02	0.66	4.7	**11.75**
AU18	**46**	0	0	1.65	3.3	**8.25**

Appendix Table F.6 **Koala – Quality of Habitat for Movement – Raw Scores**

AU	Site ID	Patch isolation and ease of movement	Presence of nearby vegetated watercourse	Size of habitat patch	Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Weighted Score (50%)	Weighted Score (30%)	Weighted Score (20%)		
AU02	**7**	1	0.9	2.5	8.8	**8.8**
	12	1	1.5	2.5	10	**10**
AU03	**9**	1	1.5	2.5	10	**10**
	13	1	1.5	2.5	10	**10**
	20	1	1.5	2.5	10	**10**
AU04	**14**	1	1.5	2.5	10	**10**
	38	0.7	1.5	2.5	9.4	**9.4**
AU05	**21**	1	1.5	2.5	10	**10**
AU06	**15**	0.3	0.9	2.5	7.4	**7.4**
	43	0.3	0.9	2.5	7.4	**7.4**
AU07	**17**	0.7	1.5	2.5	9.4	**9.4**
	29	0.3	1.5	2.5	8.6	**8.6**
	30	0.7	1.5	1.75	7.9	**7.9**
AU08	**37**	0.7	1.5	2.5	9.4	**9.4**
AU09	**22**	1	1.5	2.5	10	**10**
	45	0.3	0.9	2.5	7.4	**7.4**
AU10	**23**	1	0.9	2.5	8.8	**8.8**
	18	1	1.2	2.5	9.4	**9.4**
AU11	**24**	0.3	0.9	2.5	7.4	**7.4**
	39	0.7	1.5	2.5	9.4	**9.4**
	40	1	1.5	2.5	10	**10**
	42	0.3	1.2	2.5	8	**8**
	47	1	1.2	2.5	9.4	**9.4**
AU12	**25**	0.3	1.5	2.5	8.6	**8.6**
	35	0.3	1.5	2.5	8.6	**8.6**
AU13	**27**	0.3	0.9	0	2.4	**2.4**
AU14	**28**	1	1.5	2.5	10	**10**
AU15	**32**	0.3	1.5	0.5	4.6	**4.6**
	33	0.3	1.5	0	3.6	**3.6**
	34	0.7	1.2	2.5	8.8	**8.8**
AU16	**36**	0.3	0.9	2.5	7.4	**7.4**
AU17	**41**	1	1.2	2.5	9.4	**9.4**
AU18	**46**	1	0.9	2.5	8.8	**8.8**

Yellow-bellied glider

Appendix Table F.7 **Yellow-bellied glider – Quality of Habitat for Foraging – Raw Scores**

AU	Site ID	Canopy cover	Floristic diversity in the EDL	Total score (out of 10)	Weighted quality of habitat for foraging score (out of 20)
		Weighted Score (50%)	Weighted Score (50%)		
AU02	**7**	3	5	8	**16**
	12	5	3	8	**16**
AU03	**13**	3	5	8	**16**
	20	5	5	10	**20**
AU07	**17**	3	5	8	**16**
	30	3	5	8	**16**

Appendix Table F.8 **Yellow-bellied glider – Quality of Habitat for Shelter And Breeding – Raw Scores**

AU	Site ID	Density of live hollow-bearing trees	Presence of large (>50 cm dbh) smooth-barked or half-barked eucalypt species	Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 30)
		Weighted Score (50%)	Weighted Score (50%)		
AU02	**7**	2	2.5	4.5	**13.5**
	12	0	2.5	2.5	**7.5**
AU03	**13**	0	0	0	**0**
	20	2	0	2	**6**
AU07	**17**	2	5	7	**21**
	30	0	2.5	2.5	**7.5**

Appendix Table F.9 **Yellow-bellied glider – Quality of Habitat for Movement – Raw Scores**

AU	Site ID	Presence of tall trees	Size of habitat patch	Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Weighted Score (50%)	Weighted Score (50%)		
AU02	**7**	6.7	3.3	10	**10**
	12	6.7	3.3	10	**10**
AU03	**13**	3.35	3.3	6.65	**6.65**
	20	6.7	3.3	10	**10**
AU07	**17**	6.7	0.66	7.36	**7.36**
	30	6.7	0.66	7.36	**7.36**

Collared delma

Appendix Table F.10 **Collared delma – Quality of Habitat for Foraging – Raw Scores**

AU	Site ID	Presence of coarse woody debris for prey items	Presence or organic litter for prey items	Total score (out of 10)	Weighted quality of habitat for foraging score (out of 20)
		Weighted Score (50%)	Weighted Score (50%)		
AU02	**7**	5	5	10	**20**
	12	5	5	10	**20**
AU03	**13**	5	5	10	**20**
AU04	**38**	5	2.5	7.5	**15**
AU10	**23**	5	5	10	**20**
AU11	**40**	5	2.5	7.5	**15**
	47	2.5	2.5	5	**10**
	B80	5	5	10	**20**
AU17	**41**	2.5	5	7.5	**15**
AU19	**48**	5	2.5	7.5	**15**

Appendix Table F.11 **Collared delma – Quality of Habitat for Shelter and Breeding – Raw Scores**

AU	Site ID	Presence of loose surface rocks	Native grass cover	Organic litter cover	Presence of course woody debris	Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 40)
		Weighted Score (25%)	Weighted Score (25%)	Weighted Score (25%)	Weighted Score (25%)		
AU02	**7**	1	2.5	2.5	2.5	8.5	**34**
	12	2.5	2	2.5	1.25	8.3	**33.2**
AU03	**13**	1	2.5	2.5	2.5	8.5	**34**
AU04	**38**	2.5	1	2.5	2.5	8.5	**34**
AU10	**23**	2	2	2.5	0.25	6.8	**27.2**
AU11	**40**	1	1	2.5	1.25	5.8	**23.2**

AU	Site ID	Presence of loose surface rocks	Native grass cover	Organic litter cover	Presence of course woody debris	Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 40)
		Weighted Score (25%)	Weighted Score (25%)	Weighted Score (25%)	Weighted Score (25%)		
	47	2.5	1	1.25	0	4.8	**19.2**
	B80	2.5	1	1	1.25	5.8	**23.2**
AU17	**41**	2.5	2.5	1.25	0.25	6.5	**26**
AU19	**48**	2	1	2.5	0	5.5	**22**

HQA Raw Data - Offset

HQA Raw Data-Offset

Greater glider

Table 1-1 Greater glider – quality of habitat for foraging – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Density of large trees (>30 cm dbh)			Species richness of recognised habitat trees			Canopy cover % (does not include sub-canopy)			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (33%)	Raw Data	Raw Score/10	Weighted Score (34%)	Raw Data	Raw Score/10	Weighted Score (33%)		
AU03	LS01	≥10	10	3.3	≥2	10	3.4	88%	10	3.3	10	**10**
	LS05	≥10	10	3.3	≥2	10	3.4	106%	10	3.3	10	**10**
	OFF-04	≥10	10	3.3	≥2	10	3.4	100%	10	3.3	10	**10**
AU04	OFF-18	≥10	10	3.3	≥2	10	3.4	78%	10	3.3	10	**10**
	Off21	6 - 9	6	1.99	≥2	10	3.4	13%	1	0.33	5.72	**5.72**
AU07	BC01	≥10	10	3.3	≥2	10	3.4	126%	10	3.3	10	**10**
	BC02	≥10	10	3.3	≥2	10	3.4	130%	10	3.3	10	**10**
	OFF01(Cedars)	≥10	10	3.3	≥2	10	3.4	129%	10	3.3	10	**10**
	OFF10	≥10	10	3.3	0	0	0	51%	5	1.66	4.96	**4.96**
	OFF27	≥10	10	3.3	1	8	2.72	51%	5	1.66	7.68	**7.68**
AU10	OFF07	≥10	10	3.3	1	8	2.72	163%	10	3.3	9.32	**9.32**
	OFF80	≥10	10	3.3	≥2	10	3.4	123%	10	3.3	10	**10**
AU11	CED04	≥10	10	3.3	1	8	2.72	34%	5	1.66	7.68	**7.68**
	OFF03	≥10	10	3.3	≥2	10	3.4	65%	5	1.66	8.36	**8.36**
	OFF-07	≥10	10	3.3	≥2	10	3.4	132%	10	3.3	10	**10**
	OFF-08	≥10	10	3.3	≥2	10	3.4	229%	10	3.3	10	**10**
	OFF100(LS)	≥10	10	3.3	1	8	2.72	33%	1	0.33	6.35	**6.35**
	OFF101(LS)	≥10	10	3.3	1	8	2.72	85%	10	3.3	9.32	**9.32**
	Off16	≥10	10	3.3	0	0	0	89%	10	3.3	6.6	**6.6**
	Off18	≥10	10	3.3	≥2	10	3.4	29%	1	0.33	6.7	**6.7**
	Off22	≥10	10	3.3	≥2	10	3.4	64%	5	1.66	8.36	**8.36**

AU	Site ID	Density of large trees (>30 cm dbh)			Species richness of recognised habitat trees			Canopy cover % (does not include sub-canopy)			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (33%)	Raw Data	Raw Score/10	Weighted Score (34%)	Raw Data	Raw Score/10	Weighted Score (33%)		
	OFF31	≥10	10	3.3	1	8	2.72	90%	10	3.3	9.32	**9.32**
	OFF75	3 - 5	2	0.67	1	8	2.72	26%	1	0.33	3.72	**3.72**
AU17	OFF01 (LS)	≥10	10	3.3	1	8	2.72	123%	10	3.3	9.32	**9.32**
	OFF06	≥10	10	3.3	≥2	10	3.4	194%	10	3.3	10	**10**
AU21	CED03	< 3	0	0	0	0	0	0%	1	0	0	**0**
	LS02	< 3	0	0	≥2	10	3.4	0%	1	0	3.4	**3.4**
	Off13	< 3	0	0	0	0	0	30%	1	0.33	0.33	**0.33**
	Off14	< 3	0	0	0	0	0	3%	1	0.33	0.33	**0.33**
	Off15	< 3	0	0	≥2	10	3.4	0%	1	0	3.4	**3.4**
	OFF73	3 - 5	2	0.67	≥2	10	3.4	6%	1	0.33	4.4	**4.4**
AU24	LS202	≥10	10	3.3	≥2	10	3.4	79%	10	3.3	10	**10**
	Off11	≥10	10	3.3	1	8	2.72	112%	10	3.3	9.32	**9.32**
AU29	OFF37	< 3	0	0	≥2	10	3.4	41%	5	1.66	5.06	**5.06**

Table 1-2 Greater glider – quality of habitat for shelter and breeding – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Density of large denning trees/ha (>50 cm dbh)			Presence of habitat tree species (large trees >50 cm dbh)			Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (70%)	Raw Data	Raw Score/10	Weighted Score (30%)		
AU03	LS01	≥10	10	7	Large preferred den trees present	10	3	10	**10**
	LS05	6 - 9	8	5.6	Large preferred den trees present	10	3	8.6	**8.6**
	OFF-04	0	0	0	No habitat trees	0	0	0	**0**
AU04	OFF-18	6 - 9	8	5.6	Large habitat trees present	8	2.4	8	**8**

AU	Site ID	Density of large denning trees/ha (>50 cm dbh)			Presence of habitat tree species (large trees >50 cm dbh)			Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (70%)	Raw Data	Raw Score/10	Weighted Score (30%)		
	Off21	3 - 5	6	4.2	Large preferred den trees present	10	3	7.2	**7.2**
AU07	BC01	6 - 9	8	5.6	Large preferred den trees present	10	3	8.6	**8.6**
	BC02	≥10	10	7	Large preferred den trees present	10	3	10	**10**
	OFF01(Cedars)	≥10	10	7	Large preferred den trees present	10	3	10	**10**
	OFF10	3 - 5	6	4.2	Large preferred den trees present	10	3	7.2	**7.2**
	OFF27	≥10	10	7	Large preferred den trees present	10	3	10	**10**
AU10	OFF07	0	0	0	No habitat trees	0	0	0	**0**
	OFF80	1	2	1.4	Large habitat trees present	8	2.4	3.8	**3.8**
AU11	CED04	2	4	2.8	Large habitat trees present	8	2.4	5.2	**5.2**
	OFF03	1	2	1.4	Large habitat trees present	8	2.4	3.8	**3.8**
	OFF-07	1	2	1.4	Large habitat trees present	8	2.4	3.8	**3.8**
	OFF-08	0	0	0	Large habitat trees present	8	2.4	2.4	**2.4**
	OFF100(LS)	3 - 5	6	4.2	Large habitat trees present	8	2.4	6.6	**6.6**
	OFF101(LS)	6 - 9	8	5.6	No habitat trees	0	0	5.6	**5.6**
	Off16	6 - 9	8	5.6	Large habitat trees present	8	2.4	8	**8**
	Off18	0	0	0	No habitat trees	0	0	0	**0**

AU	Site ID	Density of large denning trees/ha (>50 cm dbh)			Presence of habitat tree species (large trees >50 cm dbh)			Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (70%)	Raw Data	Raw Score/10	Weighted Score (30%)		
	Off22	≥10	10	7	Large habitat trees present	8	2.4	9.4	**9.4**
	OFF31	3 - 5	6	4.2	Large habitat trees present	8	2.4	6.6	**6.6**
	OFF75	0	0	0	No habitat trees	0	0	0	**0**
AU17	OFF01 (LS)	2	4	2.8	Large habitat trees present	8	2.4	5.2	**5.2**
	OFF06	≥10	10	7	Large preferred den trees present	10	3	10	**10**
AU21	CED03	0	0	0	No habitat trees	0	0	0	**0**
	LS02	0	0	0	No habitat trees	0	0	0	**0**
	Off13	0	0	0	No habitat trees	0	0	0	**0**
	Off14	0	0	0	No habitat trees	0	0	0	**0**
	Off15	0	0	0	No habitat trees	0	0	0	**0**
	OFF73	0	0	0	No habitat trees	0	0	0	**0**
AU24	LS202	≥10	10	7	Large preferred den trees present	10	3	10	**10**
	Off11	0	0	0	Large preferred den trees present	10	3	3	**3**
AU29	OFF37	0	0	0	No habitat trees	0	0	0	**0**

Table 1-3 Greater glider – quality of habitat for mobility – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
AU03	LS01	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	LS05	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	OFF-04	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
AU04	OFF-18	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	Off21	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights > 15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within	10	3.5	7.9	**7.9**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
											25 m of suitable habitat.				
AU07	BC01	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	BC02	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	OFF01(Cedars)	Remnant patch > 10 ha	10	2	Canopy cover >50% and tree height greater than 20 m	10	3.5	<500 m from vegetated watercourse	10	1	Connectivity is moderately restricted - fragmented by >25–50 m from suitable habitat	7	2.45	8.95	**8.95**
	OFF10	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
	OFF27	Remnant patch >1–<10 ha	6	1.2	Woodland (>1–30% canopy cover) and	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restrict	10	3.5	7.1	**7.1**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
					tree heights 10–15 m						ed - within 25 m of suitable habitat.				
AU10	OFF07	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	OFF80	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights averaging 9 metres	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
AU11	CED04	Remnant patch >1–<10 ha	6	1.2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is severely restricted - fragmented by >100 m from suitable habitat	1	0.35	3.95	**3.95**
	OFF03	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
	OFF-07	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	OFF-08	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
	OFF100(LS)	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
	OFF101(LS)	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
	Off16	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.65	**8.65**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
	Off18	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	Off22	Remnant patch > 10 ha	10	2	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**
	OFF31	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
	OFF75	Remnant patch > 10 ha	10	2	Open woodland (<10% canopy cover) and tree heights 10-15m	1	0.35	<500 m from vegetated watercourse	10	1	Connectivity is highly restricted - fragmented by >50–100 m from suitable habitat	4	1.4	4.75	**4.75**
AU17	OFF01 (LS)	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of	10	3.5	8.95	**8.95**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
											suitable habitat.				
	OFF06	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
AU21	CED03	Non-remnant	0	0	Lack of canopy	0	0	<500 m from vegetated watercourse	10	1	Connectivity is severely restricted - fragmented by >100 m from suitable habitat	1	0.35	1.35	**1.35**
	LS02	Non-remnant	0	0	Open woodland (<10% canopy cover) and tree heights 10-15m	1	0.35	<500 m from vegetated watercourse	10	1	Connectivity is severely restricted - fragmented by >100 m from suitable habitat	1	0.35	1.7	**1.7**
	Off13	Non-remnant	0	0	Open woodland (<10% canopy cover) and tree heights 10-15m	1	0.35	<500 m from vegetated watercourse	10	1	Connectivity is highly restricted - fragmented by >50–100 m from suitable habitat	4	1.4	2.75	**2.75**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
	Off14	Non-remnant	0	0	Lack of canopy	0	0	<500 m from vegetated watercourse	10	1	Connectivity is severely restricted - fragmented by >100 m from suitable habitat	1	0.35	1.35	**1.35**
	Off15	Non-remnant	0	0	Lack of canopy	0	0	<500 m from vegetated watercourse	10	1	Connectivity is highly restricted - fragmented by >50–100 m from suitable habitat	4	1.4	2.4	**2.4**
	OFF73	Non-remnant	0	0	Woodland (>1–30% canopy cover) and tree heights 10–15 m	4	1.45	<500 m from vegetated watercourse	10	1	Connectivity is severely restricted - fragmented by >100 m from suitable habitat	1	0.35	2.8	**2.8**
AU24	LS202	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**

AU	Site ID	Size of habitat patch			Tree height and canopy structure			Proximity to riparian corridor			Connectivity of suitable habitat			Total score (out of 10)	Weighted quality of habitat for mobility score (out of 10)
		Raw Data	Raw Score /10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (35%)	Raw Data	Raw Score/10	Weighted Score (10%)	Raw Data	Raw Score/10	Weighted Score (35%)		
	Off11	Remnant patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	7	2.45	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	8.95	**8.95**
AU29	OFF37	Mature regrowth patch > 10 ha	10	2	Open forest (>30–70% canopy cover) and trees greater than 15 m	4	1.4	<500 m from vegetated watercourse	10	1	Connectivity is not restricted - within 25 m of suitable habitat.	10	3.5	7.9	**7.9**

Table 1-4 Greater glider – SSR – raw scores

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
AU03	LS01	5	10	15	10	40	**2.29**
	LS05	5	10	15	10	40	**2.29**
	OFF-04	5	10	15	10	40	**2.29**
AU04	OFF-18	5	5	15	10	35	**2.00**
	Off21	5	5	10	10	30	**1.71**
AU07	BC01	5	10	15	10	40	**2.29**
	BC02	5	10	15	10	40	**2.29**

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
	OFF01(Cedars)	5	10	15	10	40	**2.29**
	OFF10	5	10	15	10	40	**2.29**
	OFF27	5	5	15	10	35	**2.00**
AU10	OFF07	5	5	15	10	35	**2.00**
	OFF80	5	5	15	10	35	**2.00**
AU11	CED04	5	5	0	10	20	**1.14**
	OFF03	5	5	15	10	35	**2.00**
	OFF-07	5	5	15	10	35	**2.00**
	OFF-08	5	5	15	10	35	**2.00**
	OFF100(LS)	5	5	15	10	35	**2.00**
	OFF101(LS)	5	5	15	10	35	**2.00**
	Off16	5	5	10	10	30	**1.71**
	Off18	5	5	15	10	35	**2.00**
	Off22	5	5	10	10	30	**1.71**
	OFF31	5	10	10	10	35	**2.00**
	OFF75	5	5	10	10	30	**1.71**
AU17	OFF01 (LS)	5	5	15	10	35	**2.0**
	OFF06	5	5	15	10	35	**2.0**
AU21	CED03	5	5	0	0	10	**0.57**
	LS02	5	10	0	0	15	**0.86**
	Off13	5	5	0	0	10	**0.57**
	Off14	5	5	0	0	10	**0.57**
	Off15	5	5	0	0	10	**0.57**
	OFF73	5	5	0	0	10	**0.57**
AU24	LS202	5	10	15	10	40	**2.3**

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
	Off11	5	10	15	10	40	**2.3**
AU29	OFF37	5	5	5	10	25	**1.43**

Koala

Table 1-5 Koala – quality of habitat for foraging – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Richness and canopy cover of locally important koala trees			Proportion of koala foraging tree species within the EDL that are recruiting (<5cm dbh)			Total score (out of 25)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (70%)	Raw Data	Raw Score/25	Weighted Score (30%)		
AU03	LS01	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	LS05	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off-04	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
AU04	Off-18	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
	Off21	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
AU07	BC01	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	BC02	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	< 20%	5	1.5	19	**7.6**
	OFF01	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
	OFF10	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF27	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
AU10	OFF07	1 LIKT	15	10.5	≥20% and <75%	15	4.5	15	**6**
	OFF80	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
AU11	CED04	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF03	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off-07	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off-08	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**

AU	Site ID	Richness and canopy cover of locally important koala trees			Proportion of koala foraging tree species within the EDL that are recruiting (<5cm dbh)			Total score (out of 25)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (70%)	Raw Data	Raw Score/25	Weighted Score (30%)		
	OFF100(LS)	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF101(LS)	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off16	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off18	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
	Off22	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
	OFF31	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF75	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
AU17	OFF01	No LIKT	0	0	≥75%	25	7.5	7.5	**3**
	OFF06	1 LIKT	15	10.5		0.6667	1.95	12.45	**4.98**
AU21	CED03	No LIKT	0	0	No recruitment	0	0	0	**0**
	LS02	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off13	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	Off14	1 LIKT	15	10.5	No recruitment	0	0	10.5	**4.2**
	Off15	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF73	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
AU24	LS202	≥2 LIKT or 1 LIKT that accounts for >50% of canopy	25	17.5	≥75%	25	7.5	25	**10**
	Off-11	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
AU29	OFF37	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**
	OFF74	1 LIKT	15	10.5	≥75%	25	7.5	18	**7.2**

Table 1-6 Koala – quality of habitat for shelter and breeding – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Presence of large trees			Canopy and sub-canopy cover			Presence of refugia within patch			Total score (out of 25)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (33%)	Raw Data (Canopy/Sub-Canopy)	Raw Score/25	Weighted Score (33%)	Raw Data	Raw Score/25	Weighted Score (34%)		
AU03	LS01	106%	25	8.33	88%/213%	17.5	5.775	Refugia present within patch	25	8.5	22.605	**9.0**
	LS05	129%	25	8.33	106%/355%	17.5	5.775	Refugia present within patch	25	8.5	22.605	**9.0**
	Off-04	176%	25	8.33	100%/0%	25	8.25	Refugia present within patch	25	8.5	25.08	**10.0**
AU04	Off-18	190%	25	8.33	78%/114%	17.5	5.775	Refugia present within patch	25	8.5	22.605	**9.0**
	Off21	20%	5	1.66	13%/0%	10	3.3	Refugia present within patch	25	8.5	13.46	**5.4**
AU07	BC01	213%	25	8.33	126%/135%	17.5	5.775	Refugia present within patch	25	8.5	22.605	**9.0**
	BC02	56%	15	4.99	130%/133%	17.5	5.775	Refugia present within patch	25	8.5	19.265	**7.7**
	OFF01	81%	20	6.66	129%/123%	17.5	5.775	Refugia present within patch	25	8.5	20.935	**8.4**
	OFF10	19%	5	1.66	51%/0%	25	8.25	Refugia present	25	8.5	18.41	**7.4**

AU	Site ID	Presence of large trees			Canopy and sub-canopy cover			Presence of refugia within patch			Total score (out of 25)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (33%)	Raw Data (Canopy/Sub-Canopy)	Raw Score/25	Weighted Score (33%)	Raw Data	Raw Score/25	Weighted Score (34%)		
								within patch				
	OFF27	50%	10	3.33	51%/96%	25	8.25	Refugia present within patch	25	8.5	20.08	**8.0**
AU10	OFF07	14%	5	1.66	163%/211%	17.5	5.775	No refugia	0	0	7.435	**3.0**
	OFF80	86%	20	6.66	123%/560%	17.5	5.775	Refugia within 1km of patch	15	5.1	17.535	**7.0**
AU11	CED04	47%	10	3.33	34%/0%	10	3.3	Refugia present within patch	25	8.5	15.13	**6.1**
	OFF03	94%	20	6.66	65%/140%	17.5	5.775	Refugia within 1km of patch	15	5.1	17.535	**7.0**
	Off-07	165%	25	8.33	132%/390%	17.5	5.775	No refugia	0	0	14.105	**5.6**
	Off-08	71%	15	4.99	45%/204%	17.5	5.775	No refugia	0	0	10.765	**4.3**
	OFF100(LS)	82%	20	6.66	33%/248%	17.5	5.775	Refugia within 1km of patch	15	5.1	17.535	**7.0**
	OFF101(LS)	82%	20	6.66	85%/538%	17.5	5.775	Refugia within 1km of patch	15	5.1	17.535	**7.0**
	Off16	59%	15	4.99	89%/0%	25	8.25	Refugia within 1km of patch	15	5.1	18.34	**7.3**
	Off18	94%	20	6.66	29%/714%	17.5	5.775	Refugia within 1km of patch	15	5.1	17.535	**7.0**

AU	Site ID	Presence of large trees			Canopy and sub-canopy cover			Presence of refugia within patch			Total score (out of 25)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (33%)	Raw Data (Canopy/Sub-Canopy)	Raw Score/25	Weighted Score (33%)	Raw Data	Raw Score/25	Weighted Score (34%)		
	Off22	82%	20	6.66	64%/2%	25	8.25	Refugia within 1km of patch	15	5.1	20.01	**8.0**
	OFF31	82%	20	6.66	90%/0%	25	8.25	Refugia within 1km of patch	15	5.1	20.01	**8.0**
	OFF75	12%	5	1.66	26%/136%	17.5	5.775	Refugia within 1km of patch	15	5.1	12.535	**5.0**
AU17	OFF01	0%	0	0	123%/0%	25	8.25	Refugia present within patch	25	8.5	16.75	**6.7**
	OFF06	110%	25	8.33	194%/265%	17.5	5.775	No refugia	0	0	14.105	**5.6**
AU21	CED03	0%	0	0	0%/0%	0	0	Refugia within 1km of patch	15	5.1	5.1	**2.0**
	LS02	0%	0	0	0%/0%	0	0	Refugia within 1km of patch	15	5.1	5.1	**2.0**
	Off13	47%	10	3.33	30%/0%	10	3.3	Refugia within 1km of patch	15	5.1	11.73	**4.7**
	Off14	0%	0	0	3%/0%	0	0	Refugia within 1km of patch	15	5.1	5.1	**2.0**
	Off15	0%	0	0	0%/0%	0	0	Refugia within 1km of patch	15	5.1	5.1	**2.0**

AU	Site ID	Presence of large trees			Canopy and sub-canopy cover			Presence of refugia within patch			Total score (out of 25)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/25	Weighted Score (33%)	Raw Data (Canopy/Sub-Canopy)	Raw Score/25	Weighted Score (33%)	Raw Data	Raw Score/25	Weighted Score (34%)		
	OFF73	10%	5	1.66	6%/0%	0	0	Refugia within 1km of patch	15	5.1	6.76	**2.7**
AU24	LS202	137%	25	8.33	79%/131%	17.5	5.775	Refugia present within patch	25	8.5	22.605	**9.0**
	Off-11	63%	15	4.99	112%/0%	25	8.25	Refugia present within patch	25	8.5	21.74	**8.7**
AU29	OFF37	0%	0	0	41%/70%	25	8.25	Refugia present within patch	25	8.5	16.75	**6.7**
	OFF74	35%	10	3.33	173%/30%	17.5	5.775	Refugia within 1km of patch	15	5.1	14.205	**5.7**

Table 1-7 Koala – quality of habitat for movement – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Size of habitat patch			Presence of nearby vegetated watercourse			Patch isolation and ease of movement			Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (30%)	Raw Data	Raw Score/10	Weighted Score (50%)		
AU03	LS01	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	LS05	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off-04	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
AU04	Off-18	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off21	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
AU07	BC01	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	BC02	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF01	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF10	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF27	1 - 50 ha remnant patch	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**
AU10	OFF07	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**

AU	Site ID	Size of habitat patch			Presence of nearby vegetated watercourse			Patch isolation and ease of movement			Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (30%)	Raw Data	Raw Score/10	Weighted Score (50%)		
	OFF80	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
AU11	CED04	1 - 50 ha remnant patch	4	0.8	< 500m	10	3	Minor restriction	10	5	8.8	**8.8**
	OFF03	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off-07	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off-08	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF100(LS)	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF101(LS)	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off16	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off18	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off22	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF31	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF75	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**

AU	Site ID	Size of habitat patch			Presence of nearby vegetated watercourse			Patch isolation and ease of movement			Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (30%)	Raw Data	Raw Score/10	Weighted Score (50%)		
AU17	OFF01	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	OFF06	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
AU21	CED03	Patch is non-remnant and does not contain eucalypt trees	1	0.2	< 500m	10	3	Moderate restriction	7	3.5	6.7	**6.7**
	LS02	Patch is non-remnant and contains scattered eucalypt trees	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**
	Off13	Patch is non-remnant and contains scattered eucalypt trees	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**
	Off14	Patch is non-remnant and contains scattered eucalypt trees	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**
	Off15	Patch is non-remnant and contains scattered eucalypt trees	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**
	OFF73	Patch is non-remnant and contains	4	0.8	< 500m	10	3	Moderate restriction	7	3.5	7.3	**7.3**

AU	Site ID	Size of habitat patch			Presence of nearby vegetated watercourse			Patch isolation and ease of movement			Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (20%)	Raw Data	Raw Score/10	Weighted Score (30%)	Raw Data	Raw Score/10	Weighted Score (50%)		
		scattered eucalypt trees										
AU24	LS202	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
	Off-11	>250 ha remnant patch	10	2	< 500m	10	3	Minor restriction	10	5	10	**10**
AU29	OFF37	<1 ha high-value regrowth	1	0.2	< 500m	10	3	Moderate restriction	7	3.5	6.7	**6.7**
	OFF74	<1 ha high-value regrowth	1	0.2	< 500m	10	3	Minor restriction	10	5	8.2	**8.2**

Table 1-8 Koala – SSR – raw scores

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
AU03	**LS01**	10	5	10	10	35	**2.00**
	LS05	10	5	10	10	35	**2.00**
	OFF-04	10	5	10	10	35	**2.00**
AU04	**OFF-18**	10	5	10	10	35	**2.00**
	Off21	10	5	10	10	35	**2.00**
AU07	**BC01**	10	5	15	10	40	**2.29**
	BC02	10	5	15	10	40	**2.29**

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
	OFF01(Cedars)	10	5	15	10	40	**2.29**
	OFF10	10	5	15	10	40	**2.29**
	OFF27	10	5	15	10	40	**2.29**
AU10	**OFF07**	10	5	10	10	35	**2.00**
	OFF80	10	5	10	10	35	**2.00**
AU11	**CED04**	10	5	10	10	35	**2.00**
	OFF03	10	5	10	10	35	**2.00**
	OFF-07	10	5	10	10	35	**2.00**
	OFF-08	10	5	10	10	35	**2.00**
	OFF100(LS)	10	5	10	10	35	**2.00**
	OFF101(LS)	10	5	10	10	35	**2.00**
	Off16	10	10	10	10	40	**2.29**
	Off18	10	10	10	10	40	**2.29**
	Off22	10	5	10	10	35	**2.00**
	OFF31	10	5	10	10	35	**2.00**
	OFF75	10	5	10	10	35	**2.00**
AU17	**OFF01 (LS)**	10	5	10	10	35	**2.00**
	OFF06	10	5	10	10	35	**2.00**
AU21	**CED03**	10	5	10	10	35	**2.00**
	LS02	10	5	10	10	35	**2.00**
	Off13	10	5	10	10	35	**2.00**
	Off14	10	5	10	10	35	**2.00**
	Off15	10	5	10	10	35	**2.00**
	Off17	10	5	10	10	35	**2.00**
	OFF-17	10	5	10	10	35	**2.00**

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
	OFF73	10	5	10	10	35	**2.00**
AU24	**LS202**	10	5	15	10	40	**2.29**
	Off11	10	5	15	10	40	**2.29**
AU29	**OFF37**	10	10	10	10	40	**2.29**
	OFF74	10	5	10	10	35	**2.00**

Yellow-bellied glider

Table 1-9 Yellow-bellied glider – quality of habitat for foraging – raw scores(sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Floristic diversity in the EDL			Canopy cover			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (50%)	Raw Data	Raw Score/10	Weighted Score (50%)		
AU03	LS01	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	88%	10	5	8	**8**
	LS05	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	106%	10	5	8	**8**
	OFF-04	1-2 smooth bark or half-bark eucalypt species	2	1	100%	10	5	6	**6**

AU	Site ID	Floristic diversity in the EDL			Canopy cover			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (50%)	Raw Data	Raw Score/10	Weighted Score (50%)		
		in EDL but neither are known sap trees							
AU04	OFF-18	No suitable trees	0	0	78%	10	5	5	**5**
AU07	BC01	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	126%	10	5	8	**8**
	BC02	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	130%	10	5	8	**8**
	OFF-10	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	51%	10	5	8	**8**
AU17	OFF01 (LS)	1-2 smooth bark or half-bark eucalypt species in EDL but neither are known sap trees	2	1	123%	10	5	6	**6**
	OFF06	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	194%	10	5	8	**8**
AU24	LS202	3 or more eucalypt species	10	5	79%	10	5	10	**10**

AU	Site ID	Floristic diversity in the EDL			Canopy cover			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (50%)	Raw Data	Raw Score/10	Weighted Score (50%)		
		in EDL and at least one is a known sap tree OR there is evidence of sap scars							
	OFF-11	1-2 smooth bark or half-bark eucalypts species in EDL and at least one is a known sap tree	6	3	112%	10	5	8	**8**

Table 1-10 Yellow-bellied glider – quality of habitat for shelter and breeding – raw scores(sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Density of live hollow-bearing trees			Presence of large (>50 cm dbh) smooth-barked or half-barked eucalypt species			Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (50%)	Raw Data	Raw Score/10	Weighted Score (50%)		
AU03	LS01	≥10	10	5	Present and suitable	8	4	9	**9**
	LS05	6 - 9	8	4	Present and suitable	8	4	8	**8**
	OFF-04	0	0	0	None	0	0	0	**0**
AU04	OFF-18	2	4	2	Present and suitable	8	4	6	**6**
AU07	BC01	≥10	10	5	Present and suitable	8	4	9	**9**
	BC02	≥10	10	5	Present, suitable and at least one >100cm dbh	10	5	10	**10**
	OFF-10	2	4	2	Present and suitable	8	4	6	**6**
AU17	OFF01 (LS)	0	0	0	Present and suitable	8	4	4	**4**
	OFF06	6 - 9	8	4	Present and suitable	8	4	8	**8**
AU24	LS202	≥10	10	5	Present, suitable and at least one >100cm dbh	10	5	10	**10**
	OFF-11	2	4	2	Present, suitable and at least one >100cm dbh	10	5	7	**7**

Table 1-11 Yellow-bellied glider – quality of habitat for movement – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Presence of tall trees			Size of habitat patch			Total score (out of 10)	Weighted quality of habitat for movement score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (67%)	Raw Data	Raw Score/10	Weighted Score (33%)		
AU03	LS01	82%	10	6.7	> 85 ha	10	3.3	10	**10**
	LS05	96%	10	6.7	> 85 ha	10	3.3	10	**10**
	OFF-04	71%	10	6.7	> 85 ha	10	3.3	10	**10**
AU04	OFF-18	95%	10	6.7	< 25 ha	0	0	6.7	**6.7**
AU07	BC01	91%	10	6.7	> 85 ha	10	3.3	10	**10**
	BC02	104%	10	6.7	> 85 ha	10	3.3	10	**10**
	OFF-10	104%	10	6.7	> 85 ha	10	3.3	10	**10**
AU17	OFF01 (LS)	82%	10	6.7	> 85 ha	10	3.3	10	**10**
	OFF06	86%	10	6.7	50.5 – 85 ha	6	1.98	8.68	**8.68**
AU24	LS202	104%	10	6.7	> 85 ha	10	3.3	10	**10**
	OFF-11	100%	10	6.7	> 85 ha	10	3.3	10	**10**

Table 1-12 Yellow-bellied glider – SSR – raw scores

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
AU03	LS01	5	0	15	0	20	**1.14**
	LS05	5	0	15	0	20	**1.14**
	OFF-04	5	0	15	0	20	**1.14**
AU04	OFF-18	5	0	15	0	20	**1.14**
AU07	BC01	5	0	15	0	20	**1.14**
	BC02	5	0	15	0	20	**1.14**
	OFF-10	5	0	15	0	20	**1.14**
AU17	OFF01 (LS)	5	0	15	0	20	**1.14**
	OFF06	5	0	15	0	20	**1.14**
AU24	LS202	5	0	15	0	20	**1.14**
	OFF-11	5	0	15	0	20	**1.14**

Table 1-13 Collared delma – quality of habitat for foraging – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Presence of coarse woody debris for prey items			Presence or organic litter for prey items			Total score (out of 10)	Weighted quality of habitat for foraging score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (50%)	Raw Data	Raw Score/10	Weighted Score (50%)		
AU03	LS01	45%	5	2.5	56%	10	5	7.5	**7.5**
	LS05	52%	10	5	71%	10	5	10	**10**
AU11	OFF03	26%	5	2.5	132%	10	5	7.5	**7.5**
	OFF100(LS)	88%	10	5	264%	5	2.5	7.5	**7.5**
	OFF101(LS)	56%	10	5	224%	5	2.5	7.5	**7.5**
	Off16	116%	10	5	80%	10	5	10	**10**
	Off18	59%	10	5	96%	10	5	10	**10**
	OFF75	29%	5	2.5	31%	5	2.5	5	**5**
	OFF-07	37%	5	2.5	59%	10	5	7.5	**7.5**
AU17	OFF01	935%	5	2.5	174%	10	5	7.5	**7.5**
AU21	LS02	0%	0	0	6%	0	0	0	**0**
	OFF73	46%	5	2.5	156%	10	5	7.5	**7.5**
	OFF13	59%	10	5	41%	5	2.5	7.5	**7.5**
	OFF15	119%	10	5	90%	10	5	10	**10**
AU29	OFF37	171%	10	5	39%	5	2.5	7.5	**7.5**
AU04	Off-18	12%	5	2.5	34%	5	2.5	5	**5**

Table 1-14 Collared delma – quality of habitat for shelter and breeding – raw scores (sub-attribute scoring classes provided in Appendix A)

AU	Site ID	Presence of loose surface rocks			Organic litter cover			Presence of course woody debris			Native grass cover			Total score (out of 10)	Weighted quality of habitat for shelter and breeding score (out of 10)
		Raw Data	Raw Score/10	Weighted Score (25%)	Raw Data	Raw Score/10	Weighted Score (25%)	Raw Data	Raw Score/10	Weighted Score (25%)	Raw Data	Raw Score/10	Weighted Score (25%)		
AU03	LS01	Absent	0	0	Absent	0	0	45%	5	1.25	180%	1	0.25	1.5	**1.5**
	LS05	Absent	0	0	Absent	0	0	52%	10	2.5	176%	1	0.25	2.75	**2.75**
	OFF04	Common	10	2.5	<25%	4	1	11%	5	1.25	259%	1	0.25	5	**5**
AU11	OFF03	Rare	2	0.5	Dominant	10	2.5	26%	5	1.25	144%	1	0.25	4.5	**4.5**
	OFF100(LS)	10-25%	4	1	<25%	4	1	88%	10	2.5	27%	5	1.25	5.75	**5.75**
	OFF101(LS)	10-25%	4	1	<25%	4	1	56%	10	2.5	24%	5	1.25	5.75	**5.75**
	Off16	10-25%	4	1	Absent	0	0	116%	10	2.5	128%	1	0.25	3.75	**3.75**
	Off18	10-25%	4	1	Absent	0	0	59%	10	2.5	84%	10	2.5	6	**6**
	OFF75	Absent	0	0	Absent	0	0	29%	5	1.25	159%	1	0.25	1.5	**1.5**
	Off08	Common	10	2.5	Absent	0	0	45%	5	1.25	153%	1	0.25	4	**4**
	OFF-07	Common	10	2.5	25-50%	8	2	37%	5	1.25	93%	10	2.5	8.25	**8.25**
AU17	OFF01	Absent	0	0	Absent	0	0	935%	5	1.25	0%	0	0	1.25	**1.25**
AU21	LS02	Absent	0	0	Absent	0	0	0%	0	0	53%	10	2.5	2.5	**2.5**
	OFF73	Rare	2	0.5	Absent	0	0	46%	5	1.25	128%	1	0.25	2	**2**
	OFF13	Rare	2	0.5	Absent	0	0	59%	10	2.5	80%	10	2.5	5.5	**5.5**
	OFF15	10-25%	4	1	Absent	0	0	119%	10	2.5	79%	10	2.5	6	**6**
AU29	OFF37	Absent	0	0	Absent	0	0	171%	10	2.5	4%	1	0.25	2.75	**2.75**
AU04	Off-18	25-50%	8	2	Dominant	10	2.5	12%	5	1.25	240%	1	0.25	6	**6**

Table 1-15 Collared delma – SSR – raw scores

AU	Site ID	Role/ Importance of species population on site	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Species usage of the site (habitat type & evidenced usage)	Approximate density (per ha)	SSR Total Score (out of 70)	Weighted SSR Score (multiplier of 4)
AU03	LS01	5	0	10	0	15	**0.75**
	LS05	5	0	10	0	15	**0.75**
	OFF04	5	0	10	0	15	**0.75**
AU11	OFF03	5	0	10	0	15	**0.75**
	OFF100(LS)	5	0	10	0	15	**0.75**
	OFF101(LS)	5	0	10	0	15	**0.75**
	Off16	5	0	10	0	15	**0.75**
	Off18	5	0	10	0	15	**0.75**
	OFF75	5	0	10	0	15	**0.75**
	Off08	5	0	10	0	15	**0.75**
	OFF-07	5	0	10	0	15	**0.75**
AU17	OFF01	5	0	10	0	15	**0.75**
AU21	LS02	5	0	0	0	5	**0.25**
	OFF73	5	0	0	0	5	**0.25**
	OFF13	5	0	0	0	5	**0.25**
	OFF15	5	0	0	0	5	**0.25**
AU29	OFF37	5	0	10	0	15	**0.75**
AU04	Off-18	5	0	10	0	15	**0.75**

Threat Matrix

Table 1-16 Threat Matrix as scored in the HQAs

Threat	Scope / Severity	Contributing factors	Very high - 1 / Very high - 1	High - 1.5 / High – 2	Medium - 2 / Medium - 3	Low – 2.5 / Low – 4	Very low - 3 / Very low - 5
Barbed wire entanglement Greater glider, Yellow-bellied glider	Scope	The proportion of the local population within the matter area that can reasonably be expected to be affected by the threat.	Pervasive in its scope, affecting 80-100% of the population	Widespread in its scope, affecting 60-79% of the population	Restricted in its scope, affecting 40-59% of the population	The threat is likely to be narrow in its scope, affecting 20-39% of the population	The threat is likely very narrow in its scope, affecting 1-19% of the population
	Severity	Recorded mortality of the Offset MNES in the preceding years Density of the barbed wire throughout habitat patches	More than 1 mortality detected in the previous 5 years	1 mortality detected in the previous 5 years	1 mortality detected in the previous 10 years	No mortality detected in the previous 10 years AND Barbed wire common throughout most patches (Expected to intersect most patches >5 times)	No mortality detected in the previous 10 years AND Barbed wire scattered throughout most patches (Expected to intersect most patches <5 times)
High-intensity wildfire/ Inappropriate fire regime: All Offset MNES	Scope	Proportion of the matter area subject to wildfires throughout the offset area in the preceding 15 years.	Pervasive in its scope, affecting 80-100% of the matter area	Widespread in its scope, affecting 60-79% of the matter area.	Restricted in its scope, affecting 40-59% of the matter area.	The threat is likely to be narrow in its scope, affecting 20-39% of the matter area.	The threat is likely very narrow in its scope, affecting 1-19% of the matter area.
	Severity	The following points will be considered as a collective: Historic and ongoing bushfire management strategy for the matter area Effective, maintained fire breaks/ access tracks Fire regime resulting in an appropriate landscape-scale mosaic fire scar Prescribed burns retain key habitat features for each MNES Results of the Fire Fuel Load Hazard Assessments (FFLH)	Fire breaks are ineffective or absent from most high-risk areas Fire regime interval and intensity is inappropriate for the MNES and/ or RE throughout the landscape FFLHs show ≥5 sites with an 'Extreme' rating and/or ≥10 sites with a 'Very High' rating	Fire breaks are ineffective or absent from high-risk areas Fire regime interval and intensity is inappropriate for the MNES and/ or RE throughout the landscape FFLHs show ≥3 sites with an 'Extreme' rating and/or ≥7 sites with a 'Very High' rating Substantial reduction in key habitat features such as hollow-bearing trees, CWD and leaf litter mats following prescribed burn	Fire breaks are somewhat effective in most high-risk areas Fire regime interval and intensity is somewhat appropriate for the MNES and/ or RE throughout the landscape FFLHs show ≥2 sites with an 'Extreme' rating and/or ≥5 sites with a 'Very High' rating Minor reduction in key habitat features such as hollow-bearing trees, CWD and leaf litter mats following prescribed burn	Fire breaks are effective throughout most high-risk areas Fire regime interval and intensity is appropriate for the MNES and/ or RE throughout the landscape FFLHs show 1 sites with an 'Extreme' rating and/or ≥3 sites with a 'Very High' rating No unplanned, high-intensity fires (as indicated by canopy scorch) during the previous 5 years Nil to minor reduction in key habitat features such as hollow-bearing trees, CWD and leaf litter mats following prescribed burn	Fire breaks are effective throughout most high-risk areas Fire regime interval and intensity is appropriate for the MNES and/ or RE throughout the landscape FFLHs show 1 sites with an 'Extreme' rating and/or ≥3 sites with a 'Very High' rating No unplanned, high-intensity fires (as indicated by canopy scorch) during the previous 5 years Nil to minor reduction in key habitat features such as hollow-bearing trees, CWD and leaf litter mats following prescribed burn
Feral pest predation– Greater glider, Koala, Yellow-bellied glider	Scope	The proportion of the local population within the matter area that can reasonably be expected to be affected by the threat.	Pervasive in its scope, affecting 80-100% of the population	Widespread in its scope, affecting 60-79% of the population	• Restricted in its scope, affecting 40-59% of the population	• Pervasive in its scope, affecting 80-100% of the population	• Widespread in its scope, affecting 60-79% of the population

Threat	Scope / Severity	Contributing factors	Very high - 1 / Very high - 1	High - 1.5 / High – 2	Medium - 2 / Medium - 3	Low – 2.5 / Low – 4	Very low - 3 / Very low - 5
	Severity	The following points will be considered as a collective: Feral pest management effort Recorded mortality of the Offset MNES in the preceding years Density of feral animal detections as recorded during the comprehensive camera trapping program conducted every five years	More than 1 mortality detected in the previous 5 years	1 mortality detected in the previous 5 years	• ≤1 mortality detected in the previous 10 years • Targeted feral pest management conducted for the preceding 1-5 year in response to the results of the camera trapping program	• ≤1 mortality detected in the previous 10 years • Targeted feral pest management conducted for the preceding 5-10 year in response to the results of the camera trapping program	• ≤1 mortality detected in the previous 10 years • Targeted feral pest management conducted for the preceding >10 years in response to the results of the camera trapping program
Feral pest disturbance and degradation on habitat: Eucalypt Floodplain Forest TEC		The following points will be considered as a collective: Feral pest management effort The prevalence of habitat degradation from feral pests Density of feral animal detections as recorded during the comprehensive camera trapping program conducted every five years	Pervasive in its scope, affecting 80-100% of the matter area	Widespread in its scope, affecting 60-79% of the matter area.	Restricted in its scope, affecting 40-59% of the matter area.	The threat is likely to be narrow in its scope, affecting 20-39% of the matter area.	The threat is likely very narrow in its scope, affecting 1-19% of the matter area.
			N/A: This threat is not considered realistically significant enough to warrant a very high rating.	N/A: This threat is not considered realistically significant enough to warrant a high rating.	• Material habitat degradation from feral pest activity that is likely to reduce native recruitment or understorey vegetation composition and structure at most HQA sites. • Targeted feral pest management conducted for the preceding 1-5 year in response to the results of the camera trapping program	• Material habitat degradation from feral pest activity that is likely to reduce native recruitment or understorey vegetation composition and structure is rare throughout HQA sites. • Targeted feral pest management conducted for the preceding 5-10 year in response to the results of the camera trapping program	• Material habitat degradation from feral pest activity that is likely to reduce native recruitment or understorey vegetation composition and structure is very rare throughout HQA sites. • Targeted feral pest management conducted for the preceding >10 years in response to the results of the camera trapping program
Degradation of habitat quality due to invasive weed species creeping lantana	Scope	Proportion of the collared delma habitat where creeping lantana occurs	Pervasive in its scope, occurs at 80-100% of the Matter Area	Pervasive in its scope, occurs at 60-79% of the Matter Area	Pervasive in its scope, occurs at 40-59% of the Matter Area	Pervasive in its scope, occurs at 20-39% of the Matter Area	Pervasive in its scope, occurs at 1-19% of the Matter Area
	Severity	Average creeping lantana cover (%) as recorded throughout the HQAs	Average creeping lantana cover >50% throughout Offset Area	Average creeping lantana cover between 30 – 50% throughout Offset Area	Average creeping lantana cover between >15 30% throughout Offset Area	Average creeping lantana cover between 5-15%	Average creeping lantana cover less than 5%
Degradation of habitat quality due to invasive weed species:	Scope	Total, average non-native plant cover Proportion of the MNES habitat with exotic cover >5% as recorded in the HQAs	Pervasive in its scope, 80-100% of the matter area has a total weed cover ≥5%*	Pervasive in its scope, 60-79% of the matter area has a total weed cover ≥5%*	Pervasive in its scope, 40-59% of the matter area has a total weed cover greater ≥5%*	Pervasive in its scope, 20-39% of the matter area has a total weed cover greater ≥5%*	Pervasive in its scope, 1-19% of the matter area has a total weed cover greater ≥5%*

Threat	Scope	Contributing factors	Very high - 1	High - 1.5	Medium - 2	Low – 2.5	Very low - 3
	Severity		Very high - 1	High – 2	Medium - 3	Low – 4	Very low - 5
SEVT, Eucalypt Floodplain Forest TEC, *Samadera bidwillii*	Severity	Average non-native cover (%) as recorded throughout the HQAs	Average non-native plant cover >50% throughout Offset Area	Average non-native plant cover between 30 - 50% throughout Offset Area	Average non-native plant cover between >15 - 30% throughout Offset Area	Average non-native plant cover between 5-15%	Average creeping lantana cover less than 5%
Degradation of habitat from grazing	Scope	Proportion of HQA sites where primary or secondary evidence of cattle grazing were recorded	Pervasive in its scope, affecting 80-100% of the matter area	Widespread in its scope, affecting 60-79% of the matter area.	Restricted in its scope, affecting 40-59% of the matter area.	The threat is likely to be narrow in its scope, affecting 20-39% of the matter area.	The threat is likely very narrow in its scope, affecting 1-19% of the matter area.
	Severity	The following points will be considered as a collective: Severity of grazing pressure as recorded at the HQA sites Expected functional impact on existing and regenerating habitat	N/A: This threat is not considered realistically significant enough to warrant a very high rating.	N/A: This threat is not considered realistically significant enough to warrant a high rating.	• Severe to very severe grazing pressure with most grass below 5cm in height due to grazing. • Grazing is expected to be having a material/ functional impact on the matter	• Moderate grazing pressure with half or more of the potential grass has been grazed. • Grazing is expected to be having a material/ functional impact on the matter	• Low grazing pressure with half or more of the potential grass has been grazed. • Grazing is not expected to be having a material/ functional impact on the matter

Threat Assessment - BBOA

Table 1-17 Threat Assessment for the Koala throughout the BBOA

Threat	Description	Threat Assessment – Koala		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Increased intensity/ frequency of bushfire	Increased frequency/intensity of bushfires with the potential to cause direct mortality or degrade koala habitat via loss of foraging or shelter resources, modified vegetation structure (whipstick regrowth) and prevention of native recruitment. (N. A. Davies et al., 2013; Department of Agriculture Water and the Environment, 2022b; Seabrook et al., 2011).	**1.5:** Since 2010, wildfire has affected a substantial proportion (within 60–79%) of koala habitat within the BBOA, including both high-intensity events and areas subject to repeated fire (high frequency). The extent of contiguous native vegetation and connectivity to surrounding forested landscapes increases the likelihood of landscape-scale, high intensity fire spread conditions, resulting in broad exposure of koala habitat to wildfire risk.	**3:** There is evidence of repeated or high-intensity fires throughout the BBOA (dense regrowth with limited canopy development) which reduces habitat suitability over the long term. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation. Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of extensive canopy scorch or loss, disruption to habitat continuity and delayed recovery of suitable koala habitat.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Maintenance of fuel loads within ecologically appropriate thresholds • Application of mosaic burning to reduce landscape-scale fire risk while retaining refugia • Application of fire regimes consistent with BMP-defined intervals (including ≥10-year intervals in key arboreal habitat) • Protection of fire-sensitive habitat features and recruitment cohorts • Establishment and maintenance of fire breaks and access tracks	**8**
Encounter mortality with vehicles and dogs	Vehicle strike and dog attack can result in injury or mortality to individual koalas. Moreover, koalas may become more vulnerable to predation when displaced from habitat due to fragmentation, habitat loss or wildfires.	**2.5:** Risk of vehicle encounter mortality is present but spatially variable across the Offset Area. Exposure is associated with a combination of internal access tracks, Coal Rd (which bisects the BBOA), and areas of human activity where domestic or working dogs may be present. While Coal Rd represents a potential interaction point between eastern and western offset areas, traffic volumes are low and vehicle-related risk is localised. The presence of domestic dogs and wild canids across the broader property landscape presents a broader source of potential encounter risk, particularly in areas where koalas utilise ground movement between habitat patches or occupy lower-quality or fragmented habitat.	**3:** The likelihood of frequent vehicle or dog encounters is low within the rural context of the Offset Area. Baseline camera trapping across the BBOA and broader properties confirmed the presence of feral cats and multiple canids, with the latter assessed as dingoes. While dingoes are not considered a feral pest species, their presence indicates that terrestrial predators are present and mobile across the landscape. This, in combination with the presence of domestic and working dogs associated with rural land use, contributes to a low but spatially widespread risk of encounter for koalas, particularly where individuals are moving through fragmented habitat or along riparian corridors.	**10**	Conduct feral pest and predator management, delivered as an adaptive, evidence-based program across the BBOA and wider properties as required. The long-term objective is population suppression rather than eradication and the threat score is therefore assumed to remain stable.	**10**
			Final threat score assigned in the HQS	**4.5**		**8**

Table 1-18 Threat Assessment for the Collared Delma throughout the BBOA

Threat	Description	Threat Assessment – Collared Delma		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Increased intensity/ frequency of bushfire	The response of collared delma to fire is not well documented however, fire is known to reduce reptile diversity and is likely to impact the species through direct mortality and loss of shelter habitat (Department of Climate Change, Energy, the Environment and Water, 2024). Extensive or inappropriate fire is therefore	**1.5:** Since 2010, wildfire has affected a substantial proportion (within 60–79%) of collared delma habitat. This includes instances of high-intensity fires and frequent fire intervals which is likely to be detrimental to collared delma through direct mortality or reducing foraging and shelter habitat.	**3:** There is evidence of repeated and/ or high-intensity fire across the BBOA which can simplify ground-layer structure and reduce the availability of key foraging and shelter resources required by collared delma. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Maintenance of fuel loads within ecologically appropriate thresholds	**8**

Threat	Description	Threat Assessment – Collared Delma		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
	considered a threat either through direct mortality or reduction in shelter habitat such as leaf litter and CWD.		Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of extensive ground-layer consumption, loss of shelter resources and disruption to habitat continuity with recovery of suitable habitat dependent on the re-establishment of complex ground-layer structure.		• Application of mosaic burning to reduce landscape-scale fire risk while retaining refugia • Apply a spatial buffer to any collared delma records to exclude or limit fire where appropriate • Protection of fire-sensitive habitat features and recruitment cohorts • Establishment and maintenance of fire breaks and access tracks	
Degradation of habitat quality due to invasive wee species creeping lantana	Creeping lantana (*Lantana montevidensis*) smothers and reduces shelter habitat availability and outcompetes native ground cover species.	**2:** Creeping lantana is widespread throughout the BBOA and recorded throughout 43% of HQA sites.	**3:** Creeping lantana forms a significant component of the ground layer (up to 50% cover in some areas, more typically 5–20%), displacing native grasses and reducing the availability of suitable shelter and movement habitat. Dense infestations can smother ground-layer structure, limiting access to microhabitat features and reducing habitat suitability.	**6**	Prepare, implement and monitor a WMP aimed to: • Reduce overall weed cover throughout the BBOA • Target creeping lantana within collared delma habitat • Integrate with fire and grazing • Be responsive to HQA and weed assessment monitoring	**8**
Degradation of habitat from grazing	Collared delma habitat is likely sensitive to grazing, particularly due to trampling of loose rock habitat and compaction of surface soils.	**1.5:** Cattle grazing was observed at most areas of the matter area (60-79%) during offset field surveys.	**4:** Overall, grazing pressure throughout the BBOA was described as moderate with approximately half of potential grass being grazed whilst large grass tussocks were typically scattered. It is expected that grazing slightly reducing the functional habitat quality for the collared delma through soil and ground litter compaction and native tussock removal.	**6**	Prepare, implement and monitor a GMP aimed to: • Exclude grazing from all restoration areas within the BBOA • Conditionally graze throughout some intact areas to reduce fuel load whilst maintaining habitat quality	**12**
			Final threat score assigned in the HQS	**4.5**		**7**

Table 1-19 Threat Assessment for the *Samadera bidwillii* throughout the BBOA

Threat	Description	Threat Assessment – *Samadera bidwillii*		Total Threat Matrix Score	Management Actions to Improve/ Maintain Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Inappropriate fire regimes	The species' direct response to fire is not well known however, post-fire proliferation of lantana and exotic grasses may increase competitive pressure, alter habitat structure and increase fuel load (Department of Climate Change, Energy, the Environment and Water, 2026).	**1.5:** Much of the areas (60 – 79%) now supporting known *Samadera bidwillii* habitat were subject to high-intensity fires in 2011 and 2012 with responsive whipstick regrowth dominating the understorey and altering the vegetation structure at present.	**3:** High-intensity fire has altered vegetation structure within known *Samadera bidwillii* habitat, resulting in dense understorey whipstick regrowth. This has created a feedback loop which has elevated the fuel load to an Extreme level throughout the surface and elevated layers which will increase the fire intensity should one occur. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the habitat supporting *Samadera bidwilli* and surrounding, including: • Maintenance of fuel loads within ecologically appropriate thresholds • Application of mosaic burning to reduce landscape-scale fire risk while retaining refugia • Establishment and maintenance of fire breaks and access tracks	**10**
Degradation of habitat due to weed proliferation	An expected threat to the species referenced for its tendency to increase fuel load and wildfire severity (Department of Climate Change, Energy, the Environment and Water, 2026).	**2:** Weed infestations are currently low within areas supporting known *Samadera bidwillii* individuals with approximately half of the habitat reflecting non-native cover greater than 5%. However, weeds are relatively common across the broader BBOA and would likely continue to spread into the *Samader bidwillii* offset area over time and particularly after disturbance events.	**4:** Low impact on areas currently supporting *Samadera bidwillii* population with an average of 10% cover. This is likely to increase in time, without target weed management, particularly after disturbance events.	**8**	Prepare, implement and monitor a WMP aimed to: • Reduce overall weed cover throughout the BBOA • Target lantana throughout *Samadera bidwillii* habitat • Integrate with fire and grazing • Be responsive to HQA and weed assessment monitoring	**12**
			Final threat score assigned in the HQS	**4.5**		**10**

Table 1-20 Threat Assessment for the Greater Glider throughout the BBOA

Threat	Description	Threat Assessment – Greater Glider		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Increased intensity/ frequency of bushfire	Substantial population losses or declines have been documented in and after high severity bushfires. Losses can occur as a result of direct mortality due to lethal heating or suffocation from smoke, or indirect mortality due to the loss of key habitat features and resources (Department of Climate Change, Energy, the Environment and Water, 2022b).	**1.5:** Since 2010, wildfire has affected a substantial proportion (within 60–79%) of glider habitat within the BBOA, including both high-intensity events and areas subject to repeated fire (high frequency). The extent of contiguous native vegetation and connectivity to surrounding forested landscapes increases the likelihood of landscape-scale, high intensity fire spread conditions, resulting in broad exposure of glider habitat to wildfire risk.	**3:** There is evidence of repeated or high-intensity fires throughout the BBOA (e.g. dense regrowth with limited canopy development) which reduces habitat suitability over the long term. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation. Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of extensive canopy scorch or loss, disruption to habitat continuity and delayed recovery of suitable glider habitat.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Maintenance of fuel loads within ecologically appropriate thresholds • Application of mosaic burning to reduce landscape-scale fire risk while retaining refugia • Protection of fire-sensitive habitat features and recruitment cohorts • Establishment and maintenance of fire breaks and access tracks.	**8**
Barbed wire fence entanglement	There are occasional losses of individuals due to entanglement in barbed wire fences across the greater glider's range (Department of Climate Change, Energy, the Environment and Water, 2022b).	**2.5:** Barbed wire commonly occurs across landscapes modified for agricultural use, however is considered narrow in its scope as barbed wire is conservatively utilised across the BBOA.	**4:** Barbed wire fencing was sparse to common across the BBOA and was observed to intersect high quality glider habitat including where individuals were detected. Bat carcass were observed within the Offset Area, establishing the possibility of the threat to impact greater glider individuals.	**10**	• Any current barbed wire fencing will be adapted to remove the top strand to mitigate entanglement. • All newly installed fencing or repairs/ modifications to existing fencing in the Offset Area will be 'wildlife friendly'.	**10**
Hyper-predation by owls or feral animals	The greater glider forms a significant part of the diet of *Ninox strenua* (powerful owl), and has become a significant part of the diet of *Tyto tenebricosa* (sooty owl) since European settlement due to the widespread decline of terrestrial prey species for these owls (Department of Climate Change, Energy, the Environment and Water, 2022b). Remains of greater gliders have been found in the stomachs and scats of red foxes and feral cats (Department of Climate Change, Energy, the Environment and Water, 2022b).	**2.5:** This threat likely affects gliders across a small proportion of their occurrence, exacerbated by the threat level at a local scale. The current recorded observation of feral pests across the BBOA indicates that pests are present and mobile across the landscape. In addition, owls are likely to occur in some capacity within the BBOA given their high mobility. For this reason, the impact of predation from pests is considered narrow in its scope.	**4:** Baseline camera trapping across the BBOA and broader properties confirmed the presence of feral cats and multiple canids, with the latter assessed as dingoes. While dingoes are not considered a feral pest species, their presence indicates that terrestrial predators (i.e. foxes) may be present and mobile across the landscape. The presence of owls was not sufficiently quantified however it is assumed, due to their high mobility, that they are present across the Offset Area.	**10**	• Conduct feral pest and predator management, delivered as an adaptive, evidence-based program across the BBOA and wider properties as required. The long-term objective is population suppression rather than eradication and the threat score is therefore assumed to remain stable. • Improvements in habitat quality, extent and connectivity will likely result in increases in owl terrestrial prey species. This will reduce the predation pressure of owl on greater gliders across the Offset Area.	**10**
			Final threat score assigned in the HQS	**4.5**		**8**

Table 1-21 Threat Assessment for the Yellow-bellied Glider throughout the BBOA

Threat	Description	Threat Assessment – Yellow-bellied Glider		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Increased intensity/ frequency of bushfire	Previous high severity fires have eliminated yellow bellied gliders (south-eastern) from a site for at least 15 years, and local extinctions due to high severity fire have been observed.	**1.5:** Since 2010, wildfire has affected a substantial proportion (within 60–79%) of glider habitat within the BBOA, including both high-intensity events and areas subject to repeated fire (high frequency). The extent of contiguous native vegetation and connectivity to surrounding forested landscapes increases the likelihood of landscape-scale, high intensity fire spread conditions, resulting in broad exposure of glider habitat to wildfire risk.	**3:** There is evidence of repeated or high-intensity fires throughout yellow-bellied glider habitat within the BBOA (e.g. dense regrowth with limited canopy development) which reduces habitat suitability over the long term. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation. Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of extensive canopy scorch or loss, disruption to habitat continuity and delayed recovery of suitable glider habitat.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Maintenance of fuel loads within ecologically appropriate thresholds • Application of mosaic burning to reduce landscape-scale fire risk while retaining refugia • Protection of fire-sensitive habitat features and recruitment cohorts • Establishment and maintenance of fire breaks and access tracks.	**8**
Predation from feral cats and red foxes	Yellow-bellied gliders (south-eastern) have been found in the scats of European red foxes and have been hypothesised to also be in the diet of feral cats (Department of Agriculture Water and the Environment, 2022a).	**2.5:** This threat likely affects yellow-bellied gliders across a small proportion of their occurrence, exacerbated by the threat level at a local scale. The current recoded observation of feral pests, inclusive of cats and foxes, across the BBOA indicates that pests are present and mobile across the landscape. For this reason, the impact of predation from pests is considered narrow in its scope.	**3:** Baseline camera trapping across the BBOA and broader properties confirmed the presence of feral cats and multiple canids, with the latter assessed as dingoes. While dingoes are not considered a feral pest species, their presence indicates that terrestrial predators (i.e. red foxes) may be present and mobile across the landscape.	**7.5**	Conduct feral pest and predator management, delivered as an adaptive, evidence-based program across the BBOA and wider host properties as required. The long-term objective is population suppression rather than eradication and the threat score is therefore assumed to remain stable.	**7.5**
Barbed wire fence entanglement	Occasional losses of individuals have been known to occur due to entanglement in barbed wire fencing (Department of Agriculture Water and the Environment, 2022a).	**2.5:** Barbed wire commonly occurs across landscapes modified for agricultural use, however is considered narrow in its scope as barbed wire is conservatively utilised across the BBOA.	**4:** Barbed wire fencing was sparse to common across the BBOA and was observed to intersect high quality glider habitat. Bat carcass were observed within the Offset Area, establishing the possibility of the threat to impact greater glider individuals.	**10**	• Any current barbed wire fencing will be adapted to remove the top strand to mitigate entanglement. • All newly installed fencing or repairs/ modifications to existing fencing in the Offset Area will be 'wildlife friendly'.	**10**
			Final threat score assigned in the HQS	**4.5**		**6**

Table 1-22 Threat Assessment for Semi-evergreen Vine Thicket TEC throughout the BBOA

Threat	Description	Threat Assessment – SEVT TEC		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Fire damage	Fire becomes a serious threat where fuel characteristics have been changed by the presence of introduced grass pasture species such as buffel grass (Cenchrus *ciliare*), green panic (*Megathyrsus maximus var. pubiglumis*) or sabi grass (*Urochloa mosambicensis*) in areas adjacent to thickets or where thickets have been invaded by lantana (*Lantana camara*) (Department of Climate Change, Energy, the Environment and Water, 2023). McDonald (2010) indicated that repeated fires and the slow rate of	**1.5:** The threat of fire is considered to be widespread in its scope, with high intensity fires known to become a greater threat throughout the Brigalow Belt bioregion. The extent of contiguous native vegetation and connectivity to surrounding forested landscapes increases the likelihood of landscape-scale, high intensity fire spread conditions, resulting in broad exposure of SEVT to wildfire risk.	**3:** Historical fires have occurred adjacent to SEVT habitat within the BBOA, with the most extensive fires occurring in 2006 and 2011. Current fire management across the BBOA focuses on hazard reduction and does not mitigate the severity of fires to SEVT completely. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The SEVT patch currently has an effective firebreak along the north of	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Exclusion of fire from-sensitive communities such as the SEVT patches • Maintenance of fuel loads within ecologically appropriate thresholds • Weed management, particularly lantana which can encourage fire into existing SEVT patches • Application of mosaic burning to reduce landscape-scale fire risk	**8**

Threat	Description	Threat Assessment – SEVT TEC: Scope (Max of 3)	Threat Assessment – SEVT TEC: Severity (Max of 5)	Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
	regeneration in vine thicket vegetation were causing rapid attrition of roadside SEVT remnants and many hill slope fragments in Queensland.		its boundary whilst there is no fire break along the south to the adjacent eucaypt forest. Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of widespread and high-intensity wildfire that could directly or indirectly impact the SEVT.		• Application of fire regimes consistent with BMP-defined intervals • Establishment and maintenance of fire breaks and access tracks	
Degradation of habitat due to weed proliferation	The major weed species considered to pose a threat to SEVT in Queensland, because they facilitate the incursion of fire into them, are the pasture species buffel grass and green panic and the pasture weed parthenium (*Parthenium hysterophorus*). Other introduced species recorded in Queensland vine thickets include lantana, rubber vine (*Cryptostegia grandiflora*), Brazilian nightshade (*Solanum seaforthianum*) and coral berry (*Rivina humilis*), but of these weed species, only lantana and rubber vine are considered to pose a serious threat (McDonald, 2010).	**2.5:** Significant weed infestations occur within approximately 20% of the mattera, including very dense cat's claw creeper within remnant vegetation and pasture weeds throughout non-remnant areas prescribed for SEVT restoration.	**3:** The majority of SEVT patches have only minor infestations (<5%). The main exceptions are very dense cat's claw creeper within a patch and pasture weeds within non-remnant areas prescribed for SEVT restoration. There is a risk that the cat's claw could extend further into adjacent SEVT patches if left unmanaged.	**7.5**	Prepare, implement and monitor a WMP aimed to: • Reduce overall weed cover throughout the BBOA • Target vine thicket weeds in SEVT habitat • Integrate with fire and grazing • Be responsive to HQA and weed assessment monitoring	**7**
Degradation of habitat from grazing	McDonald (2010) cites extensive trampling damage and associated invasion by pasture grasses in vine thickets in central and southern Queensland, and evidence of severe overgrazing by sheep and cattle in some vine thicket patches in New South Wales. Carr (pers. comm. 2018) notes that some graziers are deliberately using goats to browse SEVT and convert it to more open, grass-dominated pasture suitable for cattle.	**3:**This threat is considered to be restricted in its scope with impact largely restricted to the non-remnant patch (1-19% of the matter area) prescribed from SEVT restoration and the adjacent edges of remnant patches.	**4:** Moderate grazing pressure was recorded within the non-remnant HQA site however it is likely that grazing may be reducing native recruitment as they defoliate and kill emerging trees and shrubs.	**9**	• Preparation and implementation of a GMP to exclude grazing throughout restoration areas and all SEVT patches.	**15**
			Final threat score assigned in the HQS	**4.5**		**7**

Table 1-23 Threat Assessment for *Cycas megacarpa* Throughout the BBOA

Threat	Description	Threat Assessment – *Cycas megacarpa*: Scope (Max of 3)	Threat Assessment – *Cycas megacarpa*: Severity (Max of 5)	Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
Inappropriate fire regime	Cycads do not have a long-lived soil seed bank and the viability of most species is from six months to three years. Most fires, but especially those of high intensity, will result in the destruction of any existing seed banks and disrupt the reproduction of the species. Fires occurring at the times when seeds are ripe, and especially during synchronous coning or "masting" events, will result in high losses of potential seed (Queensland Herbarium, 2007).	**1.5:** Since 2010, wildfire has affected a substantial proportion of *C. megacarpa* habitat within the BBOA, including both high-intensity events and areas subject to repeated fire (high frequency). The large, contiguous patches of native vegetation within the Offset Areas and their connectivity to surrounding vegetated landscapes, further elevate wildfire risk by increasing the potential for fire spread under extreme weather conditions. Also,	**3:** There is evidence of repeated or high-intensity fires throughout the BBOA (e.g. dense regrowth with limited canopy development) which reduces habitat suitability over the long term. Fire breaks are somewhat effective throughout the BBOA occurring at the the foot of slopes and scattered throughout upper slopes and ridges. The fire break/ access track along the western boundary is currently ineffective as it is overgrown with regrowth vegetation.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the BBOA, including: • Avoid burns during or directly after mass fruiting (masting) events • Maintenance of fuel loads within ecologically appropriate thresholds • Application of mosaic burning to reduce landscape-scale fire risk	**8**

Threat	Description	Threat Assessment – *Cycas megacarpa*		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
		cycads already occur in high densities within largely intact remnant vegetation in the BBOA, further exacerbating this threat.	Current FFLH assessments resulted in two sites with extreme ratings and three sites with very high-rating. Without intervention, these conditions elevate the risk of extensive high-intensity wildfire that could cause directly *Cycas megacarpa* mortality and reduce reproductivity within the population.		• Protection of fire-sensitive habitat features and recruitment cohorts • Establishment and maintenance of fire breaks and access tracks	
Destruction of habitat and individuals	Targeted removal of individuals due to toxicity to livestock and illegal harvesting pose ongoing risks to Cycas megacarpa. Landholders may selectively clear cycads within grazing areas to reduce perceived risks to cattle, while the species is also susceptible to illegal collection due to its horticultural value. These pressures can result in localised population decline and reduction in reproductive individuals, particularly where accessible populations occur near managed land or access tracks(Queensland Herbarium, 2007).	**2.5:** Targeted removal of Cycas megacarpa individuals associated with grazing management is likely to have occurred historically and may persist at low levels within accessible areas of the BBOA, particularly in lower slopes and interface zones with pasture. In addition, the large size and relative accessibility of parts of the Offset Area present an ongoing, albeit low likelihood, risk of illegal harvesting of individuals.	**4:** The severity of this threat is moderated by the fact that most known populations occur within remnant vegetation on upper slopes and ridgelines that are relatively inaccessible to cattle and machinery, limiting the extent of targeted removal. However, where access is possible, removal of individual plants can directly reduce local population size, reproductive capacity and long-term persistence	**10**	• Commitment to targeted surveys over the offset period to detect additional individuals across currently untraversed upper slopes and ridgelines. • Ongoing property management presence and monitoring to discourage and detect unauthorised removal of individuals.	**10**
			Final threat score assigned in the HQS	**4.5**		**8**

Threat Assessment - SEQOA

Table 1-24 Threat Assessment for Subtropical Eucalypt Floodplain TEC Throughout the SEQOA

Threat	Description	Threat Assessment – Eucalypt floodplain TEC		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Degradation of habitat due to weed proliferation	Invasion by non-native plants, including transformer weed species, is a major threat to this ecological community (Department of Climate Change, Energy, the Environment and Water, 2022a). Transformer weeds are highly invasive plants with the potential to seriously alter the structure and function of the ecological communities they invade, thereby 'transforming' them into a different system. In this ecological community they include camphor laurel (*Cinnamomum camphora*), groundsel bush (*Baccharis halimifolia*), exotic vines and scramblers (such as lantana (*Lantana camara*), cats-claw creeper (*Dolichandra unguis-cati*) and Madeira vine (*Anredera cordifolia*)), and exotic perennial grasses (such as cocksfoot (*Dactylis glomerata*), paspalum (*Paspalum dilatatum*) and fountain grass (*Cenchrus setaceus*)).	**1.5:** Non-native plant cover was very high throughout each HQA site in the SEQOA with cat's claw creeper and giant rat's tail the most prominent.	**2:** Within the SEQOA, weed infestation is widespread across all vegetation strata, with an average cover of approximately 66% (range 40–90%). Dominant and high-impact species include cat's claw creeper, giant rat's tail grass, lantana and rubber vine. Without intervention, continued weed expansion is anticipated to further degrade the eucalypt floodplain TEC by reducing native species richness and understorey integrity, inhibiting regeneration and altering fuel structure. In particular, the advancement of cat's claw creeper and giant rat's tail grass poses a material risk to the long-term condition and resilience of this TEC.	**2**	Prepare, implement and monitor a WMP aimed to: • Reduce overall weed cover throughout the SEQOA • Target cat's claw creeper and giant rats tail grass within the existing TEC patch and potential TEC habitat • Integrate with fire and grazing • Be responsive to HQA and weed assessment monitoring	**8**
Degradation from cattle grazing	Cattle grazing can degrade the ecological community through overgrazing, trampling and soil disturbance, leading to reduced native ground cover, altered species composition and increased susceptibility to weed invasion. Grazing pressure preferentially removes grasses and forbs, and can extend to woody species during periods of resource scarcity (e.g. drought), further disrupting the structure and ecological function of the TEC (Department of Climate Change, Energy, the Environment and Water, 2022a).	**1:** Cattle grazing was observed at most areas of the matter area (80-100%) during offset field surveys.	**4:** Moderate grazing pressure was recorded throughout the matter area noting the low foraging value that the dominant grass – giant rats tail provides. However it is likely that grazing may be reducing native recruitment as they defoliate and kill emerging trees and shrubs.	**4**	• Management will support existing patches of Eucalypt Floodplain Forest TEC with active management, restoration and habitat creation to produce a substantially larger patch of functional Eucalypt Floodplain Forest TEC. • A 100 m buffer to the SEQOA will be applied to mitigate edge effects from anthroporgenic disturbance • Preparation and implementation of a GMP to exclude grazing throughout the entire SEQOA	**12**
Inappropriate fire regime	Eucalypt floodplain TEC is sensitive to altered fire regimes, as high intensity or too frequent fires may slow or prevent regeneration of some species in the ecological community and lead to lower species richness (Department of Climate Change, Energy, the Environment and Water, 2022a). Sustained high frequency fire will lead to a loss of eucalypts and other plant species, a reduction in vegetation structure and a corresponding loss of animal species in the ecological community.	**1.5:** The threat of fire is therefore considered to be widespread in its scope (60-79% of the matter area). The SEQOA has been subject to recurrent paddock fires consistent with grazing management practices whilst vegetated areas in the southern section of the Offset Area have also been burnt.	**3:** The SEQOA has been subject to repeated burns in the previous 15 years which is likely to have degraded Eucalypt Floodplain TEC and any adjacent regeneration with loss of recruits, ground-layer litter and CWD whilst exhaserbating weed pressure on native plant diversity and cover. Fire breaks are scattered throughout the property and unlikely to prevent fire spread in when the paddocks contain a high fuel load. FFLH assessment results indicated a 'high' overall fuel hazard rating, no sites with an 'Extreme' rating and 1 site with a 'Very High' rating.	**4.5**	Prepare, implement and monitor a BMP to reinstate appropriate fire mosaic pattern throughout the SEQOA, including: • Maintenance of fuel loads within ecologically appropriate thresholds. • Application of mosaic burning to reduce landscape-scale fire risk . • Application of fire regimes consistent with BMP-defined intervals. • Protection of fire-sensitive habitat features and recruitment cohorts. • Establishment and maintenance of fire breaks and access tracks.	**8**

Threat	Description	Threat Assessment – Eucalypt floodplain TEC		Total Threat Matrix Score	Management Actions to Improve Threat Score	Forecast Threat Matrix Score
		Scope (Max of 3)	Severity (Max of 5)			
Degradation from feral pest impacts	The ecological community is subject to a range of negative impacts from invasive animals (Department of Climate Change, Energy, the Environment and Water, 2022a). These include: • Predation and habitat destruction through trampling and soil disturbance, competition and disease transmission by feral pigs (*Sus scrofa*) • Predation, disease transmission and spread of invasive plant species by cats (*Felis catus),* dogs (*Canis lupus*), European red foxes (*Vulpes vulpes*) and other feral (or domestic) predators	**2:** Feral pest (European red fox) was detected at 2/5 cameras but is likely to be predating throughout the broader areas of the SEQOA and host property.	**4:** No material habitat degradation from feral pests were observed throughout the SEQOA. It is assumed that no feral pest management is conducted throughout the property. However, invasive fauna presence, independent of grazing impacts, is unlikely to be considered a severe threat within the SEQOA and instead only slightly degrade the TEC habitat within the Offset Area over time without intervention.	**8**	• Conduct feral pest and predator management, delivered as an adaptive, evidence-based program across the SEQOA and wider properties as required. The long-term objective is population suppression rather than eradication and the threat score is therefore assumed to remain stable.	**8**
			Final threat score assigned in the HQS	**2**		**6**

Threat Assessment Site Data - BBOA

Site ID	Barbed wire presence Score - Severity	Cattle grazing score - Severity	Cattle grazing evident on site score - Scope	Non-native plant cover (%) (HQA)	Degradation of habitat quality due to Invasive Weed Species - Scope	Creeping lantana within plot - Scope	Count of Overall Fuel Hazard Rating (Appendix H)
OFF07	Barbed wire fence common throughout habitat patch (expect to intersect the patch >5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	1		0	See Appendix H for individual FFLH assessment results. Summary provided at the last row of the table
OFF10	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	5	>=5%	1	
OFF100(LS)	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	15	>=5%	1	
OFF12	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	15	>=5%	1	
Off21	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	10	>=5%	1	
OFF21	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	10	>=5%	1	
Off22	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	25	>=5%	1	
OFF37	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	40	>=5%	0	
BC01	Barbed wire fence scattered throughout habitat patch (expect	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	20	>=5%	1	

Site ID	Barbed wire presence Score - Severity	Cattle grazing score - Severity	Cattle grazing evident on site score - Scope	Non-native plant cover (%) (HQA)	Degradation of habitat quality due to Invasive Weed Species - Scope	Creeping lantana within plot - Scope	Count of Overall Fuel Hazard Rating (Appendix H)
	to intersect the patch <5 times)						
CED03	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	35	>=5%	0	
CED04	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	30	>=5%	0	
CED05	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	65	>=5%	0	
LS02	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	50	>=5%	0	
Off11	Barbed wire fence within 100 m to plot	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	50	>=5%	0	
Off13	Barbed wire fence within 100 m to plot	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	10	>=5%	0	
Off15	Barbed wire fence common throughout habitat patch (expect to intersect the patch >5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	20	>=5%	1	
Off16	Barbed wire fence common throughout habitat patch (expect to intersect the patch >5 times)	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	5	>=5%	1	
Off17	Barbed wire fence within 100 m to plot	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	25	>=5%	0	
OFF26	No barbed wire fence throughout habitat patch	Moderate: Approximately half of the potential grass has	Yes	10	>=5%	1	

Site ID	Barbed wire presence Score - Severity	Cattle grazing score - Severity	Cattle grazing evident on site score - Scope	Non-native plant cover (%) (HQA)	Degradation of habitat quality due to Invasive Weed Species - Scope	Creeping lantana within plot - Scope	Count of Overall Fuel Hazard Rating (Appendix H)
		been grazed. Large grass tussocks are scattered.					
OFF31	Barbed wire fence within 100 m to plot	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	5	>=5%	1	
BC02	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	10	>=5%	1	
LS01	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	25	>=5%	0	
LS05	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	10	>=5%	0	
OFF01	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	20	>=5%	0	
OFF04	No barbed wire fence throughout habitat patch	No evidence of grazing, grass tussocks common to abundant.	No	1		0	
OFF06	No barbed wire fence throughout habitat patch	No evidence of grazing, grass tussocks common to abundant.	No	0		0	
OFF09	No barbed wire fence throughout habitat patch	No evidence of grazing, grass tussocks common to abundant.	No	0		0	
OFF101(LS)	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	20	>=5%	1	
Off16	Barbed wire fence within 100 m to plot	No evidence of grazing, grass tussocks common to abundant.	No	5	>=5%	1	
Off18	Barbed wire fence scattered throughout habitat patch (expect	No evidence of grazing, grass tussocks common to abundant.	No	5	>=5%	0	

Site ID	Barbed wire presence Score - Severity	Cattle grazing score - Severity	Cattle grazing evident on site score - Scope	Non-native plant cover (%) (HQA)	Degradation of habitat quality due to Invasive Weed Species - Scope	Creeping lantana within plot - Scope	Count of Overall Fuel Hazard Rating (Appendix H)
	to intersect the patch <5 times)						
Off18	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	5	>=5%	0	
OFF80	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	No evidence of grazing, grass tussocks common to abundant.	No	16	>=5%	1	
Off17	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Severe: Most grass below 5cm in height due to cattle. No large grass tussocks remain.	Yes	25	>=5%	0	
OFF20	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Severe: Most grass below 5cm in height due to cattle. No large grass tussocks remain.	Yes	45	>=5%	0	
OFF73	Barbed wire fence within 100 m to plot	Severe: Most grass below 5cm in height due to cattle. No large grass tussocks remain.	Yes	10	>=5%	1	
Off14	Barbed wire fence common throughout habitat patch (expect to intersect the patch >5 times)	Very severe (all grass below 5cm in height)	Yes	15	>=5%	0	
OFF2	Barbed wire fence scattered throughout habitat patch (expect to intersect the patch <5 times)	Very severe (all grass below 5cm in height)	Yes	50	>=5%	0	

	Barbed wire presence Score - Severity	Cattle grazing score - Severity	Cattle grazing evident on site score - Scope	Weed Severity Score - Non-native plant cover (%) (HQA)	Degradation of habitat quality due to Invasive Weed Species - Scope	Creeping lantana within plot - Scope	Low	Moderate	High	Very high	Extreme
Results	**Barbed wire common to scattered throughout Offset Area**	**Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.**	**68% of sites with evidence of grazing**	**Average of 21% cover**	**89% of sites =>5% weed cover**	**43% of sites with creeping lantana**	**2**	**11**	**26**	**3**	**2**

Threat Assessment Site Data - SEQOA

Site ID	Cattle grazing severtiy Score	Cattle grazing score - Scope	Non-native plant cover (%) (BioCondition)	Degradation of habitat quality due to Invasive Weed Species - Scope	Overall Fuel Hazard Rating (Appendix H)				
SK02	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	40	>=5%					
SK05	No evidence of grazing, grass tussocks common to abundant.	No	60	>=5%					
SK15	Uncertain in current state	Yes	90	>=5%					
SK01	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	70	>=5%					
SK03	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	75	>=5%					
SK12	Moderate: Approximately half of the potential grass has been grazed. Large grass tussocks are scattered.	Yes	55	>=5%					
SK14	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	60	>=5%					
SK16	Less than half of the potential grass has been grazed. Large grass tussocks are common	Yes	60	>=5%					
SK17	Uncertain in current state	Yes	85	>=5%					
	Cattle grazing score - Severity	**Cattle grazing evident on site score - Scope**	**Weed Severity Score - Non-native plant cover (%) (HQA)**	**Degradation of habitat quality due to Invasive Weed Species - Scope**	**Low**	**Moderate**	**High**	**Very high**	**Extreme**
Results	**Low: Less than half of the potential grass has been grazed. Large grass tussocks are common**	**88% of sites with evidence of grazing**	**Average of '66% cover**	**100% of sites >=5% cover**	**0**	**2**	**14**	**1**	**0**

umwelt

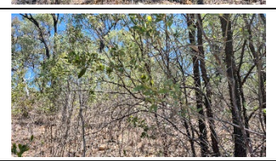
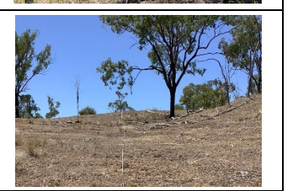
P 1300 793 267 E info@umwelt.com.au W umwelt.com.au

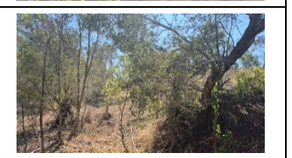
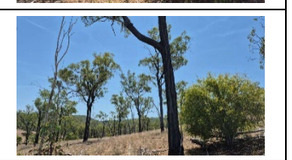
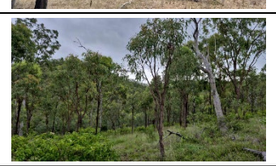
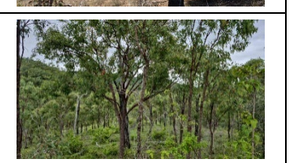
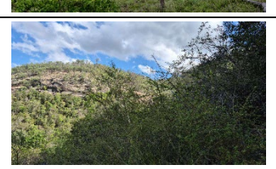
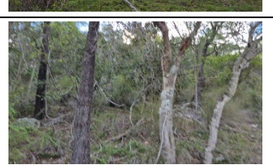
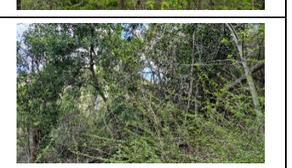
NSW | ACT | WA | QLD | VIC | SA ABN 18 059 519 041

Appendix G

Habitat Quality Assessment Photos

Table G.1 HQA Location and Photos Throughout The Cedars

Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
CED03	-24.2753, 150.6982		-24.2749, 150.6982					-24.2744, 150.6982	
CED04	-24.2820, 150.6994		-24.2817, 150.6998					-24.2815, 150.7002	
OFF01	-24.2531, 150.6966		-24.2526, 150.6965					-24.2522, 150.6963	
OFF03	-24.2811, 150.6886		-24.2806, 150.6887					-24.2802, 150.6888	
OFF04	-24.2821, 150.6894		-24.2821, 150.6892					-24.2821, 150.6889	
OFF06	-24.2859, 150.6773		-24.2855, 150.6770					-24.2852, 150.6767	
OFF07	-24.2804, 150.6840		-24.2801, 150.6836					-24.2798, 150.6832	
OFF13	-24.2710, 150.6920		-24.2707, 150.6916					-24.2704, 150.6913	
OFF14	-24.2759, 150.6971		-24.2755, 150.6970					-24.2750, 150.6968	

Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
OFF15	-24.2818, 150.6946		-24.2814, 150.6946					-24.2809, 150.6948	
OFF16	-24.2646, 150.6857		-24.2643, 150.6854					-24.2639, 150.6851	
OFF18	-24.2608, 150.6777		-24.2610, 150.6781					-24.2614, 150.6784	
OFF21	-24.2825, 150.7009		-24.2825, 150.7014					-24.2823, 150.7019	
OFF22	-24.2821, 150.6957		-24.2819, 150.6961					-24.2818, 150.6966	
OFF27	-24.2794, 150.7058		-24.2795, 150.7063					-24.2795, 150.7068	
OFF31	-24.2509, 150.6971		-24.2512, 150.6974					-24.2517, 150.6976	
OFF37	-24.2592, 150.6750		-24.2592, 150.6745					-24.2593, 150.6741	
OFF70	-24.2837, 150.6866		-24.2835, 150.6866					-24.2833, 150.6866	

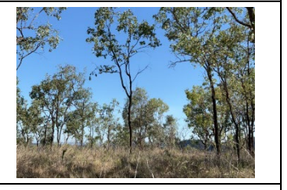
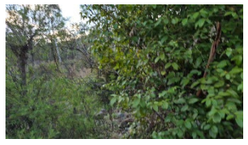
Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
OFF73	-24.2790, 150.7032		-24.2787, 150.7029					-24.2783, 150.7026	
OFF74	-24.2798, 150.6910		-24.2801, 150.6906					-24.2804, 150.6902	
OFF75	-24.2666, 150.6939		-24.2667, 150.6943					-24.2668, 150.6948	
OFF76	-24.2845, 150.6873		-24.2845, 150.6875					-24.2844, 150.6877	
OFF80	-24.2606, 150.6914		-24.2602, 150.6912					-24.2598, 150.6910	
OFF100	-24.2835, 150.6884		-24.2835, 150.6899					-24.2835, 150.6904	
OFF101	-24.2841, 150.6885		-24.2842, 150.6883					-24.2844, 150.6882	

Table G.2 HQA Location and Photos Throughout Lone Star

Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
BC01	-24.2739, 150.7565		-24.2736, 150.7569					-24.2733, 150.7786	
BC02	-24.2924, 150.7795		-24.2922, 150.7790					-24.2733, 150.7573	
OFF01 (LS)	-24.2920, 150.6758		-24.2916, 150.6759					-24.2912, 150.6759	
OFF100 (LS)	-24.2694, 150.7407		-24.2689, 150.7408					-24.2685, 150.7409	
OFF101 (LS)	-24.2658, 150.7393		-24.2654, 150.7390					-24.2651, 150.7387	
OFF-04	-24.2692, 150.7675		-24.2690, 150.7670					-24.2688, 150.7666	
OFF-07	-24.2597, 150.7531	-	-24.2601, 150.7529					-24.2605, 150.7527	
OFF-08	-24.2637, 150.7523		-24.2632, 150.7524					-24.2629, 150.7522	
OFF10	-24.2836, 150.7809		-24.2832, 150.7811					-24.2829, 150.7814	

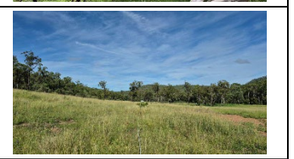
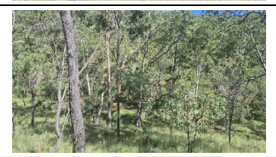
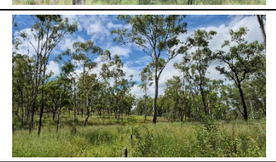
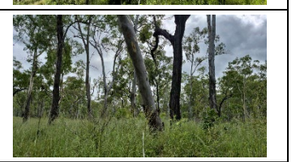
Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
OFF-11	-24.3276, 150.7669		-24.3275, 150.7665					-24.3275, 150.7660	
OFF-18	-24.2629, 150.7565		-24.2632, 150.7566					-24.2636, 150.7568	
LS01	-24.2710, 150.7606		-24.2708, 150.7610					-24.2706, 150.7614	
LS02	-24.2778, 150.7469		-24.2779, 150.7473					-24.2780, 150.7479	
LS05	-24.2686, 150.7689		-24.2683, 150.7692					-24.2680, 150.7696	
LS202	-24.2844, 150.7820		-24.2847, 150.7816					-24.2850, 150.7812	

Table G.3 HQA Location and Photos Throughout South Kolan

Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
SK01	-24.9557, 152.18450		-24.9682, 152.1801					-24.9555, 152.1835	
SK02	-24.9564, 152.1891		-24.9566, 152.1895					-24.9568, 152.1899	
SK03	-24.9581, 152.1908		-24.9556, 152.1840					-24.9574, 152.1901	
SK05	-24.9632, 152.1966		-24.9635, 152.1967					-24.9639, 152.1969	
SK11	-24.9677, 152.1816		-24.9679, 152.1820					-24.9681, 152.1825	
SK12	-24.9705, 152.1829		-24.9577, 152.1905					-24.9697, 152.1823	
SK13	-24.9713, 152.1846		-24.9710, 152.1849					-24.9707, 152.1853	
SK14	-24.9733, 152.1857		-24.9701, 152.1826					-24.9733, 152.1867	
SK15	-24.9719, 152.1898		-24.9719, 152.1903					-24.9720, 152.1908	

Site	Start loc.	Start Photo	Centre loc.	Centre Photos				End loc.	End Photo
				N	E	S	W		
SK16	-24.9683, 152.1805		-24.9732, 152.1862					-24.9681, 152.1797	
SK17	-24.9677, 152.1790		-24.9676, 152.1785					-24.9675, 152.1780	

Appendix H

Offset Monitoring Results

Lone Star

Appendix Table H.1 Species Captured on Lone Star Camera Traps

Common Name	Scientific Name	Camera #	Image #	Date	# of Individuals
Feral cat	*Felis catus*	RCAM53	RCNX0212	11/11/2025	1
Feral cat	*Felis catus*	RCAM47	RCNX0319	6/12/2025	1
Feral pig	*Sus scrofa*	AC10	RCNX0062	12/11/2025	3
Feral pig	*Sus scrofa*	RCAM59	RCNX5413	5/12/2025	1
Feral pig	*Sus scrofa*	RCAM44	RCNX0170	9/11/2025	2

Appendix Table H.2 Lone Star Fire Fuel Load

Site ID	Latitude (x)	Longitude (y)	Elevated Fuel Load – Average Cover	Near-surface Fuel Load Height (m)	Surface Fine Fuel Load – Average Cover	Near-surface Fuel Load Cover	Combined Surface and Near Surface	Bark Type	Bark Hazard	Overall fuel hazard
FFL10LS	150.719112	-24.290618	Low	0.2	Very high	High	Extreme	Iron and platy barks	Moderate	High
FFLLS11	150.727308	-24.280283	Low	0.3	Low	Very high	High	Iron and platy barks	Low	Moderate
FFLLS12	150.73436	-24.279753	Moderate	0.7	High	Very high	Very high	Iron and platy barks	Moderate	High
FFLLS13	150.741328	-24.275193	Low	0.5	Low	Very high	High	Iron and platy barks	Moderate	Moderate
FFLLS14	150.74069	-24.269417	High	0.7	Moderate	Extreme	Extreme	Iron and platy barks	Moderate	Very high
OFF101LS	150.739237	-24.2659	Low	0.5	High	Extreme	Extreme	Iron and platy barks	Moderate	High
FFLLS16	150.745363	-24.276612	Very high	1	Moderate	Extreme	Extreme	Iron and platy barks	Moderate	Very high
FFLLS17	150.753011	-24.27021	Moderate	0.6	Very high	Extreme	Extreme	Iron and platy barks	Moderate	High
FFL60	150.713744	-24.324062	Moderate	0.3	Low	High	Moderate	Iron and platy barks	Moderate	Moderate
FFL61	150.740378	-24.323122	Moderate	0.6	Moderate	High	High	Iron and platy barks	Moderate	Moderate
FFL63	150.703607	-24.323127	Low	0.2	Low	High	Moderate	Nil	Low	Moderate
FFL OFF 08	150.75227	-24.26289	Low	0.6	Moderate	Extreme	Extreme	Iron and platy barks	Moderate	High
FFL OFF 16	150.756811	-24.263629	Low	0.6	High	Extreme	Extreme	Iron and platy barks	Low	High
FFl01	150.675828	-24.292049	Extreme	0.5	Extreme	High	Extreme	Iron and platy barks	Low	Extreme
FFLLS200	150.7498671	-24.27159977	Moderate	1.4	Moderate	Extreme	Extreme	Iron and platy barks	Low	High
LS06	150.7732167	-24.32005257	Low	1.3	Low	Extreme	Extreme	Nil	Low	High
FFL07	150.773014	-24.31076274	Low	1.1	Low	Very high	Very high	Iron and platy barks	Low	High
FFL203	150.7753711	-24.27682915	Moderate	1.4	Moderate	Extreme	Extreme	Iron and platy barks	Low	High
FFL222	150.7766424	-24.28190255	Low	1.1	Low	Very high	Very high	Iron and platy barks	Low	High
LS02	150.7473142	-24.27784248	Low	0.3	Moderate	Moderate	Moderate	Nil	Low	Moderate
LS01	150.760594	-24.27105024	Moderate	1	Very high	Extreme	Extreme	Iron and platy barks	Moderate	High
LS05	150.7690926	-24.26849677	Moderate	0.5	Very high	Extreme	Extreme	Iron and platy barks	Low	High
LS202	150.7813399	-24.2848451	Moderate	1.6	Extreme	Extreme	Extreme	Ribbon or candle bark types	Very high	Extreme
LS99	150.7735829	-24.28115148	Moderate	0.6	Moderate	High	Very high	Iron and platy barks	Moderate	High

Appendix Table H.3 **Lone Star weed assessment**

Total Weed Cover of all Strata		
Site ID	**Exotic Species Richness**	**Total weed cover of all strata (%)**
LS01	6	25
LS06	7	46
LS07	12	87
LS202	9	20
Total Shrub (<1 m), Grass and Forb Weed Cover		
Site ID	**Average Cover Per Site (%)**	-
LS01	14.2	-
LS02	40	-
LS06	45.6	-
LS07	64.2	-
LS202	11	-
OFF73	43.6	-

Appendix Table H.4 **Lone Star Regrowth Recovery Assessment**

Site ID	Canopy (median)	Subcanopy (median)	T3 (median)	Seedlings and Juveniles (height range)	Distance to Seed Source (m)	Average Native Perennial Cover (%)	Average Litter Cover (%)	Tree Canopy Total	Sub Canopy Total	T3 Canopy Total	Non-native Plant Cover (%) (estimate in 50 x 10 m)	CWD Abundance (%) (estimate in 50 x 10 m)	Canopy Species Stem Count	Comment	T3 Species Stem Count	S1 Species Stem Count	Latitude (x)	Longitude (y)
LS02	0	0	1.5	1.5	75	0	0	0.8	-	-	60	Absent	6.00	6 x *Eucalyptus crebra*, *Corymbia erythriophloia*	4 x *Psydrax odorata*, *Alstonia constricta*	18 x *Acacia decora*, *Acacia everistii*	150.7471174	-24.27781168
LS06	0	0	1.5	1.5	Scattered paddock eucalypts within 50 m. Remnant veg 200 m	50	2.8	-	-	-	40	Absent	18.00	2 x *Eucalyptus crebra*, 2 x *Corymbia erythriophloia*, 14 x *Eucalyptus melanophloia*	2 x *Psydrax odorata*, 1 x *Capparis loranthifolia*	17 x *Acacia decora*	150.7734275	-24.32014138
LS07	0	0	1.1	1.1	60	14.4	3	-	-	-	70	Rare	6.00	5 x *Eucalyptus melanophloia*, 1 x *Eucalyptus crebra*	1 x *Acacia hemiglauca*, 3 x *Capparis mitchellii*	2 x *Acacia decora*	150.7735	-24.3107

Appendix Table H.5 **Species Captured on The Cedars Camera Traps**

Common Name	Scientific Name	Camera #	Image #	Date	# of Individuals
Feral pig	*Sus scrofa*	AC8	RCNX0085	26/10/2025	1

Appendix Table H.6 **The Cedars Fire Fuel Load**

Site ID	Latitude (x)	Longitude (y)	Elevated Fuel Load – Average Cover	Near – Surface Fuel Load Height (m)	Surface Fine Fuel Load – Average Cover	Near-surface Fuel Load Cover	Combined Surface and Near Surface	Bark Type	Bark Hazard	Overall Fuel Hazard
FFL01	150.703231	-24.278999	Low	0.3	Moderate	Very high	Very high	Iron and platy barks	Low	High
FFL02	150.695842	-24.283041	Moderate	0.3	Moderate	High	High	Iron and platy barks	Low	Moderate
FFL03	150.698513	-24.285877	Low	0.7	High	Very high	Very high	Iron and platy barks	Low	High
FFL51	150.705577	-24.280528	Moderate	0.6	Moderate	Very high	Very high	Iron and platy barks	Moderate	High
FFL52	150.695739	-24.283559	Low	0.55	High	Extreme	Extreme	Iron and platy barks	Moderate	High
FFL156	150.6912	-24.260273	Moderate	0.6	Low	Very high	High	Iron and platy barks	High	High
FFL53	150.69271	-24.268002	Moderate	0.25	Low	Moderate	Low	Iron and platy barks	Moderate	Low
FFL154	150.698962	-24.27586	Moderate	0.7	Moderate	Extreme	Extreme	Iron and platy barks	Moderate	High
FFL57	150.698818	-24.26454	Moderate	0.4	Moderate	Moderate	Moderate	Iron and platy barks	Moderate	Moderate
OFF100	150.6899341	-24.28349425	Low	1	Low	Extreme	Very high	Nil	Low	High
CED101	150.6878852	-24.28337013	Moderate	30	Moderate	Very high	Very high	Nil	Low	High
OFF73	150.7027878	-24.27847133	Low	30	High	High	Very high	Iron and platy barks	Low	High
CED100	150.6954798	-24.28353853	Low	0.4	Low	Very high	High	Iron and platy barks	Low	Moderate
CED04	150.6996155	-24.28192443	Low	0.4	Low	High	Moderate	Iron and platy barks	Low	Moderate
FFL20	150.6876002	-24.26952747	Low	0.4	Low	High	Moderate	Iron and platy barks	Low	Moderate
FFL21	150.6821044	-24.27219899	Moderate	0.4	High	Very high	Very high	Iron and platy barks	Low	High
CED05	150.6996379	-24.27658901	Low	60	Moderate	Extreme	Extreme	Iron and platy barks	Moderate	High
CED03	150.6981606	-24.27530862	Low	1	High	Extreme	Extreme	Nil	Low	High
CED06	150.6937612	-24.2691797	Low	0.1	Low	Low	Low	Nil	Low	Low
CED99	150.674818	-24.25951689	High	0.5	High	High	Very high	Iron and platy barks	Moderate	Very high

Appendix Table H.7 **The Cedars Weed Assessment**

Total Weed Cover of all Strata		
Site ID	**Exotic Species Richness**	**Total Weed Cover of all Strata (%)**
CED03	7	46
CED04	1	-
CED05	8	96
CED06	7	95
CED100	7	30
CED101	4	87
OFF100	11	122

Total Weed Cover of all Strata		
OFF37	7	83
OFF73	9	36
Total Shrub (<1 m), Grass and Forb Weed Cover		
Site ID	**Average Cover per Site (%)**	**-**
CED03	28.2	-
CED04	52	-
CED05	66	-
CED06	74.8	-
CED100	47	-
CED101	85	-
OFF100	81.6	-
OFF37	28.2	-

Appendix Table H.8 **The Cedars Regrowth Recovery Assessment**

Site ID	Canopy (median)	Subcanopy (median)	T3 (median)	Seedlings and juveniles (height range)	Distance to Seed Source (m)	Average native perennial cover (%)	Average litter cover (%)	Tree canopy total:	Sub canopy total	T3 canopy total	Non-native plant cover (%) (estimate in 50 x 10m)	CWD abundance (%) (estimate in 50 x 10m)	Canopy & subcanopy species stem count	Comment	T3 species stem count	S1 species stem count	Latitude (x)	Longitude (y)
OFF100	0	6	1.5	1.2	1 m – Directly adjacent	5	2.4	0	-	-	90	Absent	>20	-	0	0	150.6899521	-24.28348945
OFF73	10.5	0	3	1.5	Mature individuals scattered within and surrounding plot	1	28.2	6.6	-	-	55	Rare	>20	Includes *Eucalyptus tereticornis, Corymbia erythriophloia*, *Eucalyptus crebra*	>20 *Acacia decora*	0	150.7027973	-24.27841849
CED05	0	0	1.5	2	Within plot	0	0	0	-	-	60	Absent	>20	27 stems of *Eucalyptus tereticornis*, *Eucalyptus melanophloia* and *Corymbia intermedia*	0	1 x *Acacia decora*	150.6995957	-24.27656416
CED03	0	0	0	0	25	0	0	0	-	-	35	Absent	0	-	0	0	150.6981603	-24.27511442
CED06	0	8	1.5	1.3	*Corymbia erythrophloia* within plot, other eucalypts 50-100 m away	0.2	0	0	-	-	65	Occasional	42309	12 x *Corymbia erythriophloia*	12 x *Acacia pendula* 5 x *Vachellia bidwillii*	1 x *Pittosporum spinescens*	150.6932974	-24.26899304
OFF37	0	6	2.5	2.5	Within plot now that regenerated trees can produce trees	0	0	0	-	-	60	Absent	>20	Between 100-150, most are *Corymbia erythriophloia* with some *Eucalyptus crebra*.	*Acacia disparrima*, *Acacia pendula*	16-20 *Pimelea spinescens*, *Cassinia laevis*	150.6742655	-24.25927816

South Kolan

Appendix Table H.9 **Species Captured on South Kolan Camera Traps**

Common Name	Scientific Name	Camera #	Image #	Date	# of Individuals
European red fox	*Vulpes vulpes*	RCAM55	RCNX0118	27/12/2025	1
European red fox	*Vulpes vulpes*	RCAM56	RCNX7052	29/12/2025	2
European red fox	*Vulpes vulpes*	RCAM45	RCNX0007	15/12/2025	1

Appendix Table H.10 **Species Captured on South Kolan Camera Traps**

Site ID	Latitude (x)	Longitude (y)	Elevated fuel load – average cover (%)	Near-surface fuel load height (m)	Surface fine fuel load – average cover (%)	Near-surface fuel load cover (%)	Combined surface and near surface	Bark type	Bark hazard	Overall fuel hazard
SK01	152.1843802	-24.95571474	Moderate	0.5	Low	High	Moderate	Iron and platy barks	Low	Moderate
SK02	152.189406	-24.95663918	Moderate	0.4	Moderate	Very high	Very high	Iron and platy barks	Low	High
SK04	152.1925031	-24.95934083	Low	0.5	Low	Extreme	Very high	Nil	Low	High
SK04	152.190499	-24.95779089	Low	0.3	Low	Extreme	Very high	Iron and platy barks	Low	High
SK05	152.1966677	-24.96342709	Moderate	0.4	Very high	Extreme	Extreme	Iron and platy barks	Low	High
SK06	152.1960203	-24.96345366	Low	0.3	Low	Extreme	Very high	Iron and platy barks	Low	High
SK07	152.196438	-24.97057547	Low	0.5	Low	Very high	High	Iron and platy barks	Low	Moderate
SK08	152.1956991	-24.97073972	Very high	0.6	Moderate	Very high	Very high	Iron and platy barks	Low	Very high
SK09	152.1955685	-24.96994235	Low	0.9	Low	Extreme	Very high	Iron and platy barks	Low	High
SK10	152.1845207	-24.96954752	Low	0.3	Low	Extreme	Very high	Nil	Low	High
SK11	152.1822149	-24.96798878	Low	0.5	Low	Extreme	Very high	Nil	Low	High
SK12	152.1824813	-24.9699193	Moderate	0.6	Moderate	Extreme	Extreme	Iron and platy barks. Ribbon or candle bark types	Moderate	High
SK13	152.1847252	-24.97108715	Moderate	0.5	Extreme	High	Extreme	Iron and platy barks. Fine fibrous bark including stringy barks	Moderate	High
SK14	152.1863881	-24.97324524	Moderate	1	Moderate	Very high	Very high	Iron and platy barks	Low	High
SK15	152.1900817	-24.97190342	Low	0.5	Low	Extreme	Very high	Nil	Low	High
SK16	152.1799843	-24.96827053	Moderate	0.6	Moderate	Extreme	Extreme	Iron and platy barks	Low	High
SK17	152.1787074	-24.96759114	Moderate	1	Moderate	Extreme	Extreme	Ribbon or candle bark types	High	High

Appendix Table H.11 **South Kolan Weed Assessment**

Total weed cover of all strata		
Site ID	**Exotic species richness**	**Total weed cover of all strata (%)**
SK01	4	49
SK013	12	60
SK02	13	40
SK04	12	74
SK05	5	60
SK06	13	72

Total weed cover of all strata		
SK07	22	82
SK08	14	78
SK10	7	76
SK11	8	75
SK12	8	55
SK14	12	60
SK15	13	90
SK16	10	60
SK17	15	85
Total shrub (<1 m), grass and forb weed cover		
Site ID	**Average cover per site (%)**	**-**
SK01	57	-
SK013	19.8	-
SK02	40.2	-
SK04	57.8	-
SK05	85.6	-
SK06	39.6	-
SK07	43.6	-
SK08	70.8	-
SK10	69.6	-
SK11	70	-
SK12	56	-
SK14	67.2	-
SK15	81.4	-
SK16	66.8	-
SK17	82	-
SK03	59	-

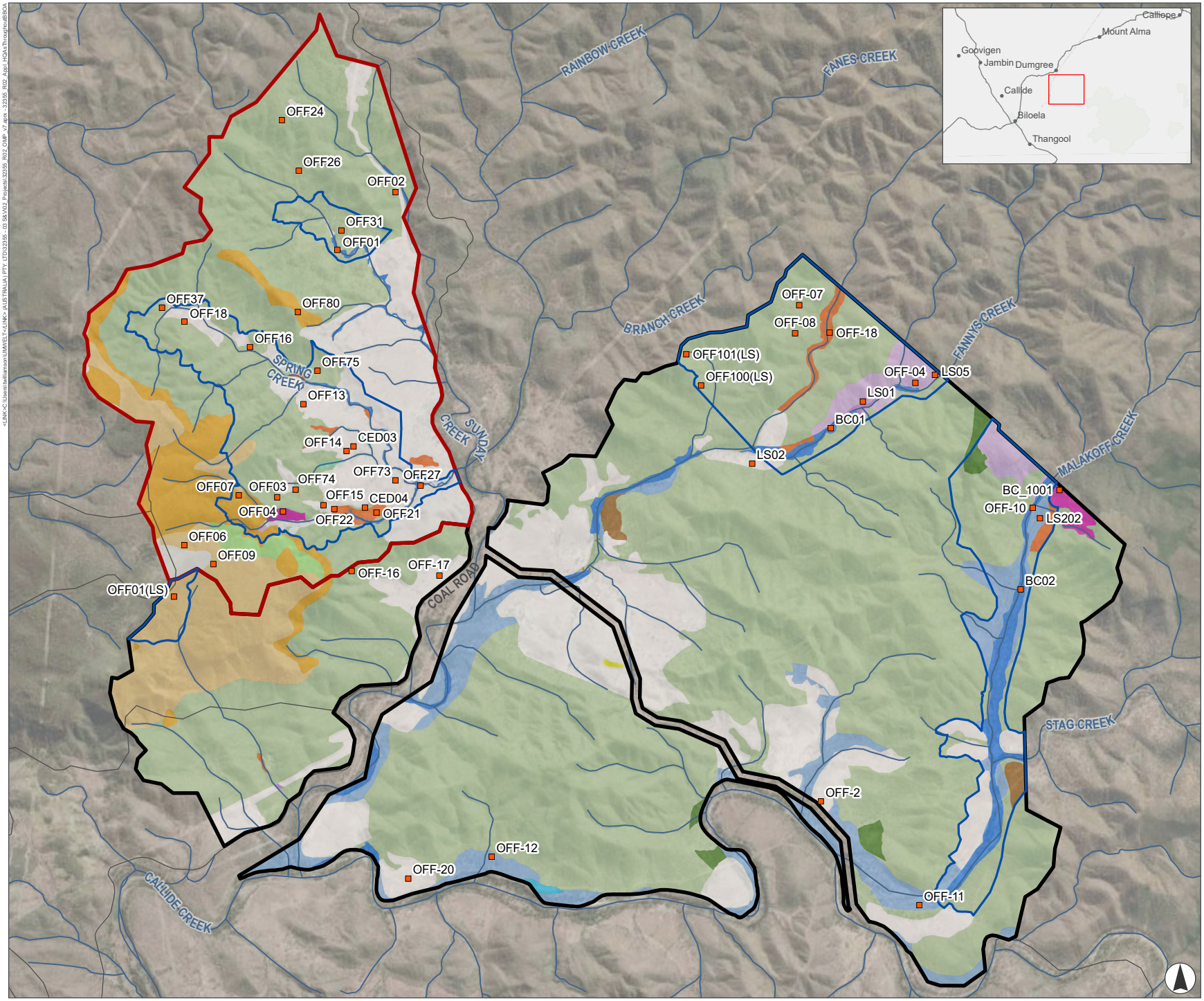
Appendix Table H.12 South Kolan Weed Assessment

Site ID	Canopy (median)	Subcanopy (median)	T3 (median)	Seedlings and juveniles (height range)	Distance to seed source (m)	Average native perennial cover (%)	Average litter cover (%)	Tree canopy total	Sub canopy total	T3 canopy total	Non-native plant cover (%) (estimate in 50 x 10m)	CWD abundance (%) (estimate in 50 x 10m)	Canopy & subcanopy species stem count	Comment	T3 species stem count	S1 species stem count	Latitude (x)	Longitude (y)
SK04	0	0	0	0	250	0	2	0	0	0	0	Absent	0	-	0	0	152.1927883	-24.95970083
SK06	0	5	0	0	50	0	3	0	0	0	65	Absent	0	-	0	0	152.1961343	-24.96389891
SK07	18	0	4	0	0	0	11.2	0	3.5	6	70	Occasional	0	-	>20	0	152.1964184	-24.97060368
SK09	0	8	1	1	100m to remnant patch. Two reproductively mature eucalypts in plot.	0	4.8	0	2.7	0	90	Absent	1-5	-	0	0	152.1956972	-24.96984964

Site ID	Canopy (median)	Subcanopy (median)	T3 (median)	Seedlings and juveniles (height range)	Distance to seed source (m)	Average native perennial cover (%)	Average litter cover (%)	Tree canopy total	Sub canopy total	T3 canopy total	Non-native plant cover (%) (estimate in 50 x 10m)	CWD abundance (%) (estimate in 50 x 10m)	Canopy & subcanopy species stem count	Comment	T3 species stem count	S1 species stem count	Latitude (x)	Longitude (y)
SK10	0	0	0	0	100	0	1.2	0	0	0	85	Absent	0	There are two *Eucalyptus tereticornis* however both mature at 10cm dbh, >6m	0	0	152.184158	-24.96980455
SK11	0	0	0	0	120	0	3	0	0	0	80	Absent	0	-	0	0	152.1815474	-24.96768615
SK15	0	0	0	0	250	0	8.6	0	0	0	75	Absent	0	-	0	0	152.1900232	-24.97188175
SK03	0	0	0	0	1 x mature *Eucalyptus tereticornis* in plot	0	0	0	0	0	75	Absent	0	-	1-5	0	152.1903218	-24.95763696
SK14	10	4	0	1	30 m, adjacent plot	0	0	0	0	0		Occasional	0	Mostly *Melaleuca bracteata*	0	11-15	152.1866102	-24.97325596

Appendix I

HQA Sites Throughout Disturbance Footprint and Offset Areas



Appendix I

HQAs Conducted throughout the BBOA

Legend

- HQA Offset
- Road
- Watercourse
- Lone Star Boundary
- The Cedars Boundary
- Offset Area

Ground-truthed Regional Ecosystem

- 11.10.13
- 11.11.10
- 11.11.14
- 11.11.15
- 11.11.3
- 11.11.4
- 11.11.5a
- 11.3.25
- 11.3.25b
- 11.3.36
- 11.3.4
- 11.3.6
- 11.8.4
- 11.10.4
- 11.11.4c
- 11.11.18
- 11.8.3
- Non-rem

0 1 2

Kilometres

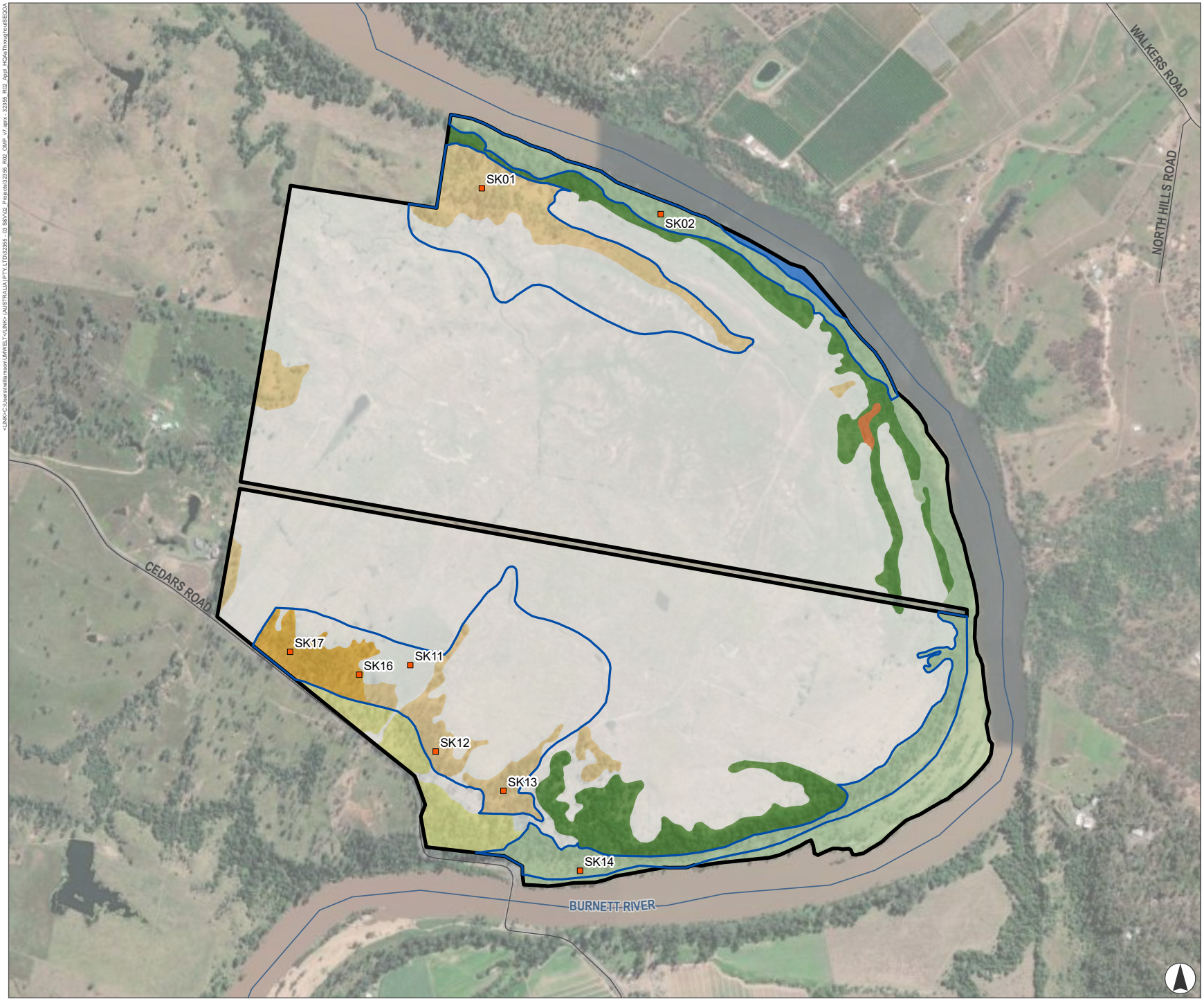
Scale 1:65,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK-C:\Users\lwilliamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\32355 - 03 SB\V02 Projects\32355_R02_OMP_v7.aprx - 32355_R02_April HQAs throughout BBOA



Appendix I

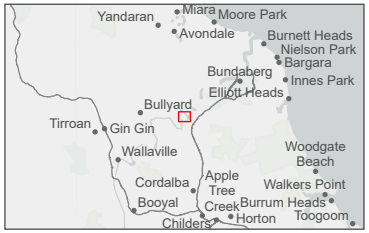
HQAs Conducted throughout the SEQOA

Legend

- HQA Offset
- Road
- Watercourse
- South Kolan Boundary
- Offset Area

Ground-truthed Regional Ecosystem

- 12.3.17
- 12.3.3
- 12.3.3d
- 12.3.7
- 12.3.7a
- 12.5.7a
- Burnett River
- Non-remnant



0 0.2 0.4

Kilometres

Scale 1:15,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

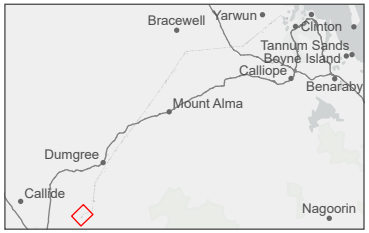
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.10
- 11.11.15
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK<C:\Users\williamson\UMWELT<LINK< (AUSTRALIA) PTY LTD\3355 - 03 SBV\02 Projects\3355_R02_OMP_v7.aprx - 3355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

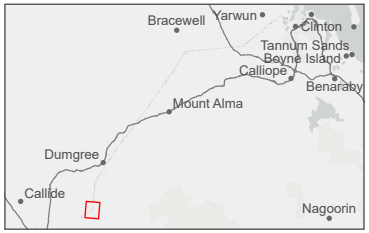
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.10.3
- 11.10.4
- 11.10.8
- 11.10.13
- 11.11.15
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK=C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\23255 - 03 SBV\02 Projects\23255_R02_OMP_v7.aprx - 23255_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

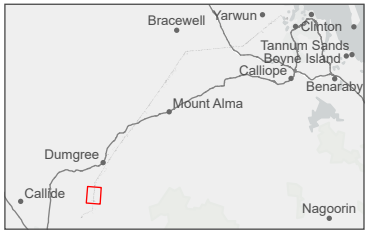
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.10.4
- 11.10.8
- 11.10.13
- 11.3.26
- 11.8.4
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK<C:\Users\williamson\UMWELT<LINK< (AUSTRALIA) PTY LTD\3355 - 03 SBV\02 Projects\3355_R02_OMP_v7.aprx - 3355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

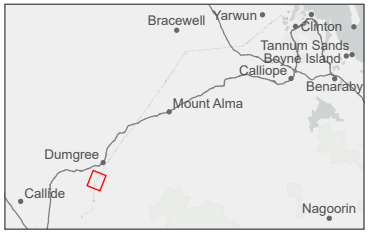
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.10.13
- 11.11.15
- 11.8.4
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

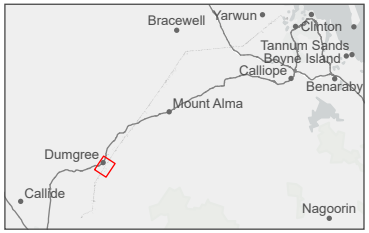
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.4
- 11.11.15
- 11.12.1
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK=C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

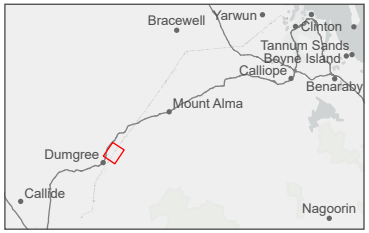
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.12.1
- 11.12.6
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LNK><C:\Users\williamson\UMWELT</LINK> (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

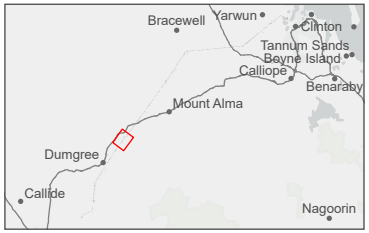
HQAs Conducted throughout the Disturbance Footprint

Legend

- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.12.1
- 11.12.6
- 11.3.4
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK>C:\Users\williamson\UMWELT<LINK>(AUSTRALIA) PTY LTD\3235 - 03 SBV\02 Projects\3235_R02_OMP_v7.aprx - 3235_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

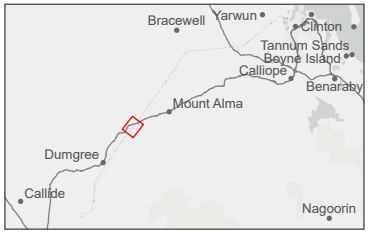
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.12.1
- 11.3.4
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK=C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

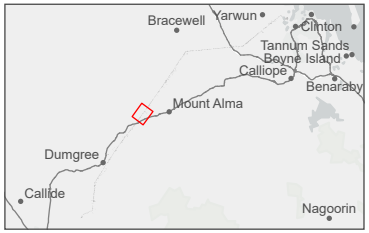
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.12.17
- 11.3.4
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

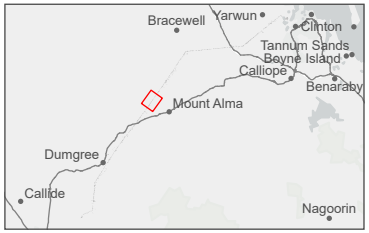
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.12.17
- 11.3.4
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

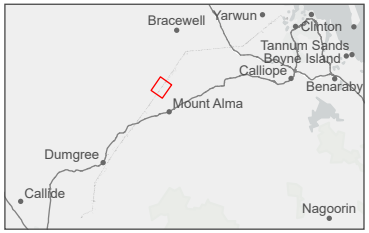
HQAs Conducted throughout the Disturbance Footprint

Legend

- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.15
- 11.3.4
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK<C:\Users\williamson\UMWELT<LINK< (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

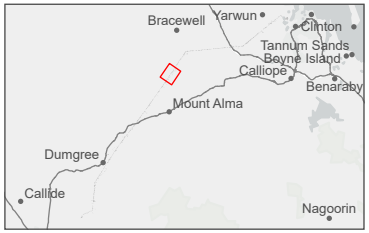
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.15
- 11.3.4
- 11.3.25b
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK><C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

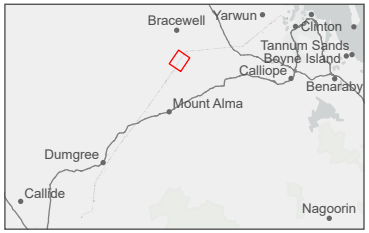
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.15
- 11.11.18
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

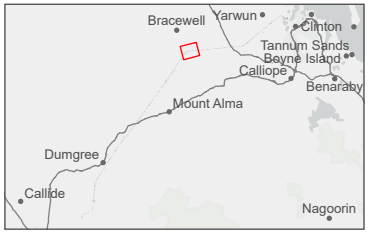
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.15
- 11.11.18
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

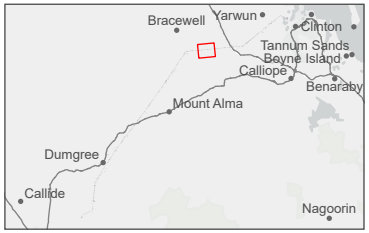
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.15
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

"<LINK>C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\3355 - 03 SBV\02 Projects\3355_R02_OMP_v7.aprx - 3355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

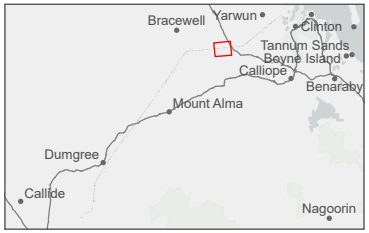
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.15
- 11.3.25
- 11.3.26
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

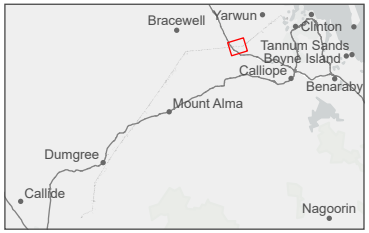
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.4
- 11.11.4c
- 11.11.15
- 11.3.25
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LNK><C:\Users\williamson\UMWELT<LINK> (AUSTRALIA) PTY LTD\23355 - 03 SBV\02 Projects\23355_R02_OMP_v7.aprx - 23355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

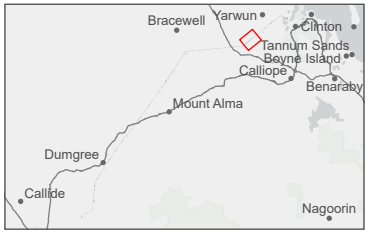
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.3c
- 11.11.4
- 11.11.4c
- 11.3.4
- Non-remnant



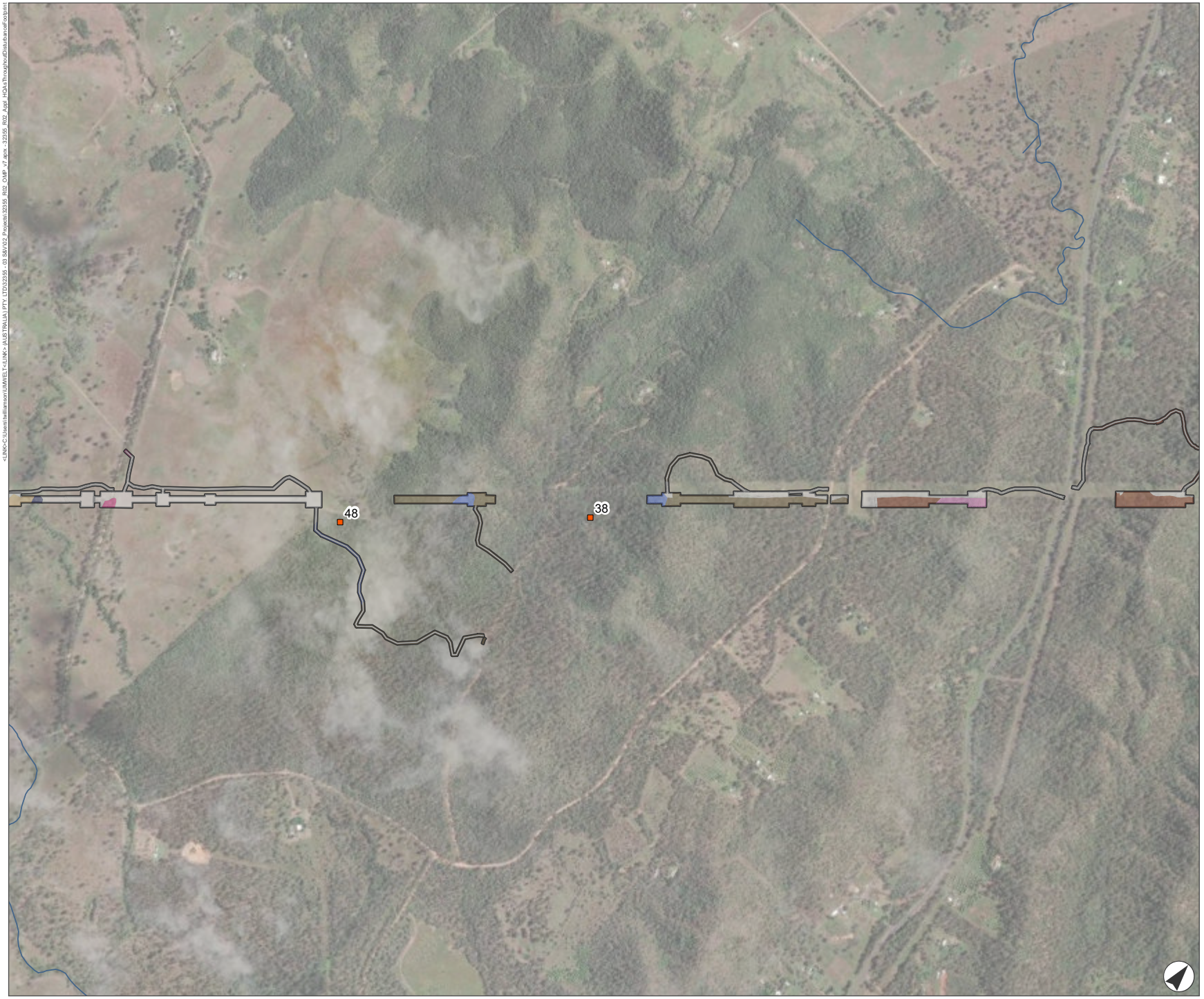
0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)



Appendix I

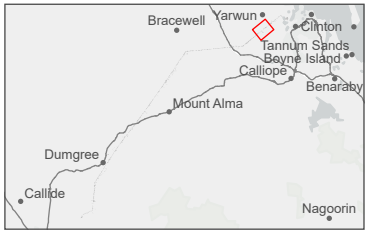
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 11.11.3
- 11.11.4
- 11.11.18
- 11.3.4
- 11.3.25
- 11.3.26
- 12.11.6
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

<LINK<C:\Users\williamson\UMWELT<LINK< (AUSTRALIA) PTY LTD\3355 - 03 SBV\02 Projects\3355_R02_OMP_v7.aprx - 3355_R02_Appl_HQAsThroughoutDisturbanceFootprint

Appendix I

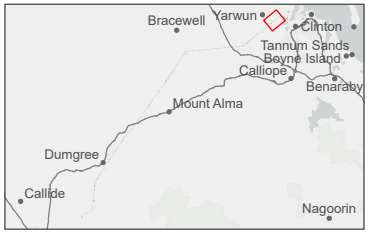
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 12.11.6
- 12.3.3
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

umwelt

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

Appendix I

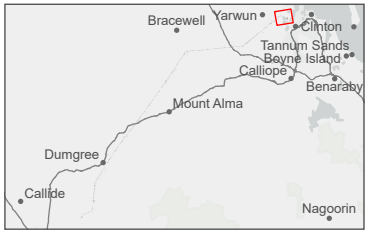
HQAs Conducted throughout the Disturbance Footprint

Legend

- HQA Impact
- Road
- Watercourse
- Disturbance Footprint

Ground-truthed Regional Ecosystems

- 12.1.2
- 12.1.3
- 12.11.6
- 12.3.3
- Non-remnant



0 250 500

Meters

Scale 1:20,000 at A4
GDA2020 MGA Zone 56

This document and the information are subject to Terms and Conditions and Umwelt (Australia) Pty Ltd ("Umwelt") Copyright in the drawings, information and data recorded ("the information") is the property of Umwelt. This document and the information are solely for the use of the authorized recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that which it was supplied by Umwelt. Umwelt makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.
APPROVED FOR AND ON BEHALF OF Umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Umwelt (2025), QLD DOR (2025), DCCEEW (2025)

umwelt

P 1300 793 267 E info@umwelt.com.au W umwelt.com.au

NSW | ACT | WA | QLD | VIC | SA ABN 18 059 519 041