CopperString 2032: Stage 1 Offset Management Plan |CopperString Western Offset Property

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Document Management

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Signed Dana Boxall

Full Name (please print) DANA BOXALL

Organisation (please print) POWERLINK QUEENSLAND

Date 01 / 05 / 2025

Potential alternative offset approach

Regional conservation fund

Powerlink acknowledges that, following the approval of this Offset Management Plan (OMP), the department may identify a suitable program to support long-term regional conservation outcomes for the protected matters relevant to this OMP (Regional conservation fund).

Powerlink acknowledges the Regional conservation fund, if established, could provide an alternative offset approach for Powerlink to acquit the significant residual impacts of Stage 1 of the Project (as identified in the OMP) and demonstrate compliance with conditions 11, 18 and 21 of the CopperString Transmission Line Project, Queensland (EPBC ref. 2019/8416) EPBC Act approval.

Obligation for good faith negotiations

Following the approval of this OMP, Powerlink and the department will commence negotiations in good faith in relation to the proposed structure, application and operation of the Regional conservation fund. Matters to be discussed are to include (although may not be limited to):

- timing for establishment of the Regional conservation fund
- the structure of the fund, including how the fund will be operated and managed and by whom
- how funding is to be structured, including methodologies for payments and escalation, timing for payment/s
- process for transfer of offset site, including tenure for offset site/s and costs
- process for endorsing/recognising Regional conservation fund for acquittal of significant residual impacts and compliance with approval conditions.
- process for future offset acquittal for the additional stages / connections of the CopperString 2032 Project on the offset site.

Application of Regional conservation fund

If, within 24 months of the date this OMP is approved:

- the department notifies Powerlink that a suitable Regional conservation fund has been identified; and
- Powerlink has been provided with sufficient details of the structure, application and operation of the fund (including payment amounts and timing);

Powerlink may, subject to any necessary approval of its Board (or delegate), elect to make payment(s) into the identified fund.

Powerlink acknowledges that if it elects to make payment(s) into the identified Regional conservation fund the funding provided by Powerlink is to be no less than the equivalent cost per year that would be incurred under the OMP for the number of remaining years from the date of the final payment and until the expiry date of the CopperString Transmission Line Project, Queensland (EPBC ref. 2019/8416) EPBC Act approval.

Powerlink and the department acknowledge that if Powerlink elects to make payment(s) into the identified Regional conservation fund, as of the date that the initial payment is provided into the fund, Powerlink:

- will have an alternative offset approach in place to acquit the significant residual impacts of Stage 1 of the Project in compliance with conditions 11, 18 and 21 of the CopperString Transmission Line Project, Queensland (EPBC ref. 2019/8416) EPBC Act approval;
- will do all things reasonably practicable to transfer the approved offset site (as described in this OMP) on terms to be discussed and agreed with the department;

If, as part of the conditions of transfer, Powerlink ceases management and monitoring of the offset site described in this OMP, Powerlink will give notice of this within a time period to be discussed and agreed with the department.

For the purposes of this section, the term 'department' means the Australian Government agency responsible for administering the EPBC Act and the Australian Government Minister administering the EPBC Act, including any delegate thereof.

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Definitions

Term	Definition
BioCondition Assessment Manual	The *BioCondition Assessment Manual: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland (Version 2.2)* (Eyre et al., 2015a).
Broad Vegetation Group	High-level groupings of vegetation communities and Regional Ecosystems in Queensland by Neldner et al. (2022).
Habitat Quality Guide	Queensland Government Guide to determining terrestrial habitat quality *(Version 1.2)* (Habitat Quality Guide) (Department of Environment and Heritage Protection, 2017)
Habitat Quality Score	A method of evaluating habitat quality within a particular community based on key indicators including site condition, site context and species stocking rate, as detailed within Section 4.2. The method produces a score out of 10, where the maximum score of 10 represents a fully intact system. Scores of 4, 5 and 6 may indicate good quality regrowth or medium value habitat.
Impact Area	Stages 1 of the proposed CopperString alignment
Matters of National Environmental Significance	Environmental values protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Significant impacts to these values may require offsets under the legislation.
Offset Area	The 2,690.93 ha located within the Copper String Western Offset Property that is required to acquit the Stage 1 Project impacts on Australian painted snipe, painted honeyeater, Julia Creek dunnart and plains death adder as depicted in Figure 10.
Offset Property	The entirety of the Western Offset Property (Lot 4 on Plan SP299868) as depicted in Figure 2.
Regional Ecosystem	A vegetation community in a bioregion that is consistently associated with a combination of geology, landform, and soil. Regional Ecosystems are described in the Regional Ecosystem Description Database, produced by the Queensland Herbarium.
Regulated Vegetation	Vegetation that is mapped within the regulated vegetation management map produced by Department of Natural Resources, Mines and Energy. The Queensland *Vegetation Management Act 1999* is applicable to regulated vegetation.
Remnant vegetation	Vegetation which forms the predominant canopy of the community that: a) covers more than 50% of the undisturbed predominant canopy b) averages more than 70% of the vegetation's undisturbed height; and c) is composed of species characteristic of the vegetation's undisturbed predominant canopy.
Stage 1 Construction Zone	Area of impact for Stage 1 of the proposed CopperString 2032 Project.
The Project	The high voltage overhead electricity transmission line spanning approximately 1,000 kilometres (km) from Mount Isa to the Powerlink transmission network in the Burdekin region, referred to as the CopperString 2032 Project.

Threatened Species	Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) or Conservation Dependent (CD) under the *Environmental Protection and Biodiversity Conservation Act 1999* or extinct in the wild (PE), critically endangered (CE), endangered (E), vulnerable (V) or near threatened (NT) under the *Nature Conservation Act 1992*.
Vegetation community	An identified vegetation community (i.e. structure, composition, condition and/or underlying geology) verified from a field survey. Communities may include Regional Ecosystems, remnant vegetation and/or disturbed/novel ecosystems (e.g. parkland, disturbed roadsides etc.).

Abbreviations

Abbreviation	Description
ALA	Atlas of Living Australia
AU	Assessment Unit
Biosecurity Act	Queensland *Biosecurity Act 2014*
BoM	Commonwealth Bureau of Meteorology
BVG	Broad Vegetation Group
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DERM	Department of Environment and Resource Management
DETSI	Queensland Department of the Environment, Tourism, Science and Innovation
DEWHA	Department of the Environment, Water, Heritage and the Arts
DotE	Department of the Environment
DPI	Queensland Department of Primary Industries
E2M	E2M Pty Ltd
EOP	*EPBC Act Environmental Offsets Policy*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ha	hectare
GTRE	Ground-truthed Regional Ecosystem
km	kilometre
MHQA	Modified Habitat Quality Assessment
MNES	Matters of National Environmental Significance
OAG	Commonwealth Offset Assessment Guide
OMP	Offset Management Plan
Powerlink	Powerlink Queensland
RE	Regional ecosystem
REDD	Regional Ecosystem Description Database
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities
sp.	Singular species. For example, *Eucalyptus* sp. refers to a single species of *Eucalyptus*
spp.	Multiple species. For example, *Eucalyptus* spp. refers to multiple species of *Eucalyptus*
SSR	Species Stocking Rate

TSSC	Threatened Species Scientific Committee
VM Act	Queensland *Vegetation Management Act 1999*
WoNS	Weeds of National Significance

Conditions of approval reference table (EPBC 2019/8416)

Table 1. Offset management plan requirements (EPBC 2019/8416)

Ref	Offset Proposal Content Requirements	Content Provided:	Summary of Key Commitments
a	To the satisfaction of the Minister, meet the principles, expectations and requirements of the Environmental Offsets Policy and the Environmental Management Plan Guidelines.	All sections of the OMP with focussed Sections 5.2.5 and Table 18	The CopperString2032: Stage 1 Offset Management Plan fully adheres to the Environmental Offsets Policy and Environmental Management Plan Guidelines by implementing comprehensive mitigation strategies, establishing measurable conservation outcomes with transparent monitoring protocols, and ensuring all environmental impacts are appropriately offset through scientifically validated mechanisms that achieve a net environmental gain, as documented in this detailed plan.
b	Include detailed information on the significant residual impacts to protected matters including the area of habitat for protected matters and its condition and habitat quality within the project area for which the offset is to address.	Section 2	The CopperString2032: Stage 1 Offset Management Plan addresses this according to the adjacent reference. The OMP confirms the following impacts: **Species** — **Hectares** — **Habitat Quality (HQ) Score** Australian painted snipe — 22.6 ha — 4 Julia Creek dunnart — 410.3 ha — 5 Painted honeyeater — 81.8 ha — 4 Plains death adder — 374.3 ha — 4

<table>
<tr><th>Ref</th><th>Offset Proposal Content Requirements</th><th>Content Provided:</th><th>Summary of Key Commitments</th></tr>
<tr><td>c</td><td>Identify one or more suitable environmental offset for the impacts on protected matters, and provide maps, detailed baseline information on the proposed offset, including condition and habitat quality, and a commitment to achievable ecological benefits, and timeframes for their achievement, for the proposed offset.</td><td>Section 3 and Section 5</td><td>The CopperString Western Offset Property, located on Lot 4 on Plan SP299868 has been identified as a suitable offset.

The CopperString2032: Stage 1 Offset Management Plan addresses the baseline information, current conditions and commitments to achievable ecological benefits according to the adjacent reference.

The plan confirms the Offset Area identified possesses the following habitat and intended ecological benefits:

Species | Hectares | Current HQ Score | Future HQ Score with Offset
Australian painted snipe | 110.2 ha | 3 | 4
Julia Creek dunnart | 2,491.1 ha | 5 | 6
Painted honeyeater | 199.9 ha | 3 | 5
Plains death adder | 914 ha | 3 | 5

This plan commits to the achievement of the improved habitat quality scores within 20 years of commencement of the offset.</td></tr>
<tr><td>d</td><td>Include timebound management actions that will be implemented to achieve the ecological benefits for relevant protected matters.</td><td>Section 6.7, Table 29, Table 30 and Table 32</td><td>Adequately addressed in the plan according to adjacent references.</td></tr>
<tr><td>e</td><td colspan="3">Include a monitoring program, which must include:</td></tr>
<tr><td></td><td>i) Evidence that effectively demonstrates progress towards, attainment of and maintenance of the ecological benefits for the protected matters.</td><td>Section 6.4 to 6.6</td><td>Measures for collecting evidence that effectively demonstrates the offsets progress (i.e. monitoring requirements) are adequately addressed in the plan according to adjacent references.
The monitoring program has yet to commence.</td></tr>
</table>

Ref	Offset Proposal Content Requirements	Content Provided:	Summary of Key Commitments
ii)	Measurable performance indicators of attainment of the ecological benefits for the protected matters.	Table 24 to Table 30	Monitoring will be undertaken to assess interim and completion performance criteria. These criteria will provide demonstrated progress towards attainment and maintenance of the ecological benefits for the protected matters as follows: **Species** / **Baseline HQ** / **Year 5** / **Year 10** / **Year 15** / **Completion Score** Australian painted snipe: 3 / 3 / 3 / 4 / 4 Julia Creek dunnart: 5 / 5 / 5 / 6 / 6 Painted honeyeater: 3 / 3 / 4 / 5 / 5 Plains death adder: 3 / 3 / 4 / 5 / 5
iii)	Trigger values for corrective actions.	Table 24 to Table 30	Adequately addressed in the plan according to adjacent references.
iv)	The timing and frequency of monitoring to detect trigger values and changes in the performance indicators.	Table 32	The CopperString 2032: Stage 1 Offset Management Plan commits to the following monitoring: • Targeted Australian painted snipe, Julia Creek dunnart, painted honeyeater and plains death adder surveys to monitor relative abundance and habitat utilisation at year one, year five and then every five years for the remaining 20 years • Habitat quality assessments at year one, then at year three, five and then every five years for the remaining 20 years • Feral animal and weed monitoring conducted yearly for the first five years and then every five years for the remaining 20 years • Continuous monitoring by the Property Manager of grazing, pest plants, pest animals, fencing, access and fire breaks.

Ref	Offset Proposal Content Requirements	Content Provided:	Summary of Key Commitments
f	Include reporting and review mechanisms, and documentation standards to inform others annually regarding compliance with management and environmental commitments, and attainment and maintenance of ecological benefits, as specified in the OMP.	Section 8	In accordance with Condition 44(c) of the approved project (EPBC 2019/8416), Powerlink will submit annual compliance reports to DCCEEW from the commencement of the Action. These reports will include the results of the implementation of this OMP where appropriate. Powerlink will also prepare a report at year one, five and then every five years for the remaining 15 years of the offset (ending at year 20). The report will summarise the activities implemented under this OMP and discuss the effectiveness of mitigation measures employed, based on the results of monitoring activities. The reports will be published on the Project website within one month of completion, provided to DCCEEW within five business days of being published on the Project website and made available upon request. Powerlink will amend the management measures as necessary in response to regular reviews, monitoring results and changes in legislation.
g	Include a reference to the EPBC Act approval conditions to which the OMP refers.	Table 1	EPBC Act approval conditions are referenced in this Table (Table 1), in the 'Offset Proposal Content Requirements' column.
h	Include table of commitments made in the Offset Management Plan to achieve the ecological benefits for protected matters, and a reference to where the commitments are detailed in the OMP.	Section 6.4 and Table 29	Adequately addressed in the plan according to adjacent references.
i	Include an assessment of risks to achieving the ecological benefit and what risk management strategies will be applied to address these.	Section 6.7 and Appendix I	Adequately addressed in the plan according to adjacent references.
j	Propose corrective measures to ensure ecological benefits for the protected matters are attained or maintained, if trigger values are reached or performance indicators not attained.	Table 24, Table 25, Table 26, Table 27,	Adequately addressed in the "Triggers and corrective actions" column of the tables according to adjacent references

Ref	Offset Proposal Content Requirements	Content Provided:	Summary of Key Commitments
k	Specify referenced plans and applicable conditions of approval (including State approval conditions), if any, and how these can be accessed.	*CopperString 2032 Pre-clearance Survey Report - Stage 1* (Base, 2024) attached in Appendix B.	Conditions of approval can be located under EPBC 2019/8416. Referenced plan can be found in Appendix B of this OMP.
l	Define the stage that the OMP refers to.	Section 2.1	The CopperString 2032: Stage 1 Offset Management Plan relates to the Target MNES as a result of Stage 1 of the Project.
m	Include information on how the proposed Offset Property provides connectivity with other relevant habitats and biodiversity corridors.	Section 5.1.2	The Gilliat River, forming the eastern boundary of the Offset Property, features a perennial network of fifth, sixth, and seventh-order streams, while Gidya Creek, which bisects the Offset Property, consists of a perennial sixth-order stream channel surrounded by a braided network of non-perennial first to fifth-order streams. Both the Gilliat River and Gidya Creek riparian corridors are recognized as Statewide riparian corridors by DETSI. Additionally, more than half of the eastern section of the Offset Property is mapped as a Statewide biodiversity corridor, which connects to these river systems, enhancing ecological connectivity (Figure 5). The Offset Property forms part of a broader ecosystem that has been modified by grazing, including the construction of stock dams and reduced tussock grass cover around water sources. Despite this, these watercourses remain key landscape features that provide important habitat connectivity and ecological value for the Target MNES.
n	Specify the mechanism by which the environmental offset sites will be secured.	Section 6.2	The legal mechanism of securing the offset is as a covenant pursuant to the *Land Title Act 1994* (Qld), DCCEEW will be provided the opportunity to review and approve the terms of the covenant. Legal securement of the Offset Area will occur within 24 months from approval of the OMP and will remain in force for at least the duration of the approval.
o	Include an estimate of the protected matters habitat that will be cleared in areas that could not be accessed during the pre-clearance survey.	Detailed within the *Habitat Quality Report – Impacts for CopperString Alignment Stage 1* (Base, 2024) attached in Appendix A.	Adequately addressed in the *Habitat Quality Report – Impacts for CopperString Alignment Stage 1* (Base, 2024) according to adjacent references.

1 Introduction

Powerlink Queensland (Powerlink) is proposing the construction and operation of a new high voltage overhead electricity transmission line spanning approximately 1,000 km from Mount Isa to the Powerlink transmission network in the Reid River region, referred to as the CopperString2032 Project (the Project) (Figure 1). The Project will be carried out in four (4) stages, with the Project alignment depicted on Figure 1 (Note, Stages 3, 4 and Southern Spur are indicative).

The Project was approved under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in November 2022 (EPBC 2019/8416), and a variation to the EPBC Act approval was subsequently approved in March 2025. Condition 18 of the EPBC Act approval requires an Offset Management Plan to compensate for significant residual impacts of the Action on protected matters.

The CopperString Western Offset Property, located on Lot 4 on Plan SP299868 (herein referred to as the Offset Property), has been identified as containing a suitable habitat for four Matters of National Environmental Significance (MNES) with the Stage 1 of the Project, Australian painted snipe, Julia Creek dunnart, painted honeyeater and plains death adder (herein referred to as Target MNES).

This Offset Management Plan (OMP) has been prepared to address the Project Stage 1 offset requirements under the EPBC Act for the Target MNES.

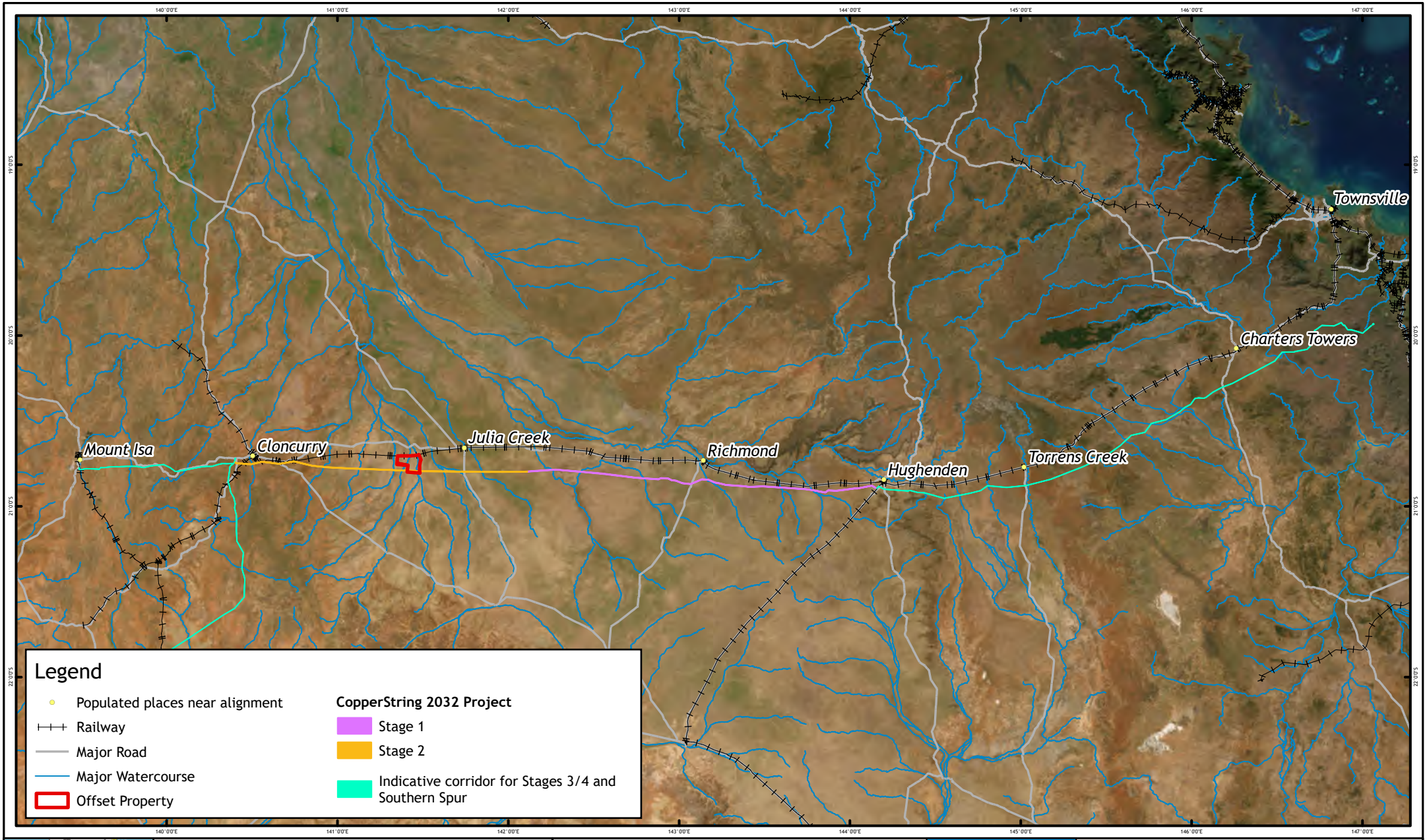
1.1 Purpose

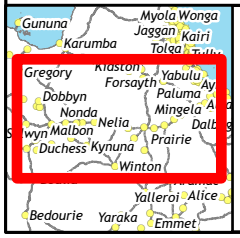
The purpose of this OMP is to detail the offsets that will be delivered to acquit the significant residual impacts of the Stage 1 of the Project on the Target MNES. It will ultimately demonstrate compliance with:

- Condition 11, 18 and Condition 21 of the EPBC Act Approval.
- Part 9 of EPBC Act and the *Environmental Offsets Policy* (EOP) as well as outline the management requirements that will ensure a 'no net loss' of MNES values.

Specifically, this OMP will:

- Describe the area identified to offset the impacts to Stage 1 of the Project (Offset Area), including values, existing condition and threatening processes for the Target MNES.
- Demonstrate the Project's compliance with relevant conditions and legislative requirements, specifically the Commonwealth EPBC Act EOP for the Target MNES, including the degree of conservation gain and environmental equivalency.
- Assess the Offset Area against the proposed action offset requirements for the Target MNES in accordance with the Commonwealth EPBC Act Offset Assessment Guide (OAG) (Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2023).
- Detail the required management, monitoring and reporting actions to achieve the desired conservation outcomes.





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Scale 1:3,250,000 (A4)

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Coordinate System: GDA2020

Notes:
Aerial Imagery: © ESRI 2025
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Road: © DNRMMRRD 2024
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Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 1: PROJECT OVERVIEW

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

2 Overview of proposed action impacts

2.1 Stage 1 Construction Zone

Impacts to the Target MNES as a result of Stage 1 of the Project relevant to this OMP are detailed in Table 2, this impact area is herein referred to as the Stage 1 Construction Zone as per the *Habitat Quality Report – Impacts for CopperString Alignment Stage 1* (Base, 2024) (attached in Appendix A). Further details regarding the direct and indirect impacts to the species as a result of the proposed action, including associated assessments against the *Matters of National Environmental Significance: Significant Impact Guidelines 1.1* (Department of the Environment (DotE), 2013), are provided in the report in Appendix A and the relevant sections of the *Supplement to the Draft Environmental Impact Statement*(GHD, 2024), as well as the *CopperString2032 Pre-Clearance Survey Report – Stage 1* (Base, 2024) (Appendix B).

Table 2: Stage 1 impacts to Target MNES

Target MNES	EPBC Act Status	Habitat impacted within the Stage 1 Construction Zone (ha)
Australian painted snipe (*Rostratula australis*)	Endangered	22.6
Julia Creek dunnart (*Sminthopsis douglasi*)	Vulnerable	410.3
Painted honeyeater (*Grantiella picta*)	Vulnerable	81.8
Plains death adder (*Acanthophis hawkei*)	Vulnerable	374.3

2.2 Stage 1 Construction Zone habitat quality

Habitat quality assessments within the Stage 1 Construction Zone were undertaken in accordance with the methodology outlined in Section 4. In total, 32 habitat quality assessments were undertaken within the Stage 1 Construction Zone, with habitat quality scores for the Target MNES summarised in Table 3. Assessment locations and detailed scoring is presented in the *Habitat Quality Report – Impacts for CopperString Alignment Stage 1* (Base, 2024) (attached in Appendix A) and the *CopperString2032 Pre-clearance Survey Report – Stage 1* (Base, 2024) (Attached in Appendix B).

Table 3: Stage 1 Construction Zone habitat quality scores

Target MNES	Stage 1 Construction Zone habitat quality score (/10)
Australian painted snipe (*Rostratula australis*)	4
Julia Creek dunnart (*Sminthopsis douglasi*)	5
Painted honeyeater (*Grantiella picta*)	4
Plains death adder (*Acanthophis hawkei*)	4

3 Offset Property

3.1 Offset Property location and regional context

The Offset Property, covering approximately 12,013.85 ha, is located within the McKinlay Shire Council Local Government Area, about 27 kilometres west of Julia Creek township. It is intersected by the Project, as shown in Figure 2.

Historically, the Offset Property has been utilised primarily for agricultural purposes, specifically livestock (cattle) grazing. Vegetation within the Offset Property comprises predominantly remnant vegetation, consisting primarily of tussock grassland dominated by Mitchell grasses (*Astrebla squarrosa, Astrebla pectinata*) and flinders grasses (*Iseilema* spp.). Coolibah (*Eucalyptus coolabah*) woodlands fringe the drainage lines of Gilliat River and Gidya Creek; and an area of gidgee (*Acacia cambagei*) woodland occurs in a residual red-brown, undulating, clay plain in the western extent of the Offset Property. The Offset Property was observed to support the following broad vegetation communities:

- tussock grasslands on recent alluvium and clay plains (comprising regional ecosystems (REs) 2.3.3, 2.3.4, 2.4.2a, 2.5.35, 4.3.15 and 4.9.1c)
- eucalypt (*Eucalyptus coolabah*) woodland fringing drainage lines (comprising RE 4.3.4f)
- seasonal swamps of mixed herb lands or shrublands (comprising RE 4.3.12); and
- gidgee (*Acacia cambagei*) woodland (comprising RE 2.3.7).

The Offset Property is drained by a number of ephemeral and perennial streams flowing into the Gilliat River and Gidya Creek (braided networks of non-perennial to perennial first to seventh order streams), flowing north through the central and western extents of the Offset Property (Figure 2). These watercourses are likely to provide important landscape connectivity and habitat features for the target MNES.

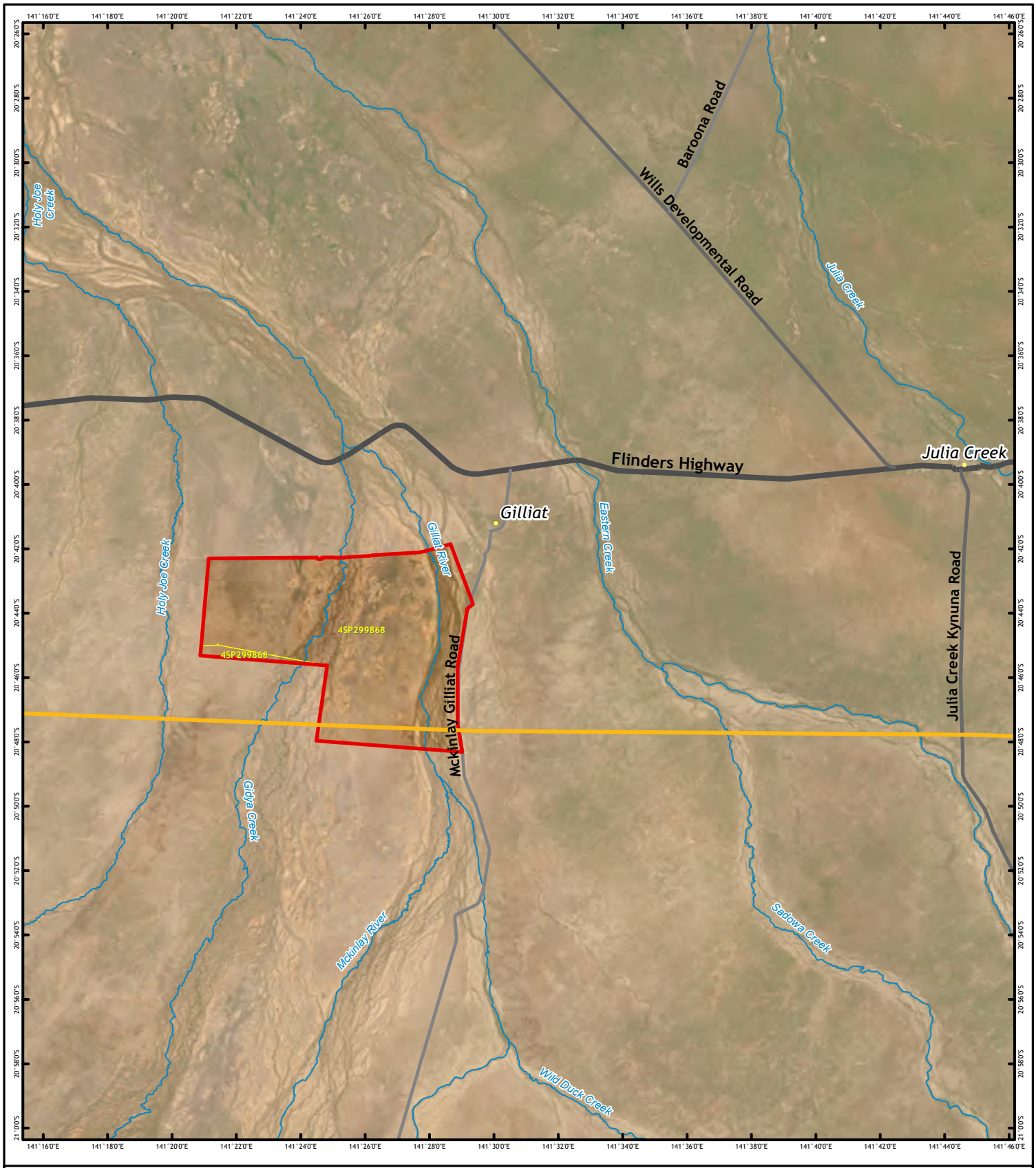
Soils within the Offset Property comprised primarily of cracking clays extending throughout both the riparian and non-riparian areas. These were noted to form deep cracks that are commonly more than 5 cm wide. Small pockets of sandy soil were also present with the central extent of the Offset Property.

3.2 Tenure and ownership

The property tenure is mapped as leasehold lands. It is bordered by Ivellen Road along the western boundary and McKinlay Gilliat Road along the eastern boundary, while a rail line runs along the northern boundary. No pipeline easements or current mining or petroleum leases occur over the property, however three Exploration Permits (EPMs) bisect the site (EPM 28435, 28436 and 28459) (Queensland Government, 2025). A summary of the property and Offset Property details are provided in Table 4.

Table 4: Offset Property details

Details	Lot 4 Plan SP299868
Property size:	12,013.85 ha
Local Government Area:	McKinlay Shire Council
Bioregion:	Gulf Plains Bioregion
Tenure:	Lands Lease



Legend

- Highway
- Secondary Road
- Local Connector Road
- Major Watercourse
- Offset Property
- Cadastre
- **CopperString 2032 Project**
- Stage 2

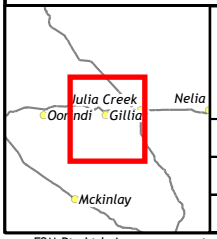
N

Scale 1:300,000 (A4)

0 10

Kilometers

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 2: OFFSET PROPERTY OVERVIEW

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

3.3 Offset Property site selection

The Offset Property was selected based on the presence of suitable habitat for the Target MNES and/or nearby records and location within species distribution, including:

- Presence of habitat for the Australian painted snipe along watercourses, gilgai areas, and channel offshoots within the distribution of the species.
- Suitable habitat for the Julia Creek dunnart consisted of cracking clay habitat, deep cracks in floodplain regions. Additionally, within 50 km of the Offset Property, 27 publicly available records from 1992-2000 exist, along with 15 undated records. The closest publicly available record is 8 km east, documented in 2000 (Atlas of Living Australia (ALA), 2025). Bone fragments, including a partial lower jawbone, were collected from owl pellets within the adjacent property (Lot 6 Plan EN65) and its surrounds. These were confirmed by the Queensland Museum to be consistent with the species. Additionally, the species has been recorded within 1 km of the Offset Property (Figure 7) (WildNet Records report attached in Appendix F) indicating the species' presence within the Offset Property and surrounding areas.
- Suitable foraging habitat for the painted honeyeater consisting of low eucalypt woodland, parasitic mistletoe (*Amyema* sp.), and a recorded sighting 21.5 km northwest of the Offset Property in 2003 (ALA, 2025a); and
- Suitable habitat for the plains death consisting of sparsely timbered riverine floodplains with cracking clay soil.

In addition to providing suitable habitat for the target species, the Offset Property was selected based on factors considered important in improving the condition and viability of existing habitat for the Target MNES, including:

- Ability to create and/or improve current habitat for relevant species.
- Opportunities to improve the control and management of threatening processes affecting the species within the landscape.
- Similarity of habitat to the portion of the Project, which intersects the southern portion of the Offset Property; and
- Connectivity with adjacent habitat in the greater landscape, including areas of similar habitat to the impact site that intersect the Offset Property.

4 Methodology

4.1 Field surveys

Field surveys were conducted within the Offset Property to identify and characterise the presence, extent and condition of habitat for the Target MNES. The field survey dates were:

- 31 October 2024: comprising rapid assessments to determine habitat suitability; and
- 9 to 17 December 2024: encompassing habitat verification, habitat quality assessments and targeted fauna surveys.

Field survey conditions were generally hot and dry, with daily temperatures ranging from 38.9°C to 45°C, with no cloud cover and no rainfall (Julia Creek Airport – weather station 029058 (Bureau of Meteorology, 2025). All field survey events were undertaken by two ecologists. Field survey methods employed adhere to the Commonwealth and State guidelines and methodologies and are included below.

4.1.1 Ground-truthed vegetation communities

Ground-truthing and validation of vegetation communities, including RE mapping, was undertaken by means of Quaternary site assessments, in accordance with the Queensland Government's *Methodology for Surveying and Mapping of Regional Ecosystems and Vegetation Communities in Queensland, Version 7.0* (Neldner et al., 2024). Quaternary assessment sites within the Offset Property are depicted in Figure 3.

Vegetation communities within the Offset Property were classified as 'remnant' or 'non-remnant' according to the criteria below:

- **Remnant** – vegetation communities that conform with the definition under the *Vegetation Management Act 1999* (VM Act) and referenced by Neldner et al. (2023). Specifically, this comprises 'vegetation, part of which forms the predominant canopy of the vegetation:
  - covering more than 50% of the undisturbed predominant canopy
  - averaging more than 70% of the vegetation's undisturbed height; and
  - composed of species characteristic of the vegetation's undisturbed predominant canopy.'
- **Non-remnant** – all vegetation that is not mapped as remnant or high-value regrowth vegetation. This includes may include regrowth, and communities that have been historically cleared/disturbed within the last 15 years, or heavily modified (i.e. improved pastures, weed encroachment etc.) that fails to meet the structural and/or floristic characteristics of remnant vegetation.

Additionally, vegetation communities were classified as grasslands based on the following criteria from Neldner et al. (2023):

- **Grasslands** – ecosystems dominated by grasses, with two classifications under Queensland's vegetation management framework:
  - Grassland - areas primarily covered by grasses, with little to no emergent woody vegetation (less than 1% crown cover).

- Woody grassland - grass-dominated areas with some emergent trees or shrubs (greater than 1% crown cover). These REs are also recorded in the Vegetation Management Regional Ecosystem Description Database (REDD).

Vegetation within the Offset Property was classified as remnant or non-remnant with reference to RE Technical Descriptions within the REDD, Version 13.1 (Queensland Herbarium, 2024b) and Specht (1970) classification of structural formations.

Where possible, REs mapped within the Offset Property were ground-truthed and re-mapped as homogenous polygons where they had previously been mapped by the Queensland Department of Resources (now Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development) as heterogenous polygons.

4.1.2 Targeted fauna surveys

A targeted fauna survey was conducted within the Offset Property to determine the presence, or likely presence of the Target MNES. The methods employed during this survey consisted of:

- deployment of baited motion camera traps targeting Julia Creek dunnart
- deployment of autonomous bioacoustic recorders (BARs) targeting painted honeyeater
- nocturnal vehicle spotlighting transects targeting plains death adder; and
- diurnal bird surveys including area searches and water source watches targeting painted honeyeater and Australian painted snipe.

4.1.3 Habitat quality assessment

Habitat quality assessments were undertaken across the Offset Property and surrounds to identify important microhabitat features and threatening processes for all target species. These assessments were undertaken in conjunction with Quaternary vegetation assessments and habitat quality assessments. Assessment of habitat suitability for target fauna, considering species' habitat requirements and preferences and presence and severity of threats.

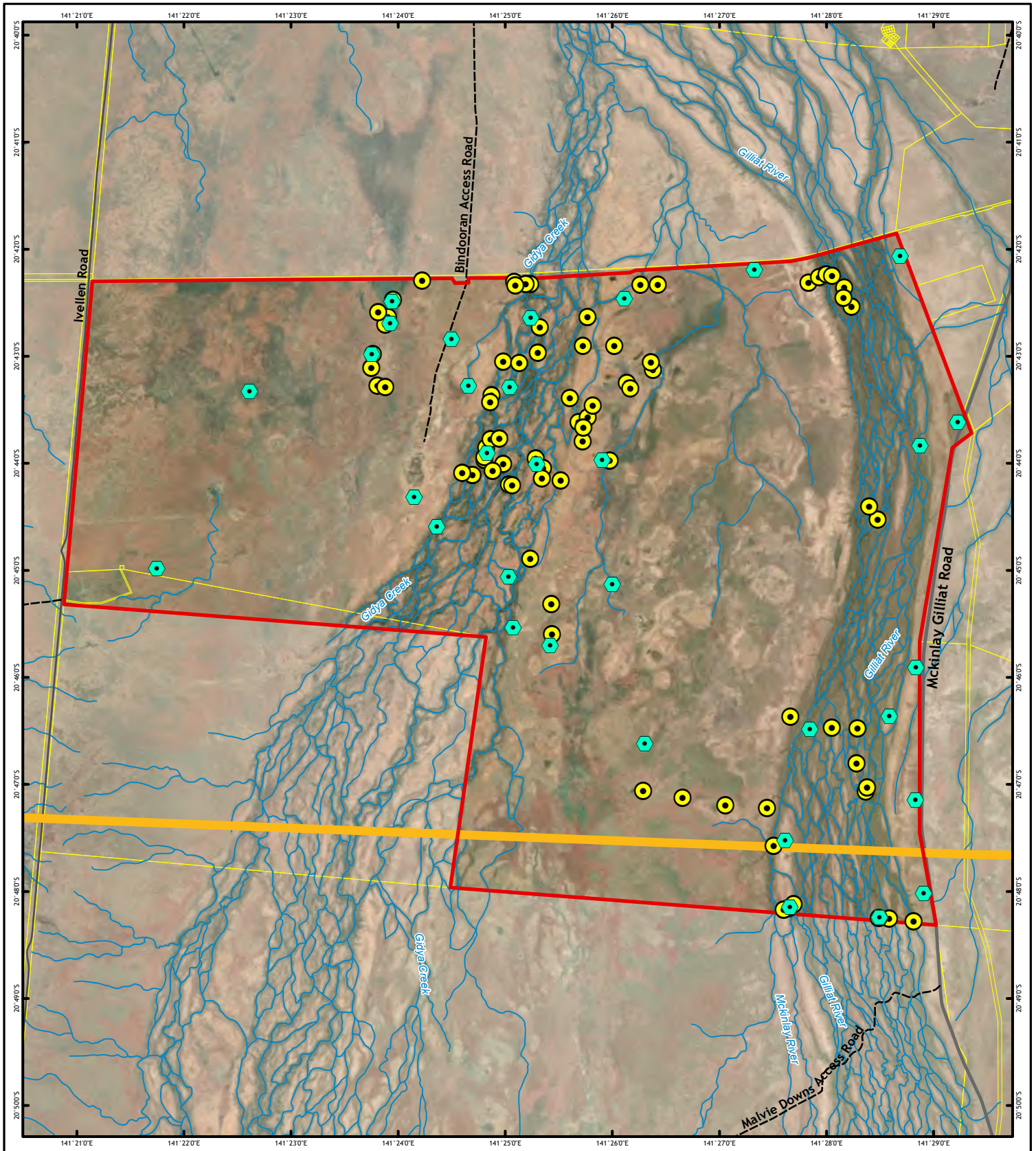
Habitat quality was assessed across representative sites within the entire Offset Property. Monitoring points will be established within the delineated Offset Area (as detailed in Section 5.2) to monitor habitat quality over the life of the offset.

Habitat assessments included assessment of the following:

- condition and relative abundance of foraging resources for Target MNES (e.g. grassland tussocks, mammalian prey, mistletoe species. etc.)
- microrelief (gilgai) abundance and depth
- soil crack abundance and depth
- presence and nature of water sources
- soil type
- presence/abundance of coarse woody debris and loose rock
- ground cover composition and density
- quality and availability of habitat required for mobility; and

- evidence of threats identified for target species (e.g. invasive weeds, inappropriate fire regimes, grazing impacts, presence of feral predators and cane toads).

Habitat quality assessment sites within the Offset Property are depicted in Figure 3. Further detail of these assessments is outlined in Section 4.2.



Legend

- Habitat Quality Assessment Site
- Quaternary Assessment Point
- Local Connector Roads
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Cadastre
- **CopperString 2032 Project**
- Stage 2

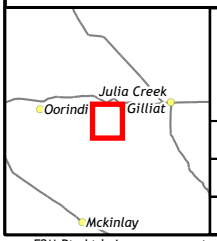
N

Scale 1:90,000 (A4)

0 5

Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	03/03/2025

FIGURE 3: HABITAT QUALITY AND VEGETATION ASSESSMENT SITES IN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

4.2 Habitat quality scoring

The Commonwealth EPBC Act OAG (DCCEEW, 2023) and *How to use the Offsets Assessment Guide* (Department of Sustainability, Environment, Water, Population and Communities (SEWPaC),, 2012b) provides guidance on the assessment offset requirements and suitability. This framework provides key concepts and guiding principles, however there is no stipulated Commonwealth method for assessing habitat quality outlined within the offset framework. The DCCEEW Modified Habitat Quality Assessment (MHQA) is an unpublished method that provides guidance on habitat quality determination for MNES and is based on the *Guide to Determining Terrestrial Habitat Quality V 1.2* (herein referred to as the Habitat Quality Guide) (Department of Environment and Science (DES), 2020).The MHQA method for assessing habitat quality for the Project gauges habitat quality for species using three indicators; site context, site condition and Species Stocking Rate (SSR), with the default ratios being 30%, 30% and 40%, respectively. The ratio at which these indicators make up a species' overall habitat quality were adjusted based on a variety of factors including:

- species detectability
- species sporadic or intermittent habitat use; and
- importance of attributes within indicators (e.g. quality and availability of food and foraging habitat, threats, patch size and connectivity).

Habitat quality indicator ratios utilised for assessing habitat quality for the target species, as well as justification behind the ratios is provided in Table 5. Further details regarding the calculation of habitat quality for Target MNES is provided in Appendix C.

Table 5: Habitat quality indicator ratios

Species	Ratios	Justification
Australian painted snipe (*Rostratula australis*)	50% site condition 30% site context 20% SSR	Given extremely low reliability of species detection (e.g. high species mobility, foraging range, sporadic habitat uses and low species abundance) and high importance of site condition and site context attributes, weightings have been adjusted as follows: • Site condition was assigned 50% weighting given the importance of habitat attributes for the species including quality and availability of food and foraging habitat (i.e. wetland habitat) and quality and availability of shelter (i.e. presence of breeding habitat). • Site context has been assigned a 30% weighting as it contains other important attributes including threats, context and patch size. Due to species ability to disperse large distances and driven by local conditions (particularly rainfall), the weighting of this component has been reduced slightly. • Due to the species very low detectability, sporadic use of the landscape, and difficulty in accurately assessing approximate density, SSR was reduced to a 20% weighting.
Julia Creek dunnart	40% site condition 30% site context 30% SSR	Given low reliability of species detection given the highly cryptic nature of the species and high importance of site

(*Sminthopsis douglasi*)		condition and site context attributes, weightings have been adjusted as follows: • Site condition was assigned 40% weighting given the importance of habitat attributes for the species including quality and availability of food and foraging habitat (i.e. abundance of prey shelter and foraging habitat) and Quality and availability of shelter (i.e. abundance of soil cracks). • Site context has been assigned a 30% weighting as it contains other important attributes including threats, context and patch size. • Due to the species low detectability and difficulty in accurately assessing approximate density, SSR was reduced to a 30% weighting.
Painted honeyeater (*Grantiella picta*)	50% site condition 30% site context 20% SSR	Given extremely low reliability of species detection (e.g. high species mobility, foraging range, sporadic habitat uses and low species abundance) and high importance of site condition and site context attributes, weightings have been adjusted as follows: • Site condition was assigned 50% weighting given the importance of habitat attributes for the species including quality and availability of food and foraging habitat (i.e. mistletoe abundance) and quality and availability of shelter (i.e. habitat complexity). • Site context has been assigned a 30% weighting as it contains other important attributes including threats, context and patch size. Due to species ability to disperse large distances, the weighting of this component has been reduced slightly. • Due to the species very low detectability and difficulty in accurately assessing approximate density, SSR was reduced to a 20% weighting.
Plains death adder (*Acanthophis hawkei*)	50% site condition 30% site context 20% SSR	Given the extremely low reliability of species detection given the highly cryptic nature of the species and high importance of site condition and site context attributes, weightings have been adjusted as follows: • Site condition was assigned 50% weighting given the importance of habitat attributes for the species including quality and availability of food and foraging habitat (i.e. abundance of prey shelter and ground cover) and quality and availability of shelter (i.e. abundance of soil cracks). • Site context has been assigned a 30% weighting as it contains other important attributes including threats, context and patch size.

- Due to the species low detectability and difficulty in accurately assessing approximate density, SSR was reduced to a 20% weighting.

4.2.1 Site condition

In accordance with the Habitat Quality Guide, habitat areas are first delineated into Assessment Units (AUs). An AU refers to an area or a group of areas within the matter area (i.e. the Offset Property or Stage 1 Construction Zone) that is homogenous in vegetation community classification (i.e. RE) and broad condition state (i.e. remnant, regrowth, non-remnant). Each AU reflects a particular community with similar structure, function and quality of habitat.

Site condition data was collected within 100 m x 50 m areas (including various sub-plots) for each AU (AUs described in Appendix D), weighted in accordance with the Habitat Quality Guide and compared to BioCondition benchmark values for the relevant RE benchmark (Queensland Herbarium, 2024a). Quality and availability of food, foraging habitat and shelter was also incorporated into the assessment of site condition and weighted accordingly for each species.

A summary of site condition data collected (i.e. habitat quality sites), plot area and associated maximum scores is summarised in Table 6. To more accurately reflect the ecology and habitat requirements for each species, the site condition attribute weightings were amended. Amended weightings for each species are presented in Table 7.

The site condition component of the habitat quality score is then weighted based on the species-specific habitat quality indicator ratios provided in Table 5.

Table 6: Site condition assessment criteria

Attribute	Description	Assessment plot	Maximum score
Large trees	Number of large trees per hectare, as determined by existing BioCondition benchmarks for the associated RE	100 m x 50 m	15
Tree canopy height	Median canopy height in metres of the ecologically dominant layer	100 m x 50 m	5
Recruitment (%)	The proportion of overstorey species present at a site that are regenerating (<5 cm diameter at breast height [DBH])	100 m x 50 m	5
Tree canopy cover (%)	Vertical projection of the tree canopy crown cover along a transect	100 m transect	5
Shrub layer cover (%)	Vertical projection of the shrub layer cover of native shrubs	100 m transect	5†
Coarse woody debris	The length of fallen woody logs and other coarse woody debris (>10 cm diameter and >0.5 m in length) per hectare	50 m x 20 m	5

Native plant species richness	Native plant species richness, comprising all life forms (i.e. trees, shrubs, grasses and forbs/other)	100 m x 50 m (trees) 50 m x 10 m (shrubs, grasses, forbs/other)	5 each (20 total)
Non-native plant cover (%)	Percentage cover of non-native/weed plant species	50 m x 10 m	10
Native perennial grass cover (%)	Average percentage cover of native perennial grass species	Five 1 m x 1 m	5
Organic litter cover	The average percentage cover of organic material such as fallen leaves, twigs, and branches <10 cm diameter	Five 1 m x 1 m	5
		BioCondition values (sub-total)	**80**
Quality and availability of food and foraging habitat	Consider these parameters relative to the essential habitat requirements for the species. These attributes should realistically reflect how much of a sustainable population of a species could be supported. This component was determined using the criteria detailed within the Habitat Quality Guide. Detailed scoring methodology is presented in Appendix C.	100 m x 50 m	10
Quality and availability of shelter habitat	An assessment of a species' shelter requirements must consider the relative abundance and condition of habitat features that could be used within a site. The site's shelter habitat is necessarily species specific and includes microhabitat requirements (e.g. hollows, logs, cracking clays, large trees, leaf litter, caves etc.). This component was determined using the criteria detailed within the Habitat Quality Guide. Detailed scoring methodology is presented in Appendix C.	100 m x 50 m	10
		Total (maximum score)	**100**

† Denotes site-based attributes which does not apply for some RE's where no tree or shrub layer was identified by the associated benchmarks (i.e. grassland REs). For grassland REs the maximum score for the BioCondition component is 30.

Table 7: Site condition attribute weightings

Species	Weightings	Justification
Australian painted snipe (*Rostratula australis*)	30% - BioCondition Values 40% - Quality and availability of food and foraging habitat 30% - Quality and availability of shelter	Given the Offset Property contains foraging habitat only, quality and availability of food and foraging habitat (e.g. wetlands) have been weighted highest at 40%. Quality and availability of shelter attributes and BioCondition values have been weighted as 30% each given their role in assessing likelihood of site utilisation and overall condition and resilience.
Julia Creek dunnart (*Sminthopsis douglasi*)	20% - BioCondition Values 40% - Quality and availability of food and foraging habitat 40% - Quality and availability of shelter	Given the species' reliance on quality and availability of shelter and foraging attributes (e.g. soil cracks), these attributes have been weighted the highest component of the overall site condition score at 40% each. BioCondition values (e.g. ground cover density and composition) make up 20%.
Painted honeyeater (*Grantiella picta*)	30% - BioCondition Values 40% - Quality and availability of food and foraging habitat 30% - Quality and availability of shelter	Given the high importance of the presence of foraging habitat to the species (i.e. mistletoe), quality and availability of food and foraging habitat has been weighted highest at 40%. Quality and availability of shelter attributes and BioCondition values have been weighted as 30% each given their role in assessing likelihood of site utilisation and overall condition and resilience.
Plains death adder (*Acanthophis hawkei*)	30% - BioCondition Values 30% - Quality and availability of food and foraging habitat 40% - Quality and availability of shelter	Given the species' reliance on quality and availability of shelter attributes (e.g. soil cracks this attribute has been weighted the highest component of the overall site condition score at 40%. Quality and availability of food and foraging habitat (e.g. abundance of prey shelter) and BioCondition values (e.g. ground cover density) are also important for the species and make up 30% each.

4.2.2 Site context

In accordance with the MHQA method and the Habitat Quality Guide, site context for the Offset Property was assessed against the criteria summarised in Table 8. As the Offset Property is located within an intact subregion (refer to Section 6 of the *BioCondition Assessment Manual* (Eyre et al., 2015b)), the 'connectedness', 'context' and 'size of patch' attributes are replaced by 'distance to water'. In accordance with the MHQA method, other attributes including 'threats', 'ecological corridors', 'role of the site location for the population in the State' and 'species mobility capacity' have also been included (and weighted) for the site context component of the habitat quality scoring.

The site context components of the habitat quality score and associated weightings for each species are provided in Table 8. Further details on the weightings of each component of site context is provided in Appendix C. The site context component of the habitat quality score is then weighted based on the species-specific habitat quality indicator ratios provided in Table 5.

Table 8: Site context criteria and scoring

Criterion	Description	Maximum score
Distance to water	The proximity of the site to a permanent watering point. Permanent water points include dams, earth tanks, raised ring-tanks, troughs on pipelines and natural permanent water supplies (rivers and waterholes).	20
Ecological corridors	The proximity of the site to the Department of Environment, Tourism, Science and Innovation (DETSI) mapped State, bioregional, regional or sub-regional corridors.	6
Role of the site location to species overall population in the State	The role of the site in relation to the overall population of the species in Queensland. This considers the species' use of the site, such as whether it is used for feeding and/or nesting and the effect that damage to or removal of the site would have to the likelihood of the species' overall population survival.	5
Threats to Species	Weightings for each threat for the Target MNES have been determined as per the risk rating of each threat identified within the species Conservation Listing Advice or National Recovery Plan. The scoring for each threat is based on the likelihood of occurring and the associated consequence. The likelihood is assessed on the following categories: • Almost certain – expected to occur every year • Likely – expected to occur at least once every five years • Possible – might occur at some time • Unlikely – such events are known to have occurred on a worldwide bases but only a few ties; or • Unknown – currently unknown how often the incident will occur. Categories for consequences are defined as follows: • Not significant – no long-term effect on individuals or populations • Minor – individuals are adversely affected but no effect at population level • Moderate – population recovery stalls or reduces	15

Criterion	Description	Maximum score
	• Major – population decreases; or • Catastrophic – population extirpation/extinction. These risks were then categorised into weighting ranges as follows: • Low risk = 0-10% • Moderate risk = >10-15% • High risk = >15-25%; or • Very high risk = >25%. The combined threat score was then categorised into a score between 1 and 15 based on the Habitat Quality Guide, where: • High threat = 1 • Moderate threat = 7; or • Low threat = 15.	
Species mobility capacity ^	Consideration of the presence and severity of factors that would contribute to a reduction in the mobility of the species (e.g. barriers to movement). This component was determined using the criteria detailed within Habitat Quality Guide. Detailed scoring methodology of species mobility is presented in Appendix C.	10
Total (max. score)		**56**

^ Due to the highly mobile nature of some species (limited impediments to movement), "Species Mobility Capacity" was not scored for Australian painted snipe. The total site context score for this species was reduced to a maximum score of 46.

4.2.3 Species Stocking Rate

Species stocking rate (SSR) is determined based on the outcomes of surveys using best-practice methods aimed at maximising detectability of the target species. This includes undertaking surveys during appropriate timing and applying suitable search effort, preferentially over numerous monitoring periods. Attributes for SSR and their respective scoring are summarised in Table 9. The overall score for SSR is then weighted based on the species-specific habitat quality indicator ratios provided in Table 5.

For species with sufficient population data, approximate density ranges can be calculated based on local survey records/sightings; or if comprehensive targeted surveys have been done within the offset sites, ranges may be devised based on the survey results. For cryptic species and data-deficient species (e.g. plains death adder), calculating density may not be possible, which would also mean that an increase in stocking rate is not feasible.

Table 9: Species Stocking Rate scoring

Attribute	Description	Maximum score
Presence detected on or adjacent to the site	Scored based on the target species being recorded within or adjacent (neighbouring property) to the site. The associated score is based on the following categories: • Yes – on site= 10 • Yes – adjacent to site = 5; and • No = 0.	10
Species usage on the site	Scored based on the target species habitat utilisation type within the site The associated score is based on the following categories: • Dispersal = 5 • Foraging = 10; and • Breeding = 15.	15
Approximate density (per ha)	Estimated density of the target species based on local survey records and available literature. Due to the limited available data for the Stage 1 Construction Zone and surrounding landscape, the approximate densities for each species were categorised into four broad categories: • Absent = 0 • Low = 10 • Moderate = 20; and • High = 30.	30

	The density of each species was then scored based on survey effort, detectability and number of detections. Due to the limited information on population densities for species such as plains death adder and Australian painted snipe, gauging of approximate density categories is not considered feasible. As such, the approximate density scoring within SSR is to be excluded for these species (i.e. max score of 40).	
Role/importance of species population on site*	Score is based on the supplementary scoring matrix (refer to Table 10*). Overall score is determined based on the following categories: • 0 = 0 • 5 to 15 = 5 • 20 to 35 = 10; and • 40 to 45 = 15.	15
	Total (maximum score)	**70**

* Attribute calculated based on supplementary scoring matrix provided in Table 10.

Table 10: Supplementary scoring matrix for role of importance of species population

Attribute	Categories	Maximum score
Key source population for breeding	• Yes/Possibly = 10; or • No = 0.	10
Key source population for dispersal	• Yes/Possibly = 5; or • No = 0.	5
Necessary for maintaining genetic diversity	• Yes/Possibly = 15; or • No = 0.	15
Near the limit of the species range	• Yes = 15; or • No = 0.	15
	Total (maximum score)	**45**

5 Offset suitability

The delivery of environmental offsets must comply with the conditions of the EPBC Approval as well as the EOP (SEWPaC, 2012a). The EPBC Act EOP provides additional guidance on identifying and assessing suitable offsets, ensuring that proposed actions approved under the EPBC Act are consistent, transparent, and achieve high-quality environmental outcomes.

E2M assessed the Offset Property using the methods outlined in Section 4, determining that the area provides suitable offsets for the Target MNES species:

- Australian painted snipe
- Julia Creek dunnart
- painted honeyeater; and
- plains death adder.

The following sections summarise the Offset Property values, including species-specific requirements.

5.1 Offset Property values

Ecological surveys to verify and characterise the presence, extent and condition of habitat for the Target MNES were undertaken by E2M from 9 to 17 December 2024 (refer to Section 4.1). The following sections summarise the offset values relevant for the Offset Property.

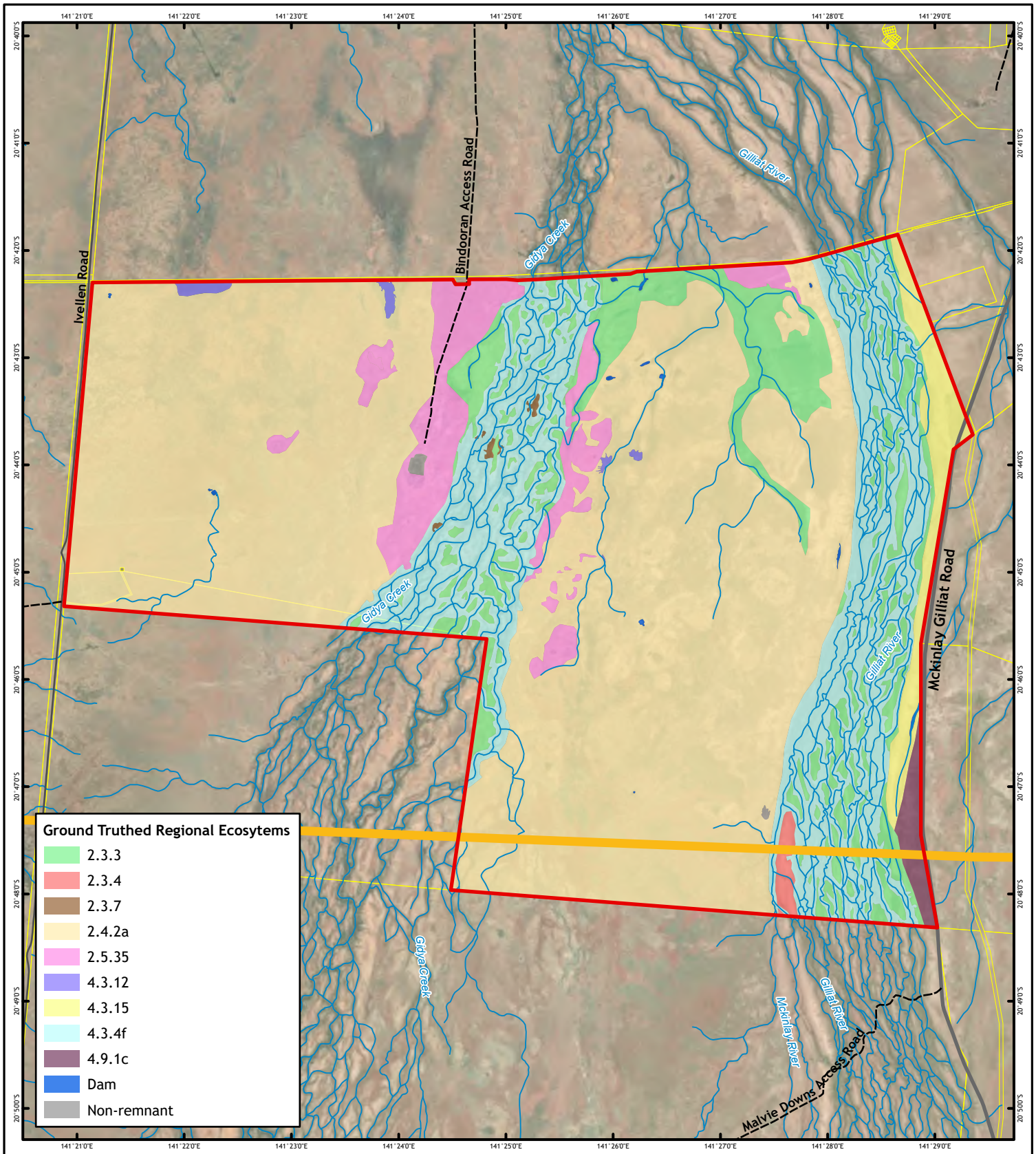
5.1.1 Vegetation communities

The Offset Property predominantly consists of remnant vegetation, including one RE classified as 'Of Concern' and nine classified as 'Least Concern' under the VM Act. Table 11 provides a summary of the REs, their extent within the Offset Property, and their associated Target MNES habitat values, as depicted in Figure 4.

Table 11: Regional Ecosystems within the Offset Property

RE	VM Act Status	RE description	Target MNES values	Area (ha)
2.3.3	Least concern	*Astrebla squarrosa* and/or *A. elymoides* and/or *Iseilema* spp. tussock grassland on active Quaternary alluvial plains.	• Australian painted snipe • Julia Creek dunnart • plains death adder	1,167.07
2.3.4	Least concern	*Eulalia aurea, Panicum decompositum, Astrebla pectinata* and *Dichanthium* spp. in mixed tussock grasslands on active Quaternary alluvial plains within Tertiary clay deposits.	• Australian painted snipe • Julia Creek dunnart • plains death adder	44.67
2.3.7	Least concern	*Acacia cambagei* +/- *Eucalyptus microtheca* low woodland on fine-textured Quaternary alluvial plains.	• Australian painted snipe • painted honeyeater • plains death adder	10.82
2.4.2a	Least concern	*Astrebla* spp. and *Iseilema* spp. tussock grassland to closed tussock grassland, occasionally with *A. latifolia*, *Sarga* spp. and *Dichanthium* spp. Emergent *Atalaya hemiglauca* may occur. Occurs on broad, Tertiary clay plains. Brown cracking clay soils.	• Julia Creek dunnart • plains death adder	7,483.80
2.5.35	Least concern	*Aristida latifolia* +/- *Enneapogon polyphyllus, Brachyachne convergens, Sporobolus* spp. tussock grassland on thin, residual sand deposits overlying Tertiary clay plains.	N/A	645.71
4.3.4f	Least concern	*Eucalyptus coolabah* and/or *E. microtheca* low open woodland. Occurs on drainage lines on *Astrebla* spp. undulating plains and braided channels on alluvial plains, particularly north-east.	• Australian painted snipe • painted honeyeater	2,219.90

RE	VM Act Status	RE description	Target MNES values	Area (ha)
4.3.12	Least concern	Seasonal swamps. *Chenopodium auricomum* dwarf shrubland in closed depressions on clay plains.	• Australian painted snipe • plains death adder	34.48
4.3.15	Least concern	*Astrebla squarrosa* +/- *Astrebla spp.*, *Bothriochloa ewartiana*, *Iseilema vaginiflorum* tussock grassland on alluvial plains.	• Australian painted snipe • Julia Creek dunnart • plains death adder	302.00
4.9.1c	Least concern	*Astrebla* spp., *Iseilema spp.* tussock grassland, commonly with *Panicum decompositum*, *Dichanthium* spp., *Eulalia aurea*, *Chrysopogon fallax*, *Sarga plumosum*. Emergent *Atalaya hemiglauca* commonly occur. Occurs on level to gently undulating downs derived from Cretaceous mudstones (predominantly Allaru Mudstone) in the north of the bioregion.	• Julia Creek dunnart • plains death adder	95.07
Non-remnant			N/A	10.36
			Total	**12,013.85**



Legend

- Local Connector Roads
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Cadastre

CopperString 2032 Project

- Stage 2

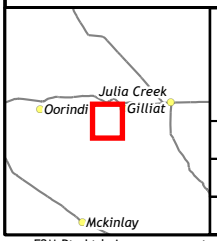
N

Scale 1:90,000 (A4)

0 5

Kilometers

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	03/03/2025

FIGURE 4: GROUND-TRUTHED REGIONAL ECOSYSTEMS WITHIN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

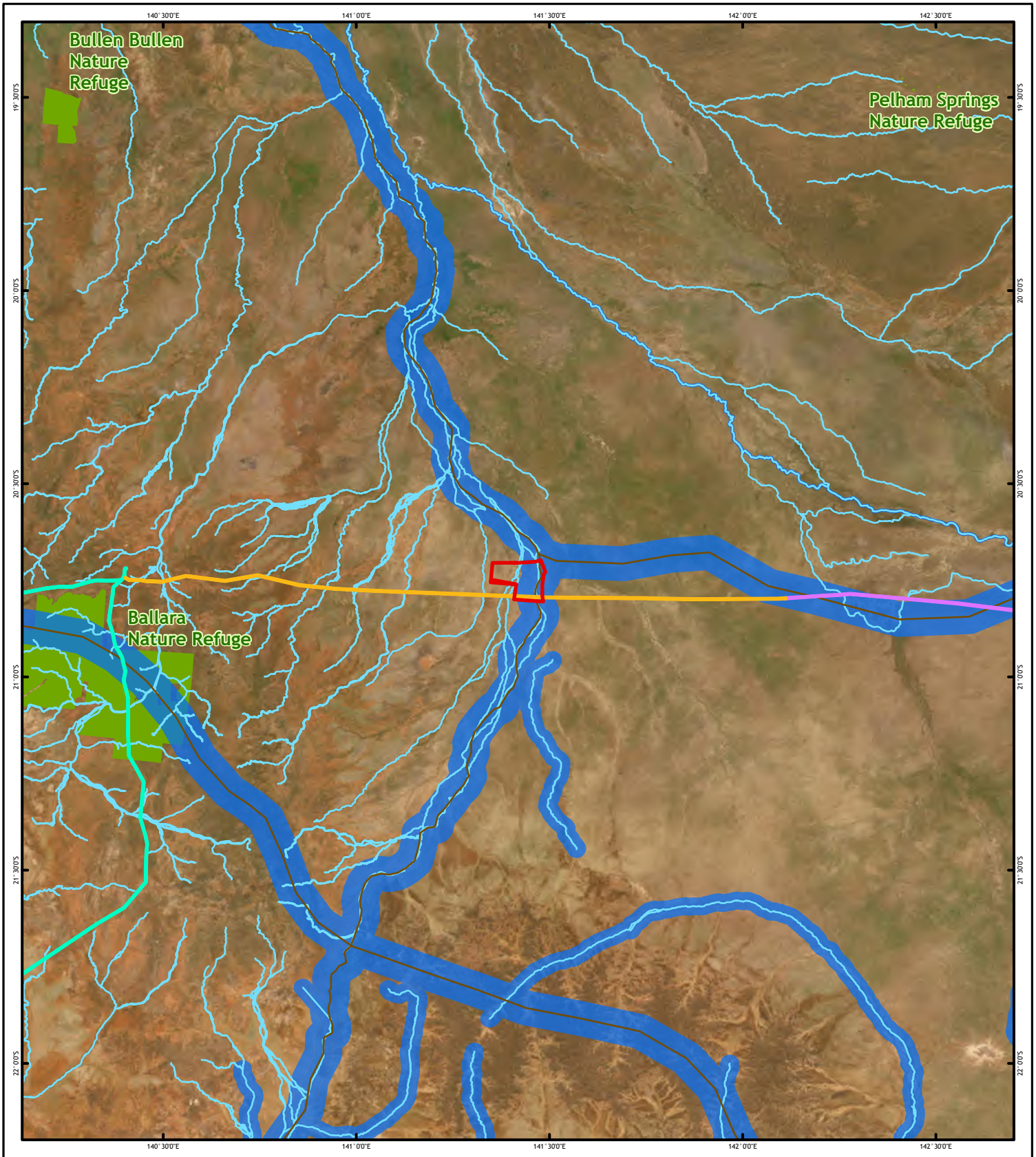
Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.1.2 Landscape values

The Offset Property is located within an open landscape, primarily characterised by expansive tussock grassland plains. Tree cover is limited and largely confined to riparian corridors along drainage lines and watercourses. Vegetation along these watercourses includes eucalypt (*Eucalyptus coolabah*) woodland and remnant riverine wetland habitat (RE 4.3.4f) associated with the Gilliat River and Gidya Creek. The surrounding landscape transitions to extensive grasslands in the west, while patches of woodland are restricted to the central and eastern floodplains.

The Gilliat River, forming the eastern boundary of the Offset Property, features a perennial network of fifth, sixth, and seventh-order streams, while Gidya Creek, which bisects the Offset Property, consists of a perennial sixth-order stream channel surrounded by a braided network of non-perennial first to fifth-order streams. Both the Gilliat River and Gidya Creek riparian corridors are recognized as Statewide riparian corridors by DETSI. Additionally, more than half of the eastern section of the Offset Property is mapped as a Statewide biodiversity corridor, which connects to these river systems, enhancing ecological connectivity (Figure 5).

The Offset Property forms part of a broader ecosystem that has been modified by grazing, including the construction of stock dams and reduced tussock grass cover around water sources. Despite this, these watercourses remain key landscape features that provide important habitat connectivity and ecological value for the Target MNES.



Legend

- Offset Property
- Nature Refuge

CopperString 2032 Project

- Stage 1
- Stage 2
- Indicative corridor for Stages 3/4 and Southern Spur

Statewide Corridor

- Terrestrial Centreline
- Riparian Centreline

Statewide Corridor - Significance

- Regional
- State

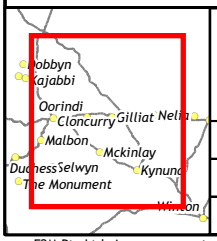
N

Scale 1:1,500,000 (A4)

0 25 50 75

Kilometers

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Statewide Corridors: © DETSI 2024
Nature Refuge © DETSI 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	03/03/2025

FIGURE 5: OFFSET PROPERTY LANDSCAPE CONTEXT OVERVIEW

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.1.3 MNES values

5.1.3.1 Summary

A summary of the habitat extents for each of the Target MNES within the Offset Property is provided in Table 12. The following sections provide further details of the composition and condition of habitat for each of the Target MNES values within the Offset Property. Detailed habitat quality scoring data for the Offset Property is presented in Appendix E.

Table 12. Habitat identified within the Offset Property

MNES	Habitat Types	Associated RE	Total area (ha)	Current habitat quality Score
Australian painted snipe (*Rostratula australis*)	Shallow freshwater and occasionally brackish wetlands, including lakes, swamps, claypans and waterlogged grasslands	2.3.3, 2.3.4, 2.3.7, 4.3.4f, 4.3.12, 4.3.15,	3,815.69	3
Julia Creek dunnart (*Sminthopsis douglasi*)	Cracking clay, predominantly covered by Mitchell Grass (*Astrebla* spp.) and Flinders Grass (*Iseilema* spp.)	2.3.3, 2.3.4, 2.4.2a, 4.3.15, 4.9.1c	9,092,59	5
Painted honeyeater (*Grantiella picta*)	Dry, open forests and woodlands (particularly in eucalypt and acacia woodlands) with flowering and fruiting mistletoe	2.3.7, 4.3.4f	2,230.72	3
Plains death adder (*Acanthophis hawkei*)	Flat, sparsely timbered or treeless riverine floodplains with cracking clay soils, particularly along drainage lines	2.3.3, 2.3.4, 2.3.7, 2.4.2a, 4.3.12, 4.3.15, 4.9.1c	9,174.66	5

5.1.3.2 Australian painted snipe (*Rostratula australis*)

5.1.3.2.1 Likelihood of occurrence and habitat

Targeted surveys, including diurnal waterbody searches and diurnal camera trapping were undertaken by E2M throughout the Offset Property, however the species was not observed. The nearest publicly available record of the Australian painted snipe is 52 km west of the Offset Property from 1880 (ALA, 2025a). An additional undated record exists 90 km west, and two records from 1994 are approximately 105-106 km

southeast (ALA, 2025a). While no recent records exist in closer proximity, the species' habitat—shallow wetlands, grasslands, and riverine environments—is present within the Offset Property and surrounding areas, particularly along Gilliat River and Gidya Creek.

The distribution of records surrounding the Offset Property, despite being older, suggests the Australian painted snipe may utilise wetlands and nearby remnant vegetation intermittently. Habitat for the Australian painted snipe in the Offset Property was largely confined to stock dams and larger areas containing gilgai. Other potential habitats include waterholes and gilgai microrelief, which may form during periods of high rainfall along Gilliat River and Gidya Creek in the eastern and central extents of the Offset Property, respectively.

A total of 3,827.29 ha of suitable Australian painted snipe habitat was observed within the Offset Property in association *E. coolabah* dominated woodland fringing ephemeral watercourse, consistent with RE 4.3.4f. as well as stock dams, waterholes, and shallow gilgai microrelief. Other areas of habitat within the Offset Property also include stock dams, waterholes, and shallow gilgai microrelief and seasonal swamps. These minor areas were associated with remnant REs 2.3.3, 2.3.4, 2.3.7, 4.3.12 and 4.3.15.

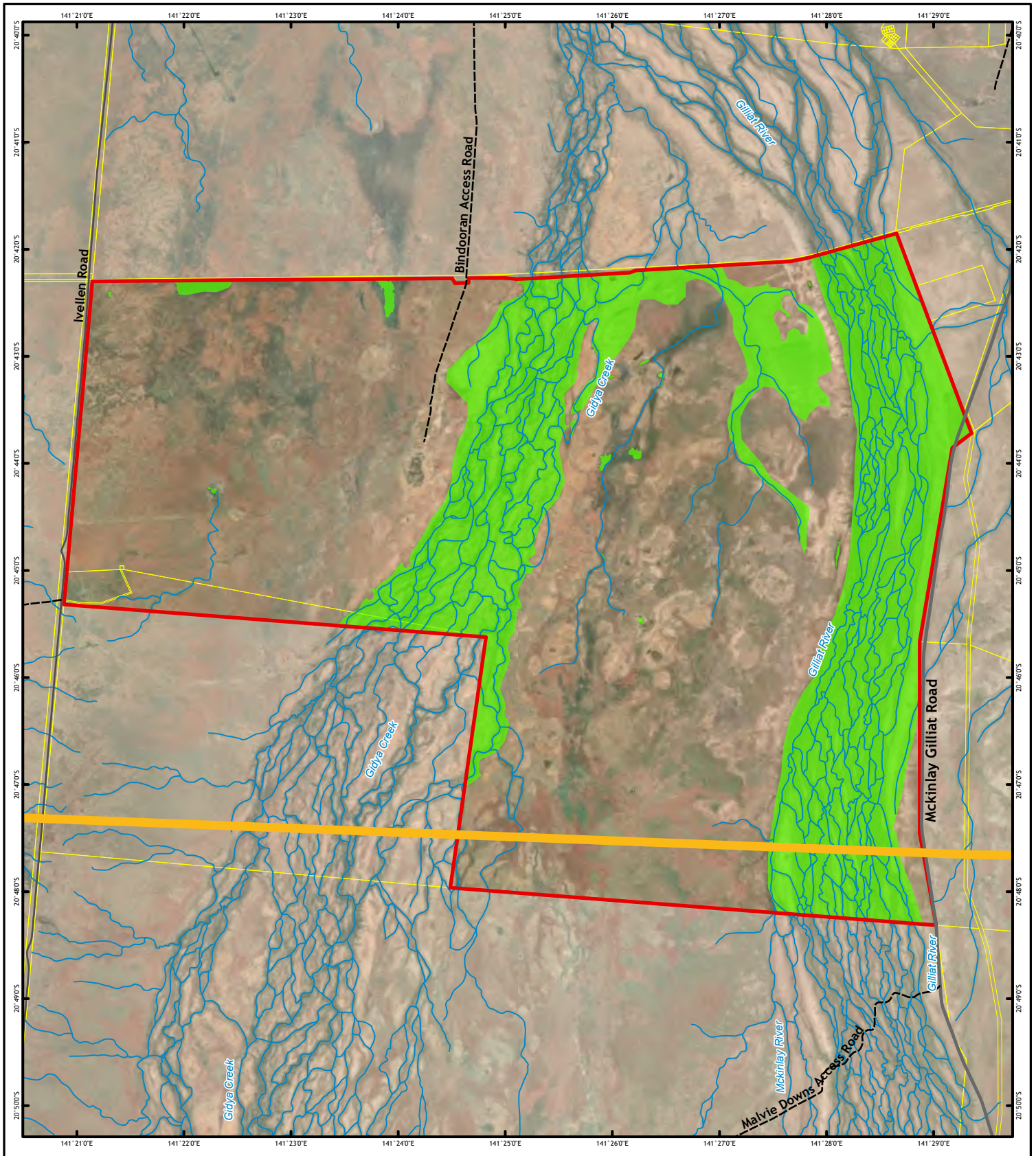
The extent of Australian painted snipe habitat within the Offset Property is depicted in Figure 6.

5.1.3.2.2 Threatening processes

The decline of the Australian painted snipe population is primarily attributed to habitat loss and degradation, particularly the alteration of wetland habitats (DCCEEW, 2024). Within the Offset Property, potential habitat is limited, with some areas of habitat only forming during periods of high rainfall along Gilliat River and Gidya Creek and in stock dams (DCCEEW, 2024).

Grazing by cattle in the Offset Property is currently a significant threat, as livestock movements around dams and drainage lines contribute to the degradation of wetland vegetation, reducing the availability of suitable roosting and foraging habitat. However, there are opportunities to effectively manage stock to enhance this area. The remnant vegetation, which includes tussock grasslands and woodland ecosystems, could provide some temporary refuge during wet periods with appropriate management interventions (DCCEEW, 2024).

Feral cats were also observed within the Offset Property, recorded on remote cameras at several locations. Predation by feral animals, particularly feral cats, is a potential threat to the Australian painted snipe, however there is no evidence to suggest that predation by feral cats has contributed significantly to the decline of the population (DCCEEW, 2024), effective management of feral cat populations could enhance the success of the Australian painted snipe at the Offset Property, as well as benefit other MNES, such as the plains death adder.



Legend

- Local Connector Road
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Australian Painted Snipe Habitat
- Cadastre

CopperString 2032 Project

- Stage 2

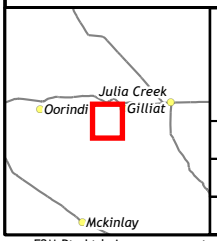
N

Scale 1:90,000 (A4)

0 5

Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 6: AUSTRALIAN PAINTED SNIPE HABITAT WITHIN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.1.3.3 Julia Creek dunnart (*Sminthopsis douglasi*)

5.1.3.3.1 Likelihood of occurrence and habitat

The desktop assessment identified the species has been previously recorded within the Offset Property. The nearest publicly available record, documented in 2000, is located 8 km east of the Offset Property. In total, 27 records within 50 km of the Offset Property are dated between 1992 and 2000, while an additional 15 records within 50 km lack dates (ALA, 2025).

Bone fragments, including a partial lower jawbone, were collected from owl pellets within and surrounding the adjacent property to the west (Lot 6 Plan EN65) of the Offset Property. These were confirmed by the Queensland Museum to be consistent with the species. Additionally, the species has been recorded within 1 km of the Offset Property (Figure 7) (WildNet Records report attached in Appendix F) indicating the species' presence within the Offset Property and surrounding areas.

The Julia Creek dunnart relies heavily on deep soil cracks for shelter during dry periods and grass tussocks for cover after rain. The Offset Property contains tussock grassland with *Astrebla* spp. and *Iseilema* spp. with cracking clay soils. The soil cracks observed were generally in moderate to high abundance across the Offset Property, with 5 cm wide cracks forming deep, complex crack systems beneath the surface. Areas of deeper soil cracks are also associated with floodplain regions associated with Gidya Creek and Gilliat River. However, the presence of canopy trees and reduced grass cover from heavy grazing in some areas may currently limit the availability of shelter (DCCEEW, 2024). Habitat was observed in association with remnant REs 2.3.3, 2.3.4, 2.4.2a, 4.3.15 and 4.9.1c.

A total of 9,092.59 ha of suitable habitat to support the Julia Creek dunnart was observed within the Offset Property as depicted in Figure 7.

5.1.3.3.2 Threatening processes

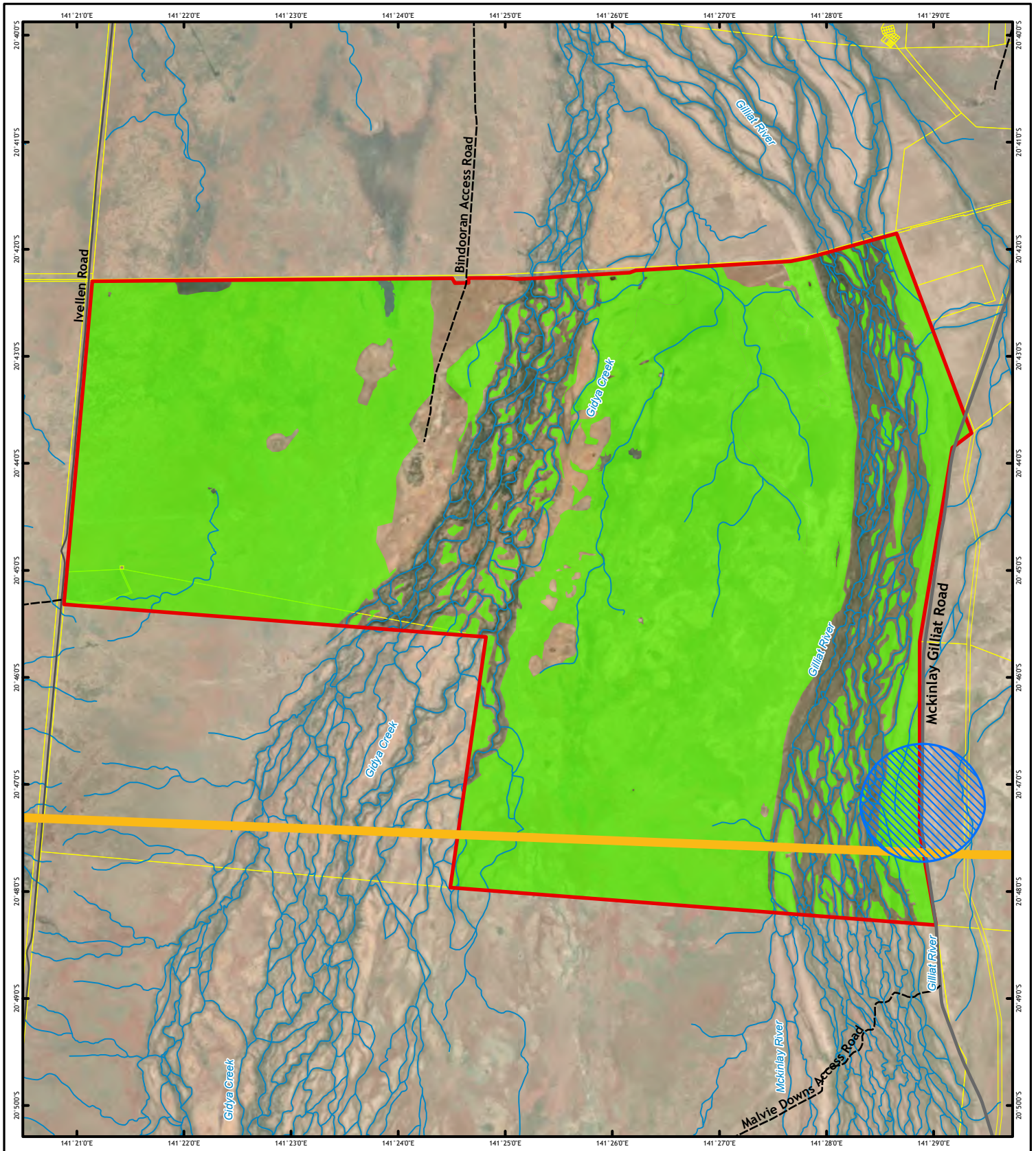
The Julia Creek dunnart has a small, sparsely distributed population and faces multiple threats, including predation by feral cats, the spread of prickly acacia (*Vachellia nilotica*), and the impacts of heavy grazing. Within the Offset Property, the primary concerns are predation by feral cats and the encroachment of prickly acacia. The recent increase in feral cat numbers, driven by a peak in the long-haired rat population, may significantly heighten predation pressure on the dunnart. However, this situation presents an opportunity for targeted pest control to reduce predation pressure, potentially enhancing the quality of habitat for the dunnart within the Offset Property.

Prickly acacia poses a major threat by outcompeting native grasses and altering the structural habitat features essential for the dunnart's shelter and foraging. Controlling this invasive species would help restore native grasslands, improving habitat quality and increasing the availability of suitable shelter.

Although heavy grazing is not considered a major issue across the entire Offset Property, grazing pressure varies, with some areas experiencing heavier impacts. In these more heavily grazed areas, habitat degradation can occur through reduced grass cover, limited shelter availability, and soil compaction. Soil compactions inhibit the formation of natural cracks, which are critical for the dunnart's shelter. Managing grazing intensity in these areas will help to maintain habitat quality and support the species' habitat requirements.

Additionally, *Astrebla* grassland communities, which dominate the region, do not require fire for regeneration. Effective fire management is essential to protect these communities, as uncontrolled fires—particularly during periods of low soil moisture—could significantly impact habitat suitability. Preventing fire encroachment into *Astrebla* grasslands is therefore a key management priority for the conservation of the Julia Creek dunnart.

With targeted management actions, including the control of invasive species like prickly acacia and feral cats, as well as strategic grazing practices, the habitat quality within the Offset Property could be significantly improved, creating a more supportive environment for the Julia Creek dunnart (DCCEEW 2024).



Legend

- Local Connector Road
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Julia Creek Dunnart Confidential WildNet Record
- Julia Creek Dunnart Habitat
- Cadastre

CopperString 2032 Project

- Stage 2

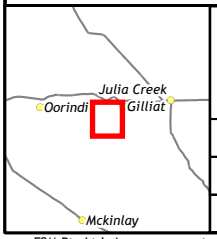
N

Scale 1:90,000 (A4)

0 5

Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 7: JULIA CREEK DUNNART HABITAT WITHIN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.1.3.4 Painted honeyeater (*Grantiella picta*)

5.1.3.4.1 Likelihood of occurrence and habitat

The desktop assessment identified historical records of the painted honeyeater near the Offset Property, with the closest record located approximately 21.5 km northwest in 2003. Two additional records within 50 km of the Offset Property date between 2003 and 2008 (ALA, 2024). The species relies on mistletoe-bearing trees, particularly within eucalypt and acacia woodlands (DAWE, 2021). Field surveys confirmed the presence of *Eucalyptus coolabah* along drainage lines associated with the Gilliat River and Gidya Creek, where mistletoe (*Amyema sp.*), the honeyeater's primary food source, was recorded in varying densities, including five observations within Gidya Creek. Areas dominated by *Acacia cambagei* low woodlands may also provide habitat, though mistletoe was less abundant, offering only intermittent foraging opportunities.

Painted honeyeaters are highly nomadic, moving seasonally in response to mistletoe flowering and fruiting, which varies across the landscape (Rowland, 2012). The field survey, conducted in early summer when the species is most detectable due to its vocal and conspicuous behaviour, did not record any painted honeyeaters within the Offset Property. However, given their transient nature, this absence does not confirm that the species is not present but rather highlights the difficulty of detecting individuals, even during peak survey periods (Rowland, 2012).

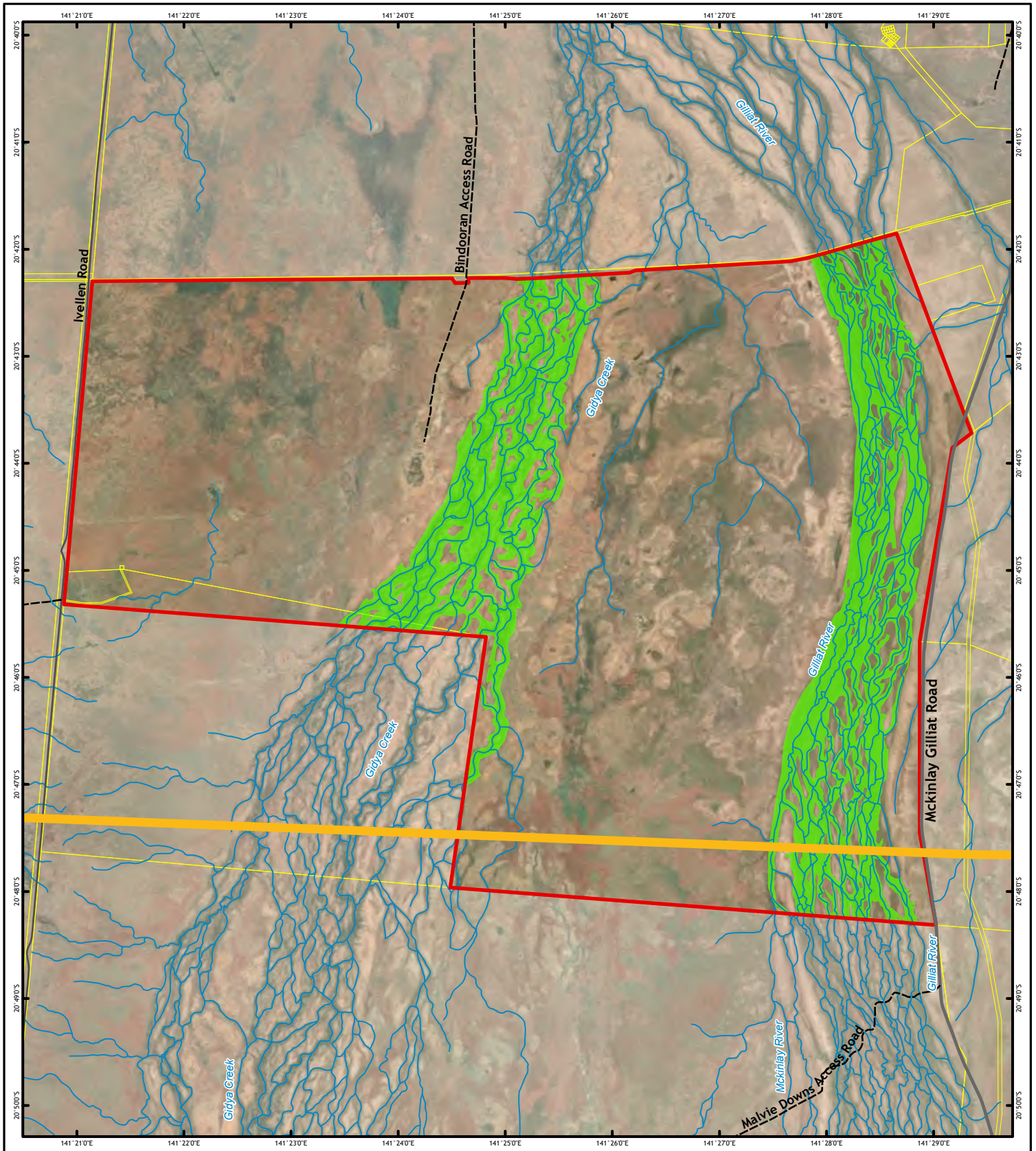
A total of 2,230.72 ha of suitable habitat for the painted honeyeater was identified within the Offset Property (Figure 8). Habitat was primarily associated with *Eucalyptus coolabah* dominated woodland fringing ephemeral watercourses (RE 4.3.4f), where mistletoe species were present. Additional habitat was mapped within *Acacia cambagei* low open forest to low woodland on fine-textured alluvial plains (RE 2.3.7), which may serve as foraging or dispersal corridors between more suitable foraging areas.

5.1.3.4.2 Threatening processes

The primary threats to the painted honeyeater include habitat degradation caused by grazing, which can reduce tree recruitment and diminish mistletoe resources. While grazing pressure varies across the Offset Property, it is particularly heavy near water sources, where key habitat trees are located. In these areas, increased grazing pressure can further degrade habitat quality by limiting tree regeneration and reducing the availability of mistletoe, the species' primary food source. Managing grazing intensity in these critical habitat areas would help support the species' foraging and breeding requirements.

Another potential threat is competition from aggressive bird species, such as the noisy miner, which can outcompete the painted honeyeater for resources (DCCEEW, 2024).

To enhance habitat suitability for the painted honeyeater, management of grazing will be undertaken to prevent further degradation and assist in improving habitat quality.



Legend

- Local Connector Road
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Painted Honeyeater Habitat
- Cadastre

CopperString 2032 Project

- Stage 2

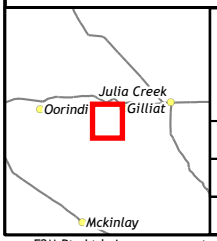
N

Scale 1:90,000 (A4)

0 5

Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 8: PAINTED HONEYEATER HABITAT WITHIN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.1.3.5 Plains death adder (*Acanthophis hawkei*)

5.1.3.5.1 Likelihood of occurrence and habitat

While the species has not been previously recorded within the desktop search extent, significant uncertainty exists regarding the species' current distribution due to its cryptic nature and the lack of targeted survey efforts. While few contemporary or historical records of the plains death adder exist in the wider landscape surrounding the Offset Property, the closest publicly available record is 88 km west with no date, while the nearest dated record is 404 km northwest from 1978 (ALA, 2025).

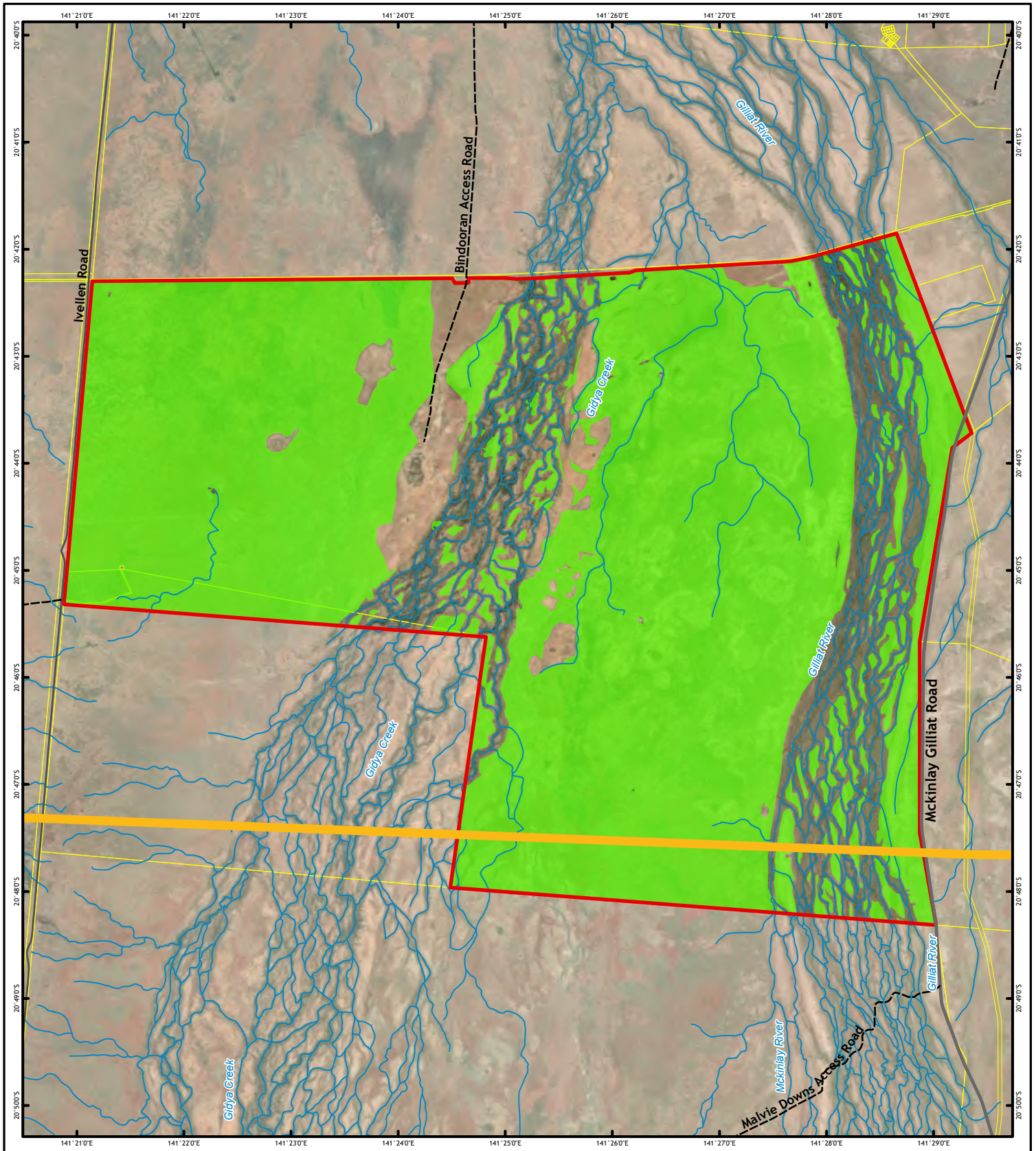
The plains death adder relies on cracking clay soils and floodplains for ambush foraging, typically within sparsely vegetated or lightly timbered areas. The Offset Property contains habitat in the form of riverine floodplains with cracking clay soils, particularly along drainage lines (DCCEEW, 2024). Sparsely timbered areas of riverine floodplain with cracking clay soil along Gilliat River and Gidya Creek within the Offset Property may provide habitat for this species.

A total of 9,174.66 ha of habitat for the plains death adder was observed within the Offset Property (Figure 9). Habitat was observed in association with floodplains and clay plains comprising tussock grasslands scattered suitable microhabitat. Soil cracks were of moderate to deep depth and abundance throughout the Offset Property. These areas of habitat were in association with remnant REs 2.3.3, 2.3.4, 2.4.2a, 4.3.15, 4.9.1c. Other areas of habitat within the Offset Property also include shallow Gilgai microrelief and seasonal swamps as well as alluvial plains. These minor areas were associated with remnant REs 2.3.7 and 4.3.12.

5.1.3.5.2 Threatening processes

The primary threat to the plains death adder across northern Australia is poisoning by cane toads, which are spreading and can fatally poison the species (SEWPaC, 2011c). The extent and abundance of cane toads within the Offset Property is unclear; however, one isolated high-density population was identified in Gidya Creek during surveys. If present in high numbers, cane toads could pose a significant threat to local biodiversity. Feral cats, which occur in high numbers within the Offset Property, also pose a predation risk to the plain's death adder. Additional threats include habitat degradation caused by grazing and inappropriate fire regimes, which can reduce ground cover and prey availability. Grazing impacts on the Offset Property may reduce prey species abundance and, in turn, limit the suitability of habitat for the plains death adder (DCCEEW, 2024).

To enhance habitat quality for the plains death adder within the Offset Property, a combination of targeted management strategies could be implemented. This includes the control of feral cats to reduce the predation on the species, strategic grazing management to maintain ground cover and preserve the availability of prey, and monitoring of fuel loads to reduce the risk of unplanned fire. These actions would improve habitat condition, increase ecosystem resilience, and support the long-term viability of the species within the Offset Property.



Legend

- Local Connector Road
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Plains Death Adder Habitat
- Cadastre

CopperString 2032 Project

- Stage 2

N

Scale 1:90,000 (A4)

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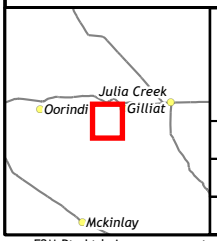
Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 9: PLAINS DEATH ADDER HABITAT WITHIN THE OFFSET PROPERTY

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.2 Offset acquittal

Within the Offset Property, only a portion is required to offset the impacts associated with Stage 1 of the Project, this area is herein referred to as the Offset Area. Areas of habitat which are in excess of the Stage 1 offset requirements will be utilised for Stages 2, 3 and 4 of the Project where possible (EPBC 2019/8416, 2024/10025 and 2024/10065 respectively).

The Offset Area was assessed against the OAG for the each of the Target MNES. Attributes associated with the Offset Area and the Stage 1 Construction Zone start quality (site condition, site context and species habitat index) have been calculated using the methodology outlined in the Habitat Quality Guide.

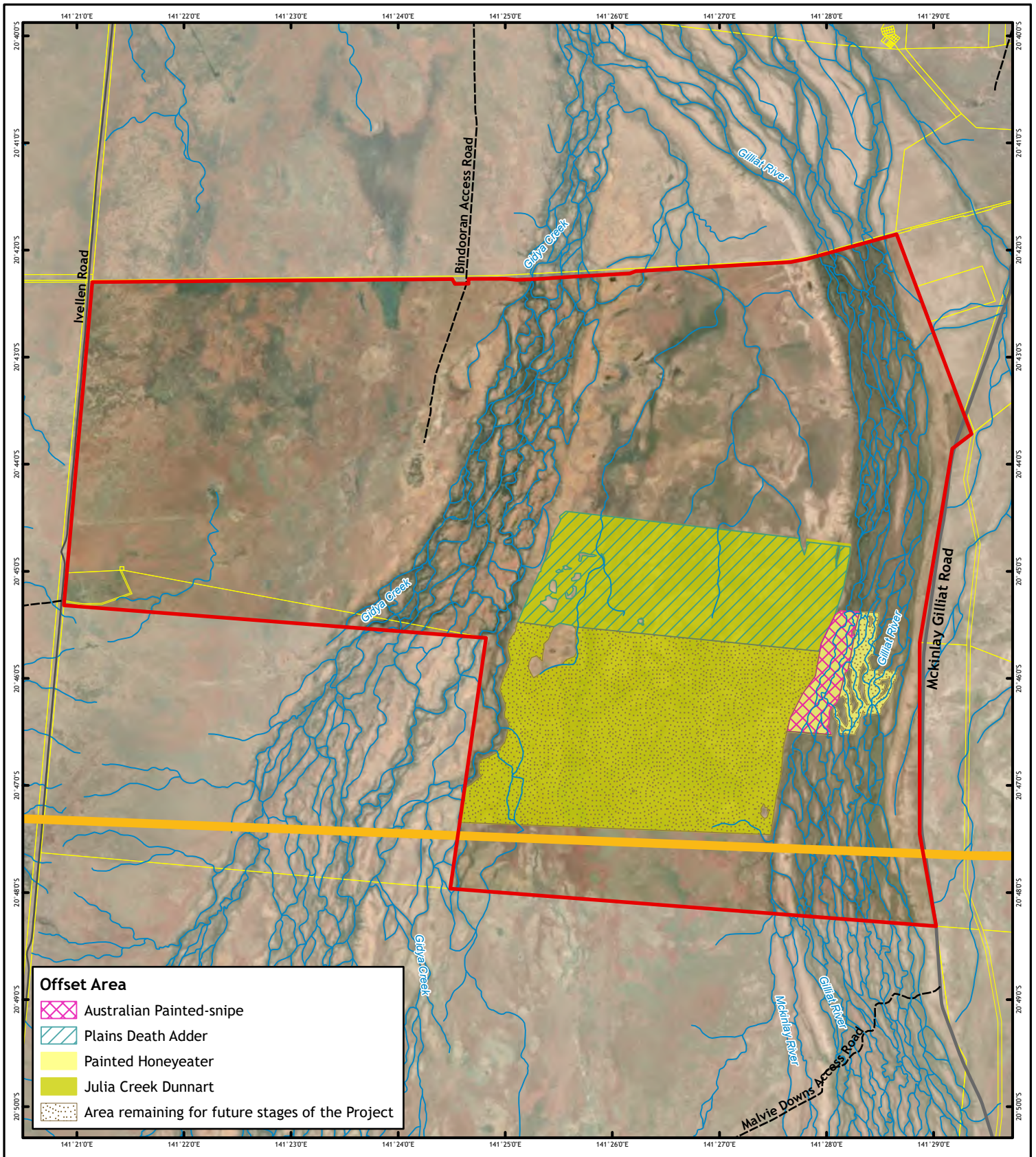
Detailed habitat quality calculations for the Stage 1 Construction Zone are presented in the *Habitat Quality Report – Impacts for CopperString Alignment Stage 1* (Base, 2024) in Appendix A. Detailed habitat quality calculations for the Offset Area, including baseline, "with offset" and "without offset" are presented in Appendix E.

The following sections provide a summary for each relevant MNES in accordance with the Commonwealth OAG. Detailed assessment of the OAG and justification of each of the inputs for each MNES is provided in Appendix G with OAG outputs presented in Appendix H.

Table 13 summarises the Offset Area required for each of the Target MNES to acquit the Stage 1 impacts as well as the area within the Offset Area that is in excess of the Stage 1 offset requirements, to be utilised for future stages of the Project (depicted in Figure 10).

Table 13: MNES OAG assessments

Target MNES	Offset Area required (ha)	% acquittal	Area remaining within the Offset Area for future stages (ha)
Australian painted snipe (*Rostratula australis*)	110.2	100	89.67
Julia Creek dunnart (*Sminthopsis douglasi*)	2,491.1	100	0
Painted honeyeater (*Grantiella picta*)	199.9	100	0
Plains death adder (*Acanthophis hawkei*)	914	100	1,573.79



Legend

- Local Connector Road
- Street/Local - only provides property access
- Private or Restricted Road
- Watercourse
- Offset Property
- Cadastre
- **CopperString 2032 Project**
- Stage 2

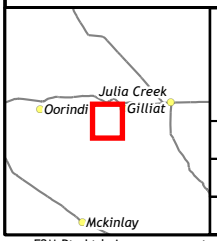
N

Scale 1:90,000 (A4)

0 5

Kilometres

Coordinate System: GDA2020



Notes:
Aerial Imagery: © ESRI 2025
Cadastre: © DNRMMRRD 2024
Ordered Drainage: © DNRMMRRD 2024
Road: © DNRMMRRD 2024

Rev	Description	Drawn	Approved	Date
0	Issued for Use	PR	JG	17/03/2025
B	Issued for Review	PR	JG	14/03/2025

FIGURE 10: OFFSET AREA OVERVIEW

CopperString 2032: Stage 1 Offset Area Management Plan
Powerlink

Map Number	Job Number	Rev
1 of 1	QEJ24001	0

5.2.1 Australian painted snipe OAG assessment

A total of 22.6 ha of Australian painted snipe habitat will be impacted by Stage 1 of the Project. A total of 110.2 ha will be secured as part of the Offset Area. The total Stage 1 offset acquittal is summarised in Table 14.

The OAG calculations and outputs relating to Australian painted snipe are presented in Appendix G and Appendix H respectively.

Table 14. Australian painted snipe OAG summary

Attribute	Value
Impact Area	
Stage 1 Construction Zone	22.6 ha
Quality of Stage 1 Construction Zone	4
Offset required	
Offset Area	110.2 ha
Quality of Offset Area	3
Future quality without offset	3
Future quality with offset	4
Confidence in result – future quality (%)	85%
Risk of loss without offset (%)	0.167%
Risk of loss with offset (%)	0%
Confidence in result – risk of loss (%)	85%
Time over which loss is averted (years)	20
Time until ecological benefit (years)	20
% of impact offset	**100%**

5.2.2 Julia Creek dunnart OAG assessment

A total of 410.3 ha of Julia Creek dunnart habitat will be impacted by Stage 1 of the Project. A total of 2,491 ha will be secured as part of the Offset Area. The total Stage 1 offset acquittal is summarised in Table 15.

The OAG calculations and outputs relating to Julia Creek dunnart are presented in Appendix G and Appendix H respectively.

Table 15. Julia Creek dunnart OAG summary

Attribute	Value
Impact Area	
Stage 1 Construction Zone	410.3 ha
Quality of Stage 1 Construction Zone	5
Offset required	
Offset Area	2,491 ha
Quality of Offset Area	5
Future quality without offset	5
Future quality with offset	6
Confidence in result – future quality (%)	85%
Risk of loss without offset (%)	0.167%
Risk of loss with offset (%)	0%
Confidence in result – risk of loss (%)	85%
Time over which loss is averted (years)	20
Time until ecological benefit (years)	20
% of impact offset	**100%**

5.2.3 Painted honeyeater OAG assessment

A total of 81.8 ha of painted honeyeater habitat will be impacted by Stage 1 of the Project. A total of 199.9 ha will be secured as part of the Offset Area. The total Stage 1 offset acquittal is summarised in Table 16.

The OAG calculations and outputs relating to painted honeyeater are presented in Appendix G and Appendix H respectively.

Table 16. Painted honeyeater OAG summary

Attribute	Value
Impact Area	
Stage 1 Construction Zone	81.8 ha
Quality of Stage 1 Construction Zone	4
Offset required	
Offset Area	199.9 ha
Quality of Offset Area	3
Future quality without offset	3
Future quality with offset	5
Confidence in result – future quality (%)	85%
Risk of loss without offset (%)	0.167%
Risk of loss with offset (%)	0%
Confidence in result – risk of loss (%)	85%
Time over which loss is averted (years)	20
Time until ecological benefit (years)	20
% of impact offset	**100%**

5.2.4 Plains death adder OAG assessment

A total of 374.3 ha of plains death adder will be impacted by Stage 1 of the Project. A total of 914 ha will be secured as part of the Offset Area. The total Stage 1 offset acquittal is summarised in Table 17.

The OAG calculations and outputs relating to plains death adder are presented in Appendix G and Appendix H respectively.

Table 17. Plains death adder OAG summary

Attribute	Value
Impact Area	
Stage 1 Construction Zone	374.3 ha
Quality of Stage 1 Construction Zone	4
Offset required	
Offset Area	914
Quality of Offset Area	3
Future quality without offset	3
Future quality with offset	5
Confidence in result – future quality (%)	85%
Risk of loss without offset (%)	0.167%
Risk of loss with offset (%)	0%
Confidence in result – risk of loss (%)	85%
Time over which loss is averted (years)	20
Time until ecological benefit (years)	20
% of impact offset	**100%**

5.2.5 Compliance with offset principles

The EOP and Environmental Management Plan Guidelines provides guidance on the identification and assessment of suitable offsets to ensure that projects approved under the EPBC Act are consistent, transparent and achieve high quality environmental outcomes. The EOP outlines offset principles that govern the selection and nature of an offset as well as the government assessment and decision-making. A summary of the compliance with these principles for the Project is outlined in Table 18.

Table 18. Compliance with EPBC Act EOP principles

Offset Principles	Compliance
1. *Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.*	The Offset Area will acquit at least 100% of the offset requirements for the Target MNES for Stage 1, based on the results of the application of the OAG (Appendix H). Securement and management of the Offset Area will result in a net conservation gain and overall improvement in the viability of those values impacted by the Project. Management strategies are detailed within Section 6.4 of this OMP to ensure that conservation outcomes for the Target MNES are achieved, based on the recovery actions developed for the species. Threatening processes within the Offset Area will be mitigated and the habitat quality will be improved to provide for viable populations of the species. As such, the Offset Area will deliver a conservation outcome that will maintain and improve the viability of the Target MNES.
2. Suitable offsets must be built around direct offsets but may include other compensatory measures.	The Offset Area will provide a direct (land-based) offset and measurable conservation gain mitigating 100% of the impacts associated with Stage 1 of the Project for the Target MNES. The management of the Offset Area, detailed within Section 6.4 of this OMP, addresses the completion criteria and interim performance targets for each of the Target MNES.
3. *Suitable offsets be in proportion to the level of statutory protection that applies to the protected matter.*	The Offset Area will provide a direct (land-based) offset and measurable conservation gain of 100% of the impacts associated with the Project for the Target MNES. The suitable offset has been developed using the OAG which incorporates the level of statutory protection of each protected matter required to be offset.
4. *Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter.*	The Offset Area will provide a direct (land-based) offset and measurable conservation gain of more than 100% of the impacts associated with the Project for the Target MNES. The suitable offset has been developed using the OAG which uses the area of impact and the quality of habitat to assess the total quantum of impact to the Target MNES. As such, the Offset Area is of a suitable size and scale that is proportionate to the unavoidable impacts on the Target MNES.
5. *Suitable offsets must effectively account for and manage the risks of the offset not succeeding.*	Potential risks to the success of the Offset Area are detailed within Section 6.7 and Appendix I of this OMP. Additional measures and corrective actions to be implemented for any potential risks are also identified. In addition to this, a monitoring and reporting schedule is provided within Sections 7 and 8 of this OMP to assess the condition of the offset at regular intervals and associated performance criteria that may require implementation of changes/revision of the management strategies detailed.

Offset Principles	Compliance
6. *Suitable offsets must be additional to what is already required, determined by law or planning regulations, agreed to under other schemes or programs.*	The Offset Area does not have any existing formal conservation arrangements in place or existing requirements under other approvals that require the landowner to undertake conservation works. Current permitted land use across the Offset Area includes cattle grazing.

7. *Suitable offsets must be efficient, timely, transparent, scientifically robust and reasonable.*	Direct (land-based) offsets have been selected as the primary offset method for this Project and is considered a robust and widely accepted approach, with a high degree of confidence. Powerlink will undertake the following timing for this offset:
	• Prior to the commencement of the action, secure a legal agreement with the landowner to protect habitat within the Offset Area, as described within this OMP, including at least:
	  • 110.2 ha of Australian painted snipe habitat
	  • 2,491 ha of habitat for the Julia Creek dunnart
	  • 199.9 ha of painted honeyeater habitat; and
	  • 914 ha of plains death adder habitat.
	• Legally secure the Offset Area through the below mechanisms within 24 months of the approval of the OMP.
	This OMP will also be implemented for the duration of the approval to improve habitat for the Target MNES to the associated attribute targets prescribed within this document. Based on the OAG, ecological benefit will be achieved for the Target MNES within 20 years. With the exemption of force majeure events occurring, this OMP will ensure the efficient and effective delivery of a conservation outcome in a timely manner, including associated performance criteria and corrective measures.

8. *Suitable offsets must have transparent governance arrangements, including being able to be readily measured, monitored, audited and enforced.*	The legal mechanism of securing the offset is as a covenant pursuant to the *Land Title Act 1994* (Qld), DCCEEW will be provided the opportunity to review and approve the terms of the covenant. This OMP outlines associated monitoring and reporting schedule requirements over the duration of the offset.

6 Offset Management Plan

6.1 Objectives and outcomes

The overall management objective of the Offset Area is to reduce threatening processes and increase the habitat quality of the area for the Target MNES values to a level at which it provides greater conservation value than its current form within the Stage 1 Construction Zone. More specifically, the desired conservation outcome is to protect and restore habitat in order to increase habitat extent, resources and patch connectivity so that viable populations of the Target MNES can be sustained. This is to be done by achieving the following condition values by year 20, with interim performance targets as outlined in Table 30.

6.2 Offset security

The Offset Area will be legally secured into perpetuity in accordance with the EPBC Act EOP. The legal mechanism of securing the offset is as a covenant pursuant to the *Land Title Act 1994* (Qld), DCCEEW will be provided the opportunity to review and approve the terms of the covenant. Legal securement of the Offset Area will occur within 24 months from approval of the OMP and will remain in force for at least the duration of the approval. This OMP will be attached to the legal mechanism used to legally secure the Offset Area.

The declaration of the Offset Area will cease once the completion criteria have been achieved and the Project or authorised activities have ended.

6.3 Offset Area restrictions

The Offset Area is to be managed for conservation purposes and is subject to land use restrictions to ensure the delivery of an improved environmental outcome for Target MNES. A summary of these restrictions is summarised in Table 19.

Table 19. Offset Area restrictions

Restrictions	Details
Vegetation clearing is prohibited unless in accordance with an exemption(s) under the VM Act and EPBC Act.	Vegetation clearing within the Offset Area is restricted to: • That necessary for the removal of non-native weeds or pests identified under the Queensland *Biosecurity Act 2014* (Biosecurity Act). • To ensure public safety. • For construction and maintenance of tracks, fence lines or firebreak. • That necessary to establish and maintain access to monitoring locations; and • Clearing for new fencing will be on the outside of the Offset Area boundary.

Livestock grazing	• Grazing of livestock (cattle) will only be implemented where necessary as a management tool for fuel load reduction; and • Grazing will only be implemented during the dry season, when biomass exceeds 1,500 kg/ha and will be carefully managed to ensure ground cover remains above a 1,000 kg/ha minimum threshold to prevent habitat degradation.
Fire	Fire (apart from force majeure events and prescribed, low intensity burns for asset protection purposes) is to be excluded from the Offset Area.

6.4 Offset management strategies

A range of offset management strategies have been developed to mitigate potential risks and ensure offset management objectives and final completion criteria are achieved. These strategies include:

- livestock grazing management (including records of grazing times and periods)
- natural regeneration of vegetation
- weed management
- pest control; and
- fire risk management.

Monitoring and reporting will also be undertaken throughout the life of the Offset to enable the implementation of adaptive management strategies, where required. Monitoring and reporting requirements for the offset are described in more detail in Section 7 below.

The proposed management strategies have been developed in line with conservation actions outlined in relevant conservation advice for the Target MNES species prepared by the Commonwealth Government, including:

- *Approved Conservation Advice for Rostratula australis (Australian painted snipe)* (SEWPaC, 2013)
- *National Recovery Plan for the Australian Painted Snipe (Rostratula australis)* (DCCEEW, 2022)
- Conservation Advice *Sminthopsis douglasi* (Julia Creek dunnart) (Threatened Species Scientific Committee (TSSC), 2016)
- *National Recovery Plan for the Julia Creek dunnart (Sminthopsis douglasi)* (Department of Environment and Resource Management 2009)
- *Targeted species survey guidelines Julia Creek dunnart* (*Sminthopsis douglasi)* (Venz et al., 2024)
- Conservation Advice *Grantiella picta* (painted honeyeater) (DotE, 2015)
- *National Recovery Plan for the Painted Honeyeater (Grantiella picta)* (DAWE, 2021); and
- Approved Conservation Advice for *Acanthophis hawkei* (plains death adder) (SEWPaC, 2011a).

A summary of the conservation actions and the proposed management strategies within the Offset Area for each Target MNES species is detailed in Table 20 to Table 23. Specific performance criteria for each management strategy have also been developed to provide a measurable target of the offset management objectives, overall desired conservation outcomes and final completion criteria for the Offset Area.

Table 20. Offset management strategy compliance with the recovery plan for the Australian painted snipe

Conservation action	Livestock management	Natural regeneration	Weed management	Pest control	Fire management
Manage and protect known Australian painted snipe habitat at the landscape scale.	✓	✓	✓	-	✓
Develop and apply techniques to measure changes in population trajectory in order to measure the success of recovery actions.	✓	✓	✓	✓	✓
Reduce, or eliminate threats at breeding and non-breeding habitats.	✓	✓	✓	✓	✓
Undertake research to improve knowledge of the habitat requirements, biology and behaviour of Australian painted snipe.	-	-	-	-	-
Engage community stakeholders to improve awareness of the conservation of Australian painted snipe.	-	-	-	-	-
Coordinate, review and report on recovery progress.	✓	✓	✓	✓	✓

Table 21. Offset management strategy compliance with recovery plan for the Julia Creek dunnart

Conservation action	Livestock management	Natural regeneration	Weed management	Pest control	Fire management
To secure and enhance the status of Julia Creek dunnart in the wild through an on-ground conservation management program that targets known threats and an integrated program of investigations during the life of this plan	✓	✓	✓	✓	✓
To secure protection of suitable habitat and populations on non-reserved lands	The Offset Area will be legally secured.				
To reduce the impact of threatening processes on Julia Creek dunnart populations by maintaining and/or implementing effective threat abatement programs	✓	-	✓	✓	✓
To increase knowledge of Julia Creek dunnart population dynamics, threats and ecology and use acquired information to guide future management	✓	✓	✓	✓	✓
Promote awareness of Julia Creek dunnart and obtain support for the recovery program	-	-	-	-	-
Establish a recovery team to manage the recovery program	-	-	-	-	-

Table 22. Offset management strategy compliance with recovery plan for the painted honeyeater

Conservation action	Livestock management	Natural regeneration	Weed management	Pest control	Fire management
Protect, manage and restore painted honeyeater breeding and foraging habitats at the local, regional and landscape scales	✓	✓	✓	✓	✓
Monitor, reduce and manage threats and sources of mortality	✓	✓	✓	✓	✓
Develop and apply techniques to measure changes in population trajectory in order to measure the success of recovery actions	✓	✓	✓	✓	✓
Improve understanding of use at a landscape scale in order to better target protection and restoration measures	-	-	-	-	-
Engage local communities and stakeholders in painted honeyeater conservation	-	-	-	-	-
Coordinate, review and report on recovery progress	-	-	-	-	-

Table 23. Offset management strategy compliance with the conservation advice for the plains death adder

Conservation action	Livestock management	Natural regeneration	Weed management	Pest control	Fire management
Further investigate the impact of the cane toad on the plains death adder through surveys and monitoring, both prior to and following the arrival of cane toads in an area	-	-	-	✓	
Undertake further studies to determine the exact distribution of the species	-	-	-	-	-
Use DNA marker analysis to identify the species to allow differentiation between the plains death adder and its close relative *Acanthophis praelongus* (northern death adder) in order to determine the species' distribution more precisely	-	-	-	-	-
Identify optimal fire regime for the species	-	-	-	-	✓
Investigate the possibility of setting up a captive breeding project	-	-	-	-	-
Investigate the risk of overgrazing to the species as a result of the practice of the proliferation of artificial watering points on land in which the species is known to occur and establish appropriate management responses as necessary	✓	-	-	-	-

6.4.1 Natural regeneration

Natural regeneration is considered the most suitable rehabilitation approach, due to the extent of remnant vegetation within the Offset Area. Natural regeneration is most suitable in areas containing mature vegetation, as natural recruitment requires the presence of a viable seed bank. Provided that the vegetation contains species from each stratum, this method is best for restoring an area to its undisturbed state. Natural, or passive regeneration, in conjunction with other management measures (i.e. weed management, grazing reduction and fencing etc.), will utilise existing vegetation and soil seed bank to promote rehabilitation through natural processes. Over the duration of the offset, the existing native vegetation will assist in the re-introduction of native species to areas previously occupied by environmental weeds.

Management actions, rationale and the performance criteria for natural regeneration across the Offset Area are summarised in Table 24.

Baseline habitat quality assessments have been undertaken as per Section 4.2, interim performance targets for years 5,10 & 15 have been established.

Where natural regeneration is not reaching the interim performance targets, or habitat quality scores have reduced to previous monitoring results, an investigation into possible causes for a decline will be undertaken (within three months of the monitoring event). A suitably qualified professional will be consulted to inform the development of scientifically robust management actions and possible corrective actions (e.g. assisted regeneration) to achieve proposed performance criteria and associated interim performance targets/ completion criteria.

Table 24. Summary of natural regeneration

Management action	Rationale	Performance criteria	Timing	Responsibility (i.e. who will carry out the action)	Triggers/ corrective actions
Natural regeneration.	Natural regeneration will provide an increase in species habitat availability, particularly across non-remnant areas.	Continued improvement in baseline site condition and foraging/shelter attributes associated with habitat quality scores, including demonstrated evidence of recruitment in all community strata (where appropriate (i.e. woodland REs only), as well as maintenance or improvement of cover and composition of native species over the duration of the offset. Natural regeneration is expected to lead to continued improvement of site condition attributes, as outlined in Table 30.	For the duration of the offset.	Suitably qualified professional.	Triggers and corrective actions will be determined based on on-ground observations. Corrective actions may comprise implementing different management methods (weed control) or assisted regeneration (as specified by a suitability qualified professional).

6.4.2 Weed management

Weed management will be undertaken within the Offset Area and target environmental weeds, including:

- Weeds of National Significances (WoNS) (Centre for Invasive Species Solutions, 2024).
- Species listed as either a prohibited matter under Schedule 1 of the Queensland Biosecurity Act, or a restricted matter under Schedule 2 of the Biosecurity Act.
- Locally declared weeds identified under the McKinlay Shire Council *North West Queensland Regional Biosecurity Plan 2022 – 2027* (Southern Gulf NRM, 2022).

Six non-native species were recorded within the Offset Area. Of these, two species were identified as WoNS and restricted matter under the Queensland Biosecurity Act, namely parkinsonia (*Parkinsonia aculeata*) and prickly acacia (*Vachellia nilotica*). Prickly acacia was widespread throughout the Offset Area, a common pattern observed in this region. The Category 3 restricted species, parkinsonia (*Parkinsonia aculeata*) and introduced *Xanthium occidentale*, was also found in high densities, but in relatively isolated patches. Encroachment of prickly acacia along with other non-native woody weeds, such as mimosa bush (*Vachellia farnesiana*) which was recorded within the Offset Area, pose a potential threat to target species, particularly Julia Creek dunnart and plains death adder, where dense infestations can modify the abundance, cover and composition within grassland communities, shading and out-competing native grasses and forbs.

The management of these pest flora species will assist in improving the ecological integrity of the Offset Area. Targeted control measures will focus on reducing the dominance of parkinsonia and prickly acacia, which are particularly aggressive invaders. This will not only improve the habitat for local flora and fauna but also increase the suitability of the area as an offset for the Target MNES species.

Weed control will be carried out using practical, site-appropriate methods, including mechanical and chemical treatments where required. Where feasible, manual removal will be preferred to minimise herbicide overspray and runoff, particularly in sensitive areas. Mechanical control will only be used in areas where soil stability allows, ensuring effective weed management without increasing erosion risk.

Chemical control will only be undertaken by a suitably trained person (i.e. Agriculture Chemical Distribution Control certified) in accordance with the Material Safety Data Sheet. Mixing of chemicals or rinsing of equipment will never occur adjacent to water bodies. Detailed methodology for weed control will be informed by best practice standards, such as those outlined by the Queensland Department of Primary Industries (DPI) and associated weed profiles (refer to https://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/plants-weeds).

Weed monitoring will occur annually for the first five years, then every five years until year 20. This will be used to guide management/control requirements. An overview of the monitoring requirements for pest flora can be found in Table 32.

Management actions, rationale and the performance criteria for weed management across the Offset Area are summarised in Table 25.

Table 25. Summary of weed management

Management action	Rationale	Performance criteria	Timing	Responsibility (i.e. who will carry out the action)	Triggers / corrective actions
Baseline weed survey and weed management strategy	A detailed baseline survey of weeds is required to revise the initial distribution and type of species present prior to active management. This will inform the weed management strategy to be completed, which will enable the prioritisation of potential hot spots and high-risk species.	• Baseline surveys are completed. • Weed management strategy finalised	Within 12 months of approval of the OMP	Suitably qualified professional.	NA
Weed prevention	Control of weeds is difficult once established / introduced. Prevention of introduction or further spread will increase the success rate of weed management across the Offset Area.	No introduction of new Biosecurity Act weed species.	For the duration of the offset.	Land manager and/or suitably qualified professional.	Increase / introduction of restricted, prohibited or locally declared weed populations from baseline survey or subsequent monitoring events will trigger the implementation of the following corrective actions: • review and evaluation of monitoring results to confirm the issue and inform any necessary additional weed surveys within the Offset Area to identify the extent of the problem. • undertake a review of the weed management strategy and amend, where necessary, to ensure risk is as low as reasonably achievable.
Weed control	Control of weeds will reduce potential threats to Target MNES (Julia Creek dunnart), reduce non-native cover and competition with native species (site condition).	• Active weed control reduces extent of woody weeds (e.g. Parkinsonia aculeata and Vachellia nilotica), reducing Julia Creek dunnart habitat quality; and	For the duration of the offset.	Land manager and/or suitably qualified professional.	

Management action	Rationale	Performance criteria	Timing	Responsibility (i.e. who will carry out the action)	Triggers / corrective actions
		• Achieves a measurable and reasonable improvement of site condition attributes, aligning with interim habitat quality performance targets (refer to Table 30).			• implement corrective actions identified in the weed management strategy review within 3 months of the identified increase or introduction of new weed species, or as specified by suitably qualified person.
Weed Monitoring	Weed monitoring to be undertaken in line with the Weed Management Strategy (to be completed within 12 months of approval of the OMP) to assess the effectiveness of control measures and to prevent the spread of invasive species over time.	• Weed monitoring is conducted in accordance with the Weed Management Strategy.	Annually for the first five years of the offset, then every five years until year 20.	Suitably qualified professional.	NA

6.4.3 Pest management

6.4.3.1 Pest presence

Three invasive fauna species were recorded within the Offset Property, including:

- feral cat (*Felis catus*)
- cane toad (*Rhinella marina*); and
- feral pig (*Sus scrofa*).

Each of these species poses a threat to the ecological balance and habitat quality. Feral cats, for instance, are well-known for their impact on small mammals and birds, pose a direct threat to native fauna such as the Julia Creek dunnart and Australian painted snipe. These predators can significantly reduce populations of small mammals and ground-nesting birds, further exacerbating the challenges faced by these species. Effective control of feral cats is essential to reducing predation pressure and improving survival rates for these MNES species.

Cane toads are an invasive species that can disrupt predator-prey relationships, particularly affecting native predators such as the plains death adder, which may ingest toxic cane toads, leading to fatal outcomes. While dingoes can also influence predator-prey dynamics, their classification as a pest species is dependent on land tenure and management objectives (Biosecurity Act, 2014).

Feral pigs are another threat, particularly due to their rooting behaviour, which disturbs soil structure and plant communities. This activity can damage young seedlings and plant roots, hindering the regeneration of native vegetation. By disrupting the establishment of native plants, pigs reduce the habitat quality for a range of species, including the painted honeyeater, which relies on mistletoe for foraging. The presence of feral pigs can also lead to increased erosion and watercourse degradation, further impacting the ecological integrity of the area.

6.4.3.2 Pest control and monitoring

Given the fluctuating nature of pest abundance relating to variation in environmental conditions and resource availability, pest control requirements will be guided by monitoring results.

6.4.3.2.1 Pest monitoring

Pest monitoring will occur annually for the first five years, then every five years until year 20. This will be used to guide management/control requirements. Pest monitoring will include deployment of a minimum of 10 cameras over a period of 6 days. Results of pest monitoring will be assessed by a suitably qualified professional, to determine the extent of management required. An overview of the monitoring requirements for pest fauna can be found in Table 32.

6.4.3.2.2 Pest management

Control of pest fauna within the Offset Area will align with biosecurity matters identified under the Biosecurity Act. Table 32 summarises the management actions, rationale, and performance criteria for the pest fauna management strategy across the Offset Area.

Vertebrate pests will be managed in accordance with a feral animal control program which will be informed by the baseline pest monitoring. Pest management may include baiting/poisoning, trapping, fencing and shooting, as recommended by the contractor to implement pest management. Use of poison baits will need to consider potential impacts to native fauna.

Detailed information for pest control will be informed by best practice standards, such as those outlined by the Queensland Department of Primary Industries (DPI) and associated weed profiles (refer to https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/land-management/health-pests-weeds-diseases/pests/invasive-animals).

Table 26. Summary of pest control

Management action	Rationale	Performance Criteria	Timing	Responsibility (i.e. who will carry out the action)	Trigger / corrective actions
Initial pest control effort	An initial pest control effort would provide immediate benefits to the Offset Area.	Initial pest control effort results in the in a reduction in pest abundance (i.e. feral cat and pig) within the Offset Area.	Within 12 months of approval of the OMP.	Suitably qualified professional.	NA
Pest monitoring	Given the fluctuating nature of pest abundance relating to variation in environmental conditions and resource availability, pest monitoring will be conducted to determine management/control requirements.	Pest monitoring is conducted in accordance with Section 6.4.3.2.1.	Annually for the first five years of the offset, then every five years until year 20.	Suitably qualified professional.	NA
Pest control	Pest fauna (e.g. cats) pose a threat to Target MNES (i.e. Julia Creek dunnart, while other pest (e.g. feral pigs) can reduce site condition attributes.	• Pest control undertaken based on monitoring results to reduce pest threat. • Achieves a measurable and reasonable improvement of site condition attributes, aligning with interim	Annually for the duration of the offset.	• Land manager; or • Suitably qualified professional	Complete additional pest control if initial control deemed ineffective by suitably qualified professional.

Management action	Rationale	Performance Criteria	Timing	Responsibility (i.e. who will carry out the action)	Trigger / corrective actions
		habitat quality performance targets (refer to Table 30).			
Pest fauna prevention	Control of pest fauna is difficult once established / introduced. Prevention of introduction or proliferation will increase the success rate of pest management across the Offset Area.	No introduction of new pest fauna species.	Throughout the duration of the offset.	• Land manager • Suitably qualified professional	Include additional monitoring and management activities to control new pest, as specified by suitably qualified professional.

6.4.4 Livestock management

6.4.4.1 Grazing

The Offset Area and surrounds are currently utilised for cattle grazing purposes. Inappropriate livestock grazing and trampling can lead to habitat degradation through reduction in ground layer diversity, structure and recruitment, increased in exotic species cover and soil compaction (Chu et al., 2019). At present, stocking rates are not fixed on the property but are rather subject to changes in grass cover and seasonal conditions.

Livestock grazing within the Offset Area will only occur as a management tool. Low intensity livestock grazing is only permitted within the Offset Area during the dry season to reduce fire risk and will be informed by the following biomass metrics. Mitchell grass in good condition is considered to have a dry weight of 1000-1500 kg/ha after accounting for detachment (grass material that is trampled, consumed by insects or from leaf drop) or unpalatable feed (unpalatable species and dead material) (Phelps, 2012). At the end of the dry season, biomass monitoring will be undertaken to inform livestock management decisions. For grassland REs biomass monitoring will be referenced against the Mitchell grass pasture photo standards from Gulf Plains region to inform the pasture biomass metrics (Futurebeef, 2012).

The reduction of livestock grazing will allow the ground layer diversity and structure to recover and species recruitment to increase, which will aid in the natural regeneration of the habitats. Risk of trampling and soil compaction will also be reduced. Livestock exclusion within the Offset Area during the wet season (typically March to April) will be undertaken to allow native species to set seed.

Overgrazing by cattle is considered a threatening process in the Offset Area for the *Astrebla* spp. dominated communities, as well as trampling wetland habitats for Australian painted snipe. Therefore, regular monitoring during periods of controlled grazing (low intensity) will need to be undertaken to ensure the benefits (i.e. reduced fire risk) are not being outweighed by the associated impacts. This will be determined by implementing a minimum biomass threshold (1000kg/ha) which needs to be maintained across the Offset Area.

As part of the reporting process, the effectiveness of management measures will be reviewed, which will include the controlled grazing regimes within the Offset Area. Management actions, rationale and the performance criteria for stock management strategy across the Offset Area are summarised in Table 27.

6.4.4.2 Fencing

Maintenance of existing fence lines is required to control and prevent the numbers of livestock from entering the Offset Area, as well as for the exclusion of larger, vertebrate pests. New and existing fencing will incorporate a barbless bottom wire strand to reduce the risk of injury or entanglement of native fauna, including Julia Creek dunnart, as they move across the landscape.

The Offset Area is also mapped as containing a Flood Hazard Area – Level 1 on the Queensland floodplain assessment overlay. Where fencing crosses watercourses, particularly the braided streams flowing into the Gilliat River and Gidya Creek, regular maintenance will be required after rainfall events.

Table 27. Summary of livestock management

Management action	Rationale	Performance criteria	Timing	Responsibility	Trigger / corrective actions
Maintenance of exterior stock proof fencing	Regular maintenance of exterior stock proof fencing will allow for effective control of livestock grazing.	• Repair of fencing where damage occurs within 30 days. • Bottom strand of exterior fences to be barbless (refer to Section 6.4.4.2).	For the duration of the offset.	Land manager	Upon being notified or becoming aware of an unsecured Offset Area, fence maintenance and repairs to resecure the Offset Area as soon as practicable within one month.
Controlled grazing of livestock for fire management	Reduction of livestock grazing intensity will assist in improving the cover and composition of native species in the ground cover as well as minimise the potential spread of exotic grasses. Grazing will also allow for fire management.	• Grazing will only occur if biomass levels are above 1,500 kg/ha and only if deemed necessary by the land manager and/or suitably qualified professional. • If grazing occurs, a minimum biomass is to be present at the end of the dry season (October) of 1,000 kg/ha.	For the duration of the offset.	Land manager and/or suitably qualified professional.	A decrease in the condition of the Offset Area habitat from baseline surveys and subsequent monitoring is observed due to the grazing regime. This will trigger the following corrective actions: • Livestock removed from Offset Area within two weeks if biomass levels fall below threshold. • Localised removal of livestock where deterioration in habitat quality is identified.

Management action	Rationale	Performance criteria	Timing	Responsibility	Trigger / corrective actions
Exclusion of livestock during the wet season	Exclusion of livestock will enable native groundcover species to flower and set seed, increasing native cover and diversity over time.	• No livestock present within the Offset Area in during the wet season; and • Habitat quality reaches the interim performance targets and completion criteria (refer to Section 6.7).	Throughout the duration of the offset.	Land manager and/or suitably qualified professional.	• Detection of a livestock breach in the exclusion fencing. Upon being notified or becoming aware of livestock within the Offset Area: • Livestock are removed as soon as breach (fencing, etc) is repaired; and • Temporary fencing is established until exterior fences have been repaired.

6.4.5 Fire management

Fire regimes are currently not recommended for use within the Offset Area. Grassland REs (RE 2.3.3 and 2.4.2a) containing grasses and forbs of *Astrebla* spp. dominated communities do not require fire for regeneration. Protection of these REs relies on management of fire in the surrounding country to prevent running fires entering *Astrebl*a spp. communities, particularly at times of low soil moisture. Increased intensity and exposure to fire within these communities can impact the composition and abundance of native grasses and forbs in the ground layer, required for ongoing viability. As such, it is not recommended to perform prescribed burns in the surrounding woodland REs (RE 2.3.17a) to prevent the risk of fire encroachment within grassland communities.

Additionally, conservation advice for some Target MNES species lists inappropriate fire regimes as potential threats. There is evidence suggesting predation pressure can increase on Julia Creek dunnarts following fire (TSSC, 2016). Furthermore, habitat modification due to inappropriate fire regimes is a potential threat to the plains death adder, as large-scale wildfires can reduce ground cover and prey availability for the species (SEWPaC, 2011a).

To control potential wildfire outbreak, fire breaks (including a 10 m buffer) will be established along existing and newly installed fence lines, access tracks, and Project assets (powerlines and towers) for the purposes of asset protection. As outlined in Section 6.4.4, low intensity livestock grazing may also be used in the dry season as a measure to reduce fire risk. The fire management program will also be modified where unplanned bushfire events occur to allow sufficient time for development of woody species and re-seeding of groundcover species.

A summary of fire management strategies is provided in Table 28.

Table 28. Summary of fire management

Management action	Rationale	Performance Criteria	Timing	Responsibility	Trigger / corrective actions
Develop Fire Management Plan	Given the threat high intensity bushfires pose to species habitat, a management plan will be developed to reduce bushfire threat and maintain/improve habitat quality.	A Fire Management Plan is developed by a suitably qualified professional.	Within 12 months of baseline surveys (refer to Section 6.5).	Suitably qualified professional.	NA
Maintenance of fire infrastructure	In the event of a fire, well maintained fire breaks will assist in containing the spread of fire and associated impacts. Well maintained access tracks will allow for efficient access of fire fighting vehicles.	Firebreaks and access tracks are well maintained to a level that provides vehicle access.	For the duration of the offset.	Land Manager.	Routine maintenance detects faults in fire infrastructure (broken fences, overgrown firebreaks, etc). Undertake fence maintenance and repairs to resecure the Offset Area within 3 months of maintenance detection, or as specified by suitably qualified professional.

Management action	Rationale	Performance Criteria	Timing	Responsibility	Trigger / corrective actions
Control of fuel loads	Minimise likelihood of high intensity fires (unplanned) impacting recovery/ regeneration of vegetation.	Fuel loads are maintained to a level that reduces threat of high intensity unplanned fires (i.e. 1,500kg/ha as per Table 27).	For the duration of the offset	Land Manager Suitably qualified professional.	If monitoring results indicate high fire danger due to high fuel loads: • Revise appropriateness of the fire management planning with a suitably qualified professional. • Revise physical fire control structures e.g. firebreaks. • Implement livestock grazing to reduce fuel loads to appropriate levels.

6.5 Timing for implementation

The timing for the implementation of the OMP will commence from the date of the approval of the document. Relevant baseline surveys will be undertaken within 12 months of the commencement of the implementation date to account for wet and dry season surveys (Year 1 baseline as outlined in Table 32). These surveys will inform the location and focus of management actions that will be implemented to improve the condition of the Offset Area.

The management program will commence within 12 months of the completion of the baseline surveys (Year 1). This will allow time for targeted management actions to be developed and for contractors and resources to be acquired to successfully implement the management program.

6.6 Summary of management strategy performance criteria

Table 29 summarises the interim performance criteria for each management strategy outline in Section 6.4. Achievement of these performance criteria will assist in ensuring the specific habitat quality scoring completion criteria specified in Section 4.2 are reached.

Table 29. Summary of performance criteria

Management Measure	Year 1 Performance Criteria	Year 5 Performance Criteria	Year 10 Performance Criteria	Year 15 Performance Criteria	Completion Criteria
Livestock management	Controlled grazing under specific conditions (refer to Table 27).	• All exterior fences are installed or repaired. • Bottom strands of exterior fences are barbless. • Controlled grazing under specific conditions (refer to Table 27). • No breaches in fencing. • Timely repair of fencing where damage occurs. • Achieves habitat quality interim performance targets (refer to Table 30).	• Controlled grazing under specific conditions (refer to Table 27). • No breaches in fencing. • Timely repair of fencing where damage occurs. • Achieves habitat quality interim performance targets (refer to Table 30).	• Controlled grazing under specific conditions (refer to Table 27). • No breaches in fencing. • Timely repair of fencing where damage occurs. • Achieves habitat quality interim performance targets (refer to Table 30).	• Controlled grazing under specific conditions (refer to Table 27). • No breaches in fencing. • Timely repair of fencing where damage occurs. • Achieves habitat quality interim performance targets (refer to Table 30).
Natural regeneration	NA	• Evidence of recruitment in all community strata. • Natural regeneration will lead to continued improvement of site condition attributes, aligning with interim habitat quality	• Continued improvement in baseline site condition attributes associated with Habitat Quality scores. • Aligns with habitat quality interim	• Continued improvement in baseline site condition attributes associated with habitat quality scores. • Aligns with habitat quality interim	• Baseline non-remnant areas provide breeding, foraging and dispersal habitat for the Target MNES. • Aligns with habitat quality interim

Management Measure	Year 1 Performance Criteria	Year 5 Performance Criteria	Year 10 Performance Criteria	Year 15 Performance Criteria	Completion Criteria
		performance targets (refer to Table 30).	performance targets (refer to Table 30).	performance targets (refer to Table 30).	performance targets (refer to Table 30).
Weed management	• Weed monitoring surveys undertaken to monitor weed severity compared to baseline levels. • No introduction of new WoNS and Biosecurity Act weed species.	• Weed control has reduced extent of woody weeds (e.g. *Vachellia nilotica* and *Parkinsonia aculeata*) from baseline levels. • No introduction of new WoNS and Biosecurity Act weed species. • Exotic cover within Habitat Quality monitoring sites exhibits measurable and reasonable improvement from baseline. • Achieves a measurable and reasonable improvement of site condition attributes, aligning with interim habitat quality performance targets (refer to Table 30).	• Weed control has reduced extent of woody weeds (e.g. *Vachellia nilotica* and *Parkinsonia aculeata*) from baseline levels, reducing impediments to fauna movement. • No introduction of new WoNS and Biosecurity Act weed species. • Exotic cover within Habitat Quality monitoring sites exhibits measurable and reasonable improvement from baseline. • Continued measurable and reasonable improvement of site condition attributes, aligning with interim habitat quality	• Weed control has reduced extent of woody weeds (e.g. *Vachellia nilotica* and *Parkinsonia aculeata*) from baseline levels, reducing impediments to fauna movement. • No introduction of new WoNS and Biosecurity Act weed species. • Exotic cover within Habitat Quality monitoring sites exhibits measurable and reasonable improvement from baseline. • Continued measurable and reasonable improvement of site condition attributes, aligning with interim habitat quality	• No net increase in woody weeds from Year 15 levels. • Exotic cover within Habitat Quality monitoring sites exhibits measurable and reasonable improvement from baseline. • Continued measurable and reasonable improvement of site condition attributes, aligning with interim habitat quality performance targets (refer to Table 30).

Management Measure	Year 1 Performance Criteria	Year 5 Performance Criteria	Year 10 Performance Criteria	Year 15 Performance Criteria	Completion Criteria
			performance targets (refer to Table 30).	performance targets (refer to Table 30).	
Pest Management	• No introduction of new pest fauna species. • Pest management undertaken in accordance with feral animal control program.	• No introduction of new pest fauna species. • Reduced pest fauna (i.e. feral cat, pig) relative abundance compared to baseline levels. • Achieves habitat quality interim performance targets (refer to Table 30).	• No introduction of new pest fauna species. • Reduced pest fauna (i.e. feral cat, pig) relative abundance compared to baseline levels. • Achieves habitat quality interim performance targets (refer to Table 30).	• No introduction of new pest fauna species. • Reduced pest fauna (i.e. feral cat, pig) relative abundance compared to baseline levels. • Achieves habitat quality interim performance targets (refer to Table 30).	• No introduction of new pest fauna species. • Reduced pest fauna (i.e. feral cat, pig) relative abundance compared to baseline levels. • Achieves habitat quality interim performance targets (refer to Table 30).
Fire Management	• A fire management plan has been developed. • Firebreaks and access tracks are maintained to a level that provides vehicle access and asset protection.	• Firebreaks and access tracks are maintained to a level that provides vehicle access. • Fuel loads are maintained to a level that reduces threat of high intensity unplanned fires. • Prescribed burns occur in accordance with Fire	• Firebreaks and access tracks are maintained to a level that provides vehicle access. • Fuel loads are maintained to a level that reduces threat of high intensity unplanned fires. • Prescribed burns occur in accordance with Fire	• Firebreaks and access tracks are maintained to a level that provides vehicle access. • Fuel loads are maintained to a level that reduces threat of high intensity unplanned fires. • Prescribed burns occur in accordance with Fire	• Firebreaks and access tracks are maintained to a level that provides vehicle access. • Fuel loads are maintained to a level that reduces threat of high intensity unplanned fires. •

Management Measure	Year 1 Performance Criteria	Year 5 Performance Criteria	Year 10 Performance Criteria	Year 15 Performance Criteria	Completion Criteria
		Management Plan for asset protection only).	Management Plan for asset protection only).	Management Plan for asset protection only).	

6.7 Completion criteria and interim performance targets

To determine whether achievable ecological benefits have been achieved for each MNES value, specific completion criteria have been identified based on the habitat quality improvements detailed in Section 5.2 and Appendix E.

Indicative interim performance targets to assess the effectiveness of measures in improving habitat quality over monitoring events and to ensure completion criteria are reached for each MNES provided in Table 30. While compliance will not be measured or reported on these interim performance targets, they do provide a means to compare monitoring results and track progress. The habitat quality improvements are based on the targeted areas of improvement within the Offset Area and the estimated time for improvement to occur. The removal of threats (e.g. livestock, weeds, pest animals) is expected to have an almost immediate influence on the habitat quality; while improvements associated with non-native cover and ground cover, recruitment, and species richness will be recognised over a longer timeframe.

Should the completion criteria not be achieved within 20 years, the frequency of ongoing management will be determined by a suitably qualified professional.

Table 30. Interim performance targets and final completion criteria

Criteria	Baseline Habitat Quality Score (/10)	Interim performance targets			Completion score
		Year 5	Year 10	Year 15	
Australian painted snipe					
Habitat quality Score	3	3	3	4	4
Julia Creek dunnart					
Habitat quality Score	5	5	5	6	6
Painted honeyeater					
Habitat quality Score	3	3	4	5	5
Plains death adder					
Habitat quality Score	3	3	4	5	5

6.8 Risk assessment

A risk assessment was undertaken to assess the known and potential risks to achieving the ecological benefit. Table 31 summarises the key risks associated with the proposed management actions.

A detailed risk assessment is provided in Appendix I.

Table 31. Risks associated with management actions

Risk Type	Risks	Risk description	Risk to conservation outcome
Standard	Fence failure and ineffective livestock management	Failure of fencing due to structural issues, unauthorised access by people, vehicles, or pests, or livestock intrusion leading to grazing and trampling. This may result in soil compaction, damage to groundcover, and disruption of habitat quality across the Offset Area.	Potential to: • Reduce habitat quality scores within the Offset Area, preventing achievement of performance targets. • Lead to the introduction and spread of invasive weeds, further degrading habitat. • Cause unauthorized vegetation clearing and habitat disturbance.
	Pest fauna proliferation	Increased pest fauna abundance within the Offset Area.	Potential to: • Negatively impact existing populations of the species through habitat degradation and predation. • Reduce the habitat quality score of habitat within the Offset Area by reducing conservation value.
	Vegetation clearing	Unapproved removal of habitat within the Offset Area.	Potential to: • Result in the loss of individuals/populations and habitat within the Offset Area. • Impact vegetation composition and structure resulting in reduced habitat quality scores. • Reduce the conservation value of the Offset Area to less than that of the Stage 1 Construction Zone.

Risk Type	Risks	Risk description	Risk to conservation outcome
	Erosion	Loss of vegetation composition and structure, particularly groundcover.	Potential to: • Impact groundcover composition and structure resulting in reduced habitat quality scores. • Reduce the conservation value of the Offset Area to less than that of the Stage 1 Construction Zone.
	Failed vegetative regeneration	No recruitment, establishment or spread of native flora species within the Offset Area.	Potential to interfere with habitat quality improvements and prevent achievement of completion criteria.
	Introduction and spread of weeds	Increased spread of existing infestations of invasive weed species and exotic pasture grass or the introduction of new weed/exotic pasture grass species being established.	Potential to reduce the habitat quality score of habitat within the Offset Area, reducing conservation value.
	High fuel loads resulting in high intensity fire	Impacts to vegetation composition and structure impacting habitat quality scores.	Potential to: • Result in the loss of individuals/populations and habitat within the Offset Area. • Impact vegetation composition and structure resulting in reduced habitat quality scores. • Reduce the conservation value of the Offset Area to less than that of the Stage 1 Construction Zone.

Risk Type	Risks	Risk description	Risk to conservation outcome
Force majeure	Drought	Dry conditions resulting in negative impacts to vegetation regeneration (groundcover) or dieback, due to a lack of water resources.	Potential to: • Reduce the availability and abundance of foraging resources, impacting existing populations. • Reduce the habitat quality score of habitat within the Offset Area, reducing conservation value. • Reduce the conservation value less than that of the Stage 1 Construction Zone.
	Bushfire	Moderate to high intensity bushfire resulting in short term degradation of habitat.	Potential to result in localised damage to vegetation leading to a reduction in canopy and ground cover, impacting habitat quality scores.
	Flooding	Introduction and spread of weed species, increased erosion and soil loss. Reduction in habitat features such as cracking clay.	Potential to: • Result in localised damage to vegetation – impacting the habitat quality scores. • Increase non-native plant presence and soil compaction. • Lead to a reduction in native canopy and ground cover.
	Severe storm (cyclone) /tropical low	Flooding/inundation and destructive winds.	Potential to result in localised damage to vegetation leading to a reduction in canopy and ground cover, impacting habitat quality scores.

7 Offset monitoring

7.1 Monitoring actions

Ongoing monitoring is required to gauge the effectiveness of and, if necessary, adapt the management actions, as well as record the progress towards completion criteria. The following monitoring actions will be undertaken:

- targeted Australian painted snipe, Julia Creek dunnart, painted honeyeater and plains death adder surveys to monitor relative abundance and habitat utilisation.
- habitat quality assessments at year one, then at year three, five and then every five years for the remaining 20 years (to be undertaken by Powerlink Queensland, its agents, contractors or assigns).
- feral animal and weed monitoring conducted yearly for the first five years and then every five years for the remaining 20 years (to be undertaken by the Project Owner, its agents, contractors or assigns).
- landholder / property Manager monitoring of grazing, pest plants, pest animals, fencing, access and fire breaks.

A detailed overview of the monitoring requirements within the Offset Area is provided in Table 32, with monitoring undertaken for the duration of the environmental offset. Specific performance criteria for each monitoring action have also been provided to measure targets associated with management objectives and the overall desired conservation outcomes for the Offset Area. The monitoring effort described above in relation to habitat quality, as well as monitoring to be undertaken will be used to substantiate that the offset actions have resulted in an increase in ecosystem resilience and therefore provide an enduring benefit for the Target MNES. Suitably qualified and experienced professionals will be engaged to undertake the relevant monitoring, and should this monitoring indicate that the either interim performance criteria or completion criteria are not being achieved, corrective actions (such as those prescribed within this document) will be applied for durations prescribed by the suitably qualified and experienced professional.

Species-specific monitoring methods have been developed based on prescribed survey methodologies including:

- *Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the EPBC Act* (Department of the Environment, Water, Heritage and the Arts (DEWHA), 2010b)
- *Survey guidelines for Australia's threatened reptiles: Guidelines for detecting reptiles listed as threatened under the EPBC Act* (SEWPaC, 2011c), and
- *Targeted species survey guidelines Julia Creek dunnart* (*Sminthopsis douglasi)* (Venz et al., 2024).

A detailed overview of the monitoring requirements within the Offset Area are provided in Table 32. Specific performance criteria for each monitoring action have also been provided in order to measure targets associated with management objectives and the overall desired conservation outcomes for the Offset Area. Further details regarding the monitoring actions are also provided in the following sections.

Table 32: Overview of the monitoring requirements within the Offset Area

Monitoring Action	Monitoring Frequency									Attribute/s Monitored	Method	Location	Performance Criteria	Corrective Actions
	Year 1 Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20					
Targeted Australian painted snipe surveys	-	✓	-	-	-	✓	✓	✓	✓	Species occurrence	Refer to Section 7.1	Offset Area	Refer to Table 30	Within 3 month of a performance criteria failing to be reached, an investigation will be undertaken by a suitably qualified professional to identify drivers and develop scientifically robust management actions and possible corrective actions. Corrective actions and suitable corresponding monitoring actions will be documented and incorporated into the OMP revisions where required.
Targeted Julia Creek dunnart surveys	-	✓	-	-	-	✓	✓	✓	✓	Species occurrence	Refer to Section 7.1	Offset Area	Refer to Table 30	
Targeted painted honeyeater surveys	-	✓	-	-	-	✓	✓	✓	✓	Species occurrence	Refer to Section 7.1	Offset Area	Refer to Table 30	
Targeted plains death adder surveys	-	✓	-	-	-	✓	✓	✓	✓	Species occurrence	Refer to Section 7.1	Offset Area	Refer to Table 30	

Monitoring Action	Monitoring Frequency									Attribute/s Monitored	Method	Location	Performance Criteria	Corrective Actions
	Year 1 Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20					
Habitat quality Assessment	-	✓	-	✓	-	✓	✓	✓	✓	Habitat quality Attributes: • Site Condition • Site Context • SSR	Refer to Section 4.2	Offset Area Habitat Quality assessment survey sites	• Increase in habitat quality Score over time. Interim performance targets are detailed within Table 30. • No decrease in habitat quality scores	
Weed monitoring	✓	✓	✓	✓	✓	✓	✓	✓	✓	Weed treatment success	Records and photos in conjunction with habitat quality assessments and observations across the Offset Area	Offset Area	Refer to Table 25	Refer to Table 25

Monitoring Action	Monitoring Frequency									Attribute/s Monitored	Method	Location	Performance Criteria	Corrective Actions
	Year 1 Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20					
Pest monitoring	✓		✓	✓	✓	✓	✓	✓	✓	• Damage/ degradation of habitat from feral animals • Occurrence of pests • Pest/Weed treatment success	• Records and photos • In conjunction with Habitat Quality Assessments and observations across the Offset Area • Monitoring by engaged pest management contractor, prior and during management methods	Offset Area	Refer to Table 26	Refer to Table 26

Monitoring Action	Monitoring Frequency									Attribute/s Monitored	Method	Location	Performance Criteria	Corrective Actions
	Year 1 Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 10	Year 15	Year 20					
Fire fuel load monitoring	-	✓	As prescribed by suitably qualified professional in Fire Management Plan.							Fuel load	Biomass monitoring	Offset Area	Refer to Table 28	Refer to Table 28
General maintenance inspection	Quarterly and/or within two weeks (pending safe access) following extreme weather event (e.g. severe storm, bushfire, flood, etc.)									• Condition and functionality of fences • Condition of fire infrastructure	Visual inspection of fence lines and fire breaks	Throughout the Offset Area and boundary fencing	• Fences are intact and exclude livestock/ unauthorised entry • Firebreaks and access tracks are maintained to a level that provides vehicle access and appropriate asset protection.	Examples of possible corrective actions may include fence maintenance and repairs to resecure the Offset Area and re-establishment of firebreaks. Rectification of damaged fence lines and overgrown firebreaks are to be undertaken within one month of inspection event.

7.1.1 Targeted Australian painted snipe surveys

Targeted surveys for Australian painted snipe will be undertaken to determine species presence/likely presence within the Offset Area. Specifically, methods to detect will be in accordance with the *Survey guidelines for Australia's Threatened birds* (DEWHA, 2010). Survey methods will include best practice methods, including area searches of suitable wetlands and targeted bird surveys for the species at suitable habitat. A minimum of 10 hrs of surveys will be conducted over a minimum of five days, with surveys conducted either early morning or late afternoon. Targeted Australian painted snipe survey frequency is detailed in Table 32.

7.1.2 Targeted Julia Creek dunnart surveys

Targeted surveys for Julia Creek dunnart will be undertaken to determine species presence / likely presence within the Offset Area. Surveys methods will be completed in accordance with the *Targeted species survey guidelines Julia Creek dunnart* (*Sminthopsis douglasi)* (Venz et al., 2024) or any superseding methodology, to a reasonable and practical extent, considering the scale of the Offset Area and as agreed upon by the department. Examples of targeted survey methods include habitat assessments, Elliott trapping or camera trapping, thermal infrared imaging, collection of predator scats, owl casts or remains in predatory bird or mammal nests/dens, hair sampling and wildlife detection dogs. Due to the size of the Offset Area, targeted surveys of subsets (stratified) of habitat should be undertaken during each monitoring period. Targeted Julia Creek dunnart survey frequency is detailed in Table 32.

Due to the timing constraints of the initial ecological assessment conducted for this OMP, Powerlink commits to conducting a supplementary survey during the first post-wet season period of Year 1. This survey will adhere to the methodologies outlined in the *Targeted Species Survey Guidelines for Julia Creek Dunnart (Sminthopsis douglasi)* (Venz et al., 2024) to a reasonable and practical extent considering the scale of the Offset Area and as agreed upon by the department. Following this additional survey work, habitat quality scores will be reassessed and compared against the baseline scores established in the original assessment. Should any discrepancies in habitat quality scores be identified, the OMP, including potential adjustments to the Offset Area requirements, will be updated in consultation with DCCEEW.

7.1.3 Targeted painted honeyeater surveys

Targeted surveys for painted honeyeater will be undertaken to determine species presence/ likely presence within the Offset Area. Specifically, surveys will involve undertaking targeted diurnal bird surveys for the species during optimal conditions in preferred habitat (i.e. during periods when mistletoes and other preferred foraging species within the Offset Area are in flower). A minimum of 40 hours of surveys will be conducted over a minimum of four days, with surveys conducted either early morning or late afternoon. Deployment of long-term bioacoustics recorders may also be utilised within the Offset Area; however, effective use may be limited by durability in high temperatures. Targeted painted honeyeater survey frequency is detailed in Table 32.

7.1.4 Targeted plains death adder surveys

No survey guidelines or survey methods are available for the plains death adder at the time of this report. The Listing Advice recommends survey methods such as slow driving along roads that intersect suitable habitat. Surveys should cover large areas, especially in regions where cane toads are present (TSSC, 2012). Surveys for the plains death adder will include opportunistic surveys and spotlighting surveys in floodplains, clay plains, shallow gilgai microrelief, seasonal swamps, and alluvial plains within the Offset Area to determine species presence and habitat usage. Targeted plains death adder survey frequency is detailed in Table 32.

7.2 Management responsibilities

The responsible party assigned to undertake each management action is as below:

- pest flora and fauna control – suitably qualified professional appointed by property manager
- livestock management – landholder
- vegetation natural regeneration – suitably qualified professional appointed by property manager and/or landholder; and
- fire management – suitably qualified professional and landholder.

7.3 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.

8 Reporting, evaluation and review

8.1 Reporting

Reporting will also be completed in alignment with the EPBC approval conditions relating to Offset reporting conditions outlined in Table 1.

Powerlink will prepare a report on the implementation of this OMP at year one, five and then every five years for the remaining 15 years of the offset (ending at year 20). The report will summarise the activities implemented under this OMP and discuss the effectiveness of mitigation measures employed, based on the results of monitoring activities.

The reports will be published on the Project website within one month of completion, provided to DCCEEW within five business days of being published on the Project website and made available upon request.

Powerlink will amend the management measures as necessary in response to regular reviews, monitoring results and changes in legislation.

8.2 OMP evaluation and review

This OMP is a living document that requires review and amendment throughout the life of the offset to ensure that measures within this document remain effective. This document will be updated, where:

- Monitoring reports identify that the performance criteria and interim performance targets are being met and any additional measures that may be required; or
- A change in legislation or best practice methodology has been identified.

Any updates to the OMP will be submitted to DCCEEW for review and to enable the provision of feedback.

9 References

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