



Wambo Wind Farm Connection Project

Ecological Assessment Report

Powerlink Queensland

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Document prepared by:

Aurecon Australasia Pty Ltd

ABN 54 005 139 873

Ground Floor, 25 King Street
Bowen Hills QLD 4006

Locked Bag 331
Brisbane QLD 4001
Australia

T +61 7 3173 8000

F +61 7 3173 8001

E brisbane@arecongroup.com

W arecongroup.com

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Name		Name	
Andy Dalton		Hugh Campbell	
Title		Title	
Senior Consultant		Senior Planner	

Executive summary

Cubico and Stanwell Corporation Limited (Stanwell) are seeking to establish the Wambo Wind Farm (Wind Farm), a renewable energy facility located 15 kilometres (km) northeast of the town of Jandowae, in the Western Downs Region of Queensland. The Wind Farm received development approval (Reference 2007-17946 SDA) from the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) in October 2020 for the development of 110 wind turbines, ancillary buildings and infrastructure.

Powerlink Queensland (Powerlink) is a Transmission Entity under the *Electricity Act 1994*, and owns, operates and maintains Queensland's high voltage electricity transmission network. Powerlink has been engaged by the Wind Farm proponents (Cubico and Stanwell) to connect the renewable energy facility to the network. The connection works will comprise of a double circuit 275 kilovolt (kV) high voltage transmission line, commencing at a new substation to be constructed at the Wambo Wind Farm and tracking east for approximately 47 km before connecting into Powerlink's existing Halys Substation (the Project).

The transmission line will be located within a 60 m easement. For the majority of its alignment, the 60 m easement will replace an existing 50 m easement for the soon to be decommissioned 132kV Tarong-Chinchilla transmission line.

Aurecon, on behalf of Powerlink is seeking a Ministerial Infrastructure Designation (MID) for the Project in accordance with Chapter 2, Part 5 of the *Planning Act 2016* (Planning Act).

The purpose of the terrestrial ecology assessment was to document the species and habitat types within and adjacent to the Project's disturbance footprint, with particular reference to the occurrence of conservation significant species, and to recommend mitigation measures to minimise potential impacts from the Project.

The terrestrial ecology assessment was a two stage process involving a desktop assessment followed by targeted field surveys in February 2022, and August 2022. The desktop assessment analysed existing data to identify matters of national environmental significance (MNES) and matters of state environmental significance (MSES) and potential habitat values for relevant conservation significant species. This review informed the planning of the field surveys.

Key findings of the ecology assessment include the following:

- The Project disturbance footprint contains areas of contiguous remnant vegetation, including 6.78 hectares (ha) of field-verified regional ecosystems (REs).
- The Project will remove areas of regulated vegetation as well as essential habitat for the *Callitris baileyi* (listed as Near Threatened under the NC Act). Assessment under the State guidelines determined that a significant residual impact is anticipated for this MSES. Significant residual impacts may vary dependant on the total vegetation removed within the Project Corridor.
- Four individuals of a single MSES conservation significant flora species (*Callitris baileyi*) were identified within the Project Corridor. The Project Corridor is the extension from the existing 50 metre (m) easement corridor to a 60 metre (m) wide corridor for the proposed transmission line between the new substation and Halys Substation. *Callitris baileyi* is listed as Near Threatened under the provisions of the *Nature Conservation Act 1992* (NC Act).
- Potential habitat for 12 fauna and five migratory MNES species
- The traces of one MSES conservation significant fauna species was identified during the field surveys:
 - - Short-beaked echidna (*Tachyglossus aculeatus*), listed as Special Least Concern under the NC Act.



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Glossary of terms

Acronyms/Project abbreviations	Definition
Biosecurity Act	<i>Biosecurity Act 2014 (Qld)</i>
BPA	Biodiversity Planning Assessment
Buffer area	30km radius of the Project disturbance footprint
CEEVNT	Critically Endangered, Endangered, Vulnerable, or Near Threatened
DES	Department of Environment and Science
DNRME	Department of Natural Resources, Mines and Energy
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning
EO Act	<i>Environmental Offsets Act 2014 (Qld)</i>
EO Regulation	<i>Environmental Offsets Regulation 2014 (Qld)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
MNES	Matters of national environmental significance
MSES	Matters of state environmental significance
NC Act	<i>Nature Conservation Act 1992 (Qld)</i>
Powerlink	Powerlink Queensland
Project	Connection works for Wambo Wind Farm
Project Corridor	The extension from the existing 50 metre (m) easement corridor to a 60 m wide corridor for the proposed transmission line between the new substation and Halys Substation
Project study area	The Project disturbance footprint plus a 1km radius buffer
Project EMP(C)	Project Environmental Management Plan (Construction)
RE	Regional Ecosystem
SDAP	State Development Assessment Provisions
SIA	Significant impact assessment
SMP	Species Management Program
SPA	<i>Sustainable Planning Act 2009 (Qld)</i>
SRI	Significant residual impact
SRI Guideline	Significant Residual Impact Guideline
TEC	Threatened ecological community
VM Act	<i>Vegetation Management Act 1999 (Qld)</i>
Wind farm	Wambo Wind farm
WoNS	Weed of National Significance

1 Introduction

1.1 Project background

Cubico and Stanwell Corporation Limited (Stanwell) are seeking to establish the Wambo Wind Farm (Wind Farm), a renewable energy facility located 15 kilometres (km) northeast of the town of Jandowae, in the Western Downs Region of Queensland. The Wind Farm received development approval from the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) in October 2020 for the development of 110 wind turbines, ancillary buildings and infrastructure.

Powerlink Queensland (Powerlink) is a Transmission Entity under the *Electricity Act 1994* (Electricity Act), and owns, operates and maintains Queensland's high voltage electricity transmission network.

Powerlink has been engaged by the Wind Farm proponents (Cubico and Stanwell) to connect the renewable energy facility to the network. The connection works will comprise of a double circuit 275 kilovolt (kV) high voltage transmission line, commencing at a new substation to be constructed at the Wambo Wind Farm and tracking east for approximately 47 km before connecting into Powerlink's existing Halys Substation (the Project).

1.2 Purpose of this report

Aurecon has been engaged by Powerlink to undertake an Ecological Assessment Report to support a Ministerial Infrastructure Designation (MID) proposal for the Project in accordance with Chapter 2, Part 5 of the *Planning Act 2016* (Planning Act).

The aim of this report is to document the terrestrial ecological values associated with the Project disturbance footprint (i.e. the Proposed Action). Specifically, the purpose of the ecological investigation is to:

- Undertake an ecological field assessment to ground-truth vegetation community mapping and species habitat
- Prepare an ecological assessment report which:
 - Is prepared and approved by suitably qualified and experienced ecologists
 - Identifies ecological values and the likely ecological legislative constraints associated with site development
 - Identifies the potential ecological approval obligations for the proposed development

The outcomes of the ecological assessment described in this report include;

- Definition of the Project disturbance footprint in relation to the ecological assessment
- Methodology undertaken to complete the desktop and field ecological assessment
- Results from desktop and field ecological assessment
- Assessment of direct and indirect impacts on ecological values associated with the Project disturbance footprint and surrounds
- Significant residual impact assessment on matters of Commonwealth and State environmental significance
- Additional approval requirements for the Project.

1.3 Project proponent

The Project proponent is:

Powerlink Queensland
33 Harold St, Virginia,
PO Box 1193, Virginia, QLD, 4014
Telephone: (07) 3860 2111, Facsimile: (07) 3860 2100
Website: <http://www.powerlink.com.au/>

Powerlink Queensland is the registered business name of the Queensland Electricity Transmission Corporation Limited (ABN: 82 078 849 233).

1.4 Proposed development

The Project proposes to install a double circuit 275 kV high voltage transmission line commencing at a new substation to be constructed at the Wind Farm and tracking east for approximately 47 km, before connecting into Powerlink's Halys Substation.

The project corridor intersects two local government areas (LGA), being Western Downs Regional Council (WDRC) and South Burnett Regional Council (SBRC).

For approximately 45 km the Project corridor will utilise the existing 132 kV Tarong-Chinchilla transmission line. To accommodate the new transmission line the existing easement will be widened by 10 m to allow for the 60 m easement required for the project. At Ellesmere Road, the project corridor diverts south of the Tarong-Chinchilla transmission line easement for 2 kms, prior to reaching the Halys Substation.

The Project disturbance footprint (i.e. the maximum clearing extent) includes the clearing associated with the extension of the original 50 m wide easement corridor to the new 60 m wide Project Corridor. This disturbance mainly involves vegetation clearance and trimming along the edge of the existing cleared easement to prevent contact with swinging powerlines. Further discussion around the definition of the 'Project disturbance footprint' is provided in Section 3.6

The Project involves the construction of steel lattice towers which will require a 40 m x 40 m disturbance footprint. The majority of the steel lattice towers will be located within the existing easement and as such does not form part of this assessment (see Section 3.6). Upgraded access tracks or tower construction footprints that sit outside of the existing easement corridor that require upgrading will constitute part of the Project disturbance footprint.

The existing access tracks that will be utilised for the Project and as such minimal clearing is required. The Project disturbance footprint is presented in Figure 2.



Legend

- Locality
- Highway
- Secondary Road
- ▭ Project corridor
- ▭ Study area

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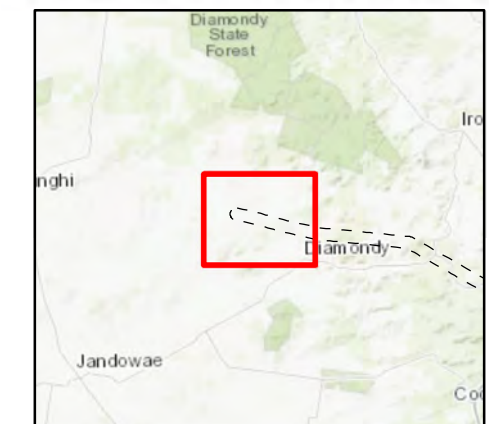
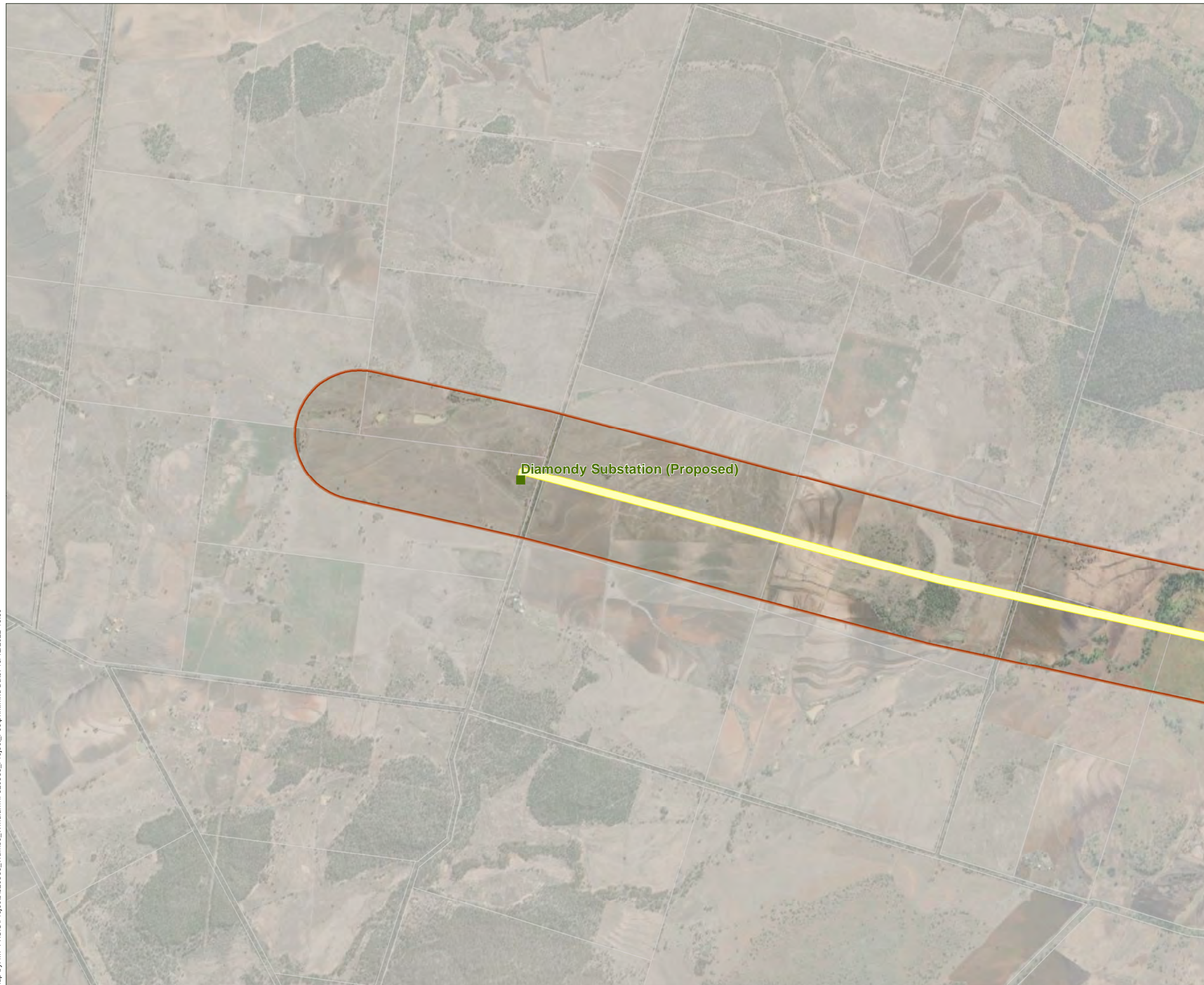
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Projection: MGA Zone 56



Legend

- Substations
- Cadastre
- Project corridor
- Study area

Notes:

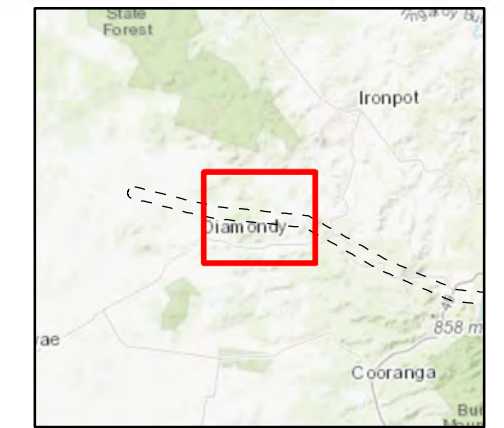
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



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Legend

-  Cadastre
-  Disturbance footprint
-  Project corridor
-  Study area

Notes:

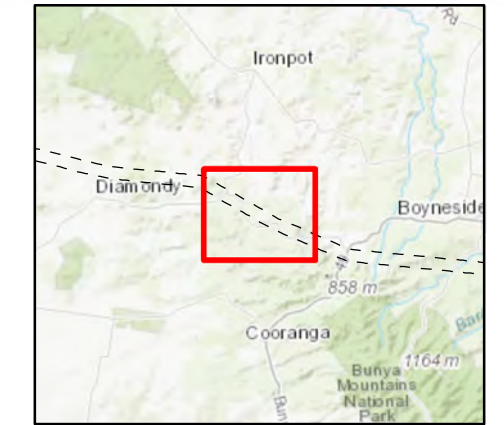
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Projection: MGA Zone 56



Legend

- Watercourses
- Cadastre
- Disturbance footprint
- Project corridor
- Study area



Notes:

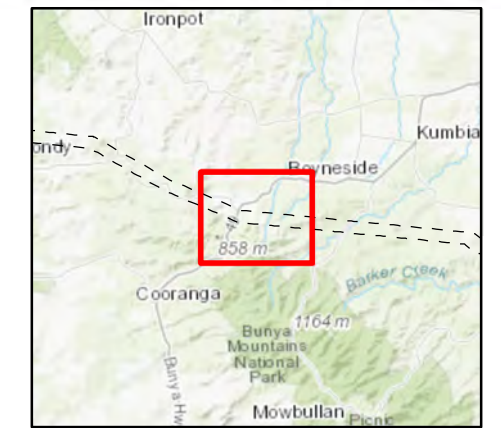
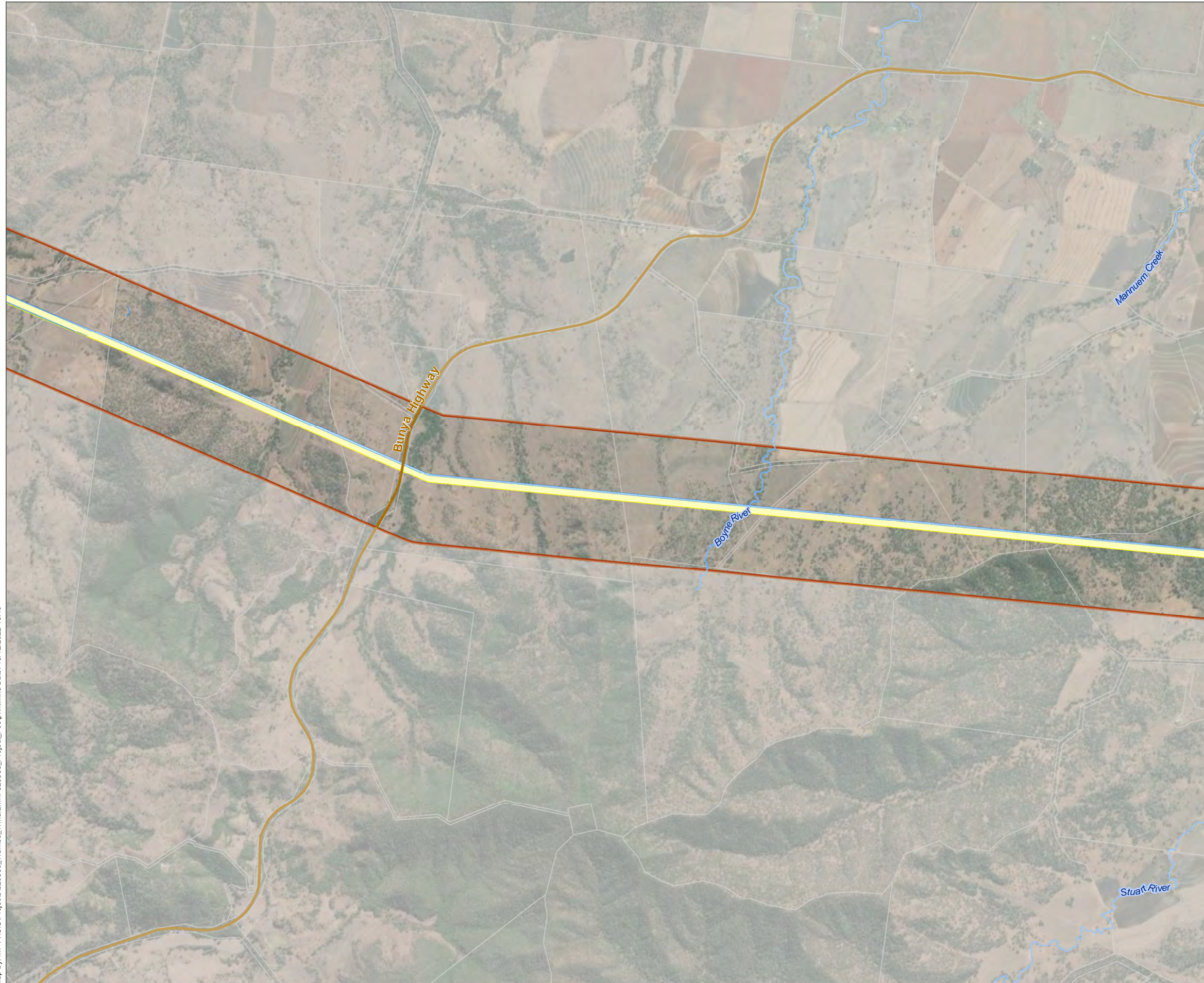
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Legend

- Highway
- Watercourses
- Cadastre
- Disturbance footprint
- Project corridor
- Study area

Notes:

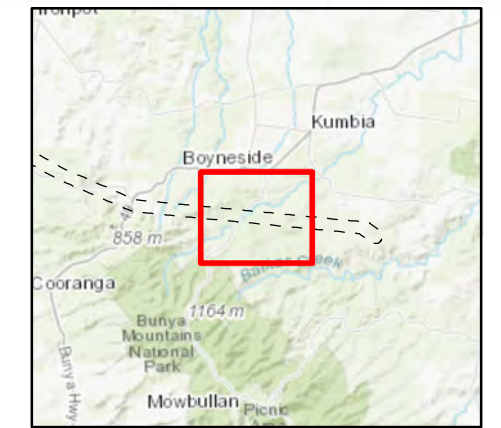
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Legend

- Highway
- Secondary Road
- Watercourses
- Cadastre
- Disturbance footprint
- Project corridor
- Study area

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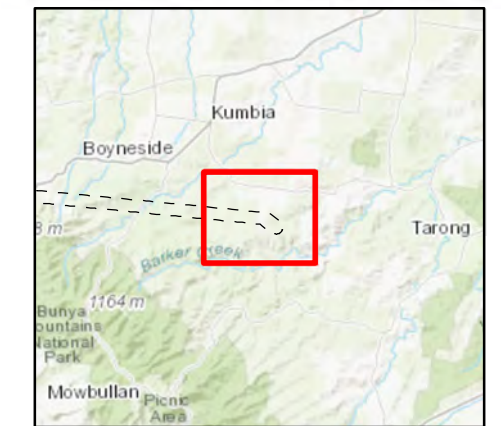
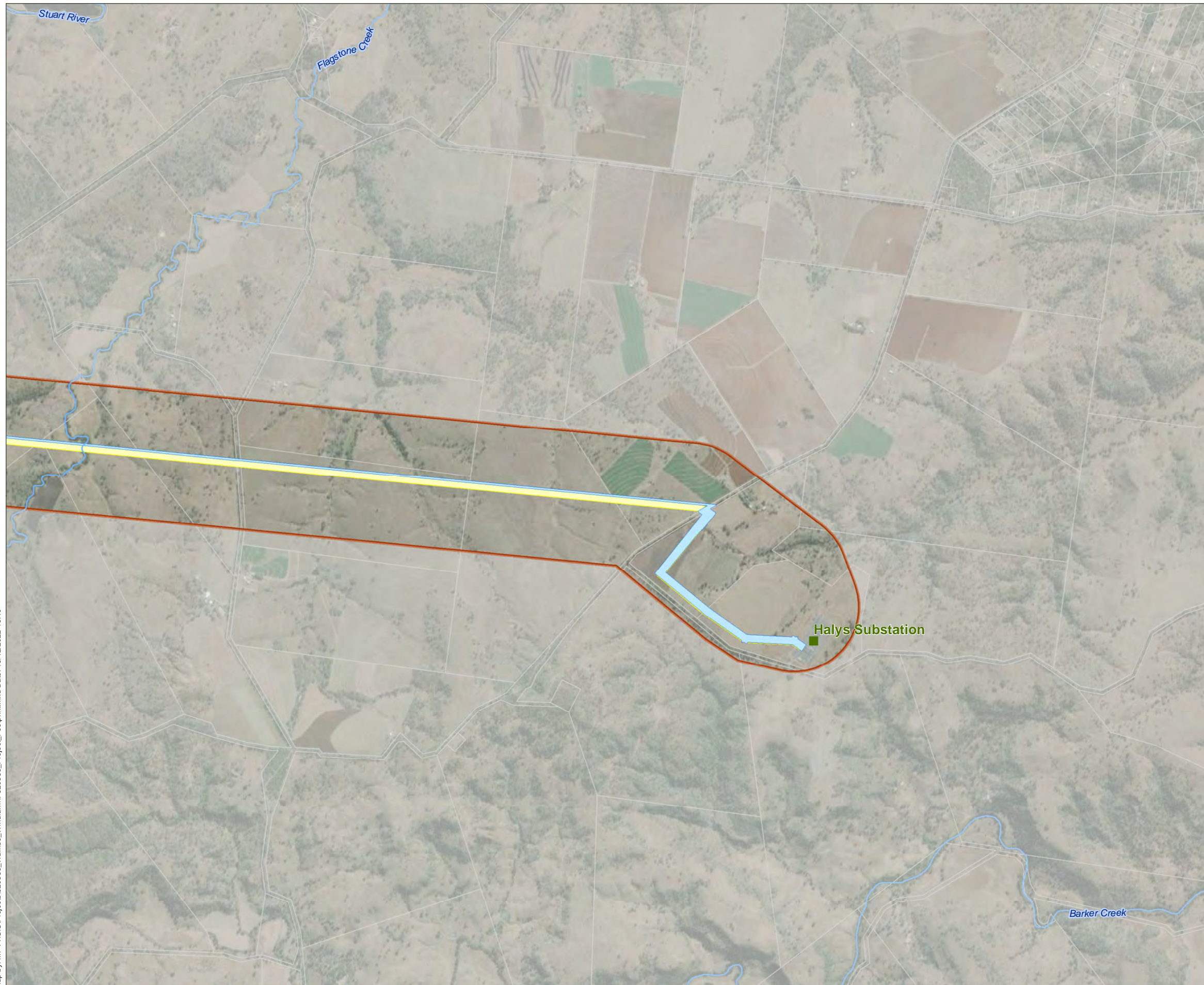
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



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Legend

-  Substations
-  Watercourses
-  Cadastre
-  Disturbance footprint
-  Project corridor
-  Study area

Notes:

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Projection: MGA Zone 56

2 Legislative framework

The State legislative framework relevant to this ecological assessment is provided in Table 2.1.

Table 2.1 Legislative requirements

Legislation/policy	Intent	Project relevance
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act)	The EPBC Act provides that any action that has, will have, or is likely to have a significant residual adverse impact on a matter of national environmental significance (MNES), or other matters protected under the EPBC Act (i.e. activities conducted by a Commonwealth agency or on Commonwealth land), requires approval from the Commonwealth Environment Minister.	<p>Aurecon, on behalf of Powerlink, has undertaken a significant impact assessment (SIA) under the EPBC Act in accordance with the <i>Matters of National Environmental Significance – Significant Impact Guidelines 1.1</i> (DEWHA 2013). The SIA assessed the following:</p> <ul style="list-style-type: none"> Twelve (12) threatened fauna species Five (5) migratory species. <p>The SIA concluded that the Project is not likely to cause a significant impact to any of the MNES that were evaluated, and as such, a referral to the Federal Minister for the Environment and Water under the EPBC Act is not required.</p>
State		
<i>Environmental Offsets Act 2014</i> (Qld) (EO Act) and <i>Environmental Offsets Regulation 2014</i> (Qld) (EO Regulation)	<p>The EO Act, EO Regulation and the Queensland Environmental Offsets Policy (V1.12) coordinate the delivery of environmental offsets across jurisdictions and provides a single point-of-truth for offsets in Queensland. An environmental offset may be required if a proposed activity is likely to result in a significant residual impact on prescribed environmental matters.</p> <p>The <i>Significant Residual Impact Guideline</i> December 2014 for activities assessable under the <i>Planning Act 2016</i> (Planning Act) (the SRI Guideline) under the <i>Queensland Environmental Offsets Policy</i> outlines when an action is likely to have a 'significant residual impact' to a matters of state environmental significance (MSES) and therefore when an offset will be required.</p>	<p>Multiple mapped matters of MSES have been identified as potentially occurring within the Project disturbance footprint. A summary of these matters is provided in Section 4.3.</p> <p>As such, significant impact assessments have been undertaken to determine if the Project will have a significant impact on MSES (refer Section 6).</p>
<i>Nature Conservation Act 1992</i> (Qld) (NC Act)	<p>The NC Act aims to address the impacts of activities on the conservation of Queensland's native flora and fauna. Listed species of threatened flora and fauna are identified in the subordinate legislation <i>Nature Conservation (Wildlife) Regulation 2006</i> (Qld).</p> <p>Clearing activities in an area considered 'high risk', as shown in the Protected Plants Flora Survey Trigger Map, require a protected plants survey and report to be completed in accordance with the <i>Flora Survey Guidelines – protected plants</i> (Department of Environment and Science (DES) 2019).</p>	<p>The Project disturbance footprint is mapped as containing a 'high risk' trigger area for protected plants and as such a protected plants survey has been undertaken. The protected plant survey identified 74 individuals of a single NC Act listed endangered flora species (i.e. <i>Callitris baileyi</i>) within the Project study area. Details are provided in the <i>Protected Plants Survey Report</i> (Aurecon 2022b) for the Project.</p>

Legislation/policy	Intent	Project relevance
	<p>When no Critically Endangered, Endangered, Vulnerable or Near Threatened (CREVNT) species are found during the appropriate survey, no clearing permits are required under the NC Act, however a 'clearing exemption notification' must be lodged with DES at least one week prior to any ground disturbance occurring and no later than one year after the completion of the flora survey.</p> <p>The NC Act regulates the tampering of animal breeding places for any proposed activity that will impact on breeding places of protected animals that are classified as extinct in the wild as EVNT, Special Least Concern, colonial breeder or least concern, a Species Management Program (SMP) for that species will be required.</p>	
<p><i>Planning Act 2016</i> (Qld) (Planning Act)</p>	<p>The Planning Act is Queensland's principal planning legislation. The purpose of the Planning Act is to provide an efficient, effective, transparent, integrated, coordinated and accountable system of land use planning and development assessment.</p>	<p>The Project triggers assessable development under the Planning Act and therefore requires a development approval prior to commencing works.</p> <p>Chapter 2, Part 5 of the Planning Act allows for the Minister of the DSDILGP to designate premises for the development of infrastructure prescribed by Schedule 5 of the <i>Planning Regulation 2017</i> (Planning Regulation). The project is defined as 'electricity operating works' under Schedule 5, Part 2, Item 7 of the Planning Regulation and as such may be subject to designation.</p>
<p><i>Vegetation Management Act 1999</i> (Qld) (VM Act)</p>	<p>The VM Act regulates and manages the process and impacts of native vegetation clearing. The objectives of the VM Act include conservation of remnant regional ecosystems, prevention of the loss of biodiversity, maintenance of ecological processes, and conservation of vegetation in areas of high nature conservation value or lands vulnerable to land degradation, and the preservation of high value regrowth areas. It regulates clearing of vegetation across Queensland in conjunction with the Planning Act.</p> <p>The clearing of any relevant remnant or regulated regrowth vegetation constitutes operational works under Schedule 10 of the Planning Regulation which will require development approval, unless the clearing can be exempt or accepted development.</p>	<p>As illustrated in Figure 2, the Project disturbance footprint is mapped as containing Category B and Category C vegetation.</p> <p>A review of the scope of works identifies that the clearing of Category B vegetation will likely be required to facilitate expansion of the Project Corridor.</p>
<p><i>Biosecurity Act 2014</i> (Qld) (Biosecurity Act)</p>	<p>The Biosecurity Act seeks to provide a framework for an effective biosecurity system for Queensland that helps to manage and minimise biosecurity risks, as well as facilitate the response to biosecurity issues and events in a timely and effective way, so as to align with national and international obligations. The Biosecurity Act introduces the general biosecurity obligation upon all persons to take all reasonable and practical measures to prevent or minimise biosecurity risks.</p>	<p>The Project will potentially involve interaction with restricted matters and prohibited matters (including pests, diseases or contaminants) and will therefore require compliance with the Biosecurity Act.</p>

Legislation/policy	Intent	Project relevance
<i>Fisheries Act 1994 (Qld) (Fisheries Act)</i>	<p>The Fisheries Act provides for the management, use, development and protection of fish habitats and resources, together with the management of aquaculture activities. The Fisheries Act holds provisions for the following:</p> <ol style="list-style-type: none"> Removal, destruction and/or damage to marine plants Works in a declared fish habitat area Constructing or raising waterway barrier works Tidal water, fresh and marine aquaculture operations. <p>The Department of Agriculture and Fisheries is responsible for the conservation and management of fish habitats in Queensland and for assessing fisheries development under the Fisheries Act in combination with the Planning Act.</p>	<p>The Project disturbance footprint contains multiple mapped waterways for waterway barrier works.</p>
<i>Queensland Nature Conservation (Plants) Regulation 2020</i>	<p>A permit is required under the NC Act to undertake clearing that impacts Critically Endangered, Endangered, Vulnerable, or Near Threatened (CEEVNT) species.</p>	<p>A protected plants survey was undertaken at the Project Corridor on 24 and 25th August 2022. The survey identified one CEEVNT flora species protected under the provisions of the NC Act present within the Project corridor. The NC Act provides exemptions for work that will not impact CEEVNT flora species.</p> <p>A Protected Plant Clearing Permit may be required for the Project.</p>
<i>Nature Conservation (Animals) Regulation 2020).</i>	<p>A SMP must be submitted to the DES for approval for tampering with some animal breeding places (Section 33 of the <i>Nature Conservation (Animals) Regulation 2020</i>).</p>	<p>A High-Risk SMP is recommended for the Project, in accordance with the NC Act provisions; <i>SMP Information Sheet – Requirements for tampering with a protected animal breeding place in Queensland</i> (DES 2020b).</p> <p>Species to be included on the High-Risk SMP</p> <ul style="list-style-type: none"> ■ Rufous fantail ■ Greater glider ■ Yellow-bellied glider ■ South-eastern glossy black-cockatoo ■ Short-beaked echidna. <p>Additional field investigations are recommended to determine presence or absence of these species which would reduce the number of species to be included on the High-Risk SMP.</p>

3 Methodology

3.1 Desktop assessment

Prior to the commencement of the ecological field survey of the Project disturbance footprint, a desktop review of government ecological databases and vegetation mapping was conducted to identify potential ecological constraints, including conservation significant flora and fauna species, which may occur within the Project study area.

The following databases, maps and documents were reviewed for this desktop assessment:

- Commonwealth Protected Matters Search Tool (PMST) to identify MNES, as listed under the provisions of the EPBC Act (DCCEEW 2022i), which have the potential to occur within the Project study area
- Wildlife Online Database (DES 2022a), such as the Queensland Government WildNET database to identify known occurrences¹ of flora or fauna species listed as conservation significant under the provisions of the EPBC Act and/or the NC Act, within the Project study area
- Queensland Government MSES report to identify any MSES as referenced in the biodiversity state interest under the State Planning Policy (DES 2022b)
- Queensland Regional Ecosystem (RE) Mapping Version 12.2 (DES) to identify the REs that have been mapped to occur within the Project disturbance footprint and determine the habitats that are likely to be impacted
- Queensland Government Protected Plants Flora Survey Trigger Map (DES 2022), to identify if the Project disturbance footprint has been described as a 'High-risk' area for conservation significant flora species
- Queensland waterways for waterway barrier works – Department of Agriculture and Fisheries
- Queensland Government Regulated Vegetation Management Mapping (Department of Natural Resources, Mines and Energy (DNRME) 2022) to describe the mapped vegetation communities present within the Project study area, and subsequent habitat values for conservation significant species and threatened ecological communities
- Essential Habitat Mapping (DNRME 2022) to represent mapped threatened species habitat under the VM Act within the Project disturbance footprint
- Queensland Government Koala habitat area map and Koala priority areas mapping (DES 2022c), to describe the mapped Koala habitat values of the Project disturbance footprint
- High resolution aerial imagery.

The outputs of the database and mapping reviews have been provided in Appendix A.

3.2 Likelihood of occurrence

The likelihood of occurrence of threatened ecological communities (TEC), threatened flora species or threatened fauna species, as listed under the provisions of the NC Act and/or the EPBC Act, within the Project disturbance footprint and immediate surrounds was determined based on:

- Observations on habitat characteristics from field surveys
- The results of the desktop study
- Consideration of a species current (known) distribution range
- Presence and condition of suitable habitat in the Project disturbance footprint and immediate surrounds.

1. ¹ Based on specimen backed records

Species considered **unlikely** to occur include species that fit one or more of the following criteria:

- The Project disturbance footprint is beyond the species current distributional limits
- The species is associated with specific habitat types or resources that are known not to be present in the Project disturbance footprint
- The species is considered locally extinct.

Species that are considered to have the **potential** to occur include species that fit one or more of the following criteria:

- No records of the species within the buffer area (30 km radius of the Project disturbance footprint) in the last 20 years, but the species uses habitat types or resources that are present in the Project disturbance footprint
- The species has been recorded within the buffer area, but habitat present is generally in a poor or modified condition or is limited in extent (e.g. wetland bird species)
- The species is unlikely to maintain sedentary populations, however, may seasonally utilise resources within the Project disturbance footprint opportunistically during variable seasons or migration.

Species that are considered **likely** to occur include species that fit one or more of the following criteria:

- The species has been recorded within the buffer area (but not directly within the Project disturbance footprint), within the last 20 years and suitable habitat is present within the Project disturbance footprint as supported by ecological observations recorded during the ecological field survey
- The species uses habitat types or resources that are present in the Project disturbance footprint, which are in good condition (with condition based on field review)
- The species is likely to maintain sedentary populations within the Project disturbance footprint.
- Species is considered **known to occur** as it fits the following criteria:
- The species has been recorded within the Project disturbance footprint.

The likelihood of occurrence table is presented in Section 4.2.

3.3 Field assessment

Two, four-day ecological field assessments were conducted in February and August 2022 within the Project disturbance footprint to ground-truth state-mapped ecological values of the site. The ecological values assessed included vegetation community mapping and identification of habitat values for threatened flora and fauna species. The following tasks were completed as part of the preliminary ecological field assessment:

- Protected Plant Surveys in accordance with the requirements of the NC Act (and its provisions) (triggered by the DES Flora Survey Trigger Map) to identify CEEVNT flora species which may be present within the Project disturbance footprint.
- Identification of habitat values within the Project disturbance footprint for conservation significant flora and fauna species (i.e. CEEVNT species listed under the provisions of the EPBC Act and/or NC Act).
- Incidental observations of any CEEVNT flora species present within the Project disturbance footprint.
- Survey of animal breeding places to determine if a high risk of impact species management program is required (High Risk SMP).
- Regional ecosystem verification of vegetation within the Project disturbance footprint. The extent, classification and condition of ground-truthed vegetation communities within the Project Corridor and Project study area. Vegetation communities were traversed to gather information such as vegetation structure, including remnant status, species composition, and dominant species present.
- TEC assessments were undertaken to target analogous regional ecosystems, as per the conservation advice. Assessment against the key characteristics and condition thresholds were undertaken.

Where plant species could not be identified in the field, fruiting and/or flowering specimens were taken to assist with identification. For those species not field identified during the surveys, samples were pressed and dried, and positive identifications of plant specimens were subsequently made under laboratory conditions.

Results of the field assessment are presented in Section 4.

3.4 Nomenclature

Taxonomic nomenclature used for the description of floral species is according to Census of the Queensland Flora 2018 (Bostock & Holland 2018).

3.5 Impact assessment

The impact assessment process included the identification of potential Project impacts on ecological values within and adjacent to the Project disturbance footprint (refer Section 5).

The direct and indirect impacts to ecological values within the Project disturbance footprint were also assessed. Mitigation measures were then defined and applied to the potential Project impacts (refer Section 5).

3.6 Disturbance footprint

The Project will utilise an existing 50 m transmission line easement for the majority of its alignment. In order to accommodate the Project, the existing easement will require widening by 10 m. Schedule 21 of the Planning Regulation identifies 'exempt clearing work'. Under Schedule 21, Part 1, Item 10 (a) and activity carried out under Section 101 of the Electricity Act is exempt clearing work. Section 101, Item 1 (a) identifies:

1(a) that a electricity entity (ie Powerlink) may take action in a publicly controlled place it considers necessary to provide or supply electricity include, for example—

(b) cutting lopping, or removing trees and other vegetation growing in or over the place.

As such, it is considered that where vegetation clearing is proposed within the existing easement, this is exempt clearing work under Schedule 21 of the Planning Regulation and not subject to this MID.

For the purposes of this report, the Project disturbance footprint is therefore defined as the area located outside of the existing easement required to facilitate the Project.

3.7 Significant residual impact assessment

A SIA was completed for ecological values that qualified as MSES, as defined under the EO Act. The SIA was based on the potential Project residual impacts, that is those potential impacts which remain following the application of the Project mitigation measures. The SIA was based on the direct impacts within the Project disturbance footprint as well as the indirect impacts adjacent to the Project disturbance footprint and in the local and regional context.

The SIA was completed in accordance with the appropriate guideline document.

The SIA guideline which were referenced during the assessment included:

- Significant Residual Impact Guideline for MSES and prescribed activities assessable under the Sustainable Planning Act 2009 (DSDIP 2014).

MSES potentially subject to significant residual Project impacts were assessed against the relevant guidelines and discussed in Section 6.

3.8 Permits to conduct works

The ecological field assessment was conducted in accordance with Aurecon's Scientific Purposes Permit, WISP14453114 (valid between 20 April 2019 and 19 April 2024).

3.9 Survey limitations

This assessment has been completed using a combination of field-validated data, desktop information and extrapolated field survey results. As such the results are subject to the level of accuracy and detail associated with this information. Field survey data collection to inform mapping was conducted using a hand-held iPad unit with aerial imagery. The accuracy of the iPad is generally <8 m and considered appropriate for the purpose of this assessment.

4 Results

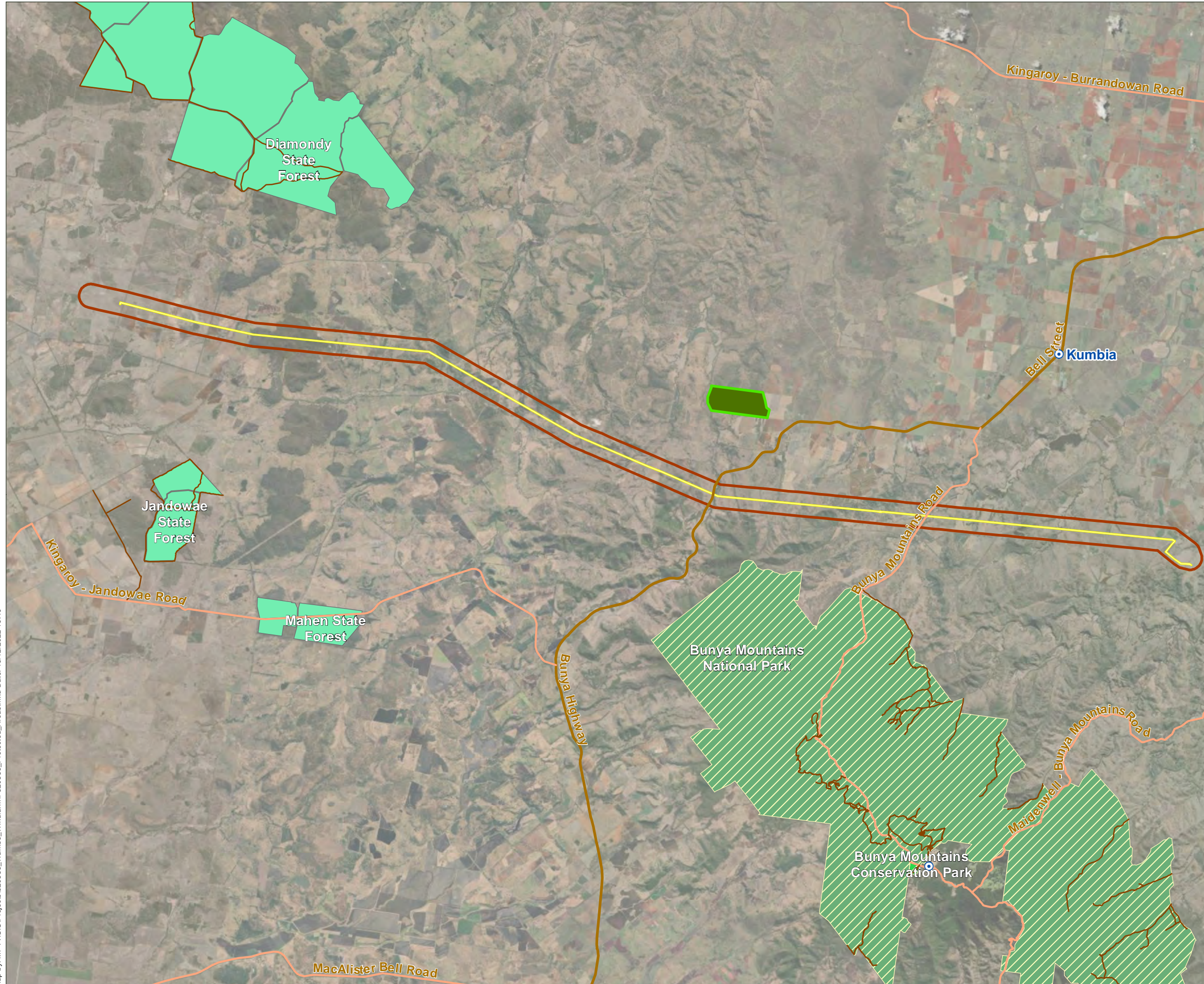
4.1 Desktop assessment

The desktop ecological assessment has identified multiple environmental considerations, including MSES that have the potential to occur within and surrounding the Project disturbance footprint. The desktop assessment findings for the Project study area are outlined in Table 4.1.

Table 4.1 Summary of desktop assessment results regarding ecological considerations within the Project study area

Ecological matter	Details
Matters of state environmental significance	
State conservation areas	There are no state conservation areas identified within the Project disturbance footprint as illustrated in Figure 3.
Watercourses (<i>Water Act 2000</i>)	The Project disturbance footprint contains a significant number of mapped drainage features and unmapped watercourses. Additionally, the Project disturbance footprint intersects the following defined watercourses: <ul style="list-style-type: none"> ■ Ironpot Creek ■ Boyne River ■ Stuart River ■ Flagstone Creek.
Waterway barrier works (Fisheries Act)	The Project disturbance footprint intersects a significant number of waterways for waterway barrier works according to the Department of Agriculture and Fisheries' mapping, including one (1) major risk (purple) mapped waterway, which aligns with Stuart River, and five (5) high risk (red) mapped waterways, three (3) of which align with Flagstone Creek, Boyne River and Ironpot Creek.
Wetlands and waterways	There is one mapped wetland – referenced as "01-50_RE - Wetlands are subdominant (comprising 50 % or less of the area)" located within the Project disturbance footprint as illustrated in Figure 5. The Project disturbance footprint intersects Ironpot Creek, Boyne River and Stuart River.
Regulated vegetation	The Project disturbance footprint, as illustrated in Figure 3 is mapped as containing: <ul style="list-style-type: none"> ■ Regulated vegetation – Category C – endangered or of concern ■ Regulated vegetation – Category R – GBR riverine ■ Regulated vegetation – Category B – endangered or of concern.
Regional Ecosystems	There were 10 REs identified within the Project disturbance (refer Figure 6). These are listed below along with their conservation status under the VM Act and biodiversity status: <ul style="list-style-type: none"> ■ 11.3.25 – Least concern under the VM Act, Biodiversity status is Of concern ■ 11.8.3 – Of concern under the VM Act, Biodiversity status is Of concern ■ 11.8.5 – Least concern under the VM Act, Biodiversity status is No concern at present ■ 11.9.2– Least concern under the VM Act, Biodiversity status is No concern at present ■ 11.9.4 – Of concern under the VM Act, Biodiversity status is Endangered ■ 11.10.1– Least concern under the VM Act, Biodiversity status is No concern at present ■ 12.3.3– Endangered under the VM Act, Biodiversity status is Endangered ■ 12.8.14 – Least concern under the VM Act, Biodiversity status is No concern at present ■ 12.8.16 – Of concern under the VM Act, Biodiversity status is Of concern ■ 12.8.17– Least concern under the VM Act, Biodiversity status is No concern at present.
Wildlife habitat	The Project disturbance footprint does not intersect any areas mapped as containing MSES wildlife habitat.

Ecological matter	Details
Essential habitat	The Project disturbance footprint does not intersect any areas of essential habitat. There were 4.45 ha of essential habitat identified within the Project study area, associated with <i>Callitris baileyi</i> (code 14766).
Protected plants (NC Act)	The Project disturbance footprint, as illustrated in Figure 8, is mapped within a flora survey trigger area mapped as 'High risk'.
Biodiversity Planning Assessment (BPA)	A review of DES BPA corridor mapping identified State significant ecological corridors occur within the Project study area. Vegetation within the far eastern Project disturbance footprint occurs within a terrestrial corridor that is associated with the Bunya Mountains and extends northwest into the Diamondy State Forest as illustrated in Figure 9.
Koala priority areas and habitat areas	The Project disturbance footprint does not interfere with any known mapped Koala priority areas or core Koala habitat area.



Legend

- Locality
- QPWS_access
- Existing rail
- Highway
- Secondary Road
- Protected area - Estates
- Protected area - Nature Refuges
- Conservation Park
- Forest Reserve
- National Park
- National Park (Scientific)
- Resources Reserve
- State Forest
- Project corridor
- Study area

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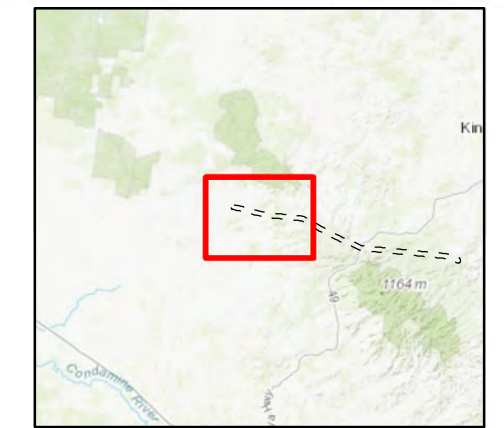
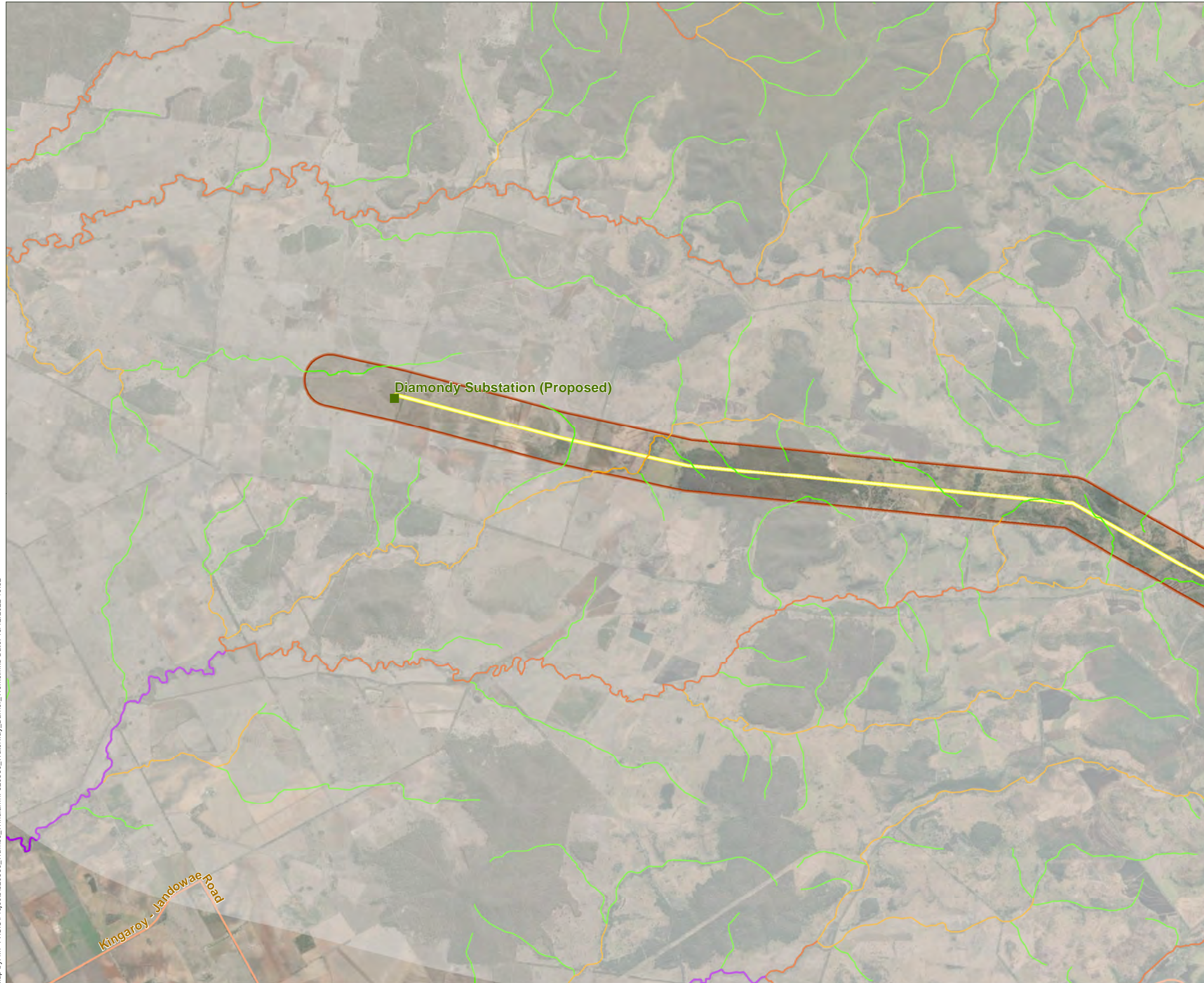
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A3 scale: 1:165,000
0 1 2 3 4 5 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Substations
- Waterway Barrier Fish Passage**
- 1
- 2
- 3
- 4
- Secondary Road
- Project corridor
- Study area

Notes:

Date: 15/12/2022 Version:0

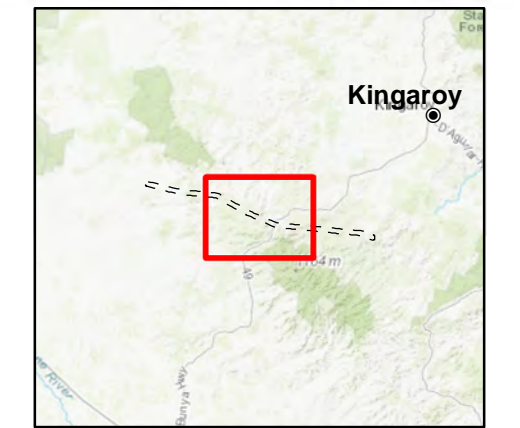
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Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 4a: Waterways for waterway barrier works



Legend

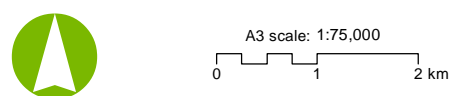
Waterway Barrier Fish Passage

- 1
- 2
- 3
- 4
- Highway
- Secondary Road
- Watercourses
- Project corridor
- Study area

Notes:

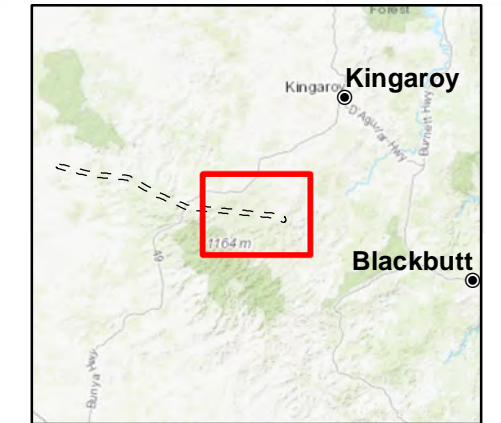
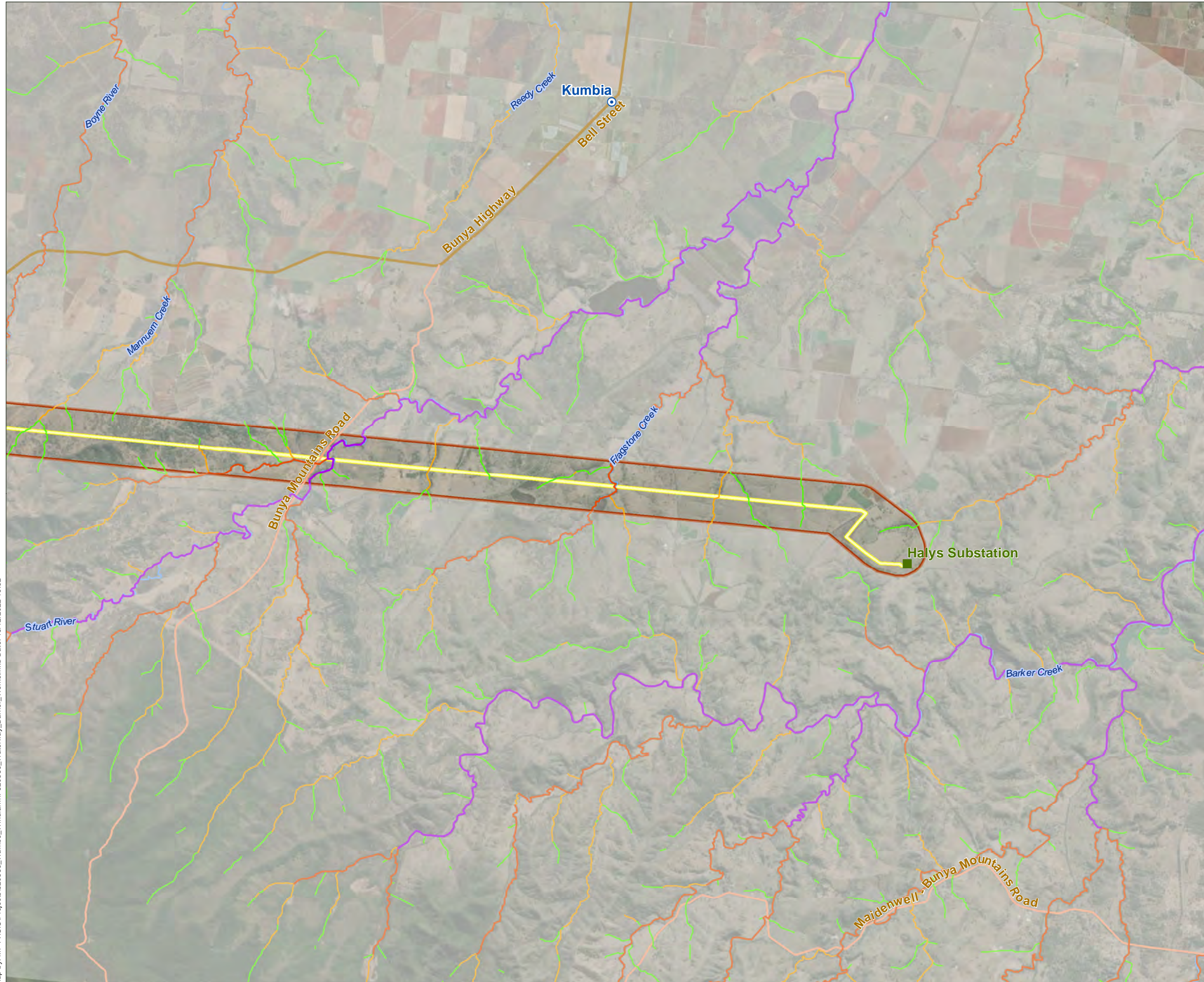
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Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 4b: Waterways for waterway barrier works



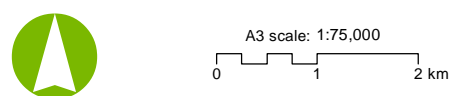
Legend

- Locality
 - Substations
- Waterway Barrier Fish Passage
- 1
 - 2
 - 3
 - 4
- Highway
 - Secondary Road
 - Watercourses
 - Project corridor
 - Study area

Notes:

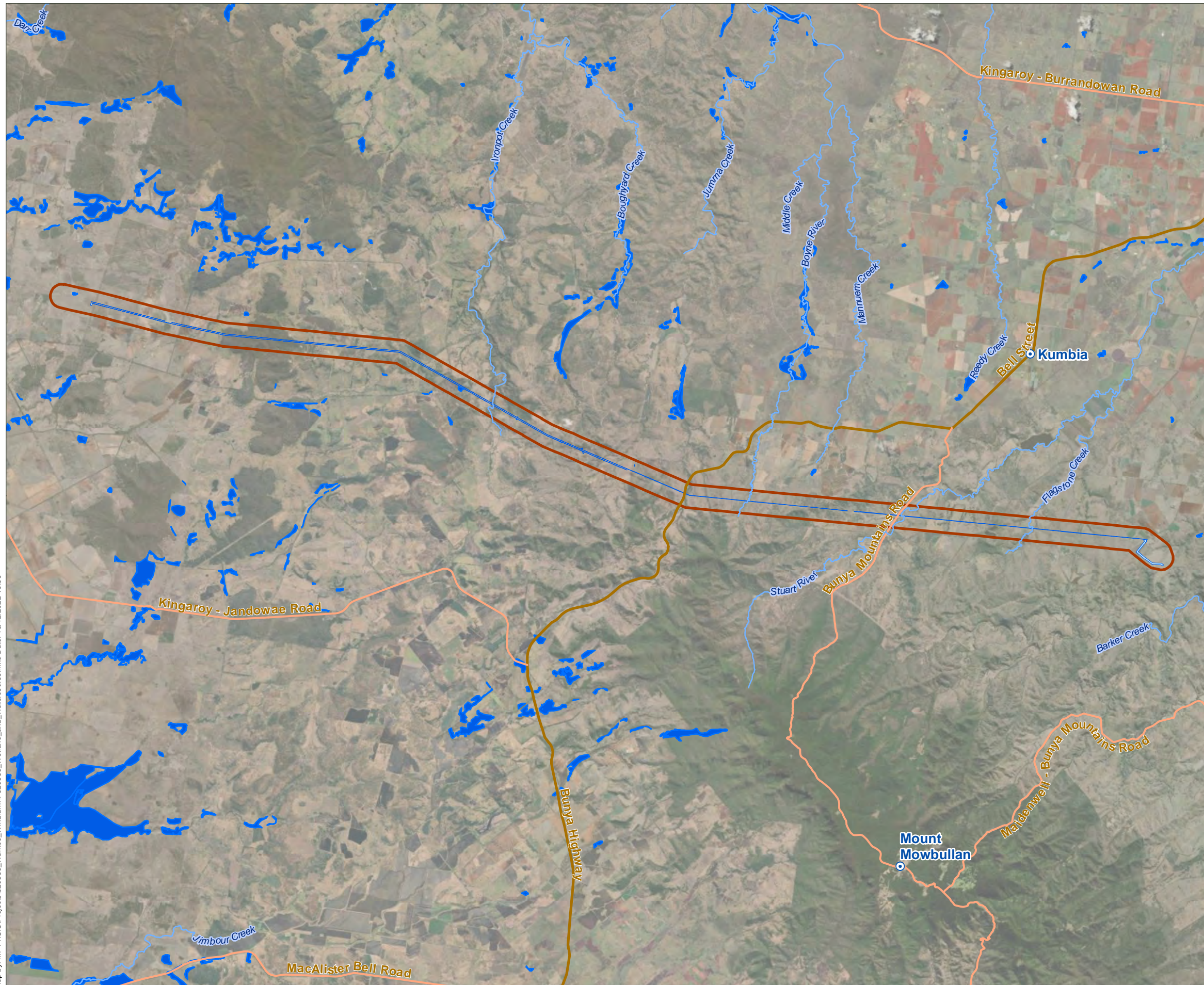
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Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 4c: Waterways for waterway barrier works



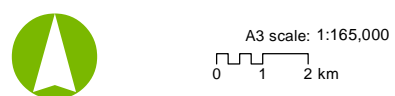
Legend

- Locality
- Highway
- Secondary Road
- Watercourses
- Disturbance footprint
- Non-HEV/HES wetland
- Study area

Notes:

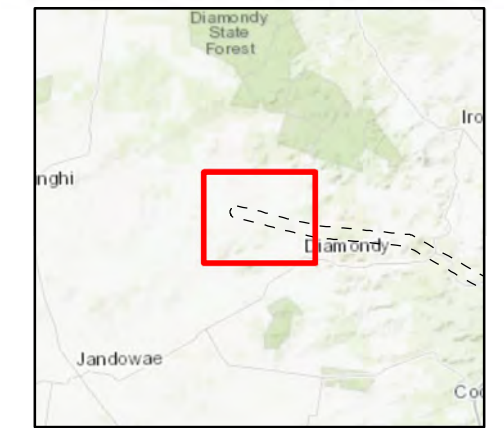
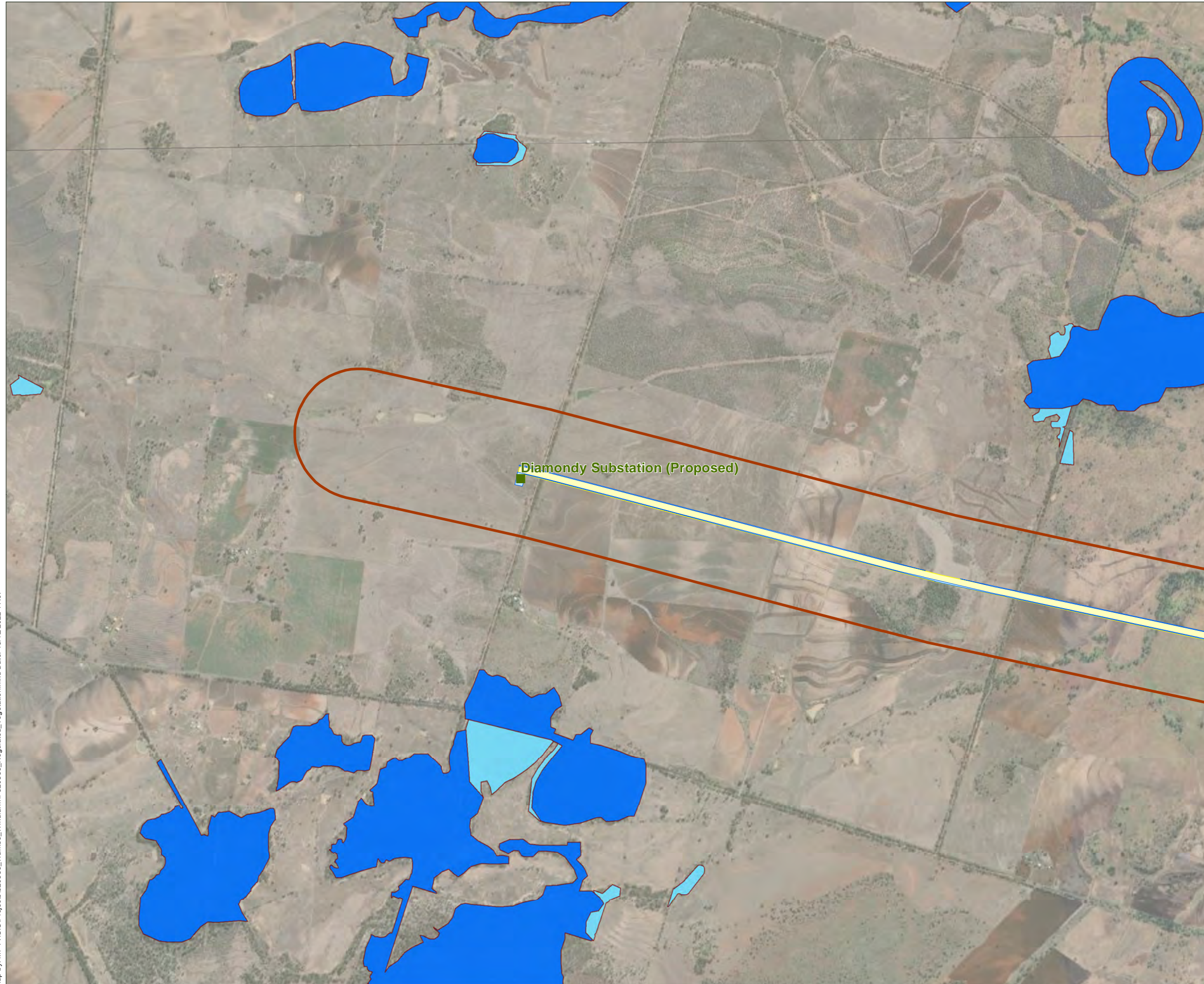
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Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 5: Wetlands and Watercourses



Legend

- Substations
- Project corridor
- Category B area
- Category C area
- Category X area
- Disturbance footprint
- Study area

Notes:

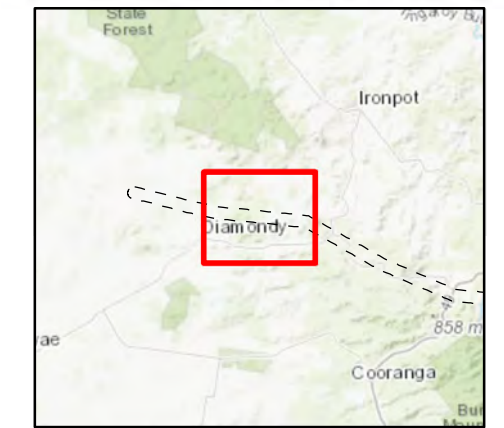
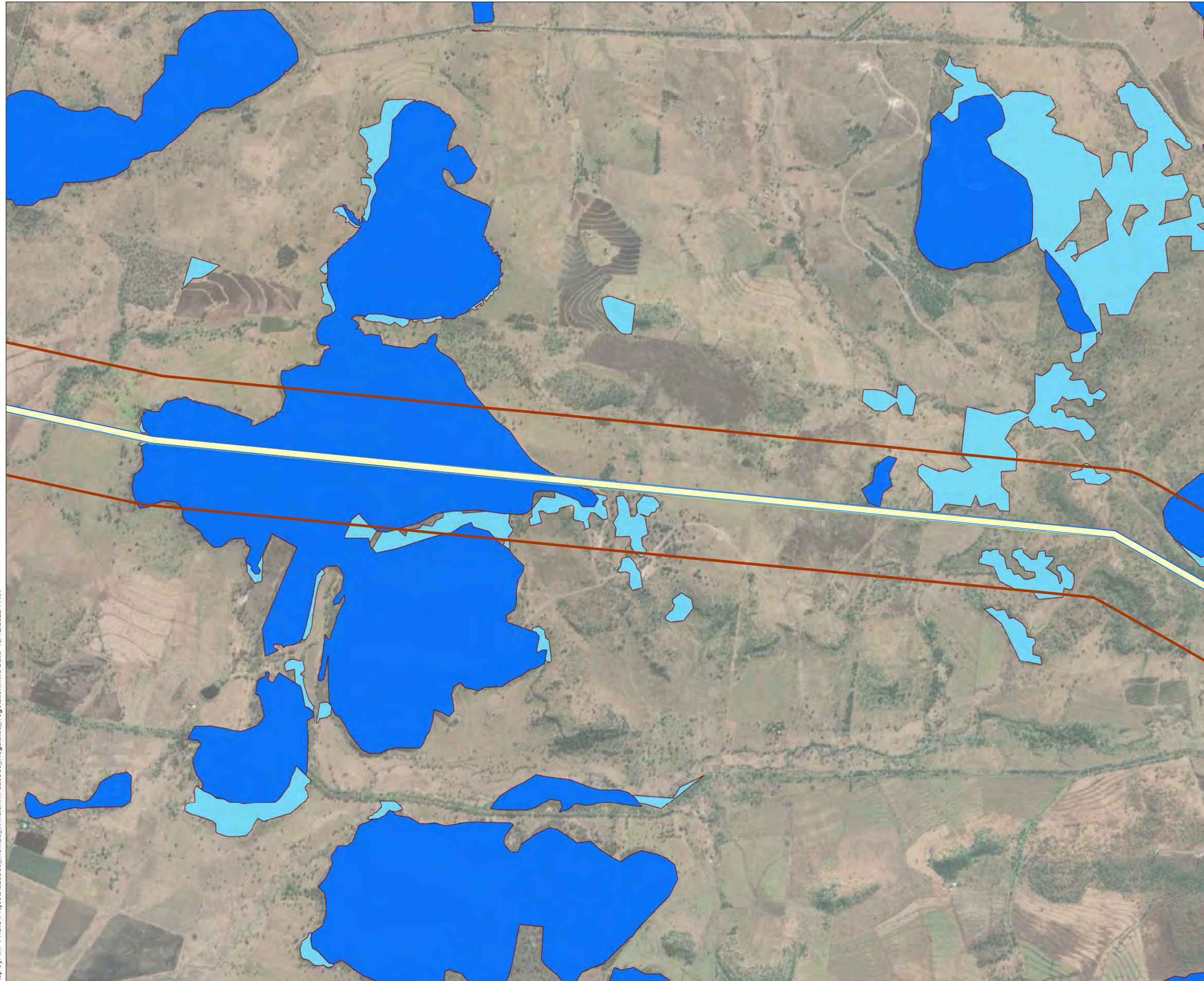
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Job No: 520836
Projection: MGA Zone 56



Legend

- Project corridor
- Category B area
- Category C area
- Category X area
- Disturbance footprint
- Study area

Notes:

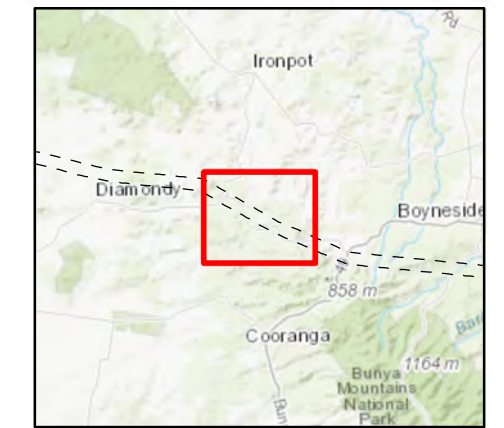
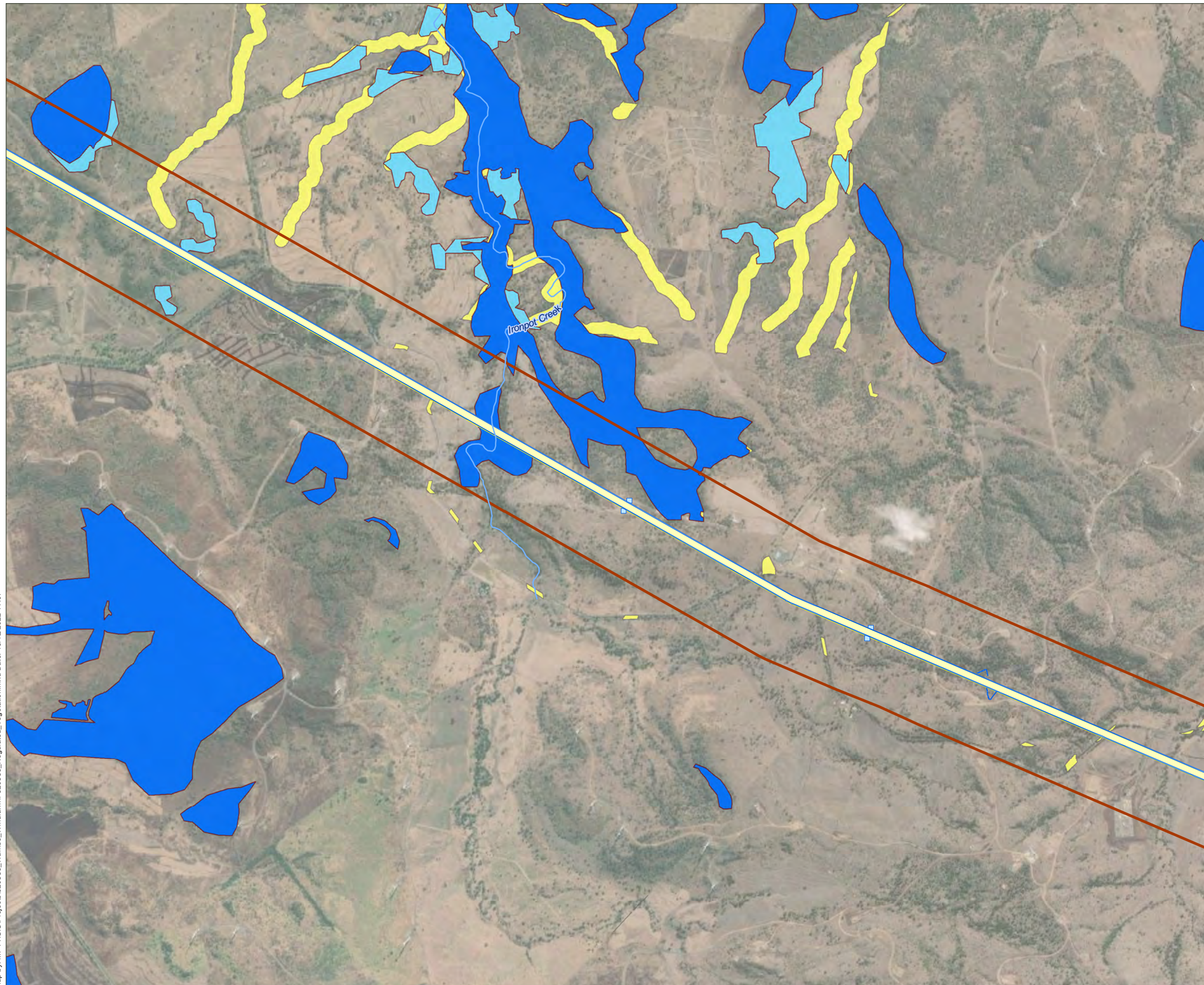
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Job No: 520836
Projection: MGA Zone 56



Legend

- Watercourses
- Project corridor
- Category B area
- Category C area
- Category R area
- Category X area
- Disturbance footprint
- Study area

Notes:

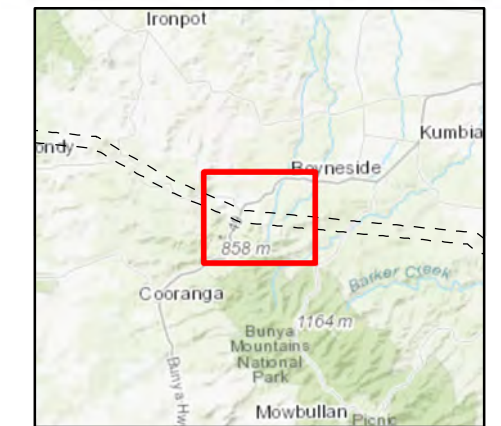
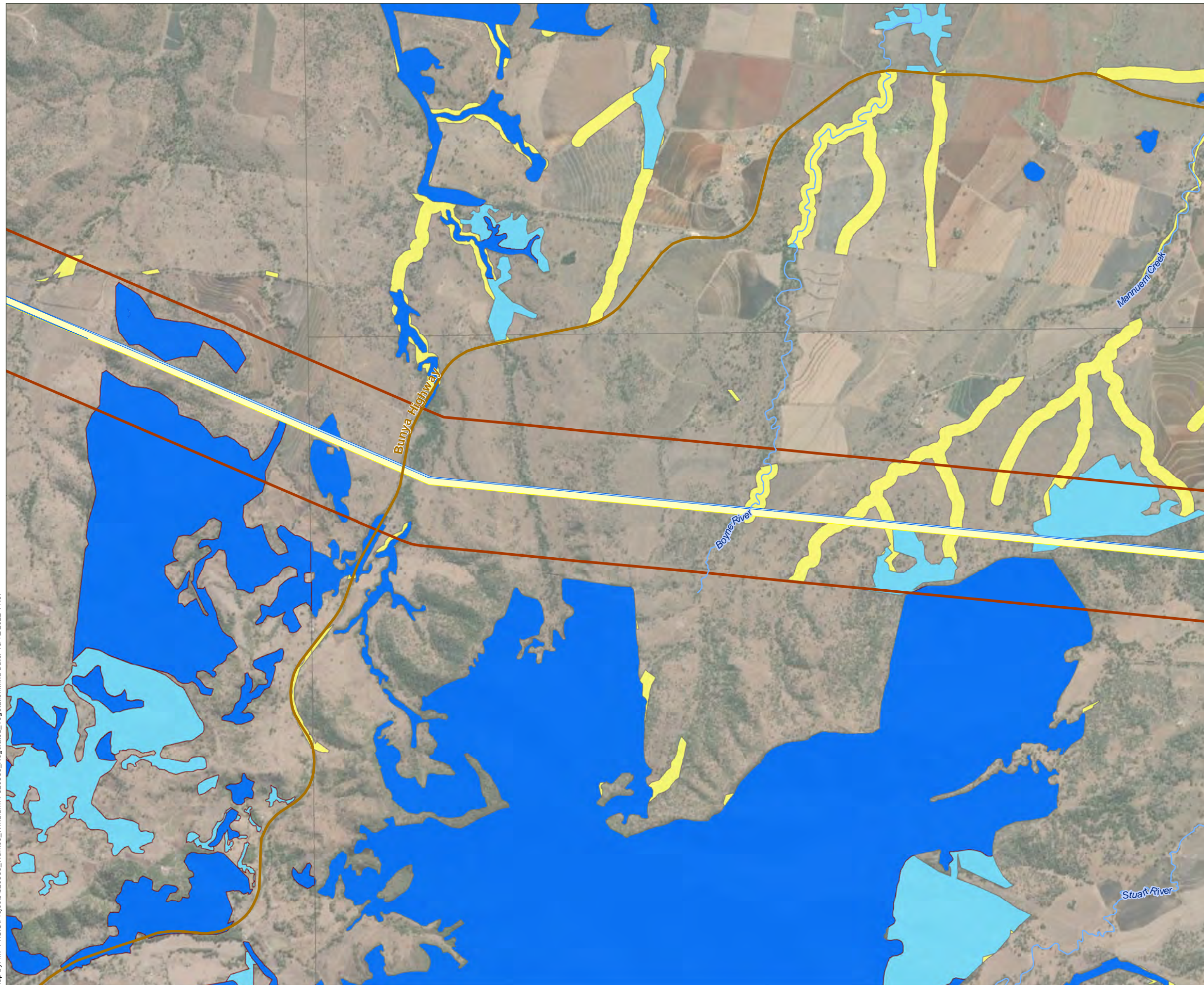
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Job No: 520836
Projection: MGA Zone 56



Legend

- Highway
- Watercourses
- Project corridor
- Category B area
- Category C area
- Category R area
- Category X area
- Disturbance footprint
- Study area

Notes:

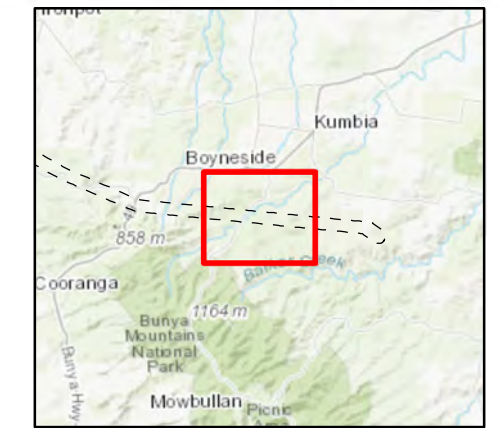
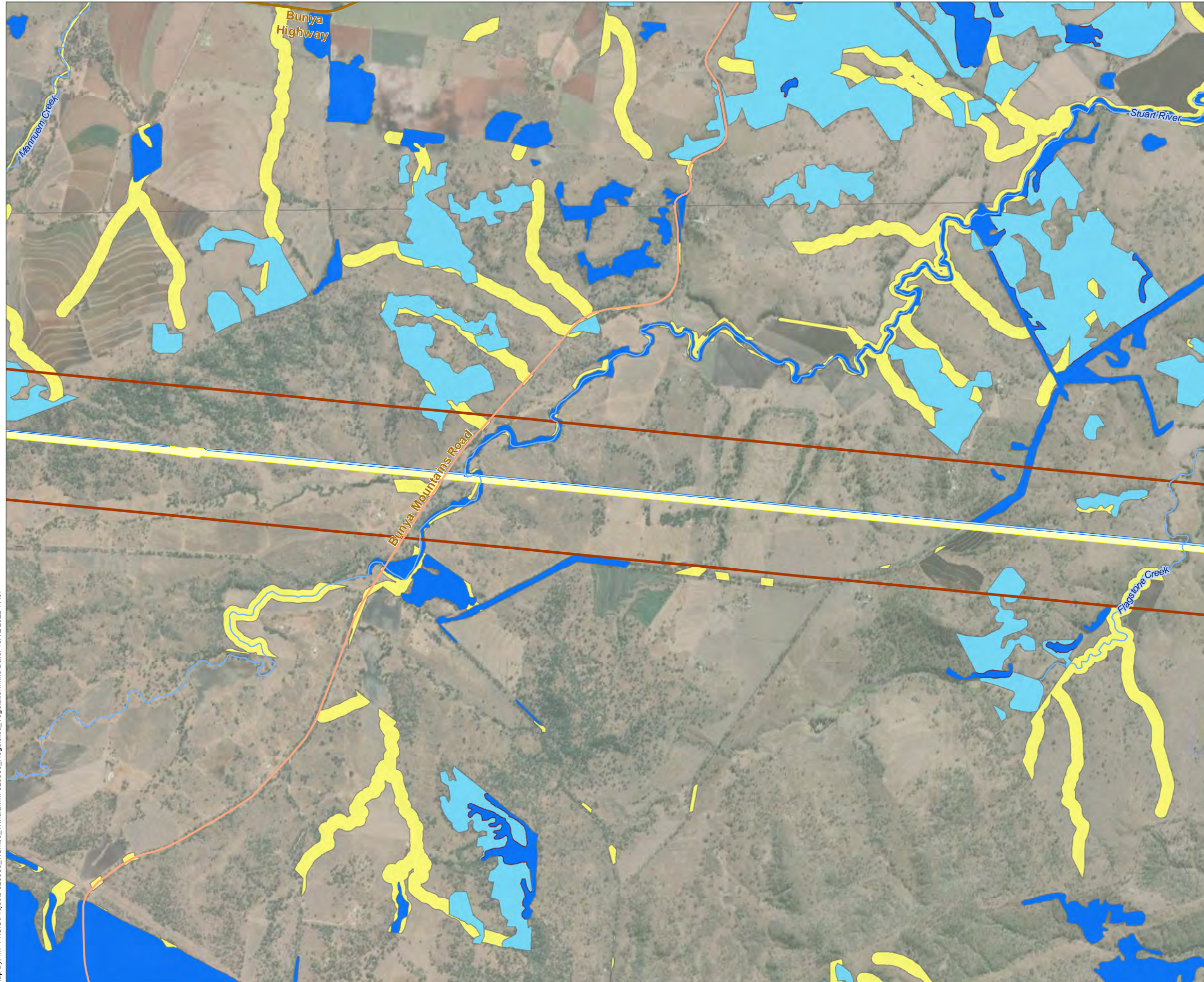
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Projection: MGA Zone 56



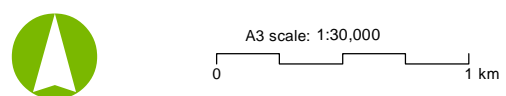
Legend

- Highway
- Secondary Road
- Watercourses
- Project corridor
- Category B area
- Category C area
- Category R area
- Category X area
- Disturbance footprint
- Study area

Notes:

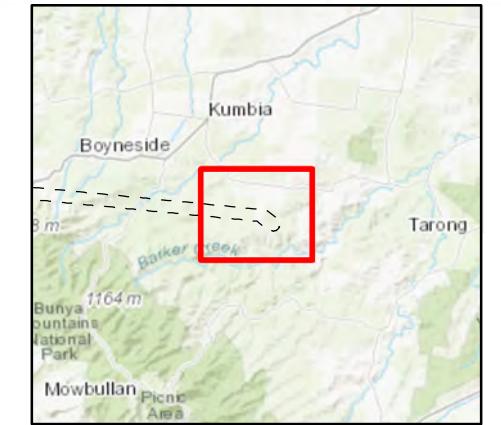
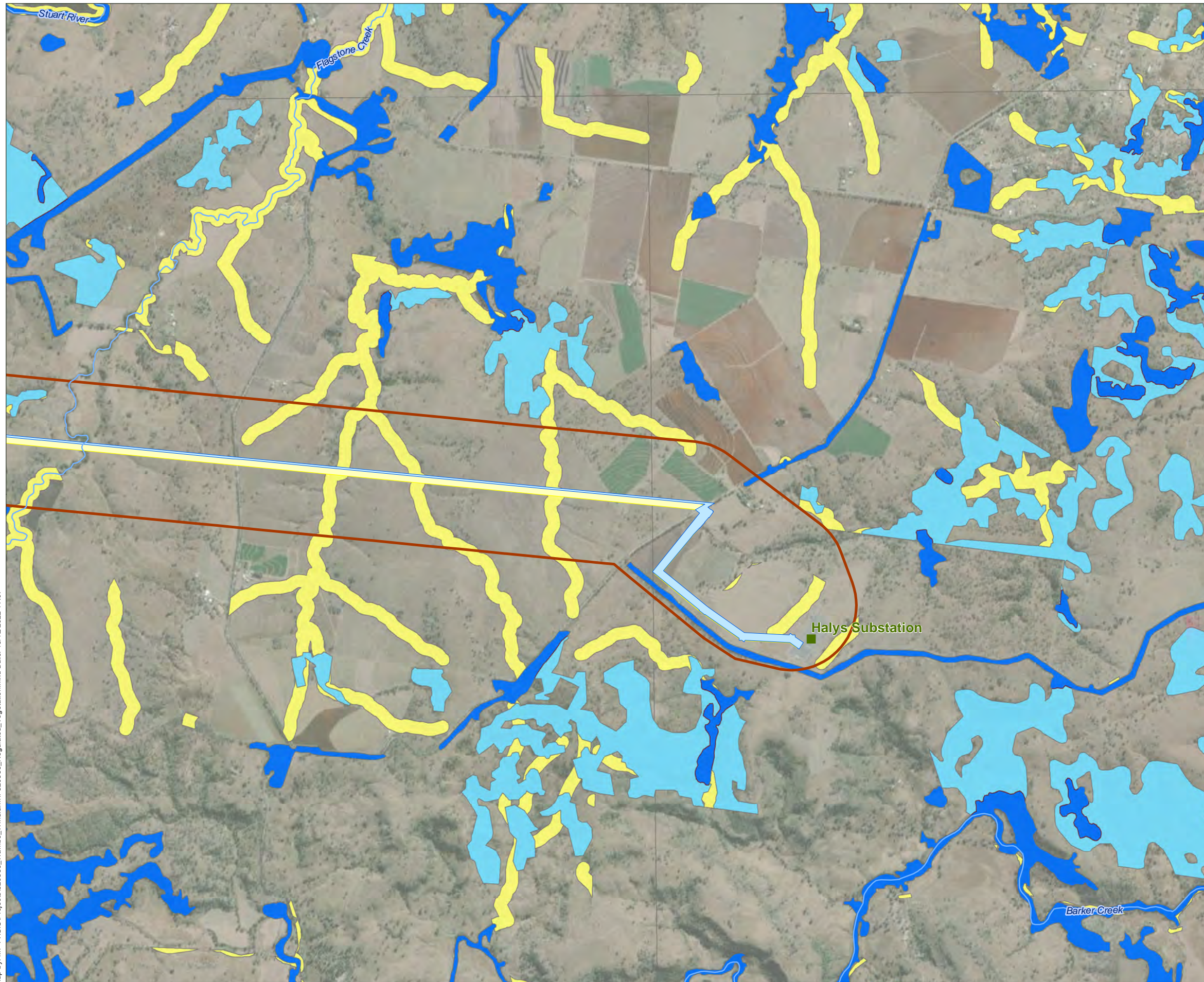
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Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 6e: Regulated Vegetation



Legend

- Substations
- Watercourses
- Project corridor
- Category B area
- Category C area
- Category R area
- Category X area
- Disturbance footprint
- Study area

Notes:

Date: 15/12/2022

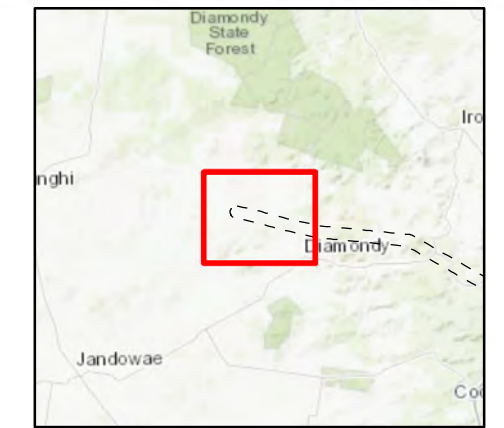
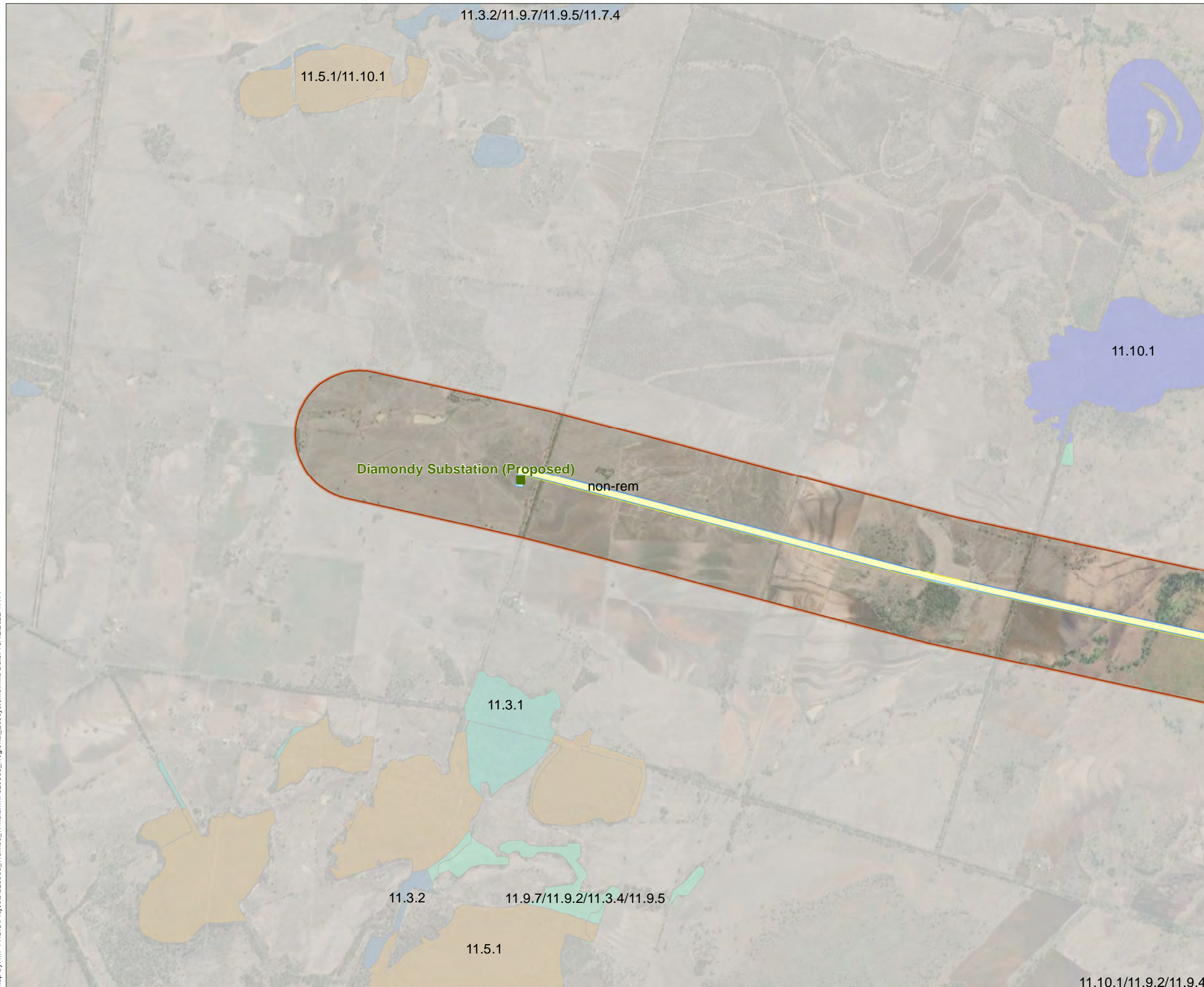
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0 1 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Substations
- Study_area_mask
- Disturbance footprint
- Project corridor
- Study area

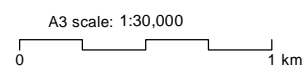
Regional Ecosystems

- 11.10.1
- 11.3.1
- 11.3.2
- 11.5.1
- 11.9.7

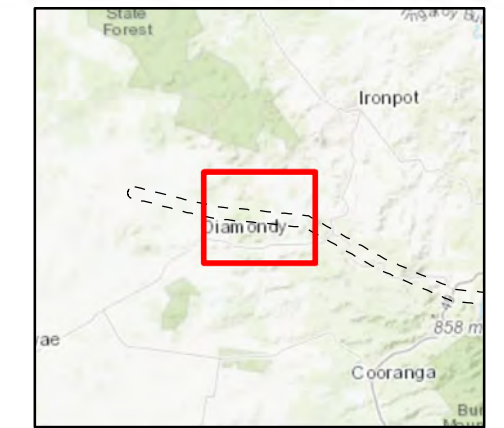
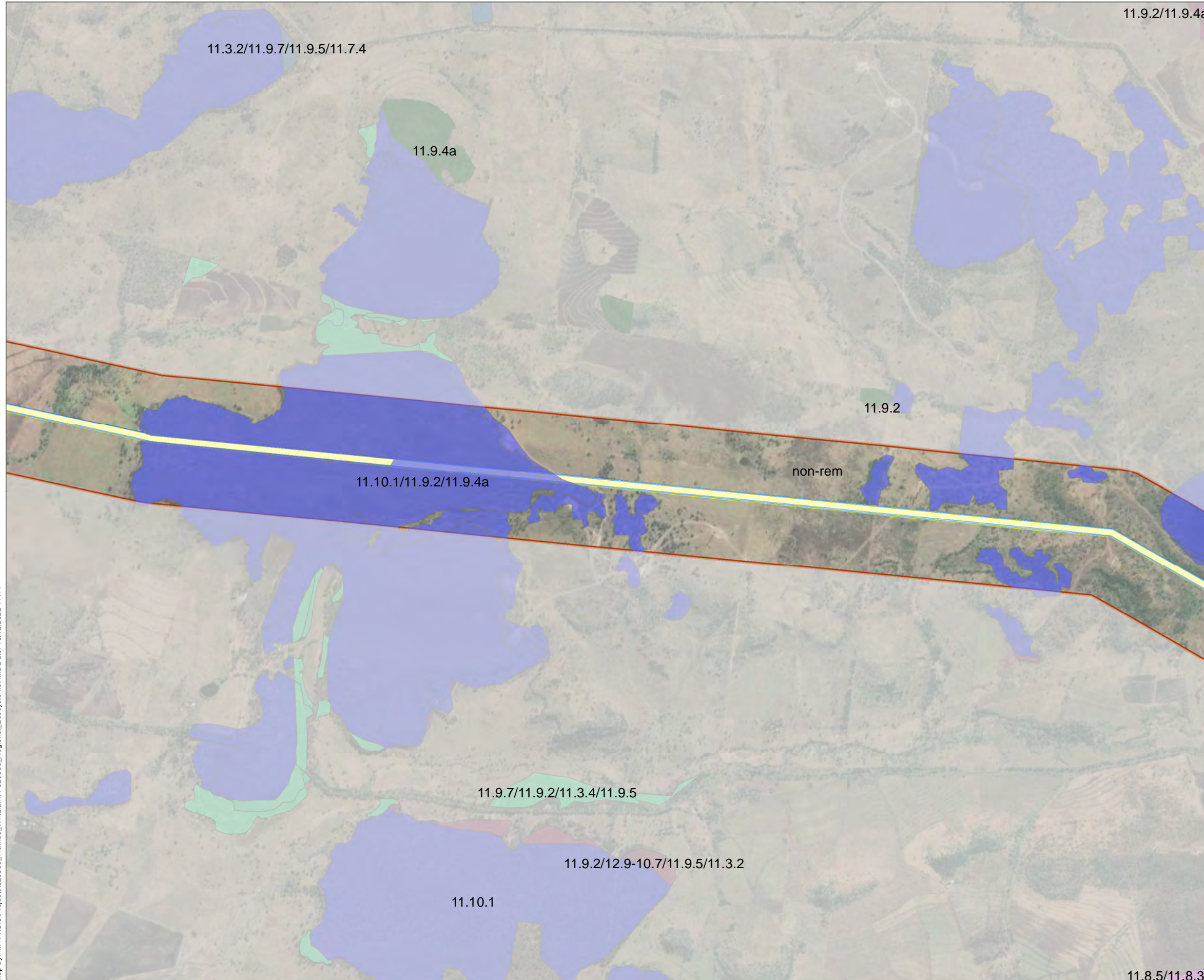
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Date: 15/12/2022

Version:0



Job No: 520836
Projection: MGA Zone 56



Legend

- Study_area_mask
- Disturbance footprint
- Project corridor
- Study area

Regional Ecosystems

- 11.10.1
- 11.3.2
- 11.8.5
- 11.9.2
- 11.9.4a
- 11.9.7

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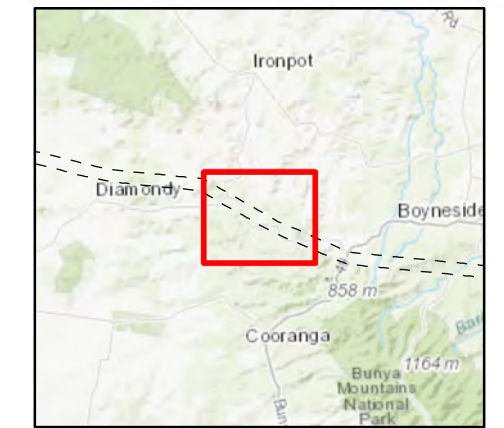
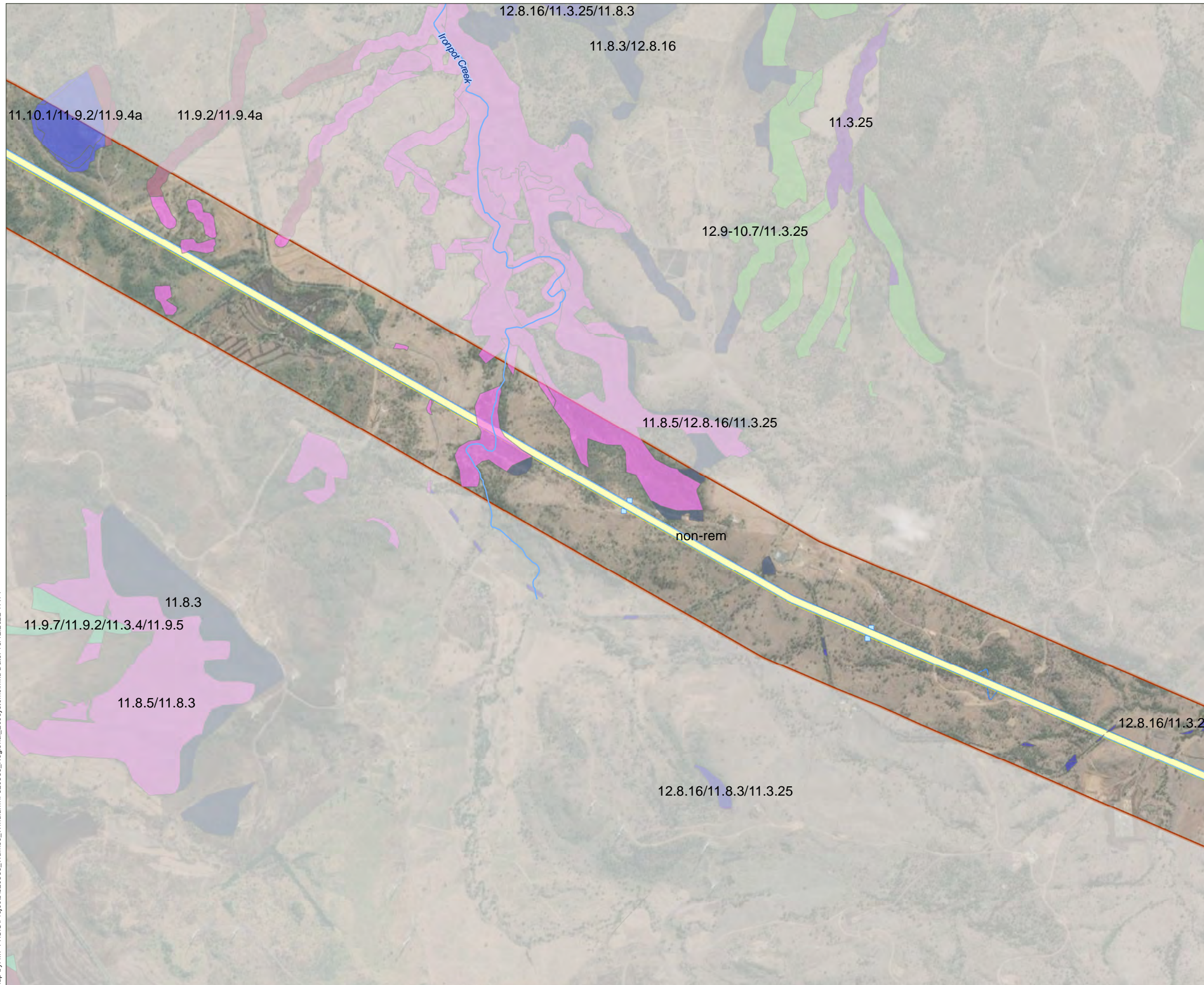
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A3 scale: 1:30,000
0 1 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Watercourses
- Study_area_mask
- Disturbance footprint
- Project corridor
- Study area

Regional Ecosystems

- 11.10.1
- 11.3.25
- 11.8.3
- 11.8.5
- 11.9.2
- 11.9.7
- 12.8.16
- 12.9-10.7

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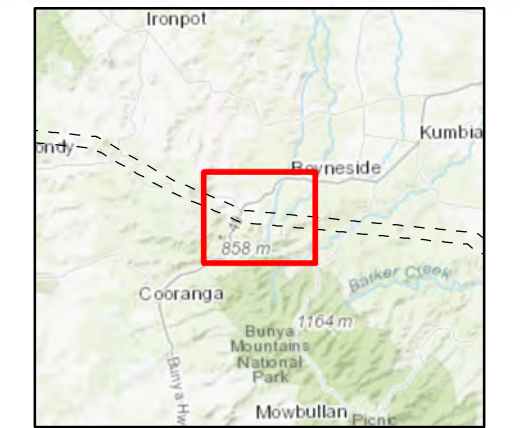
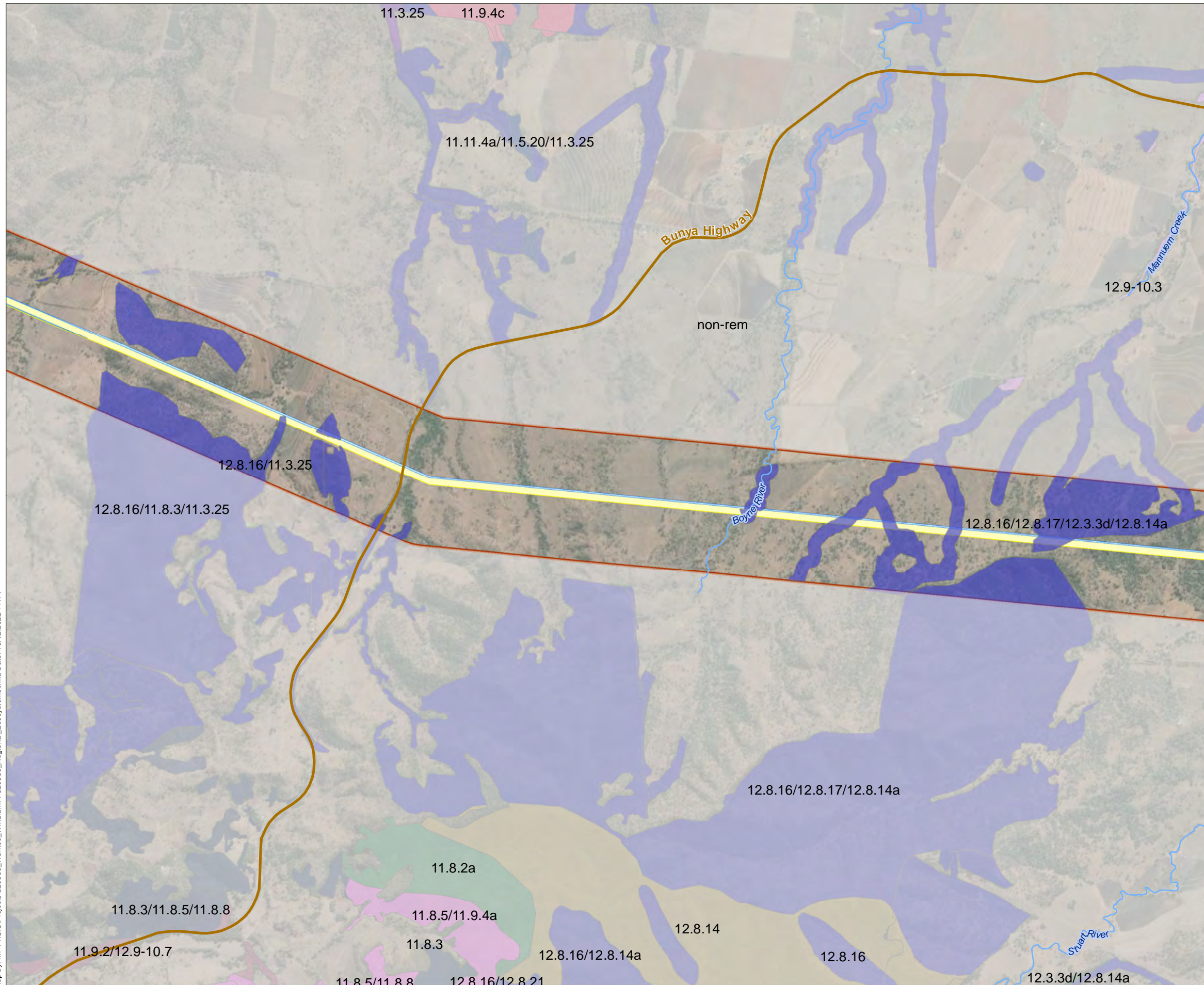
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A3 scale: 1:30,000
0 1 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Highway
- Watercourses
- Study_area_mask
- Disturbance footprint
- Project corridor
- Study area

Regional Ecosystems

- 11.11.4a
- 11.3.25
- 11.8.2a
- 11.8.3
- 11.8.5
- 11.9.2
- 11.9.4c
- 12.3.3d
- 12.8.14
- 12.8.16
- 12.9-10.3

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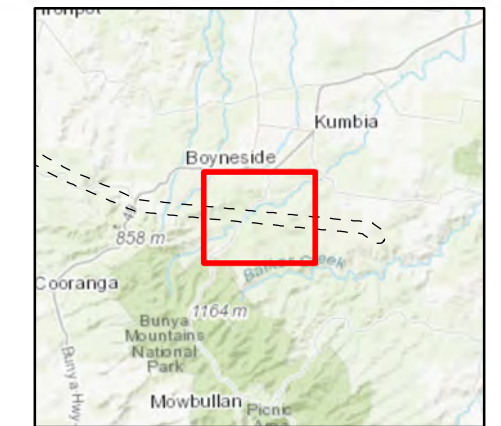
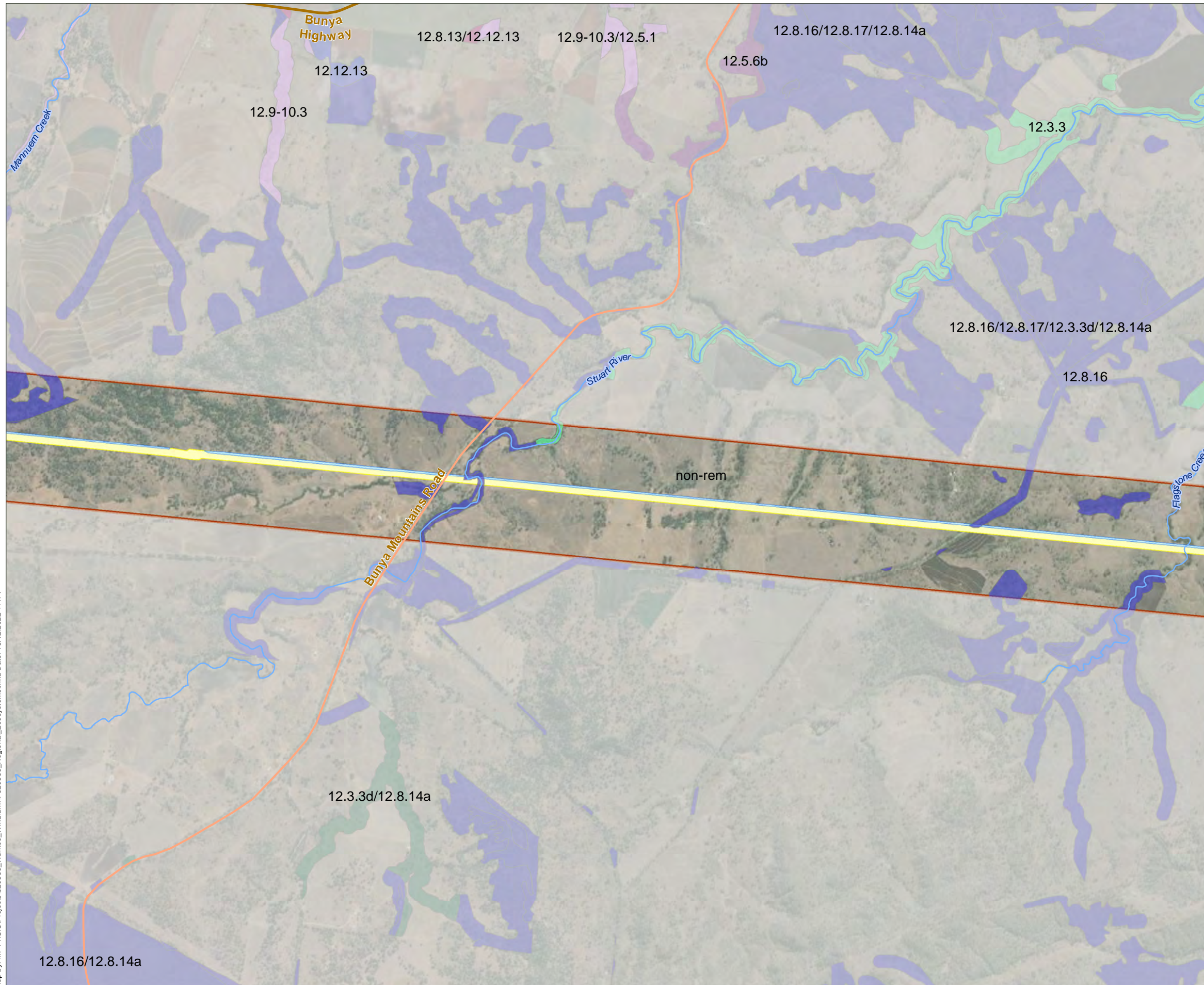
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A3 scale: 1:30,000
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Job No: 520836
Projection: MGA Zone 56



Legend

- Highway
- Secondary Road
- Watercourses
- Study_area_mask
- Disturbance footprint
- Project corridor
- Study area

Regional Ecosystems

- 12.12.13
- 12.3.3
- 12.3.3d
- 12.5.6b
- 12.8.13
- 12.8.16
- 12.9-10.3

Map by: MF P:\GIS\Projects\520836_Wambo_Windfarm\PS20836_Regional_Ecosystems.mxd Date: 15/12/2022 17:14

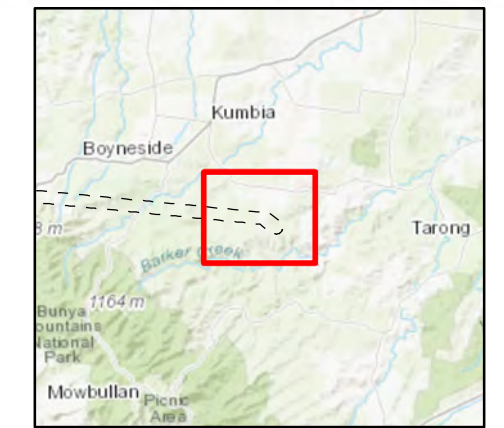
Date: 15/12/2022

Version:0



A3 scale: 1:30,000
0 1 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Substations
 - Watercourses
 - Study_area_mask
 - Disturbance footprint
 - Project corridor
 - Study area
- Regional Ecosystems**
- 12.12.24
 - 12.12.28
 - 12.12.7
 - 12.3.3
 - 12.3.7
 - 12.8.16

Map by: MF P:\GIS\Projects\520836_Wambo_Windfarm\PS20836_Regional_Ecosystems.mxd Date: 15/12/2022 17:14

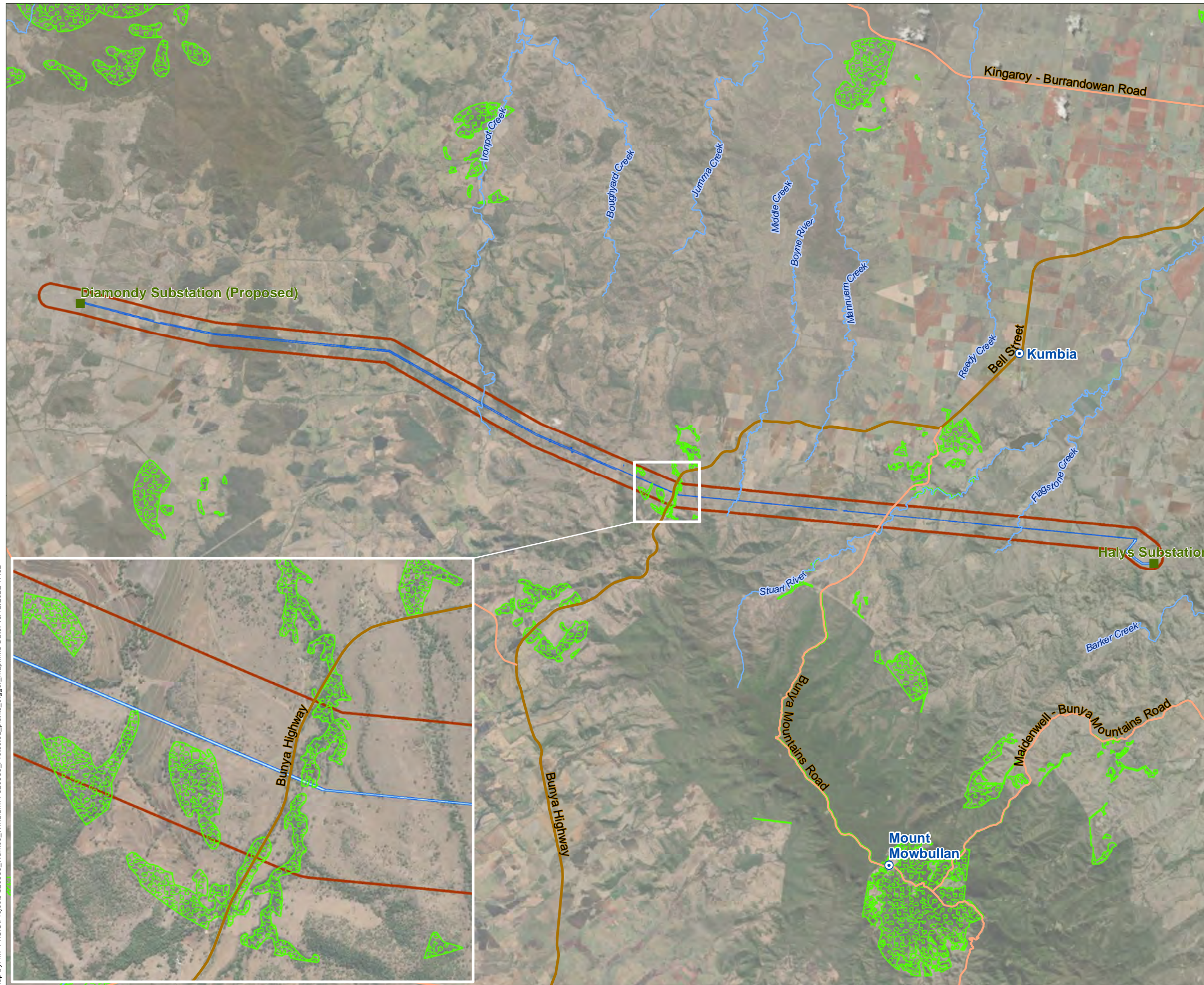
Date: 15/12/2022

Version:0



A3 scale: 1:30,000
0 1 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Substations
- Locality
- Existing rail
- Watercourses
- Highway
- Secondary Road
- ▭ Flora Survey Trigger Map
- ▭ Disturbance footprint
- ▭ Study area

Map by: MF P:\GIS\Projects\520836_Wambo_Windfarm\PS20836_Protected_plants_trigger_map.mxd Date: 15/12/2022 17:32

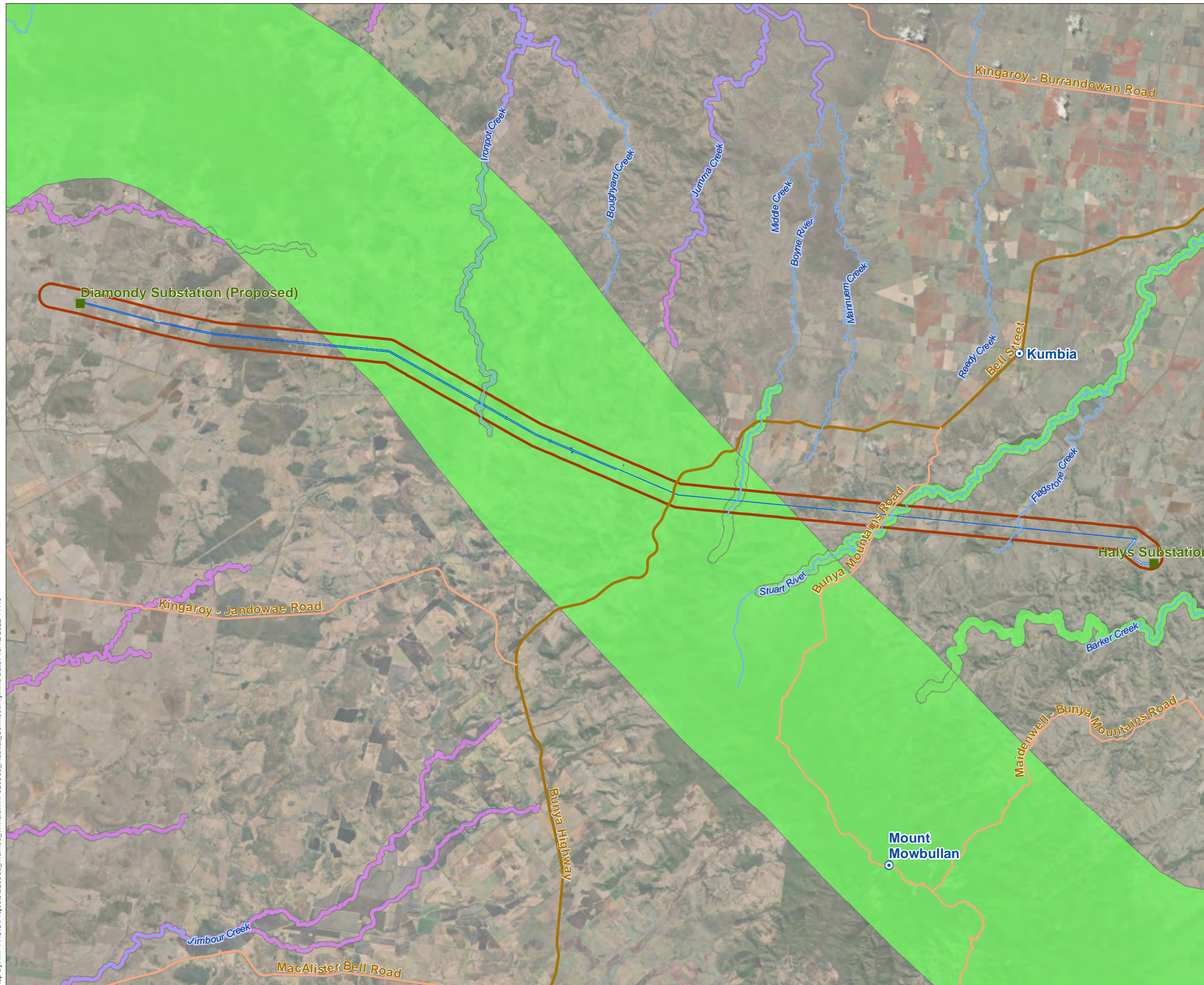
Date: 15/12/2022

Version:0



A3 scale: 1:165,000
0 1 2 3 4 5 km

Job No: 520836
Projection: MGA Zone 56



Legend

- Substations
- Locality
- Highway
- Secondary Road
- Watercourses
- Regional significance
- State significance
- Disturbance footprint
- ▭ Study area

Notes:

Date: 15/12/2022 Version:0

Map by: MF P:\GIS\Projects\520836_Wambo_Windfarm\PS20836_Habitat_Connectivity.mxd Date: 15/12/2022 17:43



A3 scale: 1:165,000
0 1 2 km

Job No: 520836
Projection: MGA Zone 56

4.2 Likelihood of occurrence assessment

A search of DES's Wildlife Online database and DCCEEW's PMST was completed for the Project disturbance footprint, using a 1 km search buffer, to identify CEEVNT conservation significant species which may be present, or have the potential to be present, within the Project study area (refer Appendix A). The results identified eight EPBC Act listed TECs in addition to 24 flora and 40 fauna species with CEEVNT values.

To identify the likely presence of MNES and MSES CEEVNT species within the Project disturbance footprint, a likelihood of occurrence assessment was conducted for all the species identified in the DES's Wildlife Online database search and PMST (refer Appendix A). The likelihood of occurrence assessment for the Project study area assists in evaluating and categorising species that are unlikely, likely, have the potential to occur, or are known to occur within the Project study area. Clarification on how the likelihood of occurrence assessment of CEEVNT species categorised each species is provided in Section 3.2.

There were 24 protected flora species identified during the desktop assessment. Of these records, all but one species were considered unlikely to occur within the Project disturbance footprint, based mainly on ground-truth data results, the lack of habitat requirements, and limited to no known records within the buffer area (based on results from the Atlas of Living Australia database). The one species considered known to occur within the Project disturbance footprint (*Callitris baileyi*) is based on recent Atlas of Living Australia records from within the Project study area and the identification of the species during the Flora Survey (refer Figure 10).

Fauna species identified using the DES's Wildlife Online database were the Short-beaked echidna (likely to occur) and Bunya sunskink (unlikely to occur).

A summary of the MSES CEEVNT species identified from the desktop assessment and their potential to occur within the Project disturbance footprint is provided in Table 4.2.

Table 4.2 MSES CEEVNT species considered to have potential, likely or known to occur within the Project disturbance footprint

Species name	Common name	Status (NC Act)	Habitat	Likelihood of occurrence
Fauna				
<i>Tachyglossus aculeatus</i>	Short-beaked echidna	SL	A wide variety of habitats, including open woodlands, forests and vine thickets	Known from scat observations during field assessment
<i>Lampropholis colossus</i>	Bunya sunskink	NT	Dry rainforest edge adjacent to balds, dry rainforest and savanna woodland containing rainforest elements at high altitude	Unlikely due to lack of altitude and suitable habitat within Project disturbance footprint
Flora				
<i>Callitris baileyi</i>	Bailey's cypress	NT	Grows on rocky slopes, hilly or mountainous areas, in shallow and often clay soils. It is found in eucalypt woodland, commonly associated with ironbark, blue gum and spotted gum	Known from observations during field assessment
<i>Cyperus clarus</i>		V	Grows in grassland or open woodland, on heavy soils derived from basalt	Unlikely, no observations of species during field assessment
<i>Cryptocarya floydii</i>	Gorge laurel	NT	Steep dry rocky gullies	Unlikely, no observations of species during field assessment
<i>Melaleuca formosa</i>	-	NT	This melaleuca occurs in near coastal districts in south-eastern Queensland where it grows in vine forest or as an understorey plant beneath eucalypts in loam or sandy soil over trachyte. Grows on and around cliffs. Similar to <i>Melaleuca saligna</i> .	Unlikely, no observations of species during field assessment

Species name	Common name	Status (NC Act)	Habitat	Likelihood of occurrence
<i>Rhodamnia dumicola</i>	Rib-fruited malletwood	E	Dry Rainforest species from north of Beenleigh. Flowering spring to summer. Fruiting April to May.	Unlikely, no observations of species during field assessment
<i>Diuris parvipetala</i>	-	V	<i>Diuris parvipetala</i> has a purple flower and grows among grass in open forests, on ridges and gentle to steep slopes, among basalt boulders and on granite pavements. It grows in shallow, brown, basalt loam soils. Flowers in Spring.	Unlikely, no observations of species during field assessment.

Table notes:

NCA: Queensland conservation status of the taxon under the NC Act (Least Concern (LC), Critically Endangered (CE), Endangered (E), Near Threatened (NT), Special Least Concern (SLC), and Vulnerable (V)).

A summary of the MNES identified from the desktop assessment and their potential to occur within the Project disturbance footprint is provided in Table 4.3. A detailed likelihood of occurrence assessment which has informed Table 4.3 is provided in Appendix B.

Table 4.3 MNES considered to have potential, or is likely or known to occur within the Project disturbance footprint

Common name	Species name	EPBC Act conservation status	Likelihood of occurrence
Threatened fauna			
South-eastern glossy black-cockatoo	<i>Calyptorhynchus lathami lathami</i>	V	Potential
Painted honeyeater	<i>Grantiella picta</i>	V	Likely
White-throated needletail	<i>Hirundapus caudacutus</i>	V	Likely
Swift parrot	<i>Lathamus discolor</i>	CE	Potential
Black-breasted button-quail	<i>Turnix melanogaster</i>	V	Potential
Corben's Long-eared Bat	<i>Nyctophilus corbeni</i>	V	Likely
Greater glider (southern and central)	<i>Petauroides volans</i>	E	Likely
Yellow-bellied glider (south-eastern)	<i>Petaurus australis australis</i>	V	Likely
Koala	<i>Phascolarctos cinereus</i>	E	Known
Grey-headed flying-fox	<i>Pteropus poliocephalus</i>	V	Likely
Collared delma	<i>Delma torquata</i>	V	Likely
Yakka skink	<i>Egernia rugosa</i>	V	Potential
Migratory birds			
Fork-tailed Swift	<i>Apus pacificus</i>	M	Likely
Oriental cuckoo	<i>Cuculus optatus</i>	M	Potential
Satin flycatcher	<i>Myiagra cyanoleuca</i>	M	Potential
Rufous fantail	<i>Rhipidura rufifrons</i>	M	Known
Spectacled monarch	<i>Symposiachrus trivirgatus</i> as <i>Monarch trivirgatus</i>	M	Potential

Table notes:

V = Vulnerable E = Endangered M = Migratory



Legend

- Threatened flora
- Locality
- Highway
- Secondary Road
- Watercourses
- Disturbance footprint
- Project corridor
- Study area

Map by: MF P:\GIS\Projects\520836_Wambo_Windfarm\PS20836_Field_identified_Threatened_Flora.mxd Date: 15/12/2022 17:41

Date: 15/12/2022

Version:0



A3 scale: 1:10,000
0 100 200 300 m

Job No: 520836
Projection: MGA Zone 56

Powerlink Wambo transmission line
Figure 10: Field-identified Threatened Flora

4.3 Field assessment

4.3.1 Threatened flora

The desktop assessment identified that sections of the Project Corridor are located within the Protected Plants Flora Survey Trigger Map high risk area. Subsequently, a protected plant flora survey has been undertaken for the clearing impact area, which included the Project disturbance footprint to the extent it is within a 'High Risk Area' with a 100 m buffer in accordance with the *Flora Survey Guidelines – Protected Plants Nature Conservation Act 1992*. Timed meander surveys have been undertaken at the rates specified in Section 6.2.2 of the *Flora Survey Guidelines*.

A total of four individuals of a single species (i.e. Bailey's Cypress Pine, *Callitris baileyi*) were identified within or immediately adjacent to the Project disturbance footprint as illustrated in Figure 10.

4.3.2 Regional ecosystems

REs are remnant vegetation communities listed under the VM Act. The Project disturbance footprint is mapped on the Regulated Vegetation Management Map as containing Category B (remnant) C (regrowth), and R (GBR riverine regrowth) vegetation, as well as sections of Category X (non-remnant vegetation). This consists of the following REs:

- Endangered RE: 12.3.3
- Of concern REs: 11.8.3 and 12.8.16
- Least concern REs: 11.3.25, 11.8.5, 11.9.2, 11.10.1, and 12.3.7.

The REs ground-truthed within the Project study area and thus the Project disturbance footprint are presented in Table 4.4. Non-remnant vegetation was the dominant vegetation type within the Project disturbance footprint being majority previously disturbed.

Removal of the vegetation amounts listed in the area within the Project disturbance footprint in Table 4.4 may be required for the Project.

Table 4.4 Vegetation ground-truthed within the Project disturbance footprint

RE	Description	VM Act	Area within Project Study Area (ha)	Area within Project disturbance footprint (ha)
11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	Least concern	4.31	0.00
11.8.3	Semi-evergreen vine thicket on Cainozoic igneous rocks	Of concern	2.58	0.00
11.8.5	<i>Eucalyptus orgadophila</i> open woodland on Cainozoic igneous rocks	Least concern	315.53	3.49
11.9.2	<i>Eucalyptus melanophloia</i> +/- <i>E. orgadophila</i> woodland to open woodland on fine-grained sedimentary rocks	Least concern	11.13	0.05
11.10.1	<i>Corymbia citriodora</i> woodland on coarse-grained sedimentary rocks	Least concern	90.77	0.03
12.3.3	<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium	Endangered	2.58	0.00
12.3.7	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland	Least concern	13.1	0.24

RE	Description	VM Act	Area within Project Study Area (ha)	Area within Project disturbance footprint (ha)
12.8.16	<i>Eucalyptus crebra</i> +/- <i>E. melliodora</i> , <i>E. tereticornis</i> woodland on Cainozoic igneous rocks	Of concern	225.66	1.29
-	Non-remnant vegetation	-		59.68 ha



Photograph 1 RE 11.10.1: *Corymbia citriodora* woodland on coarse-grained sedimentary rocks



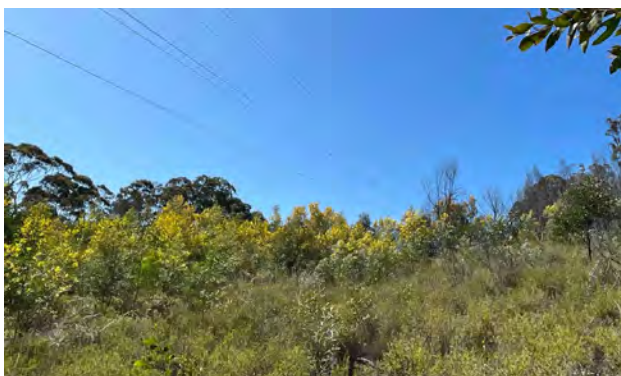
Photograph 2 RE 12.8.16: *Eucalyptus crebra* +/- *E. melliodora*, *E. tereticornis* woodland on Cainozoic igneous rocks



Photograph 3 Non-remnant vegetation grassland dominated by pasture grass



Photograph 4 RE 11.8.5: *Eucalyptus orgadophila* open woodland on Cainozoic igneous rocks



Photograph 5 Non-remnant vegetation wattle spp. regrowth under powerlines



Photograph 6 RE 12.3.7: *Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca* spp. fringing woodland on the Stuart River

4.3.3 Regulated vegetation

A review of the DNRME Regulated Vegetation mapping identified the presence of regulated vegetation at various locations within the Project study area. The Project study area contains large portions of Category X as well as portions of Categories C, R and B (remnant vegetation) mapping.

4.3.4 Threatened Ecological Communities

- One Endangered (EPBC Act) TEC was identified in the desktop assessment as having potential to occur within the Project disturbance footprint, including White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
- In Queensland, the TEC is considered to be analogous to 12 REs including: 11.3.23, 11.8.2a, 11.8.8, 11.9.9a, 12.8.16, 13.3.4, 13.3.1, 13.11.3, 13.11.4, 13.11.8, 13.12.8, and 13.12.9. RE 12.8.16 was mapped under state regional ecosystem mapping.
- No TECs were encountered during the field surveys. REs confirmed during the field surveys were not analogous to the REs associated with the TEC, and vegetation within the Project study area does not meet the key diagnostic features or condition thresholds for the TEC, as detailed in the Listing Advice (DCCEEW 2022f).

4.3.5 Threatened fauna

The ecological field investigations identified no conservation significant fauna. It is acknowledged that no targeted fauna surveys were conducted for the Project. In absence of targeted fauna surveys, presence was assumed by using habitat as a proxy. These include:

- South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)
- Painted honeyeater (*Grantiella picta*)
- White-throated needletail (*Hirundapus caudacutus*)
- Swift parrot (*Lathamus discolor*)
- Black-breasted button-quail (*Turnix melanogaster*)
- Corben's long-eared bat (*Nyctophilus corbeni*)
- Greater glider (*Petauroides volans*)
- Yellow-bellied glider (*Petaurus australis australis*)
- Koala (*Phascolarctos cinereus*)
- Grey-headed flying-fox (*Pteropus poliocephalus*)
- Collared Delma (*Delma torquata*)
- Yakka skink (*Egernia rugosa*).

Due to the Project only clearing a small amount of habitat (6.78 ha) in comparison to the large area of the Project Corridor, significant impacts are not expected on any of these species. A SIA has been undertaken for potential impacts to MNES species determined to have a high likelihood of occurrence within the Project disturbance footprint.

4.3.6 Migratory species

Only one migratory MNES was observed during site investigations, Rufous fantail (*Rhipidura rufifrons*) found at 151.6004926°E 26.7515443°S.

4.3.7 Special Least Concern species

Suitable habitat for one Special Least Concern species as listed under the provisions of the NC Act, was identified within the Project disturbance footprint during field investigations. This species was the Short-beaked echidna (*Tachyglossus aculeatus*). Presence of the Short-beaked echidna was indicative by the identification of scat traces within the Project disturbance footprint during the time of field investigations, suggestive of suitable habitat (refer Photograph 7).

The species is associated with most to all habitats across Australia. It is frequently observed rurally in open woodland, scrubs, forests, grasslands, and other sandy habitats. Breeding places for the Short-beaked echidna are associated with burrows under fallen logs or debris, or in the sides of banks and sandy soils.

The Short-beaked echidna is a spiny egg-laying mammal and is distributed across all of Australia including Tasmania. The species has been known to inhabit all ecosystems from the beach to montane areas, but typically prefers areas where terrestrial termite mounds and leaf litter is abundant.

Breeding from the end of June until September, echidnas commonly display sexual activity by making 'trains' with the female leading and prospecting males following behind. The female will lay one egg and incubate the egg within the pouch. Once the egg hatches after approximately 10 days, the young echidna is reared in the pouch for 3 months. The female echidna may leave the young in the burrow at times while foraging throughout this period. The young will leave the burrow at approximately 12 months of age (Rismiller P.D.).

The Project disturbance footprint is considered to provide potential suitable breeding habitat for the Short-beaked echidna. Project associated impacts have the potential to affect Short-beaked echidna breeding places.



Photograph 7 Scat traces of Short-beaked echidna

4.3.8 Animal breeding places

The habitat assessments undertaken during the February and August field surveys determined that large hollow-bearing trees, remnant vegetation, and waterways were all present throughout the Project Corridor. The Pylon towers presented favourable nesting locations for corvids, parrots and raptors.

Field surveys recorded three conservation significant species that may utilise animal breeding places within the Project disturbance footprint. The ecological surveys also confirmed the presence of suitable animal breeding place habitat for an additional five (5) species listed below. Therefore, a High-Risk SMP is recommended for the Project, in accordance with the NC Act provisions; *SMP Information Sheet – Requirements for tampering with a protected animal breeding place in Queensland* (DES 2020b).

Species to be included on the High-Risk SMP include species identified by the SIA :

- Rufous fantail (*Rhipidura rufifrons*)
- Greater glider (*Petauroides volans*)
- Yellow-bellied glider (*Petaurus australis australis*)
- South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)

As well as the Special Least Concern species:

- Short-beaked echidna (*Tachyglossus aculeatus*)

Additional field investigations are recommended to determine presence or absence of these species which would reduce the number of species to be included in the High-Risk SMP.

4.3.9 Aquatic values

The Project study area was observed to contain several minor and major watercourse features recognised under the VM Act, with stream orders ranging from one to four. The Stuart River is the highest order watercourse (stream order 4) within the Project disturbance footprint; however only traverses a small section near Bunya Mountains Road. The Boyne River is also a major watercourse that traverses the Project study area, however it is not perennial and did not have water present throughout the year. At scattered locations across the Project study area, an additional two minor watercourses (stream order 3) intersect, including Ironpot and Flagstone Creek. All aforementioned watercourses although considered 'major' are non-perennial.

Almost all watercourses run in a northerly direction and due to the linear shape of the Project study area this means only small discrete sections are generally intersected.

Based on the field survey only one artificial wetlands in the form of a farm dam occurred.

No waterbodies within the wider Project study area or Project disturbance footprint are mapped VM Act wetlands or high ecological significance wetlands.



Photograph 8 Flagstone Creek, a minor non-perennial waterway

4.3.10 Restricted matters

Restricted invasive matters are established in Queensland and seriously threaten Queensland's primary industries, natural environment livestock, human health, and people's livelihoods. The following 'Restricted Invasive Plants' under the *Biosecurity Act 2016* were recorded within the Project Corridor during the ecological field investigation conducted in February 2022:

- *Harrisia cactus (Harrisia martini)* – Category 3²
- *Lantana (Lantana camara)* – Category 3 and Weed of National Significance (WoNS)
- Prickly pear (*Opuntia stricta*) – Category 3 and WoNS
- Velvety tree pear (*Opuntia tomentosa*) – Category 3 and WoNS
- Giant Parramatta grass (*Sporobolus fertilis*) – Category 3
- Giant rats tail grass (*Sporobolus pyramidalis*) – Category 3.

Additionally, two recognised priority environmental weeds were identified:

- African lovegrass (*Eragrostis curvula*)
- Bathurst burr (*Xanthium spinosum*).

Traces of the following species listed as a category 3, 4, 6 'Restricted Matter' under the Biosecurity Act was identified during the field investigation conducted in February 2022:

- Wild dog (*Canis lupus familiaris*) (identified by observations of tracks).

2. ²Category 3 restricted matters must not be released into the environment, given away or sold.

5 Potential impacts and mitigation measures

5.1 Project Impacts

The Project disturbance footprint includes the extension of a powerline easement and associated infrastructure. The proposed works are likely to impact the ecological values contained within the Project disturbance footprint through the clearing of vegetation and its associated impact on species habitat. The proposed development also has the potential to adversely impact the waterway within the Project disturbance footprint.

Project impacts which have the potential to negatively impact the surrounding ecological values include:

- Removal of vegetation and wildlife habitat for Project activities (refer Sections 5.1.1 and 5.1.2)
- Habitat removal also potentially leading to a reduction in connectivity and habitat fragmentation (refer Section 5.1.3)
- Increased edge effects such as weed invasion (refer Section 5.1.4)
- Project construction activities which have the potential to impact ecological values directly and indirectly, including direct mortality of plants and animals (refer Sections 5.1.5 and 5.1.5)
- Loss of or disturbance to microhabitat features such as tree hollows, leaf litter, ground timber, dense shrubs and hollows.
- Increase risk of bushfire from powerlines.

5.1.1 Removal of vegetation

Vegetation clearing will be required during the construction of the Project. The clearing of vegetation is managed under the VM Act.

The total amount of vegetation to be removed for the Project is 6.78ha. A detailed breakdown of each category of regulated vegetation to be removed as part of the Project is shown in Table 5.1.

Table 5.1 Regulated vegetation within the Project disturbance footprint to be removed

Regulated vegetation	Vegetation Management Act Class	Amount to be removed within the Project disturbance footprint (ha)
Category B – Remnant vegetation	Least Concern	4.70
Category C – High value regrowth	Endangered	0.52
Category C – High value regrowth	Of concern	0.06
Category R - High value regrowth	Of concern	1.50
Total amount of vegetation to be removed (excluding Cat. X)		6.78

The total amounts of vegetation to be removed and removal process will be addressed prior to removal in the Project Environmental Management Plan (construction) (Project EMP(C)).

Regulated vegetation is considered a MSES which are a component of the biodiversity state interest that is defined under the State Planning Policy and defined under the EO Regulation. Removal of regulated vegetation may result in a significant residual impact which is discussed in Section 6.

5.1.2 Removal of wildlife habitat

Existing habitat values within the proposed Project disturbance footprint were associated with remnant vegetation towards the west of the Project Corridor. Habitat values in the eastern portion of the Project Corridor were minimised due to previous clearing for cattle grazing activity and weed invasion.

Essential habitat for NC Act listed species, as regulated under the VM Act, is mapped in the northern portion of the Project disturbance footprint for Bailey's Cypress (*Callitris baileyi*) (refer Section 4.3.1). The mapped essential habitat is associated with RE 12.8.16 and was field verified as accurate.

It is noted that a single migratory species (ie. Rufous fantail, *Rhipidura rufifrons*) was observed during the February or August 2022 field investigations and only traces of the conservation significant Short-beaked echidna (*Tachyglossus aculeatus*) from scat collection were observed. No further conservation significant fauna species were observed as present within the Project disturbance footprint.

The maximum amount of field verified suitable habitat within the Project disturbance footprint to be removed for the Project includes:

- Short-beaked echidna (*Tachyglossus aculeatus*) (Special Least Concern, NC Act): 6.78 ha of suitable habitat
- Bailey's Cypress (*Callitris baileyi*) (Near Threatened, NC Act): 0.1 ha of suitable habitat.

5.1.3 Reduction in the connectivity of biodiversity corridors and habitat fragmentation

Vegetation clearing for the Project can reduce habitat connectivity and create habitat fragmentation. It can also introduce "edge effects" due to changes in environmental conditions (i.e. altered light levels, wind speed, temperature). This can lead to changes in the local environment, by promoting the growth of different vegetation types (including weed species), promoting invasion by pest animals specialising in edge habitats, or changing the behaviour of resident native animals (Moenting and Morris 2006).

Statewide biodiversity corridors and buffers under the BPA are mapped to cross through the Project disturbance footprint as well as riparian corridors. Woodlands and habitat connectivity within the Project disturbance footprint is largely restricted by cleared agricultural paddocks; however, patches of remnant vegetation that exist within the Project Corridor allow for some connectivity to and between larger patches of remnant vegetation. This is especially true for remnant vegetation at the west of the Project Corridor, where stands of vegetation are more consistent and links connectivity between Diamondy State Forest to Jandowae State Forest and Mahen State Forest. Further, vegetation at the centre of the Project Corridor, near Bunya Highway and Bunya Mountains Road and alongside remnant riparian corridors, provide connectivity to Bunya Mountains National Park. Due to accessibility and the limited restrictive barriers (i.e. lack of fencing) that occurs throughout the Project Corridor and buffer area, it is likely fauna cross through the Project disturbance footprint regularly. Additionally, the MSES protected areas (Bunya Mountains National Park, Boyneside Nature Refuge and Tarong National Park) and state forests (Diamondy State Forest, Jandowae State Forest and Mahen State Forest) surrounding the Project Corridor are considered to provide high value habitat for a range of threatened and least concern species. Transportation between these areas via the Project Corridor for highly mobile species (i.e. birds) or species with large home ranges (i.e. Greater glider (*Petauroides volans*)) is considered likely.

The clearing of vegetation within the Project disturbance footprint would reduce connectivity between surrounding vegetation but would not block or disconnect these patches to a point of further detriment for fauna passage.

To assess the extent of potential Project connectivity impacts, the DES 'landscape fragmentation and connectivity' tool is used. The tool has been applied to the Project disturbance footprint and determined that any impact on connectivity areas is not significant. It has defined that reduction in core remnant vegetation at the local scale is non-significant (0.44%) and that a change from core to non-core remnant vegetation at the site scale is also non-significant.

5.1.4 Displacement of flora and fauna species from invasion of weed and pest species

Weed and pest species have the potential to impact on terrestrial and aquatic biodiversity. Exotic species can displace native species through predation and competition. The most likely causes of pest dispersal and pest introduction associated with the Project include vegetation and soil movement, and attachment of seed (and other propagules) to vehicles and machinery.

Numerous non-native flora species have been recorded in the Project disturbance footprint and surrounds. Non-remnant patches within the Project disturbance footprint are dominated by introduced grasses, particularly Giant Parramatta grass (*Sporobolus fertilis*) and Giant rats tail grass (*Sporobolus pyramidalis*). Six Category 3 restricted plants listed under the provisions of the Biosecurity Act were recorded by Aurecon within the Project Corridor during the February and August 2022 field investigations. Of the six restricted plants observed to be present, three were WoNS, including Lantana (*Lantana camara*), Prickly pear (*Opuntia stricta*) and Velvety tree pear (*Opuntia tomentosa*). Given the presence of these weeds in the Project Corridor, it is unlikely the Project will increase weed populations any more than existing cattle grazing activities. Weed controls will be put in place under the Project EMP(C) and will be applied to the Project in accordance with other operational procedures.

Traces of one restricted fauna species was recorded in the Project Corridor by Aurecon during the February 2022 field investigation. Wild dog (*Canine lupus familiaris*) tracks were observed at Lat: -26.6801 Long: 151.3202 of the Project Corridor. The Wild dog is a restricted invasive animal under the Biosecurity Act. Presently, feral animals were not commonly observed within the Project Corridor nor was there evidence of these fauna (e.g. scats, tracks, signs, etc). The Project is unlikely to introduce new pest animals to the area due to the previous disturbance. Pest fauna will be monitored throughout the Project and management measures within the Project EMP(C) will reduce impacts.

Impacts to aquatic values within the Project disturbance footprint are limited due to low aquatic values present (refer Section 4.3.9). Aquatic ecology such as habitat value for aquatic species or wetland ecosystems is minimal throughout the waterways within the Project disturbance footprint.

The impacts to surface water are deemed minimal due to influx likely from artificial waterbodies. The Project will minimise its impacts to the waterway where possible and will be managed to avoid loss of waterway integrity. Indirect impacts to the waterway will be managed under the Erosion and Sediment Control Plan.

5.1.5 Fauna species injury or mortality

Direct impacts to fauna have the potential to occur during all phases of the Project, with the highest potential to occur during vegetation clearing. This potential impact will be proportionate to the extent of vegetation and habitat potential for species that is removed.

No conservation significant fauna species were identified during ecological field investigations to occur within the Project disturbance footprint. There are 12 conservation significant fauna species with a high or potential likelihood of occurrence within the Project disturbance footprint based on suitable habitat presence. In addition to conservation significant species, all native fauna (including those listed as Special Least Concern species) are protected under the NC Act.

Some diurnal and mobile species, such as birds, may move away from areas being disturbed (i.e. vegetation removal) and may not be adversely impacted unless fauna are nesting. However, other species that are less mobile, or those that are nocturnal and nest or roost in tree hollows during the day, such as arboreal mammals, may be adversely affected. These species may include the threatened Greater glider (*Petauroides volans*), Yellow-bellied glider (*Petaurus australis australis*), Koala (*Phascolarctos cinereus*), Delma (*Delma torquata*), Yakka skink (*Egernia rugosa*) or Short-beaked echidna (*Tachyglossus aculeatus*).

The operational use of access tracks and roads across the Project disturbance footprint may result in increased vehicle movements that may cause injury or death to fauna by vehicle strike, although considering the low rate of use and relatively slow speeds driven on these tracks, the increase is likely to be negligible above current levels considering the existing use.

5.1.6 Dust, noise, and light impacts

In general, construction activities can generate noise, dust, and light, which may impact on adjacent vegetation and fauna. The likelihood of potential impacts is anticipated to be greatest where Project activities take place near vegetated areas and known habitat. These areas include the remnant vegetation adjacent to the Project disturbance footprint and within the Project study area .

In general, dust deposition from construction activities has the potential to impact upon vegetation if excessive quantities are sustained over extended periods of time. Excessive dust deposition on foliage reduces photosynthetic processes, which in turn stunts floral growth rates, and reduces the overall health of the remaining remnant communities within, and adjacent to, the Project disturbance footprint.

Impacts from noise and light can create an edge effect around the construction site driving fauna away from the area reducing biodiversity during construction. These impacts can also be present during the operational life of the Project. Further explanation on significant impacts to the recognised MNES and CEEVNT species that may occur within the Project disturbance footprint is addressed in the SIA . These impacts are not considered to significantly impact the species within and adjacent to the Project disturbance footprint.

5.1.7 Bushfire

The operation of ignition sources such as powerline interaction with vegetation and smoke causing arcing during the Project may cause an increased risk of fire. There is also potential for bushfire to impact the Project from surrounding vegetation. The Project is largely surrounded by eucalypt woodland or grassland which have the potential to be impacted by fire. Currently a large fire break (50 m) exists in the Project Corridor itself, reducing fire risk dependant on maintained firebreaks. Remnant vegetation within the Project disturbance footprint may require firebreaks during construction and operational stages of the Project to minimise the risk of fire.

6 Assessment of potential impacts upon MSES

6.1 Significant residual impact assessment for matters of state environmental significance

An environmental offset condition may be imposed under various State assessment frameworks (including the *Environmental Protection Act 1994*) for a prescribed environmental activity under the EO Act (i.e. a MSES), if the activity will, or is likely to have a significant residual impact (SRI) on the matter.

In the case of the Planning Act, a Project may require assessment against the criteria set out in the *Significant Residual Impact guideline for matters of state environmental significance and prescribed activities assessable under the Sustainable Planning Act 2009 (sic)* hereon referred to as the 'State guidelines'.

The State guidelines refer to the *Sustainable Planning Act 2009* (SPA) and provisions including the State Development Assessment Provisions (SDAP) and its associated modules. The *Sustainable Planning Act 2009* has been replaced by the Planning Act and the provisional SDAP has been updated. Therefore, the significant residual impact assessment has been undertaken in accordance with SDAP v2.6 and associated State codes.

- It is understood that the Project will obtain a 'Use' approval through the MID process, under Section 44(6)(b) of the Planning Act (refer Section 2). Once designated the following approval requirements will be Accepted Development:
 - Vegetation clearing under the VM Act
 - Waterway barrier works under the Fisheries Act.

This will not include environmental matters listed under the NC Act.

Although some environmental matters will become Accepted Development, assessment against the State guidelines has been completed for all relevant matters to measure the direct and indirect impacts for the Project. Determining a significant impact will assist to focus future management plans in mitigating impacts during construction and operational stages of the Project.

A desktop and field assessment of the presence of MSES within the Project disturbance footprint and immediate surrounds identified the following as present within the Project disturbance footprint (refer Section 3):

- Mapped regulated vegetation
- Protected wildlife habitat for Bailey's cypress pine (*Callitris baileyi*) and the Short-beaked echidna (*Tachyglossus aculeatus*)
- Waterway providing for fish passage
- Connectivity areas.

Table 6.1 presents the significant residual impact assessment of the MSES identified as present within the Project disturbance footprint, in accordance with the SRI Guideline criteria, SDAP v2.6 and associated State codes.

Table 6.1 MSES significant impact assessment for the Project

MSES present within the project footprint	SRI Guideline criteria (DSDIP 2014)	Significant impact assessment
<p><i>Regulated vegetation</i></p> <p>Remnant vegetation within the defined distance of a watercourse identified on the vegetation management watercourses map</p> <p>Remnant vegetation that intersects with an area shown as a wetland on the vegetation management wetlands map</p> <p>Essential habitat as identified on the essential habitat map</p>	<p>An action is LIKELY to have a SRI on <u>remnant vegetation within the defined distance of a watercourse</u> if the action will result in:</p> <ul style="list-style-type: none"> - permanent removal of vegetation within the defined distance of a stream order 2 or higher where no rehabilitation is proposed; - building of an online detention basin greater than 1ha in size or other similar works that result in the clearing of vegetation which fragments up and downstream remnant areas on any stream order; OR - permanent clearing of more than 0.5 ha of an endangered or of concern RE, within the defined distance of a watercourse. <p>An action is LIKELY to have a SRI on <u>remnant vegetation intersecting with a wetland</u> if the action will result in:</p> <ul style="list-style-type: none"> - clearing within the defining banks of a defined wetland area exceeding the thresholds specified in Table 2, SDAP Module 8 (Table 16.3.2, SDAP State code 16); - clearing involving the permanent removal of more than 25% of the vegetation located within 50m of the defining bank of a defined wetland; OR - clearing involving the permanent removal of more than 50% of the vegetation located between 50 m and 100 m of the defining bank of a defined wetland. <p>An action is LIKELY to have a SRI on <u>essential habitat</u> if the action will result in:</p> <ul style="list-style-type: none"> - clearing of essential habitat exceeding the thresholds specified in Table 1, SDAP Module 8 (Table 16.3.1, SDAP State code 16), and resulting in a greater than 10% permanent reduction in the extent of essential habitat mapped on site. 	<p>Significant impact anticipated</p> <p>It is likely that the Project will have a significant residual impact on <u>remnant vegetation within the defined distance of a watercourse</u> as the action will remove vegetation within the defined distance of a stream order 2,</p> <p>However, the Project is unlikely to build an onsite detention basin or permanently clear endangered or of concern RE, or clear 'least concern' RE of more than 1 ha on a stream order 1. There will be removal of vegetation from a heavily vegetated stream order 1 where revegetation will only occur where permanent infrastructure is not constructed.</p>

MSES present within the project footprint	SRI Guideline criteria (DSDIP 2014)	Significant impact assessment
<p><i>Connectivity areas</i></p> <p>Areas of remnant vegetation outside urban areas containing prescribed regional ecosystems that are required for ecosystem functioning (a connectivity area)</p>	<p>In deciding if an SRI is likely to occur on a connectivity area, an administering agency (that is the State) must consider the significance of the vegetation in the context of the local and the regional landscape. The measure of impact significance is based on how the prescribed activity will change the size and configuration of remnant vegetation areas and the level of fragmentation that will result at the local scale (5 km radius) given regard to the regional scale (20 km radius). Impact significance is measured by the reduction in the extent of remnant vegetation and increase in patchiness at the local scale.</p>	<p>No significant impact anticipated</p> <p>To assess the extent of potential Project connectivity impacts, the DES 'landscape fragmentation and connectivity' tool was used.</p> <p>The tool determined that any impact on connectivity areas is not significant. It has defined that reduction in core remnant vegetation at the local scale is non-significant (0.95%) and that a change from core to non-core remnant vegetation at the site scale is also non-significant.</p>
<p><i>Protected wildlife habitat</i></p> <p>Wildlife habitat for endangered or vulnerable fauna</p>	<p>Assessed under relevant significant residual impact assessment criteria for prescribed activities assessable under SPA (refer Section 6.1)</p>	<p>No significant impact anticipated</p> <p>The Project disturbance footprint contains mapped essential habitat for the <i>Callitris baileyi</i>. This area was field verified during the surveys in August 2022. Significant impact assessment against the relevant criteria is provided in Section 6.3.</p>
<p><i>Waterway providing for fish passage</i></p> <p>One moderate (amber) waterway for waterway barrier works traverses the northern portion of the Project disturbance footprint</p>	<p>An action is LIKELY to have a SRI on a <u>waterway providing for fish passage</u> if the action will result in:</p> <p>A permanent modification to the volume, depth, timing, duration, or flow frequency of the waterway;</p> <p>Permanent modification or fragmentation of fish habitat including but not limited to in stream vegetation, snags and woody debris, substrate, bank, or riffle formation necessary for breeding and/or survival of native fish species;</p> <p>The mortality or injury of fish species; OR</p> <p>Works that permanently reduce the level of fish passage provided in a tidal waterway or a waterway identified as a major high risk waterway for waterway barrier works, to a level that would increase stress on fish populations.</p>	<p>No significant impact anticipated</p> <p>The Project is not anticipated to have a significant residual impact on a <u>waterway providing for fish passage</u> as the Project will not permanently modify the volume, depth, timing, duration, or flow frequency of the waterway.</p> <p>Any infrastructure within the drainage features would be mitigated with culverts to retain fauna movement.</p> <p>Fish and aquatic species will be managed onsite during all construction works by an onsite suitably qualified person able to manage and relocate any animals within the project footprint. Any dewatering works undertaken during the Project will be managed under the appropriate permits.</p>

6.2 Flora

The field investigation identified mapped and field verified suitable habitat and the presence of the MSES species Bailey's cypress pine (*Callitris baileyi*) within the Project Corridor (refer Section 4.3.1). Table 6.1 assesses the Bailey's cypress pine by applying the SRI criteria for prescribed activities assessable under the SPA.

Table 6.2 MSES (Protected wildlife habitat for plants) significant impact assessment for the Project disturbance footprint: Bailey's cypress pine (*Callitris baileyi*)

Criteria	Assessment against significance criteria
An action is <u>unlikely</u> to have a significant impact on endangered and vulnerable wildlife if the impact on the habitat is likely to:	
Clearing of plants that are threatened wildlife and not located within a natural setting (i.e. does not meet the definition of 'in the wild' under the <i>Nature Conservation Act 1992</i>) where the proposal includes translocation.	Approximately two Bailey's cypress pine observed within the Project disturbance footprint are located in a natural setting.
Clearing of up to 10% of the total number of plants that are threatened wildlife occurring on a site where the proposal results in 90% of all plants that are threatened wildlife being retained and protected as a reserve or similar.	Of the population of 74 individual Bailey's cypress pine observed in the surrounding habitat, approximately four individuals are located directly or immediately surrounding the Project disturbance footprint.
Clearing of regenerating plants that are threatened wildlife which have previously been cleared within the last 5 years and that are historically maintained through slashing or grazing.	The four Bailey's cypress pine individuals that are within the Project disturbance footprint are not located in an area that has been subject to clearance or maintenance in the last five years.
The proposed relocation of an area of plants that are threatened wildlife less than 1000m ² not occurring in a relatively natural ecological situation (e.g. bushland), to a permanent retention area via an approved management plan.	There is no current plan to relocate the four Bailey's cypress pine individual plants.
Assessment of potential for significant residual impacts	It is determined that a significant residual Project impact is considered unlikely to occur to the Bailey's cypress pine. The Project will result in the clearing of up to four individuals of an immediate population of 74 which is less than 10% of those being retained.

6.3 Fauna

Section 4.3.7 identifies one Special Least Concern species by using habitat assumptions and field investigation verification for the Short-beaked echidna (*Tachyglossus aculeatus*). The Short-beaked echidna has been assessed under the MSES SRI criteria for Protected wildlife habitat (prescribed activities assessable under the SPA). Evidence of this species was recorded within the Project disturbance footprint from scat traces and suitable habitat was confirmed within the Project disturbance footprint during the field investigations during February and August 2022. Assessment of this species under the SRI Guideline criteria has been completed in Table 6.3. Presence of the Short-beaked echidna was indicated by the identification of scat traces within the Project disturbance footprint during the time of field investigations (refer Photograph 7).

Table 6.3 MSES (Protected wildlife habitat for Special Least Concern species) significant impact assessment for the Project disturbance footprint: Short-beaked echidna (*Tachyglossus aculeatus*)

Criteria	Assessment against significance criteria
An action is <u>likely</u> to have a significant impact on Special Least Concern wildlife if the impact on the habitat is likely to:	
Lead to a long-term decrease in the size of a local population	<p>The Short-beaked echidna has been recorded within the Project disturbance footprint through scat traces. This species is associated with most to all habitats across Australia. It is frequently observed rurally in open woodland, scrubs, forest, grasslands, and other sandy habitats. Breeding places of the Short-beaked echidna are associated with burrows under fallen logs or debris, or in the sides of banks and sandy soils. The Project disturbance footprint is within this species distribution.</p> <p>The total habitat that is suitable for the Short-beaked echidna to be cleared is 6.78 ha. During clearing the species will be managed by onsite suitably qualified and experienced persons to minimise any impacts to individuals. With conditions addressed in the Project EMP(C) in place, it is unlikely that the Project will result in a decrease in the size of the local population.</p>

Criteria	Assessment against significance criteria
Reduce the extent of occurrence	The Short-beak echidna occurs in most habitats across Australia. Therefore, the Project disturbance footprint is within the species range of distribution. In addition, the Project disturbance footprint is surrounded by areas of suitable habitat for the species, which will not be impacted. Due to its versatile habitat requirements, it is unlikely that the Short-beaked echidna will experience a reduction in the extent of occurrence for the species.
Fragment an existing population	The Project disturbance footprint is surrounded by areas of suitable habitat for the Short-beaked echidna which will not be impacted. The suitable habitat within the broader landscape scale is inclusive of eucalypt woodland and riparian woodland associated scrub, forest, grasslands, and open habitats. Many of these habitats that the echidna occurs in will not be impacted throughout the Project. Connectivity of habitats is presently partially disrupted and further works will not cause any further detriment to fauna passage. Habitat across the Project Corridor allows for periodic dispersal between nearby populations post works. Therefore, the Project will not further fragment the population from existing populations.
Reduce gene flow among populations	Connectivity between populations within the broader area occurs across habitat throughout the Project study area. Due to the large range of habitat available to the species the dispersal network will not be further impacted throughout the Project. Where infrastructure is proposed in areas where remnant vegetation occurs, fauna connectivity and movement will be retained where possible. Current connectivity of suitable habitat is partially disrupted by roads passing through the Project disturbance footprint. However, habitat across the Project Corridor allows for periodic dispersal between nearby populations. Therefore, the Project will not cause habitat isolation to occur which would result in genetically disjunct populations forming.
Cause disruption to ecologically significant locations (breeding, feeding, nesting, migration, or resting sites)	The suitable habitat within the Project disturbance footprint is likely to be used for foraging, breeding, and resting for the Short-beaked echidna. No Short-beaked echidna individuals were recorded within the field survey in February or August 2022, however evidence of the species was recorded through scat traces. The removal of 6.78 ha of suitable Short-beaked echidna habitat for the Project will cause disruption to some habitat locations such as breeding, foraging, and resting habitat for the species. However, due to the species large distribution, this disruption is considered to be minimal.
Assessment of potential for significant residual impacts	It is determined that a significant residual Project impact is considered unlikely to occur to the Short-beaked echidna. The Project will result in the clearing of approximately 6.78 ha of suitable habitat but not critical to the survival of the species.

7 Matters of national environmental significance

A summary of MNES with the potential to be impacted by the Project is provided in Table 6.4. A detailed review of MNES values are addressed in the SIA.

Table 6.1 MNES significant impact assessment for the Project disturbance footprint

Fauna species	EPBC Act status*	NC Act status	Results of assessment
Greater glider (<i>Petauroides volans</i>)	E	E	The Project is NOT likely to constitute a significant impact for this species
Koala (<i>Phascolarctos cinereus</i>)	E	E	The Project is NOT likely to constitute a significant impact for this species
Painted honeyeater (<i>Grantiella picta</i>)	V	V	The Project is NOT likely to constitute a significant impact for this species
White throated needletail (<i>Hirundapus caudacutus</i>)	V	V	The Project is NOT likely to constitute a significant impact for this species
Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>)	V	V	The Project is NOT likely to constitute a significant impact for this species
Yellow-bellied Glider (south eastern) (<i>Petaurus australis australis</i>)	V	V	The Project is NOT likely to constitute a significant impact for this species
Grey-headed flying-fox (<i>Pteropus poliocephalus</i>)	V	-	The Project is NOT likely to constitute a significant impact for this species
Collared Delma (<i>Delma torquata</i>)	V	V	The Project is NOT likely to constitute a significant impact for this species
Fork tailed swift (<i>Apus pacificus</i>)	M	SL	The Project is NOT likely to constitute a significant impact for this species
Rufous fantail (<i>Rhipidura rufifrons</i>)	M	SL	The Project is NOT likely to constitute a significant impact for this species

8 Recommendations

8.1 Management of impacts and mitigation measures

8.1.1 Mitigation measures

Mitigation measures which are recommended to be implemented by the Project to minimise potential adverse impacts on ecological values contained within the Project disturbance footprint (including indirect impacts to adjacent areas) are listed below.

- The final design, will adopt the hierarchy of mitigation (i.e. avoided, minimised, and mitigated where possible) to reduce the duration and severity of impacts.
- The Project will be undertaken in accordance with a EMP (C) which will include an Erosion and Sediment Control Plan, Landscape and Revegetation Works and a Rehabilitation Control Plan with associated plans and programs.
- No vegetation clearing is to take place without the appropriate vegetation clearing permits in place.
- The clearing of all areas will be restricted to the minimal area required to enable safe construction, operation, and maintenance of the Project infrastructure.
- Vegetation will be avoided and minimised where possible within 20 m of the waterway mapped in the Project disturbance footprint. Where infrastructure is proposed within this area, fauna movement along the riparian corridor is to be maintained.
- Clearing to be undertaken in a sequential manner to allow fauna to move safely into areas of existing bushland.
- Ensure that vegetation clearing boundaries are established with appropriate signage at regular intervals and visible and physical markings. High visibility tape, barricade webbing or similar should be utilised. Ensure that all contractors are aware of these boundaries.
- Where possible, minimise loss of canopy vegetation and works that will lead to the proliferation of weed species.
- Obtain all the appropriate approvals under local, State and Commonwealth legislation. This includes relevant approvals required to undertake site preparation and pre-clearing surveys and works.
- Ensure that all the approval conditions have been addressed or adequate measures are included in the relevant management plans to address these conditions.
- All site personnel are to be made aware of local fauna that could occur on site and that all native fauna, including snakes, are protected. Fauna are only to be handled by suitably qualified personnel.
- No feeding of wildlife by project personnel throughout the Project disturbance footprint.
- Implement fauna escape devices where practical (such as planks within trenches or trench ramps designed with a 15-degree slope placed every 30 m along the trench) to enable fauna to exit hazardous areas within the construction site.
- A suitably qualified and licenced Ecologist/Fauna Spotter Catcher with the appropriate permits will be engaged to conduct a preclearance survey and be present for all habitat clearing. During the preclearance survey the Ecologist/Fauna Spotter Catcher will inspect the Project disturbance footprint at least 3 days prior to vegetation clearing. The Contractor will give notice to the Principal prior to commencing any clearing within the Project disturbance footprint.
- Ensure that all hollow bearing tree clearing is supervised and managed by the Ecologist/Fauna Spotter Catcher.

- During construction works, a certified Ecologist/Fauna Spotter Catcher is to inspect trenches, culverts, and other structures to determine whether there are any trapped or injured fauna species present and action as appropriate.
- Where practical, minimise night work to reduce impacts to nocturnal and diurnal species.
- Project infrastructure lighting will be designed, with due consideration to safety, to have a minimal impact on surrounding habitats and fauna.
- Periodic toolbox training to be provided to all construction personnel to present new information or reiterate information relating to management of fauna throughout construction.
- Where practical, maintenance works are to be carried out within designated areas or offices and away from sensitive environments such as REs, riparian vegetation, and waterways.
- No vegetation is to be burnt either as a form of removal or disposal.
- Dust suppression techniques are to be adopted during construction to minimise smothering of native vegetation.
- The Project EMP(C) will outline specific measures to minimise the risk of weed and pest animal establishment within and adjacent to the Project disturbance footprint. Only chemicals suitable for use near waterways will be approved for use in reasonable proximity of watercourses/drain lines within the Project disturbance footprint. Weed control measures will be designed to minimise impacts on native fauna (e.g. use of aquatic and frog friendly chemicals).
- To minimise the risk of weed and pest animal establishment within and adjacent to the Project disturbance footprint, the measures outlined in the Project EMP(C) will be implemented by the appointed contractor(s) and be overseen and audited by the relevant Site Environmental Officer.
- Fill and imported soil materials are to be declared weed free or to be sourced from weed free areas where possible.
- Fill and imported soil materials are to be sourced from outside fire ant biosecurity zones or otherwise permitted.
- Any identified Class 1 or 2 infestations are to be reported to the Queensland Department of Agriculture and Fisheries.
- Any vehicles or machinery coming onto site from an area known to contain Category 1, 2 or 3 weeds are to be washed down prior to entry to site.
- Vegetation removed from the site will be managed to reduce the spread or introduction of myrtle rust and other plant pathogens.
- Chytrid fungus will be managed under the technical manual '*Interim Hygiene Protocol for Handling Amphibians*' which will be implemented by the onsite environmental representatives, ecologists and fauna spotter catchers. Dewatering practices will also be managed to ensure water is distributed on and off site without spreading the pathogen.

9 Conclusion

The Project disturbance footprint provides ecological values associated with remnant vegetation, and suitable habitat for threatened species and other wildlife.

During the field investigations in February and August 2022, the vegetative and habitat features were assessed and showed patches of remnant vegetation with complex habitat structure, including mature and frequent hollows. The remnant vegetation includes eucalypt woodland and eucalypt wetland vegetation. Large patches to the west of remnant vegetation consist of associated eucalypts and wattles. Fields of cultivated crops dominated the far west, and pasture grasses were also dominant due to the cattle grazing.

The Project will remove areas of regulated vegetation as well as essential habitat for the *Callitris baileyi* (listed as Near Threatened under the NC Act). Assessment under the State guidelines determined that a

significant residual impact is anticipated for this MSES. Significant residual impacts may vary dependant on the total vegetation removed within the Project Corridor.

Approximately up to 6.78 ha of the remnant REs are proposed to be removed as part of the Project disturbance footprint.

In consideration of *EPBC Act Significant impact guidelines 1.1*, the Project is unlikely to result in the significant impact of an MNES.

One conservation significant flora species was identified within the Project Corridor; *Callitris baileyi*, listed as Near Threatened under the NC Act. Approximately four individuals are located within the Project disturbance footprint. No significant impact is likely due to impacting less than 10% of the population in the local area.

It is recommended that a High-Risk SMP would be required due to the presence of potential animal breeding places for threatened and Special Least Concern species, particularly:

- Rufous fantail (*Rhipidura rufifrons*)
- Greater glider (*Petauroides volans*)
- Yellow-bellied glider (*Petaurus australis australis*)
- South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)
- Short-beaked echidna (*Tachyglossus aculeatus*).

Additional field investigations are recommended to determine presence or absence of these species which would reduce the number of species to be included on the High-Risk SMP.

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Appendix A

Desktop Assessment Results





EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 07-Sep-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



Queensland Government

Department of Environment and Science

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest
Custom Geometry

WetlandMaps Report



For selected area of interest Custom Geometry

Current as at 06/09/2022

WildNet Records

Conservation Significant Species List



For the selected area of interest 11301.56ha Custom Geometry

Current as at 06/09/2022

wambo

WildNet Records Species List

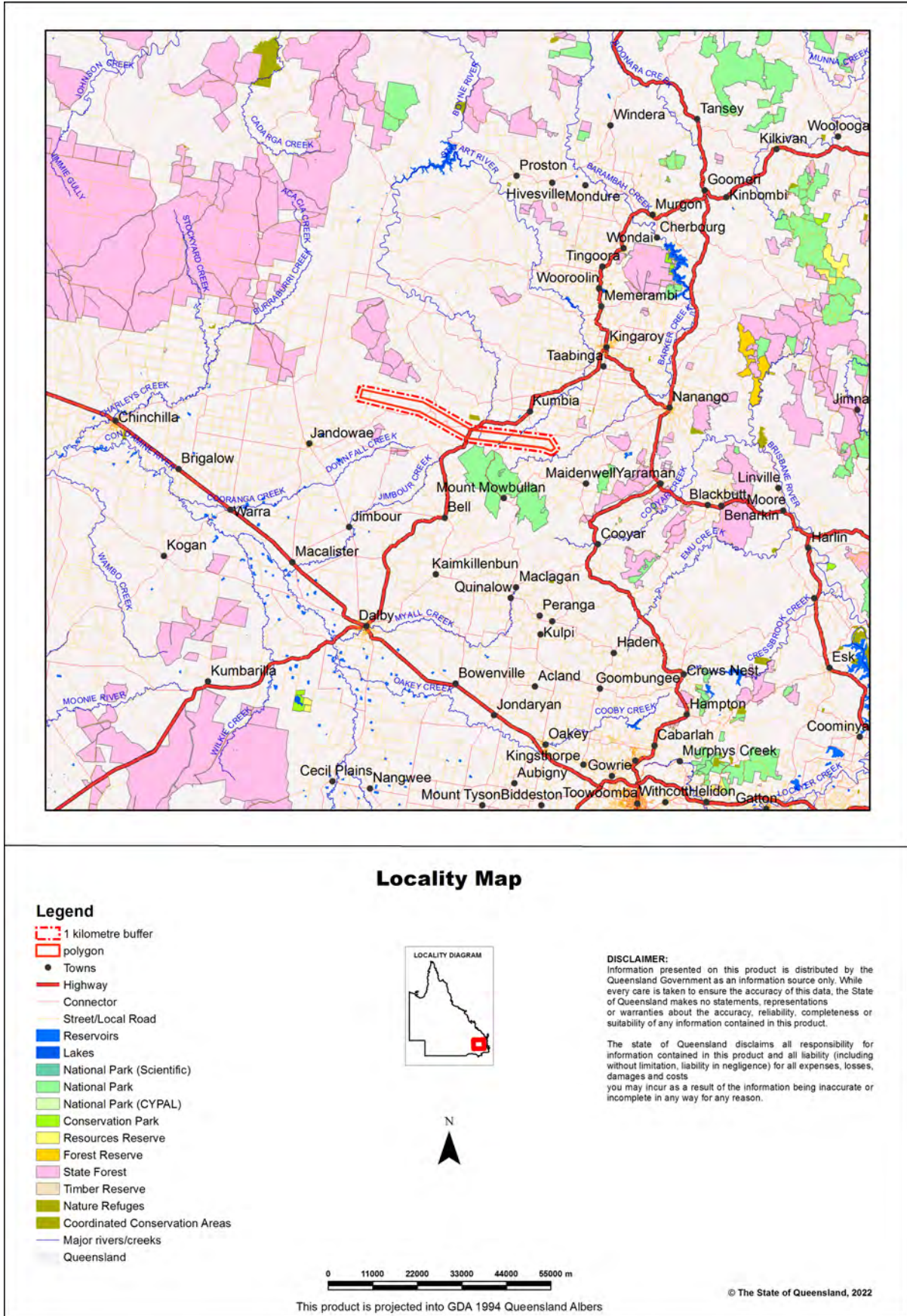


For the selected area of interest 11301.56ha Custom Geometry

Current as at 06/09/2022

wambo

Map 1. Locality Map



Summary Information

The following table provides an overview of the area of interest Custom Geometry.

Table 1. Area of interest details

Size (ha)	11,301.56
Local Government(s)	South Burnett Regional, Western Downs Regional
Bioregion(s)	Brigalow Belt, Southeast Queensland
Subregion(s)	Eastern Darling Downs, South Burnett
Catchment(s)	Balonne-Condamine, Burnett

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Species List

Introduction

This report is derived from a spatial layer generated from the [WildNet database](#) managed by the Department of Environment and Science. The layer which is generated weekly contains the WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest (Refer Links and Support).

Table 2 lists the animals recorded within the area of interest and its one kilometre buffer.

Table 3 lists the plants recorded within the area of interest and its one kilometre buffer.

Table 4 lists the fungi recorded within the area of interest and its one kilometre buffer.

Table 5 lists the other species recorded within the area of interest and its one kilometre buffer.

Table 2. Animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
716	Amphibia	Bufonidae	<i>Rhinella marina</i>	cane toad	None	None	0	1	21/02/2012
627	Amphibia	Hylidae	<i>Litoria caerulea</i>	common green treefrog	C	None	0	2	21/02/2012
608	Amphibia	Hylidae	<i>Litoria fallax</i>	eastern sedgefrog	C	None	0	3	24/11/1999
614	Amphibia	Hylidae	<i>Litoria latopalmata</i>	broad palmed rocketfrog	C	None	0	2	24/11/1999
596	Amphibia	Hylidae	<i>Litoria peronii</i>	emerald spotted treefrog	C	None	0	1	14/11/1996
600	Amphibia	Hylidae	<i>Litoria rubella</i>	ruddy treefrog	C	None	0	1	21/02/2012
681	Amphibia	Limnodynastidae	<i>Limnodynastes peronii</i>	striped marshfrog	C	None	0	2	24/11/1999

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
684	Amphibia	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	spotted grassfrog	C	None	0	1	21/02/2012
673	Amphibia	Limnodynastidae	<i>Limnodynastes terraereginae</i>	scarlet sided pobblebonk	C	None	0	1	21/02/2012
1419	Aves	Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill	C	None	0	1	21/02/2012
1422	Aves	Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill	C	None	0	1	25/10/2011
1403	Aves	Acanthizidae	<i>Pyrrholaemus sagittatus</i>	speckled warbler	C	None	0	1	21/02/2012
1382	Aves	Acanthizidae	<i>Sericornis frontalis</i>	white-browed scrubwren	C	None	0	1	30/12/2000
1732	Aves	Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle	C	None	0	2	21/02/2012
1725	Aves	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite	C	None	0	1	25/10/2011
1710	Aves	Accipitridae	<i>Hieraaetus morphnoides</i>	little eagle	C	None	0	1	25/10/2011
1993	Aves	Anatidae	<i>Anas gracilis</i>	grey teal	C	None	0	2	25/10/2011
1998	Aves	Anatidae	<i>Anas superciliosa</i>	Pacific black duck	C	None	0	2	21/02/2012
1978	Aves	Anatidae	<i>Dendrocygna eytoni</i>	plumed whistling-duck	C	None	0	1	25/10/2011
1826	Aves	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron	C	None	0	2	21/02/2012
1658	Aves	Artamidae	<i>Artamus cinereus</i>	black-faced woodswallow	C	None	0	1	22/02/2012
1660	Aves	Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow	C	None	0	1	25/10/2011
1654	Aves	Artamidae	<i>Cracticus nigrogularis</i>	pie butcherbird	C	None	0	1	25/10/2011
1656	Aves	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird	C	None	0	2	21/02/2012
1644	Aves	Artamidae	<i>Gymnorhina tibicen</i>	Australian magpie	C	None	0	3	24/02/2012
1645	Aves	Artamidae	<i>Strepera graculina</i>	pie currawong	C	None	0	3	24/02/2012
1191	Aves	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo	C	None	0	2	21/02/2012
1196	Aves	Cacatuidae	<i>Calyptorhynchus banksii</i>	red-tailed black-cockatoo	C	None	0	1	22/02/2012
1193	Aves	Cacatuidae	<i>Eolophus roseicapilla</i>	galah	C	None	0	2	21/02/2012
1173	Aves	Cacatuidae	<i>Nymphicus hollandicus</i>	cockatiel	C	None	0	2	21/02/2012
1636	Aves	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike	C	None	0	1	25/10/2011
1933	Aves	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)	C	None	0	1	25/10/2011
1809	Aves	Columbidae	<i>Geopelia cuneata</i>	diamond dove	C	None	0	1	25/10/2011

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1810	Aves	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove	C	None	0	1	25/10/2011
18323	Aves	Columbidae	<i>Geopelia placida</i>	peaceful dove	C	None	0	1	25/10/2011
1793	Aves	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon	C	None	0	1	25/10/2011
1795	Aves	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing	C	None	0	2	21/02/2012
1603	Aves	Corcoracidae	<i>Corcorax melanorhamphos</i>	white-winged chough	C	None	0	2	21/02/2012
1605	Aves	Corcoracidae	<i>Struthidea cinerea</i>	apostlebird	C	None	0	2	21/02/2012
1609	Aves	Corvidae	<i>Corvus orru</i>	Torresian crow	C	None	0	4	24/02/2012
1751	Aves	Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal	C	None	0	1	25/10/2011
1738	Aves	Cuculidae	<i>Eudynamis orientalis</i>	eastern koel	C	None	0	1	25/10/2011
1601	Aves	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo	C	None	0	2	22/02/2012
1359	Aves	Estrildidae	<i>Neochmia temporalis</i>	red-browed finch	C	None	0	1	25/10/2011
1342	Aves	Estrildidae	<i>Taeniopygia bichenovii</i>	double-barred finch	C	None	0	2	25/10/2011
1716	Aves	Falconidae	<i>Falco berigora</i>	brown falcon	C	None	0	1	25/10/2011
1704	Aves	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel	C	None	0	1	25/10/2011
1692	Aves	Falconidae	<i>Falco peregrinus</i>	peregrine falcon	C	None	0	1	25/10/2011
1767	Aves	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra	C	None	0	1	25/10/2011
1760	Aves	Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher	C	None	0	1	25/10/2011
1762	Aves	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher	C	None	0	1	21/02/2012
1572	Aves	Hirundinidae	<i>Hirundo neoxena</i>	welcome swallow	C	None	0	1	25/10/2011
1570	Aves	Maluridae	<i>Malurus cyaneus</i>	superb fairy-wren	C	None	0	2	22/02/2012
18458	Aves	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren	C	None	1	2	06/12/1999
1558	Aves	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren	C	None	0	2	25/10/2011
1694	Aves	Megapodiidae	<i>Alectura lathamii</i>	Australian brush-turkey	C	None	0	1	30/12/2000
1552	Aves	Meliphagidae	<i>Acanthagenys rufogularis</i>	spiny-cheeked honeyeater	C	None	0	1	21/02/2012
1539	Aves	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater	C	None	0	1	25/10/2011
1500	Aves	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner	C	None	0	2	24/02/2012

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1504	Aves	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater	C	None	0	1	25/10/2011
1493	Aves	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird	C	None	0	1	22/02/2012
1764	Aves	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater	C	None	0	1	25/10/2011
1589	Aves	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark	C	None	0	1	25/10/2011
1455	Aves	Motacillidae	<i>Anthus novaes eelandiae</i>	Australasian pipit	C	None	0	1	25/10/2011
1444	Aves	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird	C	None	0	1	25/10/2011
1450	Aves	Pachycephalidae	<i>Colluricincla megarrhyncha</i>	little shrike-thrush	C	None	0	1	30/12/2000
1392	Aves	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote	C	None	0	1	25/10/2011
1332	Aves	Petroicidae	<i>Petroica rosea</i>	rose robin	C	None	0	1	30/12/2000
1275	Aves	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	great cormorant	C	None	0	1	22/02/2012
1955	Aves	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth	C	None	0	2	21/02/2012
1249	Aves	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian grebe	C	None	0	2	21/02/2012
1318	Aves	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler	C	None	0	2	21/02/2012
1180	Aves	Psittacidae	<i>Alisterus scapularis</i>	Australian king-parrot	C	None	0	1	30/12/2000
1182	Aves	Psittacidae	<i>Aprosmictus erythropterus</i>	red-winged parrot	C	None	0	1	25/10/2011
1145	Aves	Psittacidae	<i>Glossopsitta concinna</i>	musk lorikeet	C	None	0	1	25/10/2011
1136	Aves	Psittacidae	<i>Platycercus adscitus</i>	pale-headed rosella	C	None	0	2	21/02/2012
1138	Aves	Psittacidae	<i>Platycercus elegans</i>	crimson rosella	C	None	0	1	30/12/2000
1118	Aves	Psittacidae	<i>Psephotus haematonotus</i>	red-rumped parrot	C	None	0	2	21/02/2012
1124	Aves	Psittacidae	<i>Trichoglossus chlorolepidotus</i>	scaly-breasted lorikeet	C	None	0	1	25/10/2011
1125	Aves	Psittacidae	<i>Trichoglossus moluccanus</i>	rainbow lorikeet	C	None	0	1	21/02/2012
1623	Aves	Psophodidae	<i>Psophodes olivaceus</i>	eastern whipbird	C	None	0	1	30/12/2000
1576	Aves	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail	C	None	0	2	22/02/2012
1578	Aves	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail	SL	None	0	1	30/12/2000
1276	Aves	Timaliidae	<i>Zosterops lateralis</i>	silveryeye	C	None	0	2	22/02/2012
1082	Aves	Turnicidae	<i>Turnix velox</i>	little button-quail	C	None	0	1	25/10/2011
1006	Mammalia	Emballonuridae	<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tail bat	C	None	0	1	25/10/2011

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1056	Mammalia	Felidae	<i>Felis catus</i>	cat	None	None	0	1	21/02/2012
834	Mammalia	Leporidae	<i>Oryctolagus cuniculus</i>	rabbit	None	None	0	1	22/02/2012
901	Mammalia	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo	C	None	0	1	21/02/2012
904	Mammalia	Macropodidae	<i>Notamacropus rufogriseus</i>	red-necked wallaby	C	None	0	1	21/02/2012
954	Mammalia	Miniopteridae	<i>Miniopterus australis</i>	little bent-wing bat	C	None	0	1	25/10/2011
989	Mammalia	Molossidae	<i>Austronomus australis</i>	white-striped freetail bat	C	None	0	1	25/10/2011
998	Mammalia	Molossidae	<i>Mormopterus lumsdenae</i>	northern free-tailed bat	C	None	0	1	25/10/2011
784	Mammalia	Peramelidae	<i>Isodon macrourus</i>	northern brown bandicoot	C	None	0	1	21/02/2012
859	Mammalia	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum	C	None	0	1	21/02/2012
973	Mammalia	Vespertilionidae	<i>Chalinolobus morio</i>	chocolate wattled bat	C	None	0	1	25/10/2011
948	Mammalia	Vespertilionidae	<i>Chalinolobus picatus</i>	little pied bat	C	None	0	1	25/10/2011
938	Mammalia	Vespertilionidae	<i>Nyctophilus sp.</i>	None	C	None	0	1	25/10/2011
931	Mammalia	Vespertilionidae	<i>Scotorepens greyii</i>	little broad-nosed bat	C	None	0	1	25/10/2011
556	Reptilia	Agamidae	<i>Pogona barbata</i>	bearded dragon	C	None	0	1	21/02/2012
150	Reptilia	Scincidae	<i>Lygisaurus foliorum</i>	tree-base litter-skink	C	None	0	1	21/02/2012
104	Reptilia	Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard	C	None	0	1	21/02/2012
78	Reptilia	Varanidae	<i>Varanus gouldii</i>	sand monitor	C	None	0	1	22/02/2012
61	Reptilia	Varanidae	<i>Varanus varius</i>	lace monitor	C	None	0	1	22/02/2012

Table 3. Plants recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
12640	Equisetopsida	Apiaceae	<i>Apium prostratum</i> var. <i>prostratum</i>	None	C	None	1	1	07/12/1997
14106	Equisetopsida	Apiaceae	<i>Berula erecta</i>	water parsnip	None	None	1	1	07/12/1997
19732	Equisetopsida	Apocynaceae	<i>Alyxia ruscifolia</i>	None	C	None	1	1	12/04/1985
9698	Equisetopsida	Apocynaceae	<i>Carissa ovata</i>	currantbush	C	None	0	1	24/02/2012
41479	Equisetopsida	Araceae	<i>Landoltia punctata</i>	None	C	None	1	1	07/12/1997
15277	Equisetopsida	Araliaceae	<i>Hydrocotyle acutiloba</i>	None	C	None	1	1	07/12/1997
15574	Equisetopsida	Asteraceae	<i>Carduus thoermeri</i>	nodding thistle	None	None	1	1	07/12/1997
14781	Equisetopsida	Asteraceae	<i>Carthamus lanatus</i>	saffron thistle	None	None	1	1	07/12/1997
9615	Equisetopsida	Asteraceae	<i>Coreopsis lanceolata</i>	None	None	None	1	1	07/12/1997
10411	Equisetopsida	Asteraceae	<i>Zinnia peruviana</i>	wild zinnia	None	None	1	1	07/12/1997
8594	Equisetopsida	Boraginaceae	<i>Cynoglossum australe</i>	None	C	None	1	1	07/12/1997

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
11193	Equisetopsida	Boraginaceae	<i>Heliotropium amplexicaule</i>	blue heliotrope	None	None	1	1	07/12/1997
10854	Equisetopsida	Brassicaceae	<i>Lepidium africanum</i>	common peppergrass	None	None	1	1	15/02/2013
14260	Equisetopsida	Brassicaceae	<i>Rorippa nasturtium-aquaticum</i>	watercress	None	None	1	1	07/12/1997
9535	Equisetopsida	Cactaceae	<i>Opuntia tomentosa</i>	velvety tree pear	None	None	0	1	24/02/2012
26398	Equisetopsida	Caryophyllaceae	<i>Petrohragia dubia</i>	None	None	None	1	1	07/12/1997
16390	Equisetopsida	Caryophyllaceae	<i>Polycarpon tetraphyllum</i>	None	None	None	1	1	07/12/1997
11097	Equisetopsida	Celastraceae	<i>Celastrus subspicata</i>	large-leaved staffvine	C	None	1	1	12/04/1985
34776	Equisetopsida	Celastraceae	<i>Denhamia disperma</i>	None	C	None	1	1	15/02/2013
22225	Equisetopsida	Celastraceae	<i>Elaeodendron australe</i> var. <i>integrifolium</i>	None	C	None	1	1	15/02/2013
10033	Equisetopsida	Commelinaceae	<i>Commelina diffusa</i>	wandering jew	C	None	1	1	21/01/2004
27434	Equisetopsida	Convolvulaceae	<i>Convolvulus angustissimus</i> subsp. <i>angustissimus</i>	None	C	None	1	1	27/01/2004
17599	Equisetopsida	Convolvulaceae	<i>Convolvulus erubescens</i>	Australian bindweed	C	None	1	1	27/01/2004
17175	Equisetopsida	Convolvulaceae	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	None	C	None	1	1	21/01/2004
14766	Equisetopsida	Cupressaceae	<i>Callitris baileyi</i>	Bailey's cypress	NT	None	3	3	16/03/2022
14785	Equisetopsida	Cyperaceae	<i>Bolboschoenus fluviatilis</i>	None	C	None	1	1	07/12/1997
14657	Equisetopsida	Cyperaceae	<i>Cyperus involucreatus</i>	None	None	None	1	1	07/12/1997
11710	Equisetopsida	Cyperaceae	<i>Cyperus vaginatus</i>	None	C	None	1	1	17/12/2003
17340	Equisetopsida	Cyperaceae	<i>Eleocharis cylindrostachys</i>	None	C	None	1	1	16/11/2003
34669	Equisetopsida	Cyperaceae	<i>Schoenoplectus tabernaemontani</i>	None	C	None	1	1	07/12/1997
17443	Equisetopsida	Ebenaceae	<i>Diospyros geminata</i>	scaly ebony	C	None	1	1	30/11/1984
6349	Equisetopsida	Erythroxylaceae	<i>Erythroxylum</i> sp. (<i>Splityard Creek L. Pedley 5360</i>)	None	C	None	1	1	12/04/1985
17562	Equisetopsida	Euphorbiaceae	<i>Croton phebaloides</i>	narrow-leaved croton	C	None	1	1	30/11/1984
9247	Equisetopsida	Geraniaceae	<i>Geranium solanderi</i> var. <i>solanderi</i>	native geranium	C	None	1	1	27/01/2004
41035	Equisetopsida	Lamiaceae	<i>Coleus australis</i>	None	C	None	1	1	07/12/1997
15243	Equisetopsida	Lamiaceae	<i>Mentha satereioides</i>	native pennyroyal	C	None	1	1	23/01/2004
9076	Equisetopsida	Lamiaceae	<i>Teucrium argutum</i>	None	C	None	1	1	23/01/2004
36200	Equisetopsida	Lamiaceae	<i>Teucrium junceum</i>	None	C	None	1	1	12/04/1985
15339	Equisetopsida	Laxmanniaceae	<i>Eustrephus latifolius</i>	wombat berry	C	None	0	1	24/02/2012
13868	Equisetopsida	Laxmanniaceae	<i>Lomandra filiformis</i> subsp. <i>coriacea</i>	None	C	None	1	1	23/01/2004
15714	Equisetopsida	Leguminosae	<i>Acacia</i>	None	None	None	0	1	24/02/2012

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
5717	Equisetopsida	Leguminosae	<i>Galactia tenuiflora</i> var. <i>lucida</i>	None	C	None	1	1	18/01/2004
14524	Equisetopsida	Leguminosae	<i>Glycine</i>	None	None	None	0	1	24/02/2012
15069	Equisetopsida	Leguminosae	<i>Senna barclayana</i>	None	C	None	1	1	07/12/1997
12339	Equisetopsida	Leguminosae	<i>Tephrosia bidwillii</i>	None	C	None	1	1	30/11/1999
14922	Equisetopsida	Leguminosae	<i>Zornia muriculata</i> subsp. <i>angustata</i>	None	C	None	1	1	01/01/2004
13236	Equisetopsida	Loranthaceae	<i>Dendrophthoe glabrescens</i>	None	C	None	1	1	20/10/2007
31326	Equisetopsida	Malvaceae	<i>Malvastrum coromandelianum</i> subsp. <i>coromandelianum</i>	None	None	None	1	1	04/02/2004
22197	Equisetopsida	Malvaceae	<i>Sida hackettiana</i>	None	C	None	1	1	04/02/2004
16146	Equisetopsida	Malvaceae	<i>Sida rhombifolia</i>	None	None	None	1	1	04/02/2004
17998	Equisetopsida	Myrtaceae	<i>Angophora floribunda</i>	rough-barked apple	C	None	1	1	09/12/1994
6531	Equisetopsida	Myrtaceae	<i>Corymbia citriodora</i>	spotted gum	C	None	0	1	21/02/2012
17207	Equisetopsida	Myrtaceae	<i>Eucalyptus</i>	None	None	None	0	1	24/02/2012
17252	Equisetopsida	Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark	C	None	0	1	24/02/2012
16840	Equisetopsida	Oleaceae	<i>Jasminum simplicifolium</i> subsp. <i>australiense</i>	None	C	None	2	2	12/02/2013
13835	Equisetopsida	Oleaceae	<i>Notelaea microcarpa</i>	None	C	None	1	1	12/02/2013
17810	Equisetopsida	Phyllanthaceae	<i>Bridelia leichhardtii</i>	None	C	None	1	1	12/04/1985
16413	Equisetopsida	Pittosporaceae	<i>Pittosporum</i>	None	None	None	0	1	24/02/2012
33869	Equisetopsida	Poaceae	<i>Cenchrus purpurascens</i>	None	C	None	1	1	19/01/2001
15498	Equisetopsida	Poaceae	<i>Cleistochloa subjuncea</i>	None	C	None	1	1	19/01/2001
15361	Equisetopsida	Poaceae	<i>Eragrostis elongata</i>	None	C	None	1	1	01/03/2004
15290	Equisetopsida	Poaceae	<i>Imperata cylindrica</i>	blady grass	C	None	1	1	07/12/1997
15001	Equisetopsida	Poaceae	<i>Sporobolus creber</i>	None	C	None	1	1	11/02/2004
13155	Equisetopsida	Polygonaceae	<i>Persicaria decipiens</i>	slender knotweed	C	None	1	1	07/12/1997
16272	Equisetopsida	Polygonaceae	<i>Rumex crispus</i>	curled dock	None	None	1	1	07/12/1997
21888	Equisetopsida	Pteridaceae	<i>Adiantum atroviride</i>	None	SL	None	1	1	20/12/2003
27648	Equisetopsida	Ranunculaceae	<i>Ranunculus meristus</i>	None	C	None	1	1	07/12/1997
16266	Equisetopsida	Rosaceae	<i>Rubus parvifolius</i>	pink-flowered native raspberry	C	None	1	1	05/11/1973
29838	Equisetopsida	Rubiaceae	<i>Psydrax odorata</i> forma <i>subnitida</i>	None	C	None	1	1	15/02/2013
13349	Equisetopsida	Rutaceae	<i>Flindersia collina</i>	broad-leaved leopard tree	C	None	1	1	09/12/1994
14267	Equisetopsida	Samolaceae	<i>Samolus valerandi</i>	brookweed	C	None	1	1	07/12/1997
14612	Equisetopsida	Sapindaceae	<i>Dodonaea</i>	None	None	None	0	1	24/02/2012
17339	Equisetopsida	Sapindaceae	<i>Elattostachys xylocarpa</i>	white tamarind	C	None	1	1	15/02/2013
16129	Equisetopsida	Solanaceae	<i>Solanum</i>	None	None	None	0	1	24/02/2012
19905	Equisetopsida	Verbenaceae	<i>Lantana camara</i>	lantana	None	None	0	1	13/01/2016

Table 4. Fungi recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
25504	Agaricomycetes	Omphalotaceae	<i>Lentinula lateritia</i>	None	C	None	1	1	17/03/2012
23245	Lecanoromycetes	Caliciaceae	<i>Buellia</i>	None	None	None	1	1	14/05/1979
23232	Lecanoromycetes	Lecanoraceae	<i>Lecanora</i>	None	None	None	1	1	14/05/1979
23384	Lecanoromycetes	Parmeliaceae	<i>Parmotrema</i>	None	None	None	1	1	14/05/1979
23547	Lecanoromycetes	Ramalinaceae	<i>Ramalina celastri</i> subsp. <i>celastri</i>	None	C	None	1	1	14/05/1979
23551	Lecanoromycetes	Ramalinaceae	<i>Ramalina glaucescens</i>	None	C	None	1	1	14/05/1979
23553	Lecanoromycetes	Ramalinaceae	<i>Ramalina inflata</i> subsp. <i>perpusilla</i>	None	C	None	1	1	14/05/1979

Table 5. Other species recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Species table headings and codes

Taxon Id: Unique identifier of the taxon from the WildNet database.

NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).

EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).

Specimens: The number of specimen-backed records of the taxon.

Records: The total number of records of the taxon.

Last record: Date of latest record of the taxon.

Links and Support

Other sites that deliver species information from the [WildNet database](#) include:

- [Species profile search](#) - access species information approved for publication including species names, statuses, notes, images, distribution maps and records
- [Species lists](#) - generate species lists for Queensland protected areas, forestry areas, local governments and areas defined using coordinates
- [Biomaps](#) - view biodiversity information, including WildNet records approved for publication, and generate reports
- [Queensland Globe](#) - view spatial information, including WildNet records approved for publication
- [Qld wildlife data API](#) - access WildNet species information approved for publication such as notes, images and records etc.
- [WetlandMaps](#) - view species records, survey locations etc. approved for publication
- [WetlandSummary](#) - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- [WildNet wildlife records - published - Queensland](#) - spatial layer of WildNet records approved for publication generated weekly
- [Generalised distribution and densities of Queensland wildlife](#) - Queensland species distributions and densities generalised to a 10 km grid resolution
- [Conservation status of Queensland wildlife](#) - access current lists of priority species for Queensland including nomenclature and status information
- [Queensland Confidential Species](#) - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the [WildNet Team](#).

Other useful sites for accessing Queensland biodiversity data include:

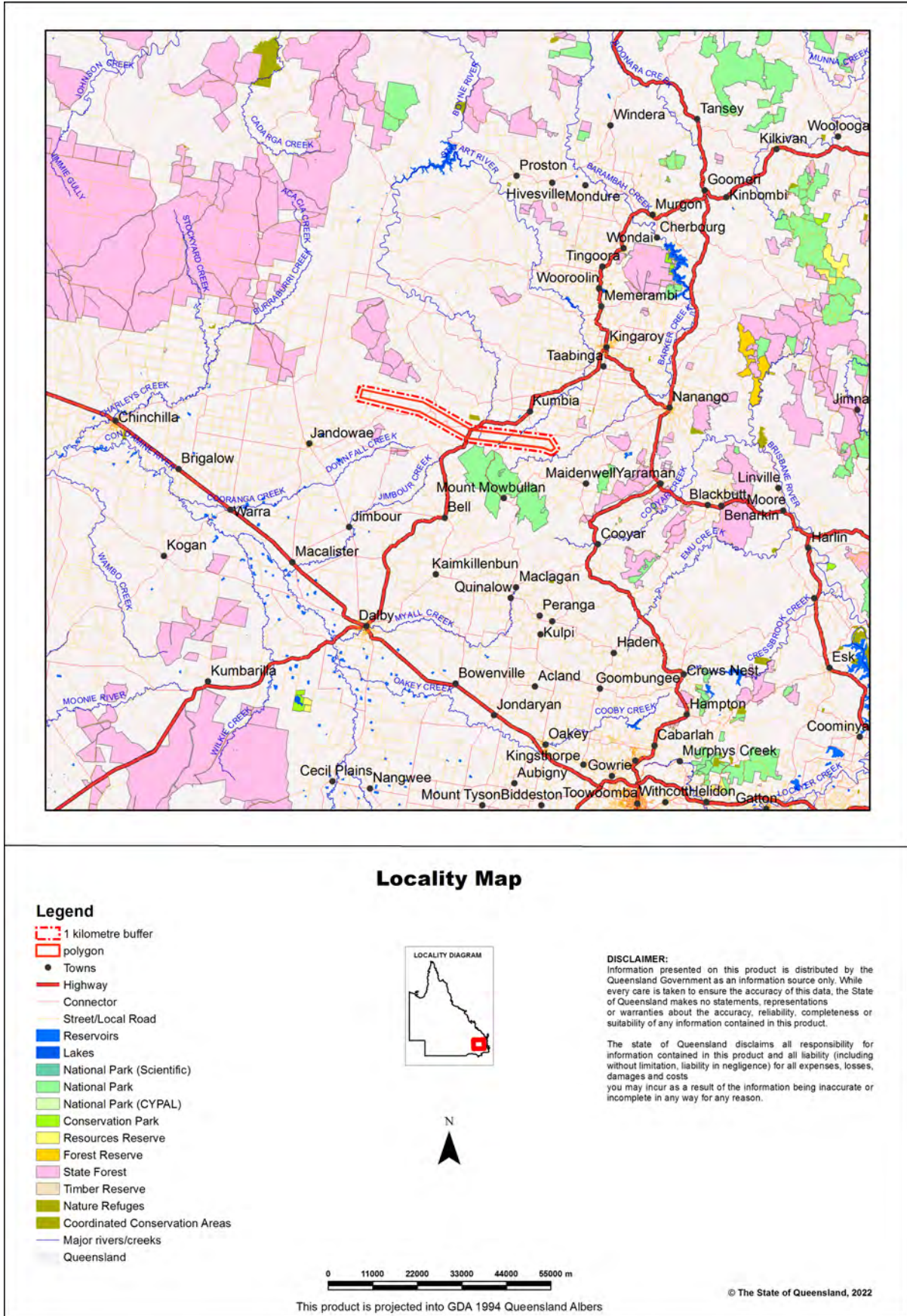
- [Useful wildlife resources](#)
- [Queensland Government Data](#)
- [Atlas of Living Australia \(ALA\)](#)
- [Online Zoological Collections of Australian Museums \(OZCAM\)](#)
- [Australia's Virtual Herbarium \(AVH\)](#)
- [Protected Matters Search Tool](#)

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Map 1. Locality Map



Summary Information

The following table provides an overview of the area of interest Custom Geometry.

Table 1. Area of interest details

Size (ha)	11,301.56
Local Government(s)	South Burnett Regional, Western Downs Regional
Bioregion(s)	Brigalow Belt, Southeast Queensland
Subregion(s)	Eastern Darling Downs, South Burnett
Catchment(s)	Balonne-Condamine, Burnett

Protected Area(s)

No estates or reserves are located within the area of interest.

World Heritage Area(s)

No World Heritage Areas are located within the area of interest.

Ramsar Area(s)

No Ramsar Areas are located within the area of interest.

Conservation Significant Species List

Introduction

This report is derived from a spatial layer generated from the [WildNet database](#) managed by the Department of Environment and Science. The layer which is generated weekly contains the WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero.

Conservation significant species are species listed:

- as [threatened](#) or near threatened under the Nature Conservation Act 1992;
- as threatened under the [Environment Protection and Biodiversity Conservation Act 1999](#) or
- [migratory species](#) protected under the following international agreements:
 - o Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
 - o China-Australia Migratory Bird Agreement
 - o Japan-Australia Migratory Bird Agreement
 - o Republic of Korea-Australia Migratory Bird Agreement

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest (Refer Links and Support).

Table 2 lists the species recorded within the area of interest and its one kilometre buffer.

Table 2. Conservation significant species recorded within the area of interest and its one kilometre buffer

Taxon Id	Kingdom	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1578	Animalia	Aves	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail	SL	None	0	1	30/12/2000
14766	Plantae	Equisetopsida	Cupressaceae	<i>Callitris baileyi</i>	Bailey's cypress	NT	None	3	3	16/03/2022
21888	Plantae	Equisetopsida	Pteridaceae	<i>Adiantum atroviride</i>	None	SL	None	1	1	20/12/2003

Taxon Id: Unique identifier of the taxon from the WildNet database.

NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).

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Environmental Reports - General Information

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the Area of Interest (AOI) (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no matters of interest have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Important Note to User

Information presented in this report is based upon the mapping of water bodies and wetland regional ecosystems across Queensland. The Queensland wetland mapping was produced using existing information including water body mapping derived from Landsat satellite imagery, regional ecosystem mapping, topographic data, and a springs database. The result is a consistent wetland map for the whole of Queensland.

Ancillary data, such as higher resolution imagery (for example SPOT and aerial photographs), other vegetation and wetland mapping, geology, soil and land system mapping was also used in attributing and assessing the derived Queensland Wetlands Program wetland mapping products.

The wetland mapping was done in accordance with a detailed peer reviewed methodology which included quality assurance measures for all steps in the process. For more detailed information on how the Queensland Wetlands Program wetland mapping was produced, please see the [Wetland Mapping and Classification Methodology](#).

Disclaimer

The State of Queensland, as represented by this department, gives no warranty in relation to the data (including without limitation, accuracy, reliability, completeness or fitness for a particular purpose) hosted on this website.

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Summary Information

The following table provides an overview of the area of interest.

Table 1. Area of interest details

Size (ha)	11,301.56
Local Government(s)	South Burnett Regional, Western Downs Regional
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Subregion(s)	Eastern Darling Downs, South Burnett
Catchment(s)	Balonne-Condamine, Burnett
Drainage sub-basin	Condamine River, Barker & Barambah Creeks, Boyne & Auburn Rivers

NRM Regions

The following NRM region(s) are in the area of interest:

- Southern Queensland Landscapes
- Burnett Mary Regional Group

Water Resource Plan Boundaries

The following Water Resource Plan(s) are in the area of interest:

- Burnett Basin
- Great Artesian Basin and Other Regional Aquifers
- Condamine and Balonne

Learn more about how Wetlands are mapped in Queensland:

Queensland Wetlands Mapping Definitions

Wetlands are areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres. To be a wetland the area must have one or more of the following attributes:

- at least periodically the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle, or
- the substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers, or
- the substratum is not soil and is saturated with water, or covered by water at some time.

Examples under this definition **include**:

- those areas shown as a river, stream, creek, swamp, lake, marsh, waterhole, wetland, billabong, pool or spring on the latest Sunmap 1:25,000, 1:50,000, 1:100,000 or 1:250,000 topographic map
- areas defined as wetlands on local or regional maps prepared with the aim of mapping wetlands
- wetland regional ecosystems (REs) as defined by the Queensland Herbarium (Environmental Protection Agency 2005a)
- areas containing recognised hydrophytes as provided by the Queensland Herbarium
- saturated parts of the riparian zone
- artificial wetlands such as farm dams
- water bodies not connected to rivers or flowing water such as billabongs and rock pools.

Examples under this definition **exclude**:

- areas that may be covered by water but are not wetlands according to the definition
- floodplains that are intermittently covered by flowing water but do not meet the hydrophytes and soil criteria

- riparian zone above the saturation level.

Wetland Systems

Riverine wetlands are all wetlands and deepwater habitats within a channel. The channels are naturally or artificially created, periodically or continuously contain moving water, or connecting two bodies of standing water.

Palustrine wetlands are primarily vegetated non-channel environments of less than 8 hectares. They include billabongs, swamps, bogs, springs, soaks etc, and have more than 30% emergent vegetation.

Lacustrine wetlands are large, open, water-dominated systems (for example, lakes) larger than 8ha. This definition also applies to modified systems (for example, dams), which are similar to lacustrine systems (for example, deep, standing or slow-moving waters).

Marine wetlands include the area of ocean from the coastline or estuary, extending to the jurisdictional limits of Queensland waters (3 nautical mile limit). This definition differs from that in Ramsar, as it includes waters deeper than 6m below the lowest astronomical tide.

Estuarine wetlands are those with oceanic water sometimes diluted with freshwater run-off from the land.

Subterranean wetlands are wetlands occurring below the surface of the ground and that are fed by groundwater i.e. caves and aquifers. These wetlands provide water to groundwater dependent ecosystems.

Methodology and Wetland Classification: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/wetland-background/>

Links and support

Other sites that deliver wetland related information include:

WetlandSummary tool: <https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/>

Queensland Spatial Catalogue: <http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

Queensland Globe: <https://qldglobe.information.qld.gov.au/>

Environmental reports online: <https://environment.ehp.qld.gov.au/report-request/environment/>

Wetland on-line education modules: <https://wetlandinfo.des.qld.gov.au/wetlands/resources/training/>

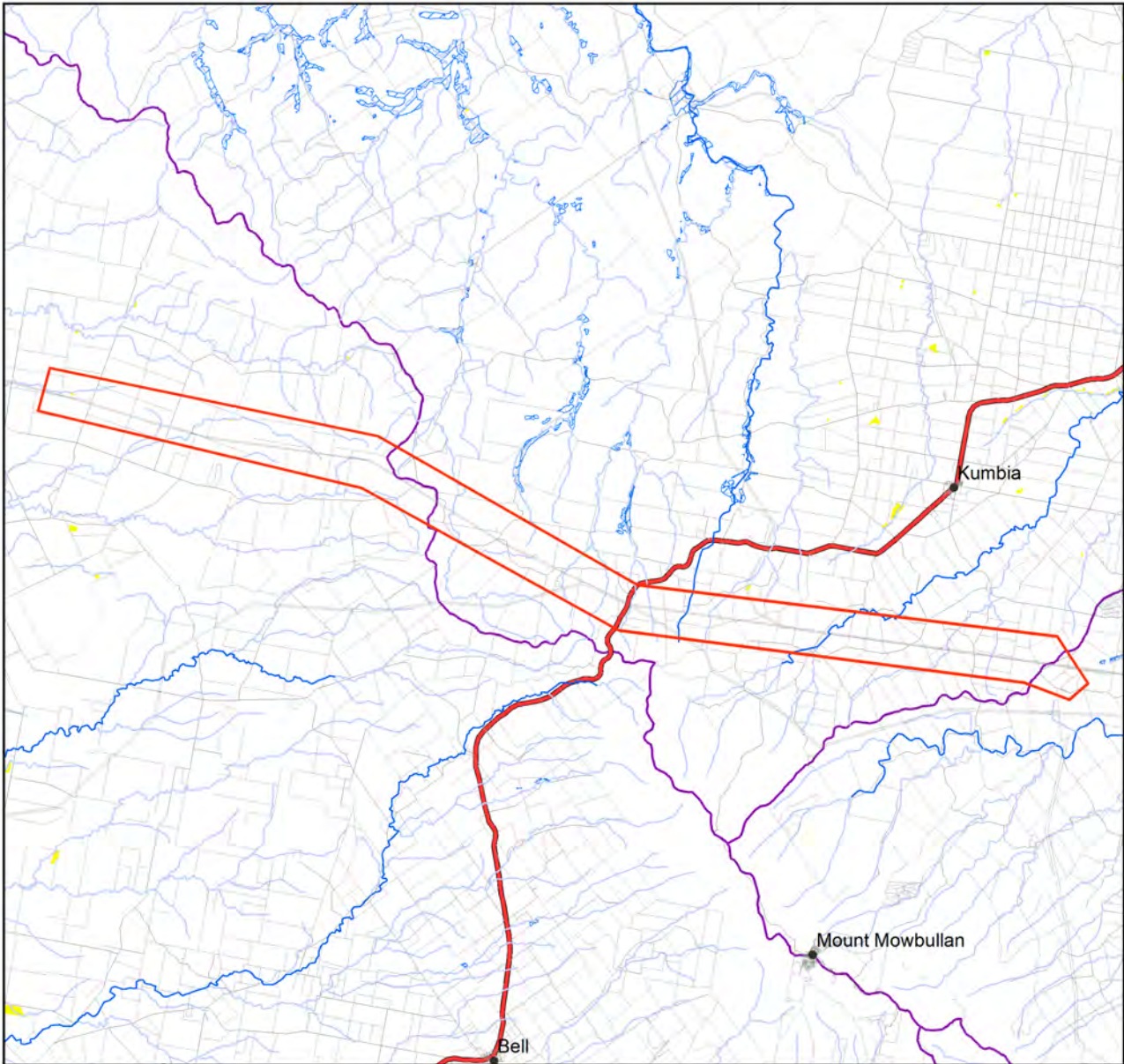
Regional Ecosystem Mapping information: :

<https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

Aquatic Conservation Assessments: : <https://wetlandinfo.des.qld.gov.au/wetlands/assessment/assessment-methods/aca/>

Groundwater Dependant Ecosystems information:

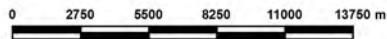
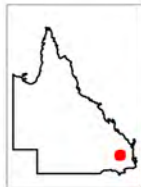
<https://wetlandinfo.des.qld.gov.au/wetlands/ecology/aquatic-ecosystems-natural/groundwater-dependent/>



Legend

- polygon
- Springs
- Dams and weirs
- Towns
- Highways
- Roads
- Cadastral boundaries
- Sub-basin
- Wetland Mapping**
- Wetland System - Water Bodies**
- Marine Waterbodies
- Estuarine Waterbodies
- Riverine Waterbodies
- Lacustrine Waterbodies
- Palustrine Waterbodies
- Wetland System - Regional Ecosystems**
- Marine RE
- Estuarine RE
- Riverine RE
- Lacustrine RE
- Palustrine RE
- RE 51_80% wetland (mosaic units)
- Riverine System Drainage Lines**
- Major
- Minor

Queensland Wetland Map

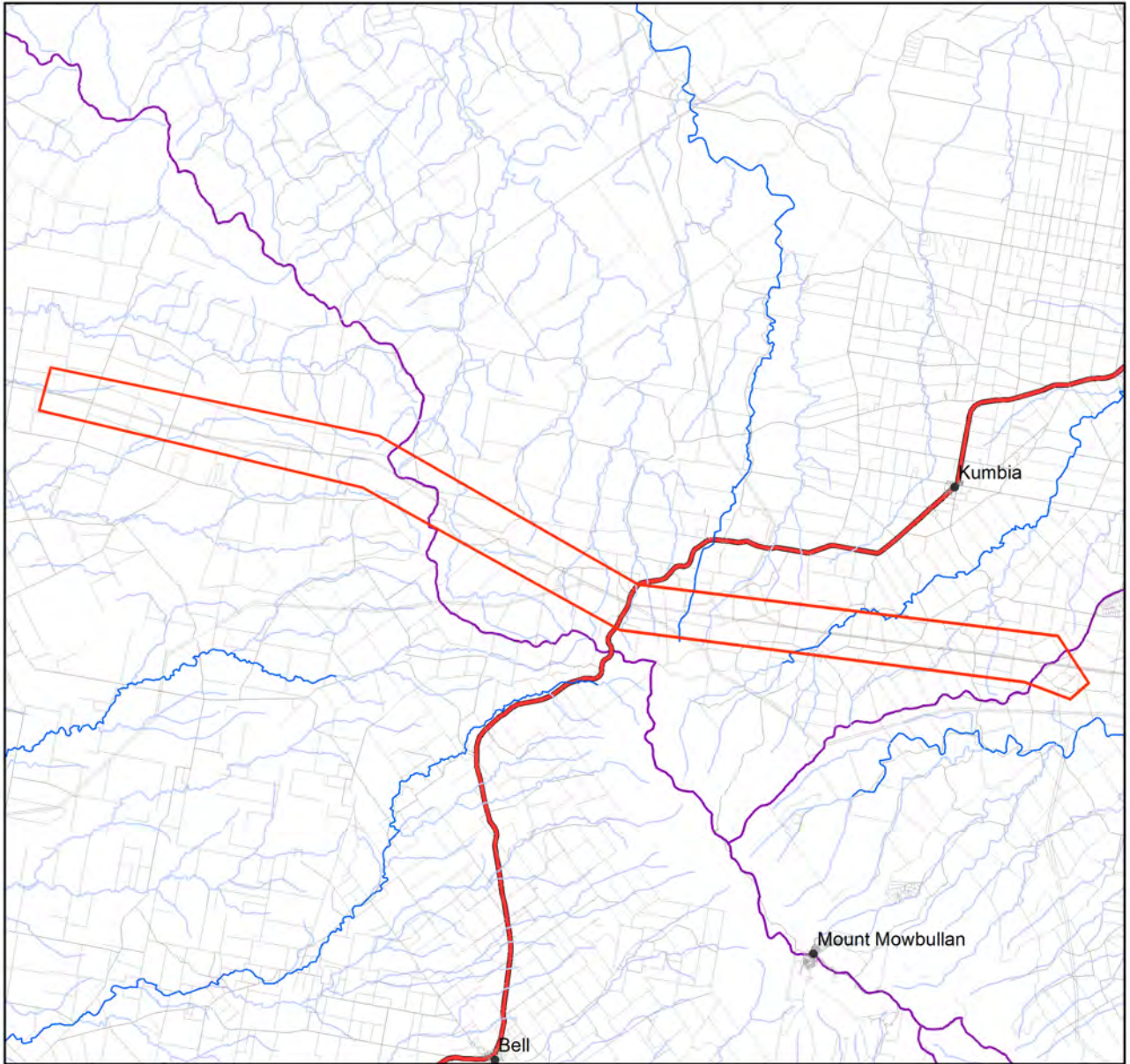


Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

This map was produced by the Queensland Wetlands Program, Department of Environment and Science, September 2022.

For further information contact: wetlands@des.qld.gov.au

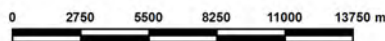
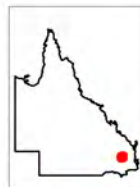
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Queensland Wetlands of Importance Map

Legend

- polygon
- Towns
- Cadastral boundaries
- Highways
- Roads
- Sub-basin
- Directory of Important Wetlands
- Ramsar Wetlands
- Riverine System Drainage Lines**
- Major
- Minor

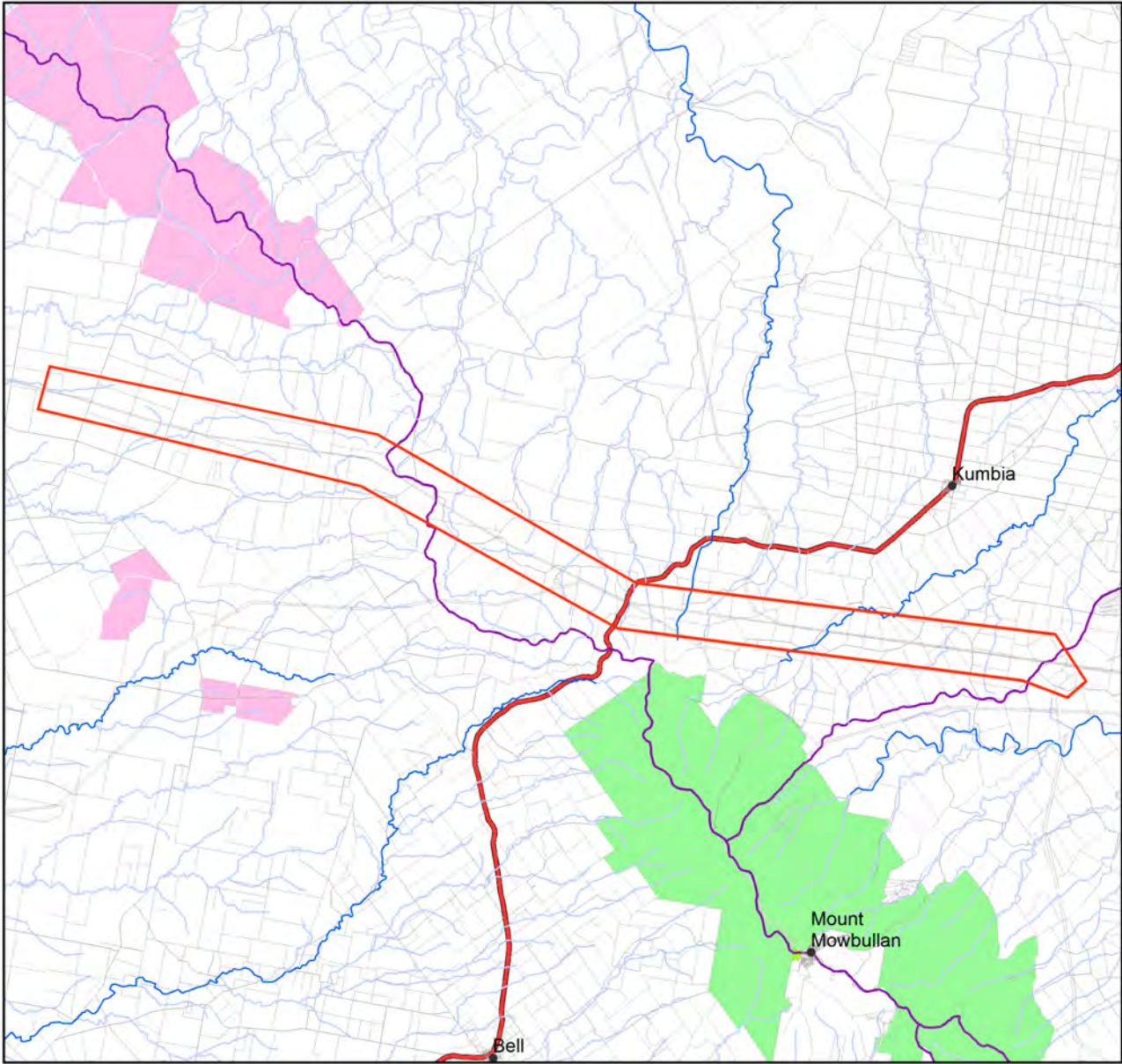


Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

This map was produced by the Queensland Wetlands Program, Department of Environment and Science, September 2022.

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Legend

- polygon
- Towns
- Cadastral boundaries
- Highways
- Roads
- Sub-basin
- Riverine System Drainage Lines**
- Major
- Minor
- Protected Areas**
- National Park
- National Park (Scientific)
- National Park (CYPAL)
- Conservation Park
- Resources Reserve
- Forest Reserve
- State Forest
- Timber Reserve
- Marine Parks**
- General Use Zone
- Habitat Protection Zone
- Estuarine Conservation Zone
- Conservation Park Zone
- Buffer Zone
- Scientific Research Zone
- Marine National Park Zone
- Preservation Zone

Queensland Protected Area Map



Horizontal Datum: Geographic Datum of Australia 1994 (GDA94)

This map was produced by the Queensland Wetlands Program, Department of Environment and Science, September 2022.

For further information contact: wetlands@des.qld.gov.au

Wetland habitat types in the AOI. Total area: 7.49ha

Wetland Class	Habitat type	Area (ha)
	Coastal/ Sub-coastal floodplain tree swamps (Melaleuca and Eucalypt)	3.84
Lacustrine	Artificial/ highly modified wetlands (dams, ring tanks, irrigation channel)	3.65

Queensland wetland habitat typology: Major wetland habitat types for wetland conceptual models and wetland management profiles

Wetland name	Conceptual model	Wetland profile
Mangrove Wetlands	Not developed	Mangrove Wetlands
Saltmarsh Wetlands	Not developed	Saltmarsh Wetlands
Coastal and subcoastal saline swamps of all substrates, water regimes, topographic types and vegetation communities	Coastal and subcoastal saline swamps	Coastal grass-sedge wetlands
Coastal and subcoastal non-floodplain tree swamps (Melaleuca and Eucalypt) of all substrates and water regimes	Coastal and subcoastal non-floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal non-floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal non-floodplain grass, sedge and herb swamps of all substrates and water regimes	Coastal and subcoastal non-floodplain grass, sedge and herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal spring swamps of all substrates, water types, water regimes and vegetation communities	Coastal and subcoastal spring swamps	Great Artesian Basin spring wetlands
Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt of all substrates and water regimes	Coastal and subcoastal floodplain tree swamps - melaleuca and eucalypt	Coastal and subcoastal tree swamps
Coastal and subcoastal floodplain wet heath swamps of all substrates and water regimes	Coastal and subcoastal floodplain wet heath swamps	Coastal and subcoastal wet heath swamps
Coastal and subcoastal floodplain, grass, sedge herb swamps of all substrates and water regimes	Coastal and subcoastal floodplain grass, sedge, herb swamps	Coastal grass-sedge wetlands
Coastal and subcoastal tree swamps - palm of all substrates, topographic types and water regimes	Coastal and subcoastal floodplain tree swamps - palm	Coastal Palm Swamps
Coastal and subcoastal Floodplain Lakes of all substrates, water types and water regimes	Coastal and subcoastal Floodplain Lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Coastal and subcoastal non-floodplain rock lakes of all water types and water regimes	Coastal and subcoastal non-floodplain rock lakes	Coastal and subcoastal non-floodplain rock lakes
Coastal and subcoastal non-floodplain sand lakes (window) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - window	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain sand lakes (perched) of all water types and water regimes	Coastal and subcoastal non-floodplain sand lakes - perched	Coastal non-floodplain sand lakes
Coastal and subcoastal non-floodplain soil lakes of all water types and water regimes	Coastal and subcoastal non-floodplain soil lakes	Coastal and subcoastal floodplain lakes and non-floodplain soil lakes
Arid and semi-arid saline swamps of all substrates, water regimes, topographic types and vegetation communities	Arid and semi-arid saline swamps	Semi-arid swamps

Wetland name	Conceptual model	Wetland profile
Arid and semi-arid fresh tree swamps of all substrates, and water regimes and topographic types	Arid and semi-arid tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid lignum swamps of all substrates, and water regimes and topographic types	Arid and semi-arid lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid grass, sedge, herb swamps of all substrates, water regimes and topographic types	Arid and semi-arid grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain tree swamps of all substrates and water regimes	Arid and semi-arid non-floodplain tree swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain lignum swamps of all substrates and water regimes	Arid and semi-arid non-floodplain lignum swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid fresh non-floodplain grass, sedge, herb swamps of all substrates and water regimes	Arid and semi-arid non-floodplain grass, sedge, herb swamps	Arid swamps Semi-Arid swamps
Arid and semi-arid, non-floodplain swamps - springs of all substrates, water regimes and vegetation communities	Arid and semi-arid spring swamps	Great Artesian Basin spring wetlands
Arid and semi-arid, saline lakes of all substrates, topographic types and water regimes	Arid and semi-arid saline lakes	Arid and semi-arid lakes
Arid and semi-arid, floodplain lakes of all, substrates and water regimes	Arid and semi-arid floodplain lakes	Arid and semi-arid lakes
Arid and semi-arid, non-floodplain Lakes of all substrates and water regimes	Arid and semi-arid non-floodplain lakes	Arid and semi-arid lakes
Arid/ semi-arid, non-floodplain (clay pans) lakes of all substrates and water regimes	Arid and semi-arid fresh non-floodplain lakes (clay pans)	Arid and semi-arid lakes
Arid and semi-arid, Permanent Lakes permanently inundated lakes of all substrates, water types, topographic types and vegetation communities	Arid and semi-arid permanent lakes	Arid and semi-arid lakes

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@des.qld.gov.au

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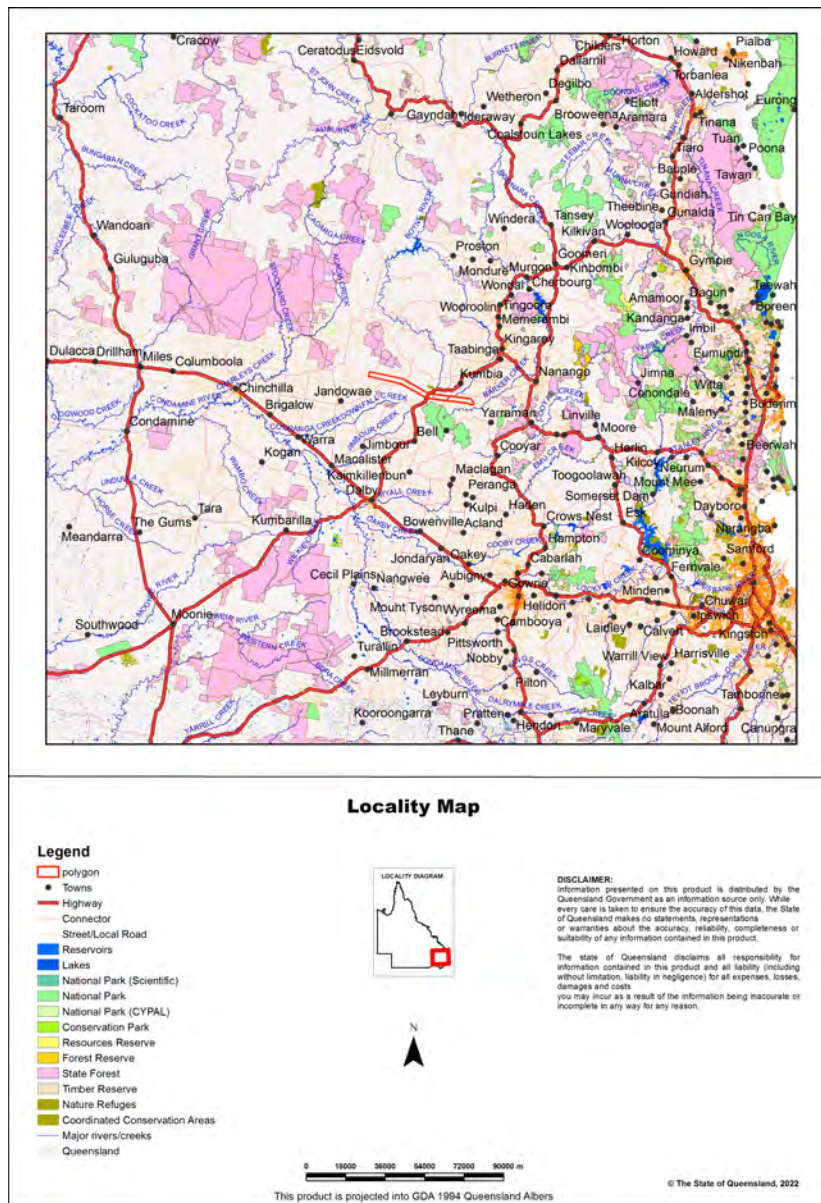
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI Custom Geometry

Size (ha)	11,301.56
Local Government(s)	South Burnett Regional, Western Downs Regional
Bioregion(s)	Brigalow Belt, Southeast Queensland
Subregion(s)	Eastern Darling Downs, South Burnett
Catchment(s)	Balonne-Condamine, Burnett



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the *Nature Conservation Act 1992* ;
- Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the *Marine Parks Act 2004* ;
- Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;
- Threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;
- Regulated vegetation under the *Vegetation Management Act 1999* that is:
 - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
 - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
 - Category R areas on the regulated vegetation management map;
 - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
 - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;
- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;
- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;
- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0.0 ha	0.0 %
1b Protected Areas- nature refuges	0.0 ha	0.0 %
1c Protected Areas- special wildlife reserves	0.0 ha	0.0 %
2 State Marine Parks- highly protected zones	0.0 ha	0.0 %
3 Fish habitat areas (A and B areas)	0.0 ha	0.0 %
4 Strategic Environmental Areas (SEA)	0.0 ha	0.0 %
5 High Ecological Significance wetlands on the map of Referable Wetlands	0.0 ha	0.0 %
6a High Ecological Value (HEV) wetlands	0.0 ha	0.0 %
6b High Ecological Value (HEV) waterways	0.0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0.0 ha	0.0 %
7b Special least concern animals	0.0 ha	0.0 %
7c i Koala habitat area - core (SEQ)	0.0 ha	0.0 %
7c ii Koala habitat area - locally refined (SEQ)	0.0 ha	0.0 %
7d Sea turtle nesting areas	0.0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	1015.97 ha	9.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	337.49 ha	3.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	323.52 ha	2.9%
8d Regulated Vegetation - Essential habitat	4.45 ha	0.0%
8e Regulated Vegetation - intersecting a watercourse	204.6 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0.0 ha	0.0 %
9a Legally secured offset areas- offset register areas	0.0 ha	0.0 %
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0.0 ha	0.0 %

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(no results)

1b. Protected Areas - nature refuges

(no results)

1c. Protected Areas - special wildlife reserves

(no results)

2. State Marine Parks - highly protected zones

(no results)

3. Fish habitat areas (A and B areas)

(no results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(no results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
<i>Boronia keysii</i>		V	None
<i>Calyptorhynchus lathami</i>	Glossy black cockatoo	V	None
<i>Casuarius casuaris johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>		V	None
<i>Melaleuca irbyana</i>		E	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	V	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Xeromys myoides</i>	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(no results)

Special least concern animal species records

(no results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

<https://www.qld.gov.au/environment/plants-animals/species-list/>

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals**, **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

<https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/>

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

<https://environment.ehp.qld.gov.au/regional-ecosystems/>

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.9.7/11.9.2/11.3.4/11.9.5	E-subdom	rem_end
11.10.1/11.9.2/11.9.4a	O-subdom	rem_oc
11.8.5/12.8.16/11.3.25	O-subdom	rem_oc
11.8.5/11.8.3	O-subdom	rem_oc
11.9.2/11.9.4a	O-subdom	rem_oc
11.8.3/12.8.16	O-dom	rem_oc
11.8.3	O-dom	rem_oc
12.8.16	O-dom	rem_oc
12.8.16/12.8.17/12.8.14a	O-dom	rem_oc
12.8.16/11.8.3/11.3.25	O-dom	rem_oc
12.8.16/12.8.17/12.3.3d/12.8.14a	E-subdom	rem_end
12.8.16/11.3.25	O-dom	rem_oc
12.3.3	E-dom	rem_end

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.9.2/12.9-10.7/11.9.5/11.3.2	E-subdom	hvr_end
11.9.4a	O-dom	hvr_oc
11.10.1/11.9.2/11.9.4a	O-subdom	hvr_oc
11.9.7/11.9.2/11.3.4/11.9.5	E-subdom	hvr_end
11.8.5/12.8.16/11.3.25	O-subdom	hvr_oc
11.8.5/11.8.3	O-subdom	hvr_oc
11.9.2/11.9.4a	O-subdom	hvr_oc
12.8.16/12.8.17/12.3.3d/12.8.14a	E-subdom	hvr_end
12.8.16/12.8.17/12.8.14a	O-dom	hvr_oc
12.3.3	E-dom	hvr_end

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Regulated vegetation map category	Map number
R	9144
R	0
R	9244

8d. Regulated Vegetation - Essential habitat

Values are present

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Not applicable

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

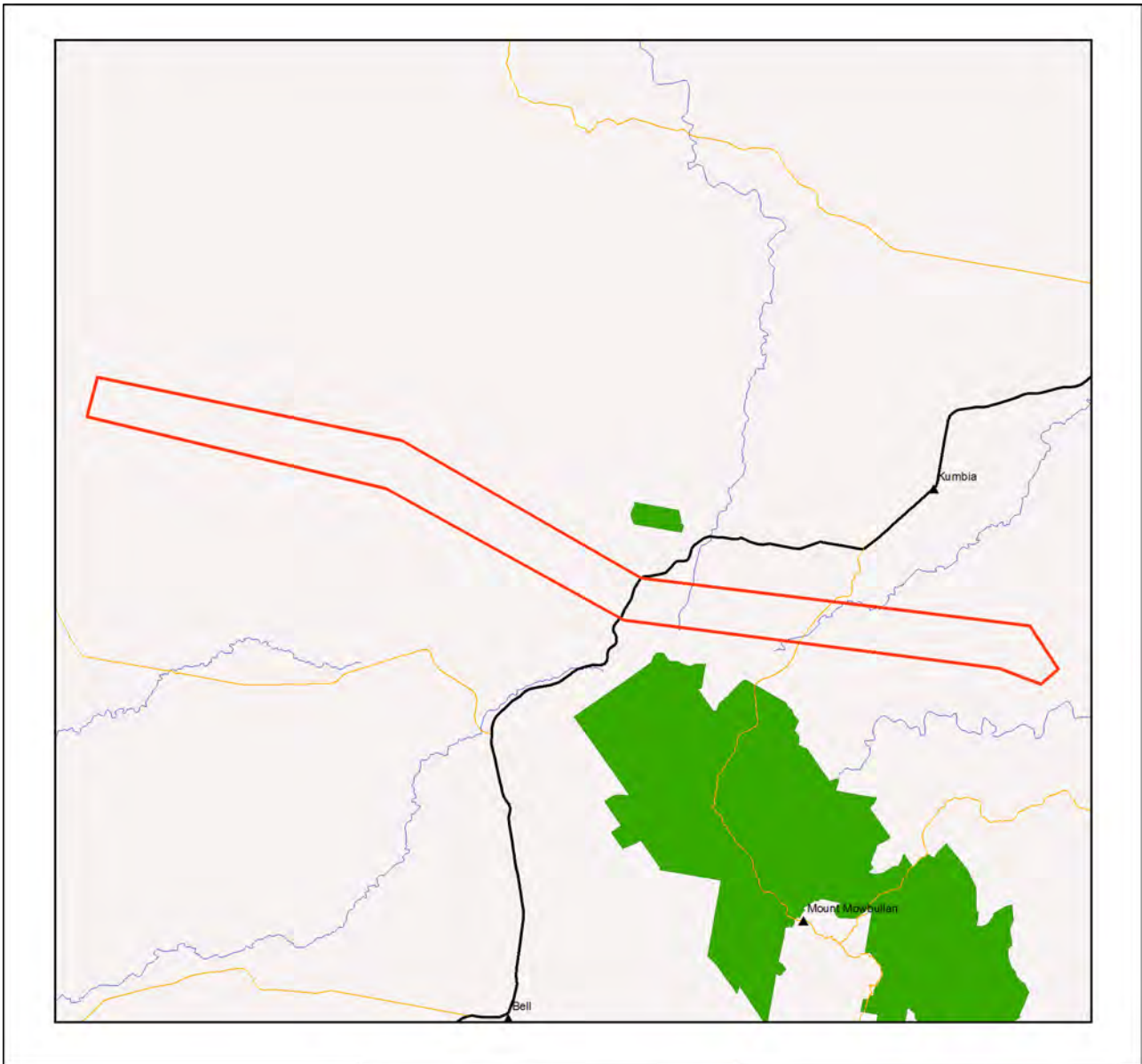
(no results)

9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

(no results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

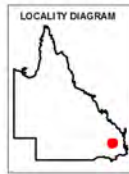
Map 1 - MSES - State Conservation Areas



MSES - State Conservation Areas

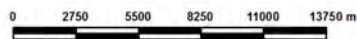
Area of Interest

- polygon
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Protected area (estates, nature refuges, special wildlife reserves)
- Declared fish habitat area (A and B areas)
- Marine park (highly protected)



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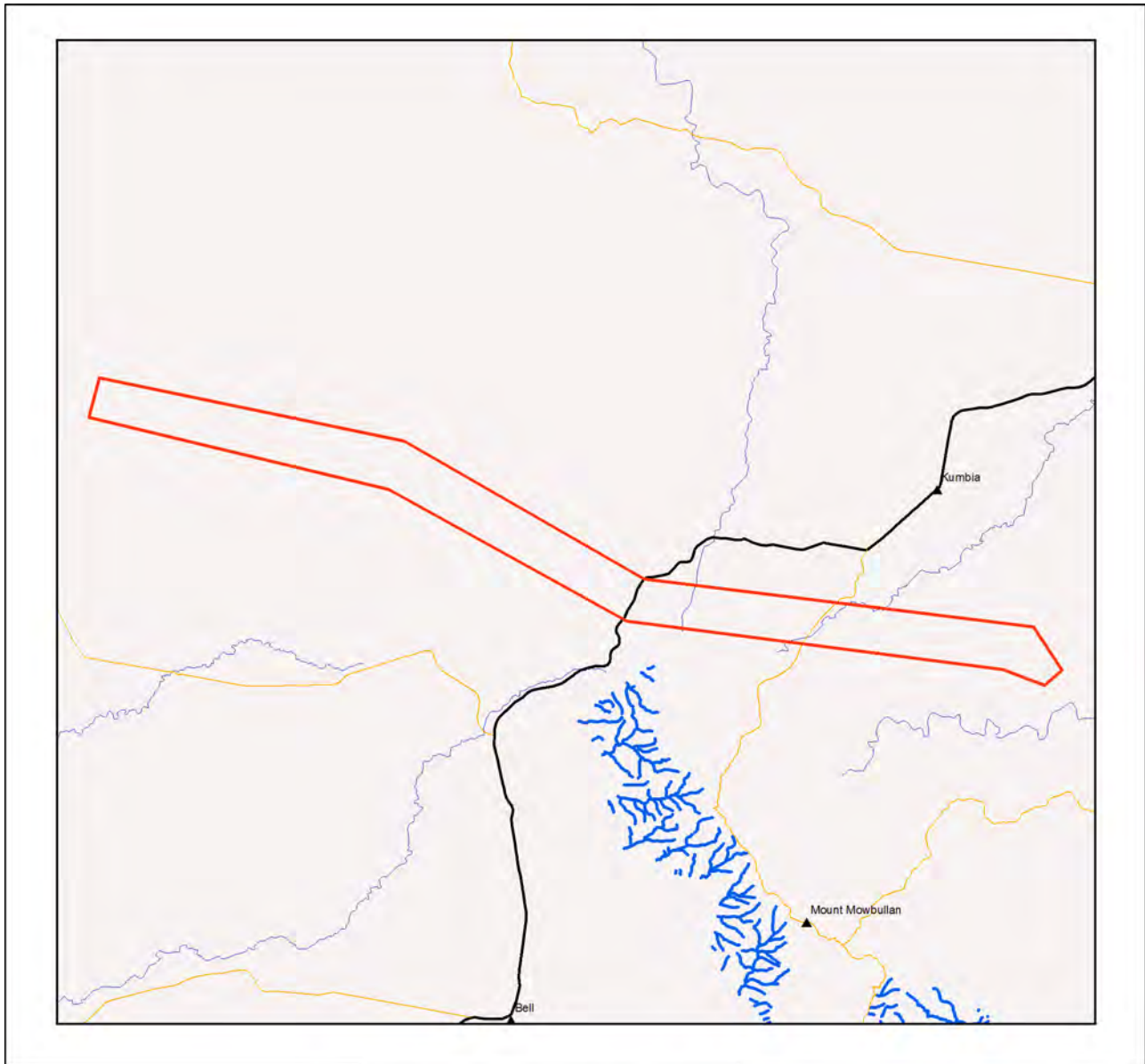
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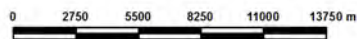
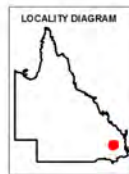
Map 2 - MSES - Wetlands and Waterways



MSES - Wetlands and Waterways

Area of Interest

- polygon
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Declared high ecological value waters (watercourse)
- Strategic environmental area (designated precinct)
- Declared high ecological value waters (wetland)
- High ecological significance wetlands



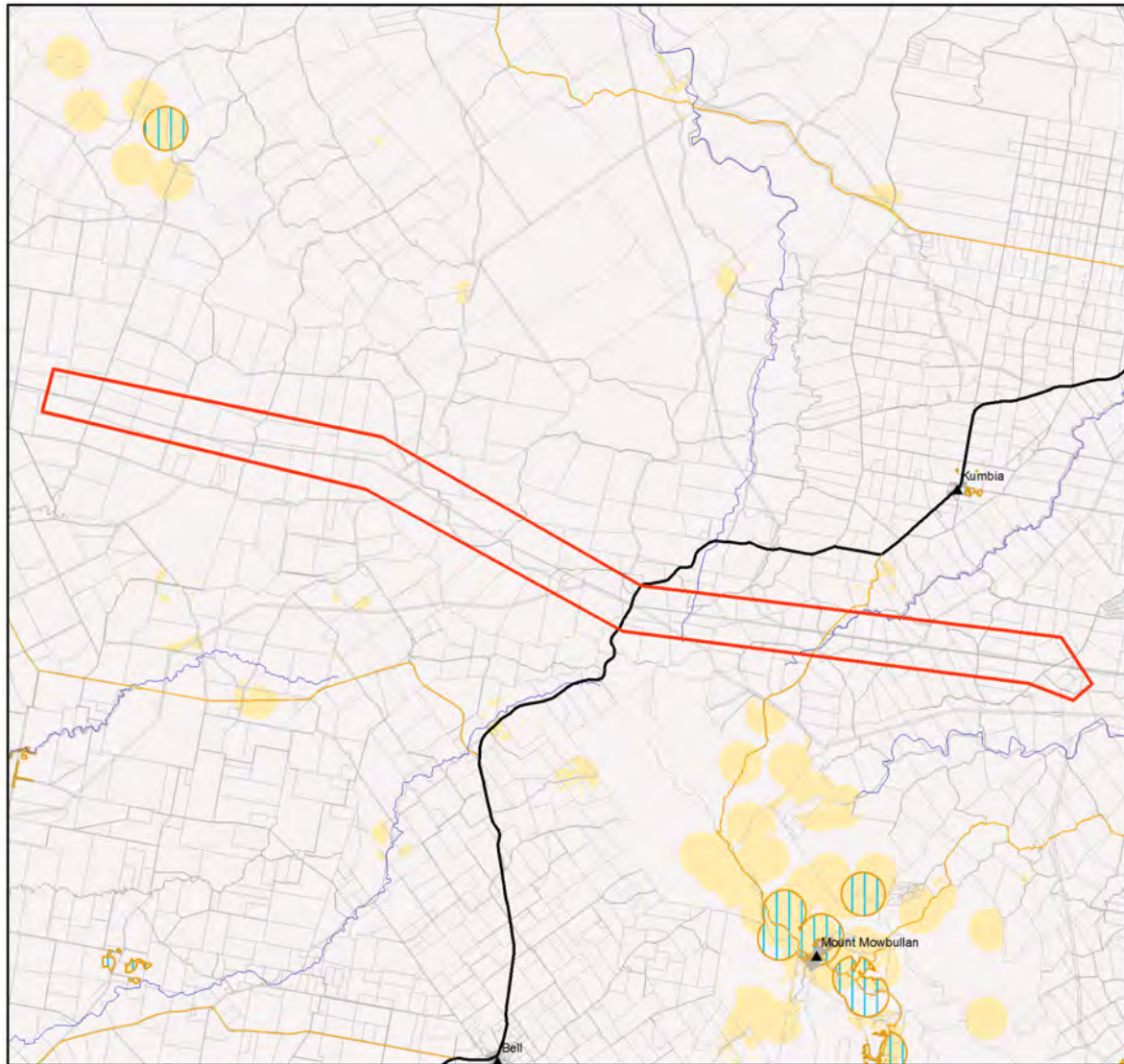
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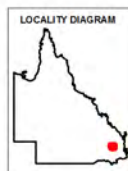
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



MSES - Species Threatened (endangered or vulnerable) wildlife and special least concern animals

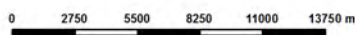
Area of Interest

- polygon
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)



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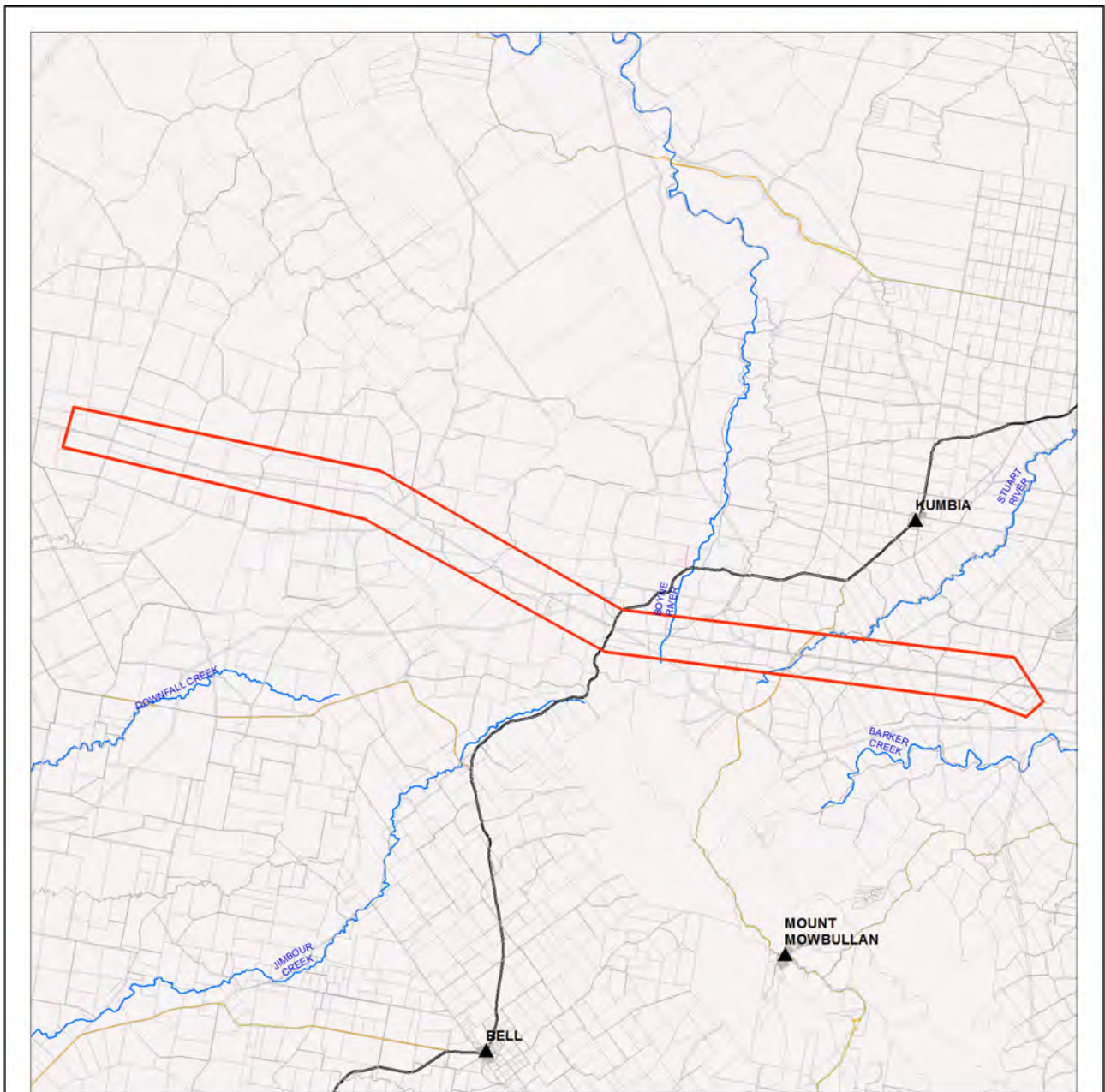
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Map 3b - MSES - Species - Koala habitat area (SEQ)



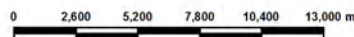
MSES - Species Koala habitat area (SEQ)

Area of Interest

-  polygon
-  Towns
-  Freeways/Highways
-  Secondary roads
-  Major rivers/creeks
-  Koala habitat area (core)
-  Koala habitat area (locally refined)



The koala habitat mapping within South East Queensland uses regional ecosystem linework compiled at a scale varying from 1:25,000 to 1:100,000. Linework should be used as a guide only. The positional accuracy of regional ecosystem data mapped at a scale of 1:100,000 is +/- 100 metres.



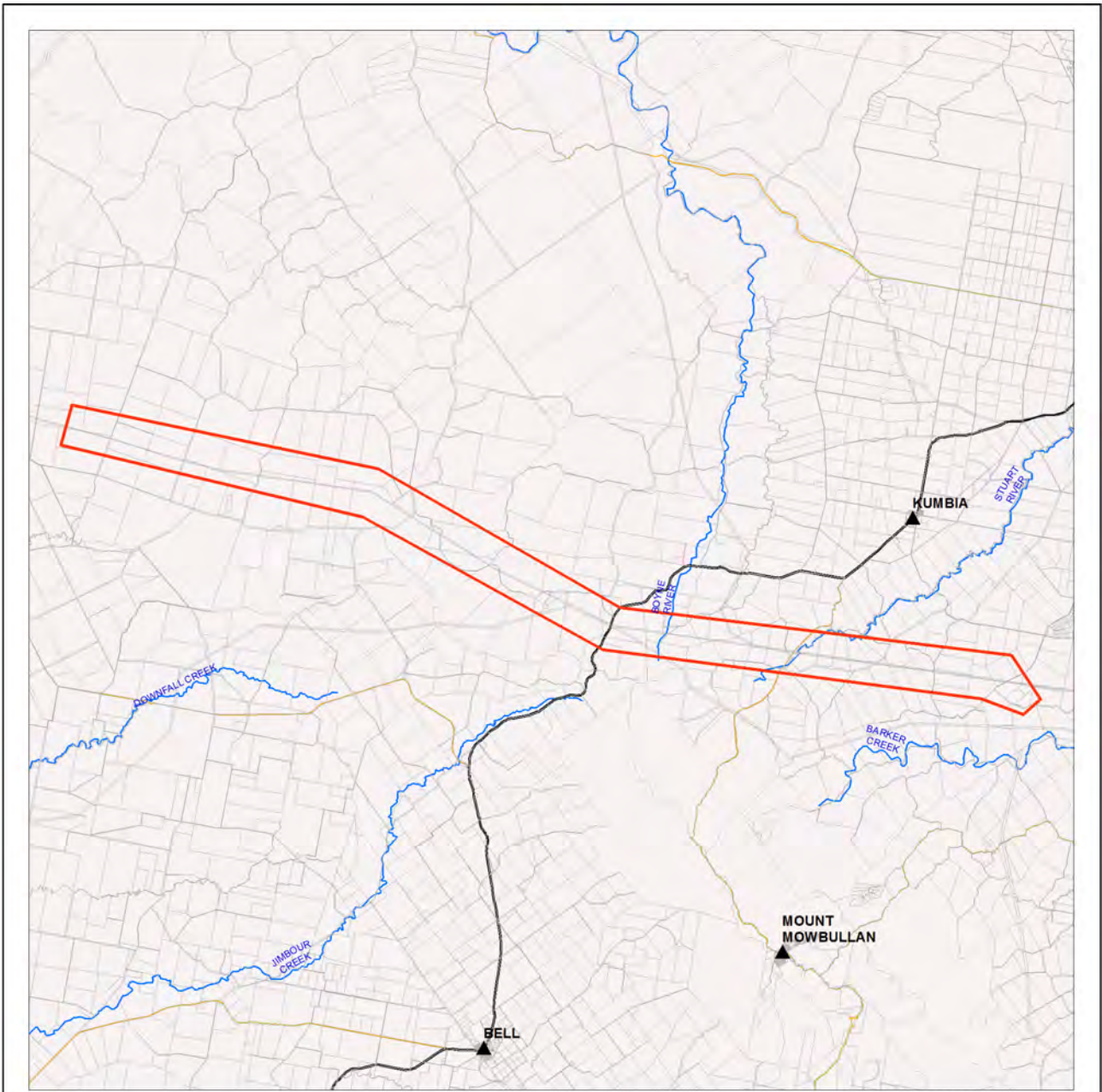
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The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area- locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to ensure the information remains current, there may be delays between updating versions. Please refer to the original mapping for the most recent version. See <https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping>

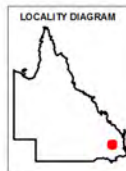
Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)



MSES - Wildlife habitat (sea turtle nesting areas)

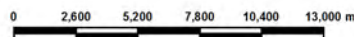
Area of Interest

- polygon
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (sea turtle nesting areas)

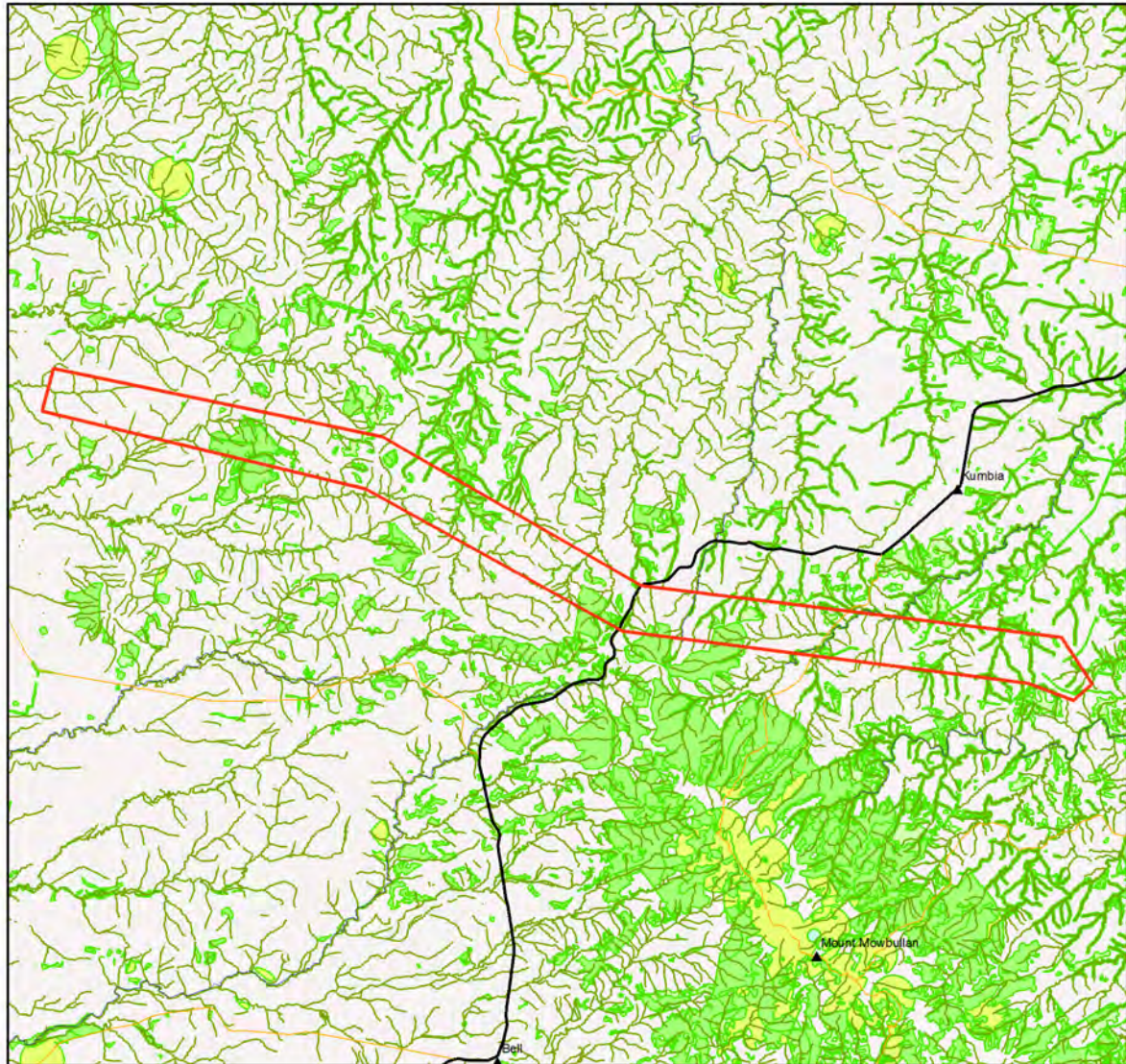


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MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise that significant numbers of nesting adults and hatchlings can become disoriented by light pollution from development on rocky coastlines and headlands while navigating offshore from nesting beaches.



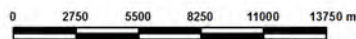
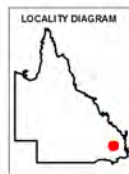
Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

Area of Interest

- ▭ polygon
- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)



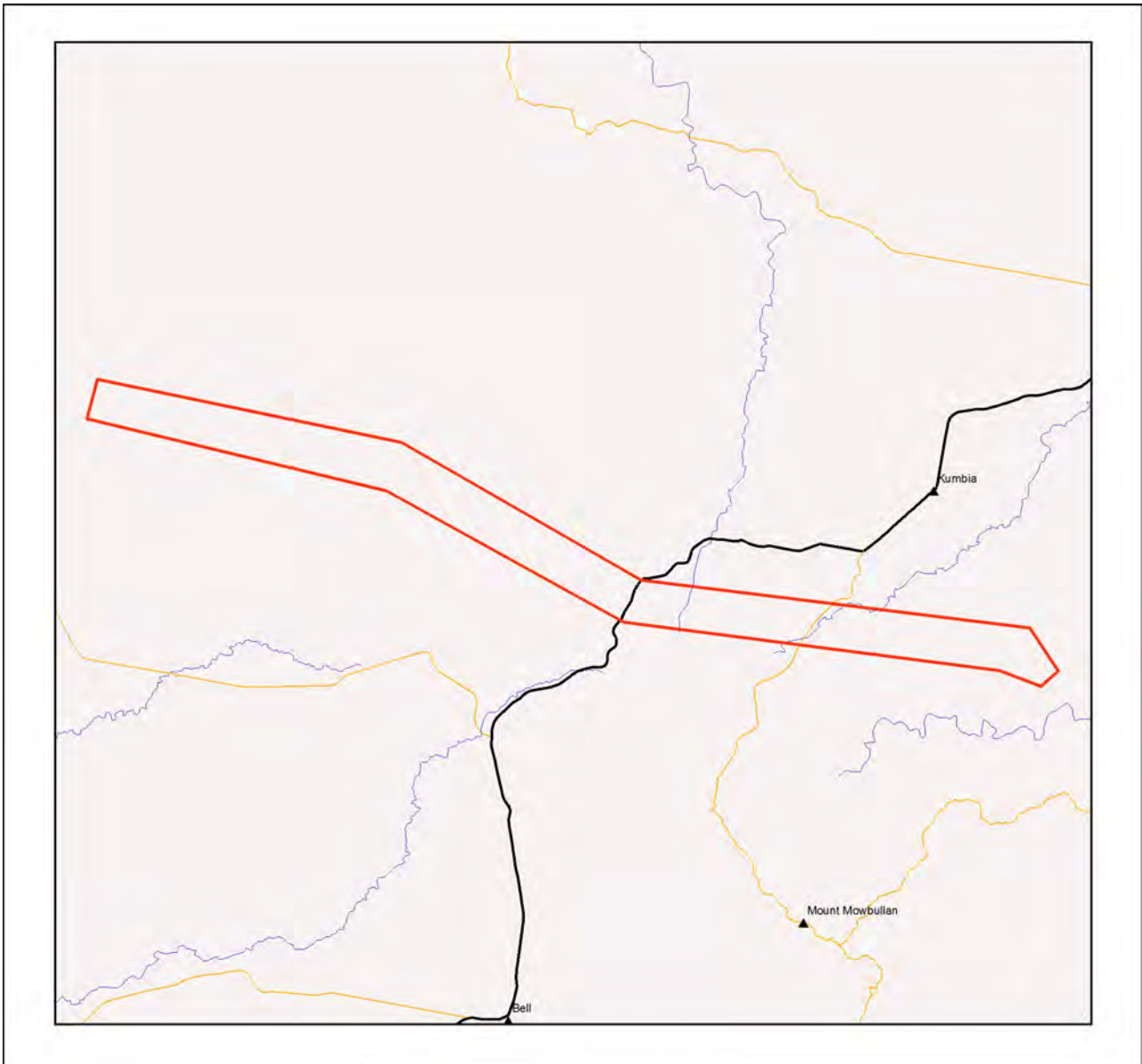
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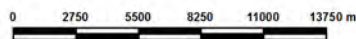
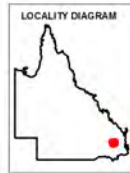
Map 5 - MSES - Offset Areas



MSES - Offsets

Area of Interest

- polygon
- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Legally secured offset area (offset register)
- Legally secured offset area (vegetation offsets)



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Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). The compiled MSES mapping product is a guide to assist planning and development assessment decision-making. Its primary purpose is to support implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations. Similarly, the SPP biodiversity policy does not override or replace specific requirements of other Acts or regulations.

The Queensland Government's "Method for mapping - matters of state environmental significance for use in land use planning and development assessment" can be downloaded from:

<http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html> .

Appendix 2 - Source Data

The datasets listed below are available on request from:

<http://qldspatial.information.qld.gov.au/catalogue/custom/index.page>

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	current QSpatial data (http://qspatial.information.qld.gov.au)
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	- WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019 - Sea Turtle Nesting Areas records
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DES
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DES	- Department of Environment and Science
EP Act	- <i>Environmental Protection Act 1994</i>
EPP	- Environmental Protection Policy
GDA94	- Geocentric Datum of Australia 1994
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- <i>Nature Conservation Act 1992</i>
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- <i>Vegetation Management Act 1999</i>

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	45
Listed Migratory Species:	13

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	1300 - 1400km upstream from Ramsar site	In feature area
Narran lake nature reserve	400 - 500km upstream from Ramsar site	In feature area
Riverland	1200 - 1300km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	1400 - 1500km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area	In feature area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status
Weeping Myall Woodlands	Endangered	Community may occur	In feature area within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur	In feature area within area

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur	In feature area within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur	In feature area within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur	In feature area within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur	In feature area within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur	In feature area within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur	In feature area within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur	In feature area within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur	In feature area within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u>			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
<u>Pteropus poliocephalus</u>			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
<u>Arthraxon hispidus</u>			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Bothriochloa bunyensis</u>			
Satin-top Grass [15961]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<u>Cadellia pentastylis</u>			
Ooline [9828]	Vulnerable	Species or species habitat may occur within area	In feature area
<u>Clematis fawcettii</u>			
Stream Clematis [4311]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Cossinia australiana</u>			
Cossinia [3066]	Endangered	Species or species habitat may occur within area	In feature area
<u>Denhamia parvifolia</u>			
Small-leaved Denhamia [18106]	Vulnerable	Species or species habitat may occur within area	In feature area
<u>Dichanthium queenslandicum</u>			
King Blue-grass [5481]	Endangered	Species or species habitat may occur within area	In feature area
<u>Dichanthium setosum</u>			
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Haloragis exalata subsp. velutina</u>			
Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat likely to occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Phebalium distans Mt Berryman Phebalium [81869]	Endangered	Species or species habitat may occur within area	In feature area
Rhaponticum australe Austral Cornflower, Native Thistle [22647]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sarcochilus weinthalii Blotched Sarcochilus, Weinthals Sarcanth [12673]	Vulnerable	Species or species habitat may occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Xerothamnella herbacea [4146]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Anomalopus mackayi Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat may occur within area	In feature area
Furina dunmali Dunmall's Snake [59254]	Vulnerable	Species or species habitat likely to occur within area	In feature area

SNAIL

Adclarkia cameroni Brigalow Woodland Snail [83886]	Endangered	Species or species habitat may occur within area	In feature area
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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Migratory Terrestrial Species

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Controlled action					
Wambo Wind Farm	2020/8727	Controlled Action	Post-Approval	In feature area	
Not controlled action					
Coal Conveyor between New Acland Coal Mine and Tarong	2007/3430	Not Controlled Action	Completed	In feature area	

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<u>Power Stations</u>				
<u>Coopers Gap Wind Farm</u>	2008/4237	Not Controlled Action	Completed	In feature area
<u>Coopers Gap Wind Farm</u>	2008/4559	Not Controlled Action	Completed	In feature area
<u>Development of the Coopers Gap Wind Farm</u>	2011/5976	Not Controlled Action	Completed	In feature area
<u>Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</u>	2015/7522	Not Controlled Action	Completed	In feature area
<u>Surat Basin to Tarong Railway project</u>	2003/1264	Not Controlled Action	Completed	In feature area

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Maranoa-Balonne-Condamine	Northern Inland Catchments	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Department of Agriculture Water and the Environment

GPO Box 858

Canberra City ACT 2601 Australia

+61 2 6274 1111

Appendix B

Likelihood of occurrence assessment – Threatened Ecological Communities

Threatened Ecological Community	EPBC status	Distribution and habitat associations	Likelihood of occurrence	Rationale
Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant)	E	Considered to be analogous to 16 regional ecosystems (RE's) in Queensland: 6.4.2, 11.3.1, 11.4.3, 11.4.7, 11.4.8, 11.4.9, 11.4.10, 11.5.16, 11.9.1, 11.9.5, 11.9.6, 11.11.14, 11.12.21, 12.8.23, 12.9-10.6, and 12.12.26.	Unlikely	Although some of the RE's that are analogous to this TEC are present within the Buffer area, there were no suitable RE's mapped or observed within the Project footprint.
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	E	Considered to be analogous to 5 RE's in Queensland: 11.3.3, 11.3.15, 11.3.16, 11.3.28, and 11.3.37.	Unlikely	RE's which are analogous to this TEC are not present within or surrounding the Project study area.
Lowland Rainforest of Subtropical Australia	CE	Considered to be analogous to 9 RE's in Queensland: 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.8.13, 12.11.1, 12.11.10, 12.12.1, and 12.12.16.	Unlikely	RE's which are analogous to this TEC are not present within or surrounding the Project study area.
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	CE	Considered to be analogous to 2 RE's in Queensland: 11.3.21 and 11.3.24.	Unlikely	Although some of the RE's that are analogous to this TEC are present within the Buffer area, there were no suitable RE's mapped or observed within the Project footprint.
Poplar Box Grassy Woodland on Alluvial Plains	E	Considered to be analogous to 5 RE's in Queensland: 11.3.2, 11.3.17, 11.4.7, 11.4.12, and 12.3.10.	Unlikely	Although some of the RE's that are analogous to this TEC are present within the Buffer area, there were no suitable RE's mapped or observed within the Project footprint.
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	E	Considered to be analogous to 10 RE's in Queensland: 11.2.3, 11.3.11, 11.4.1, 11.5.15, 11.8.3, 11.8.6, 11.8.13, 11.9.4, 11.9.8, and 11.11.18.	Unlikely	RE's which are analogous to this TEC are present within the Study area (RE 11.8.3 and 11.9.4). However, no habitat was found in Disturbance footprint during ground-truth investigations.
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	E	Considered to be analogous to 18 RE's in Queensland: 12.3.2, 12.3.2a, 12.3.3, 12.3.3a, 12.3.3b, 12.3.3b, 12.3.4a, 12.3.7, 12.3.7c, 12.3.10, 12.3.11, 12.3.11a, 12.3.11b, 12.3.12, 12.3.14, 12.3.14a, 12.3.15, 12.3.19	Unlikely	The RE 12.3.3 and 12.3.3 which is analogous to this TEC is present within the Study area. However, no habitat was found in Disturbance footprint during ground-truth investigations.
Weeping Myall Woodlands	E	Considered to be analogous to 2 RE's in Queensland: 11.3.2 and 11.3.28.	Unlikely	RE's which are analogous to this TEC are not present within or surrounding the Project study area.

Threatened Ecological Community	EPBC status	Distribution and habitat associations	Likelihood of occurrence	Rationale
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	Considered to be analogous to 12 RE's in Queensland: 11.3.23, 11.8.2a, 11.8.8, 11.9.9a, 12.8.16, 13.3.4, 13.3.1, 13.11.3, 13.11.4, 13.11.8, 13.12.8, and 13.12.9.	Unlikely	The RE 12.8.16 which is analogous to this TEC is present within the Study area. However, no habitat was found in Disturbance footprint during ground-truth investigations.

Table notes:

EPBC: Australian conservation status of the taxon under the Environment Protection and Biodiversity Conservation Act 1999 (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).

Likelihood of occurrence assessment – flora and fauna

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
Flora						
<i>Arthraxon hispidus</i>	Hairy-joint Grass	V	V	Occurs on the edges of rainforests and in wet Eucalypt Forest. It is often found around freshwater springs on coastal dunes, in shaded gullies, creek banks, and on sandy alluvium in creed beds in open forest. Has been known to occur with bog mosses in mound springs.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
<i>Bothriochloa bunyensis</i>	Bunya Mountains bluegrass (Satin-top Grass)	V	V	Associated with fertile soils in grassland or woodland with grassy understoreys. Endemic to southeast Queensland and more specifically the Bunya Mountains. Occurs on fertile krasnozem soils derived from basalt on upper slopes and hill crests, or in grasslands and woodlands with grassy understoreys. Altitudinal range from 600 to 1100 m. Flowering is between November to June.	Unlikely	Location is within altitudinal range and species is known to occur within the Buffer area, specifically south of the Project study area in Bunya Mountains National Park. However, no individuals observed during targeted surveys within the limited suitable habitat in the Project study area.
<i>Cadellia pentastylis</i>	Ooline	V	V	Grows in sclerophyll forests and semi-evergreen vine thickets on undulating terrain. Will grow on sandstone, conglomerate and claystone geology with low to medium nutrient rich soils. They are associated with upper and mid-slope terrain. Occurs 23°S and 30°S within 500 mm and 750 mm rainfall isohyets and an altitude of 300 to 460 m above sea level (some at 600 m).	Unlikely	No individuals were observed during targeted surveys within the suitable habitat in the Project study area. No known records of occurrence within the Buffer area.
<i>Callitris baileyi</i>	Bailey's Cypress Pine	NT	-	Found sporadically and grows on rocky slopes, hilly or mountainous areas, in shallow and clay soils. Occurs in Eucalypt woodland and is often associated with Ironbark, Blue Gum and Spotted Gum.	Known	Some suitable habitats within and surrounding the Project study area. Multiple known occurrences within the Project study area and Buffer area.

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Clematis fawcettii</i>	Stream Clematis	V	V	Perennial climbing vine that occurs in drier rainforests near streams. It prefers semi-evergreen vine thicket, <i>Araucarian microphyll</i> vine forest, notophyll vine forest, and Eucalypt woodlands close to vine thickets or rainforest. Various soil types but prefers fertile clays and soils derived from basalt and mixed volcanic rocks.	Unlikely	No suitable habitat within or surrounding the Project study area. Few known occurrences within the Buffer area, specifically south of the Project study area in Bunya Mountains National Park.
<i>Cossinia australiana</i>	Cossinia	E	E	Prefers ecotonal situations around dry rainforest edges but will occur scattered within closed forest communities. Occurs in fragmented patches of araucarian microphyll vine forest and relict semi-evergreen vine thickets. Prefers locations of fertile soils and altitudes between 20 to 520 m. Grows on a variety of soils including red volcanic soil and black loam.	Unlikely	No suitable habitat within or surrounding the Project study area. Some known occurrences within the Buffer area, specifically in the northeast region near Kingaroy.
<i>Cryptocarya floydii</i>	Gorge Laurel	NT	-	Distributed from its northern extent in Bunya Mountains National Park to Macleay River in New South Wales. Occurs in subtropical rainforests on steep, dry, rocky gullies.	Unlikely	No suitable habitat within or surrounding the Project study area. Known to occur within the Buffer area, specifically south of the Project study area in Bunya Mountains National Park.
<i>Cyperus clarus</i>	-	V	-	Grows in grassland or open woodland, on heavy soils derived from basalt. Associated with grasslands where <i>Aristida leptopoda</i> and <i>Panicum queenslandicum</i> occur on deep alluvial black clay; in Eucalypt woodland with mid-dense ground stratum, growing in mountain coolabah woodland on basalt ridges with <i>Stemmacantha australis</i> ; and in <i>Dichanthium</i> grassland with <i>Cyperus bifax</i> and <i>Fimbristylis</i> spp..	Unlikely	No individuals observed during targeted survey within the suitable habitat in the Project study area. One known occurrence adjacent to project near Jandowae State Forest.
<i>Denhamia parvifolia</i>	Small-leaved Denhamia	V	V	Occurs in roadside remnants of semi-evergreen microphyll vine thickets and vine forests. Commonly found on basalt soils that are brown or red and above 300 m altitude. Occasionally found in open forest.	Unlikely	No individuals observed during targeted survey within the suitable habitat (on hill slopes and in gullies) in the Project study area. Some known occurrences within the Buffer area, north of the Project study area in Kingaroy.
<i>Dichanthium queenslandicum</i>	King Blue-grass	V	E	Confined to Blue-grass grassland communities and endemic to central and southern Queensland. Occurs on black cracking clay in tussock grasslands. Mainly associates with similar species (<i>Dichanthium</i> spp. and <i>Bothriochloa</i> spp.). Flowering is between November to January.	Unlikely	No suitable habitats within and surrounding the Project study area. Although there was some black cracking clay present it was cultivated land. No known records of occurrence within the Buffer area.

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Dichanthium setosum</i>	Bluegrass	C	V	Associated with heavy basaltic black soils and stony loam with clay subsoil. Found in moderately disturbed areas, such as cleared woodland, grassy roadside remnants, grazed land and highly disturbed pasture. Flowering is in Summer (December to January).	Unlikely	No suitable habitats within and surrounding the Project study area. Although there was some black cracking clay present it was cultivated land. No known records of occurrence within the Buffer area.
<i>Diuris parvipetala</i>	Slender Purple Donkey Orchid	V	-	<i>Diuris parvipetala</i> has a purple flower and grows among grass in open forests, on ridges and gentle to steep slopes, among basalt boulders and on granite pavements. It grows in shallow, brown, basalt loam soils. Flowers in Spring (between August and October)	Unlikely	No individuals observed during targeted survey within the suitable habitat in the Project study area. No known occurrences within the Buffer area.
<i>Haloragis exalata</i> subsp. <i>Velutina</i>	Tall Velvet Sea-berry	V	V	Occurs in rainforest and rainforest margins and adjacent grassland and open grassy woodland above 500 m altitude. Often found in association with Broad-leaved apple (<i>Angophora subvelutina</i>), Forest redgum (<i>Eucalyptus tereticornis</i>), Green wattle (<i>Acacia irrorata</i>), and <i>Scutellaria humilis</i> . Recorded growing on brown heavy clay, shallow rock loam, and basaltic soils.	Unlikely	No individuals observed during targeted survey within the suitable habitat in the Project study area. Few known occurrences within the Buffer area, specifically south of the Project study area in Bunya Mountains National Park and east in Yarraman.
<i>Lepidium monoplacoides</i>	Winger Pepper-cress	C	E	Occurs on seasonally moist to waterlogged sites and on heavy fertile soils (annual rainfall between 300 to 500 mm). Can grow in heavy clay or clay-loam soils. Usually grows in open woodland or floodplain woodlands dominated by <i>Allocasuarina luehmannii</i> (Bulloak) and/or Eucalypts (particularly <i>Eucalyptus largiflorens</i> or <i>Eucalyptus populnea</i>). Surrounding woodland is often dominated by tussock grasses.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
<i>Lepidium peregrinum</i>	Wandering Pepper-cress	C	E	Grows in riparian open forest dominated by <i>Eucalyptus camaldulensis</i> and <i>Casuarina cunninghamiana</i> . Grows in variably dense shrubby understorey and is most abundant in the tussock grasslands of riparian open forest. Can also grow in shade under shrubs and close to creeks.	Unlikely	No individuals observed during targeted survey within the suitable habitat in the Project study area. Known to occur within the Buffer area, specifically south of the Project study area in Bunya Mountains National Park.
<i>Macadamia integrifolia</i>	Macadamia Nut	V	V	Grows primarily in remnant rainforest, complex notophyll forests, tall closed forest, simple notophyll mixed very tall closed forest and microphyll-notophyll mixed mid-high closed forest. Prefers to grow on edges or partially open areas. Prefers mild frost-free areas with high rainfall.	Unlikely	No suitable habitat within or surrounding the Project study area. No known occurrences within the Buffer area. Closest population >100km away.

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Melaleuca formosa</i>	Kingaroy Bottlebrush	NT	-	This melaleuca occurs in near coastal districts in south-eastern Queensland where it grows in vine forest or as an understorey plant beneath eucalypts in loam or sandy soil over trachyte. Grows on and around cliffs. Similar to <i>Melaleuca saligna</i> .	Unlikely	Multiple known occurrences in the east of the Buffer area and adjacent to the Study area in Kumbia. However, no individuals observed during targeted survey within the suitable habitat in the Project study area.
<i>Phebalium distans</i>	Mt Berryman Phebalium	E	E	Occurs in semi-evergreen vine thickets on red volcanic soils, or in communities adjacent to this vegetation type. Sometimes found in small groups or as solitary specimens. Prefers soils of red-brown earths to brown clays, lithosols to shallow, and gravelly krasnozems (dark loam). Only known from 10 populations at 3 locations.	Unlikely	No suitable habitat within or surrounding the Project study area. Some known occurrences within the Buffer area at Kingaroy. Species only known from few isolated populations.
<i>Rhaponticum australe</i>	Austral Cornflower	V	V	Confined to Queensland and typically grows in Eucalypt open forests with grassy understorey. Often found on roadsides and road reserves on black clay soil derived from basalt. Found with species such as Rhodes grass (<i>Chloris gayana</i>), Spear thistle (<i>Cirsium vulgare</i>), Queensland blue gum (<i>Eucalyptus tereticornis</i>) and Rough-barked apple (<i>Angophora floribunda</i>). Prefers areas where grass competition is reduced by fire or other types of disturbance as it is a poor competitor.	Unlikely	No individuals observed during targeted survey within the suitable habitat in the Project study area. No known records of occurrence within the Buffer area.
<i>Rhodamnia dumicola</i>	Rib-fruited Malletwood	E	-	Grows in microphyll vine forest on soils of red to brown loam from mudstones of Muncon volcanics. Grows at altitudes of 200 to 560 m. Associated with the dominant tree species <i>Araucaria cunninghamii</i> and associated with <i>Backhousia subargentea</i> , <i>Barklya syringifolia</i> , <i>Archidendropsis thozetiana</i> , <i>Backhousia kingii</i> , <i>Sterculia quadrifida</i> , <i>Mallotus philippensis</i> , <i>Croton stigmatus</i> .	Unlikely	Occurrences of species within the No known records of occurrence within the Buffer area. ear Kingaroy and in Bunya Mountains National Park. However, no individuals observed during targeted survey within the suitable habitat in the Project study area.
<i>Sarcophilus weinthalii</i>	Blotched Sarcophilus	E	V	Occurs on trees in rainforest, dry rainforest and drier scrub of sub-coastal ranges and associated foothills inland from the coast (altitudes of 400 to 700 m above seal level). Grows in microphyll and notophyll rainforest types or patches of isolated scrub.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
<i>Sophora fraseri</i>	Brush Sophora	V	V	Grows in wet sclerophyll forest and a range of rainforest types. Occurs in hilly terrain on hillslopes (altitudes of 60 to 660 m). Grows in shallow stony to shaly soils of loam to clay texture derived from sandstone or basalt. Prefers to grow on rainforest margins, in eucalypt forests in the vicinity of rainforests or in large canopy gaps in closed forests.	Unlikely	No suitable habitat within or surrounding the Project study area. One known record of occurrence within the Buffer area to the north near Kingaroy but predates 20 years ago.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Thesium australe</i>	Austral Toadflax	V	V	Occurs in shrubland, grassland or woodland, often in damp sites. Grows in subtropical, temperate and subalpine climates over a wide range of altitudes. Occurs on sedimentary, igneous, and metamorphic geology and black clay loams to yellow podzolics and peaty loams. Semi-parasitic on the roots of certain grass species. Often associated with Kangaroo grass (<i>Themeda triandra</i>) grassland surrounded by Eucalypt woodland and grassland dominated by Barbed wire grass (<i>Cymbopogon refractus</i>). Can occur in open grassy heath dominated by Swamp myrtle (<i>Leptospermum myrtifolium</i>), Small-fruit hakea (<i>Hakea microcarpa</i>), Alpine bottlebrush (<i>Callistemon sieberi</i>), Woolly grevillea (<i>Grevillea lanigera</i>), Coral heath (<i>Epacris microphylla</i>) and <i>Poa</i> spp..	Unlikely	Some records from around the Buffer area and within 5km to the Study area, on roadsides and private properties. However, no individuals observed during targeted survey within the suitable habitat in the Project study area.
<i>Xerothermella herbacea</i>	-	E	E	Occurs in Brigalow (<i>Acacia harpophylla</i>) dominated communities in shaded situations. Associated with gilgais, on heavy, grey to brown clay soils and often grows in leaf litter.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
Bird						
<i>Anthochaera phrygia</i>	Regent Honeyeater	CR	CE	Occur mainly in box-ironbark eucalypt open-forests and riparian stands of Casuarina. Occur on the western slopes of the Great Dividing Range in areas of moist and fertile soils. Often habitats areas with Needle-leaved mistletoe for feeding.	Unlikely	No suitable habitat for foraging, feeding, and correlated behaviour. One known occurrence in Buffer area, south of the Study area in Bunya Mountains National Park.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	CE	Occur on intertidal mudflats in coastal areas. These species like mangroves, estuaries, and lagoons. They also occur around beaches, rocky shores, and lakes. It is migratory and breeds in the lowland tundra of Siberia. This species can occur more inland around waterholes or lakes but are recorded infrequently.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	V	V	Distribution is continuous throughout the forested parts of the Great Dividing Range. They are hollow nesters and will utilise large Eucalypt tree hollows. They rely heavily of nine species of <i>Allocasuarina</i> spp. and <i>Casuarina</i> spp. seeds for feeding. Species will often return to specific trees they show fidelity to.	Potential	Limited suitable habitats for foraging, feeding, and correlated behaviour. Few individuals of <i>Allocasuarina littoralis</i> and <i>Casuarina cunninghamiana</i> within the Project study area. Known occurrences in Buffer area in Bunya Mountains National Park and Blackbutt.

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Cyclopsitta diophthalma coxeni</i>	Coxen's Fig-Parrot	E	E	Prefers habitat of lowland rainforest in alluvial areas but will inhabit foothill subtropical rainforest, dry rainforest, littoral rainforest, open woodland, and riparian corridors in woodlands. They require habitat with <i>Ficus</i> spp., as they feed on fig and fruit trees. They are known to occur in cleared land and isolated fruiting trees in gardens or farms.	Unlikely	No suitable habitats for foraging, feeding, and correlated behaviour. Known occurrence in Buffer area in Kumbia.
<i>Erythroriorchis radiatus</i>	Red Goshawk	E	V	Occur in tropical and warm woodlands and forests in coastal and sub-coastal areas. They favour eucalypt or paperbark dominant forests, including swamp sclerophyll and eucalypt woodland. The species prefers mosaic vegetation, permanent water sources, and large prey populations. They will avoid dense or open habitat and nest in large trees.	Unlikely	Species is considered locally extinct in SEQ. No large river systems near Project. Limited suitable habitats for foraging, feeding, and correlated behaviour. One known occurrence in the outside Buffer area near Wondai State Forest.
<i>Falco hypoleucos</i>	Grey Falcon	V	V	Often found in low densities and occurs in arid areas of high temperatures (annual average temperatures) and low annual rainfall (less than 500 mm). The species prefers lowland plains crossed by tree-lined watercourses, grasslands, and sand dune habitats.	Unlikely	No suitable habitat within or surrounding the Project study area. Few known occurrences in the Buffer area (one in Bunya Mountains National Park and one near Kingaroy).
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern subspecies)	V	V	Occurs in Eucalypt and grassy woodland in understories and is sometime found in savannas. It prefers sandy areas and is less commonly found on heavy soils. It nests and forages on the ground. The species likes to be around permanent water sources, such as rivers and dams.	Unlikely	Suitable habitat is present within and surrounding the Project study area. No known occurrences within the Buffer area. Closest records are outside the Buffer area in Allies Creek State Forest.
<i>Grantiella picta</i>	Painted Honeyeater	V	V	Occurs predominantly in woodlands and forests dominated by Eucalypts and Acacia species. Their predominant food sources are Mistletoes and are more abundant in woodland habitats with less fragmentation and more mature trees with a high percentage of canopy cover. They migrate to north Queensland and east Northern Territory during winter.	Likely	Limited suitable habitats for foraging, feeding, and correlated behaviour. Known occurrences within the Buffer area, west in Jandowae and east in Nanango.
<i>Hirundapus caudacutus</i>	White-throated Needletail	V	V	Occur over most types of habitats as they are aerial and are recorded above woodlands, open forest, and rainforests. Non-breeding habitat only in this region. They often occur in large numbers and regularly roost in tall tree hollows on ridge-tops.	Likely	Species will utilise airspace above the Project. Known occurrences scattered around entire Buffer area in Bunya Mountains National Park, Kingaroy, and Yarraman.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Lathamus discolor</i>	Swift Parrot	E	CE	Can occur across a large area as they are nomadic. Non-breeding habitat only in this region as they breed exclusively in Tasmania and migrate to southeast Queensland and New South Wales in autumn and winter months. Small populations occur in southeast Queensland on a regular basis. They prefer dry sclerophyll (rarely in wet sclerophyll), Eucalypt forests, woodlands, and parks/ gardens with flowering fruit trees. Occurrence is heavily dependent of food source (flowering trees). They have traditional roosting and foraging sites and often return to the same location depending on available food. Prefers box-ironbark habitat and White box – Yellow box – Blakely's red gum woodland and <i>Eucalyptus tereticornis</i> .	Potential	Some suitable foraging habitats within the Project study area. <i>Eucalyptus tereticornis</i> species present and White-box – Yellow- box TEC likely to occur but may not be habitat critical for the survival of species. No known occurrences within the Buffer area in the last 20 years.
<i>Rostratula australis</i>	Australian Painted Snipe	E	E	Inhabits shallow terrestrial freshwater wetlands, such as lakes, swamps, and claypans. May occur in waterlogged grassland or saltmarsh, dams, and bore drains. Nests in and near swamps, flooded areas, at the base of tussocks, and in ground grass cover near wetlands.	Unlikely	No suitable wetland habitat. No known occurrences within the Buffer area.
<i>Turnix melanogaster</i>	Black-breasted Button-quail	V	V	Restricted to rainforests and forests with highly fertile soils and annual rainfall between 770 to 1,200 mm. Prefer semi-evergreen vine thickets, low microphyll vine forest, araucarian microphyll vine forest and araucarian notophyll vine forest. May be found in Acacia thickets and coastal sand dunes. Have previously been recorded in southeast Queensland forests with low sparse shrub layer of Eucalypt and Acacia seedlings and sparse ground cover. Utilises areas of dense leaf-litter for foraging and roosting.	Potential	Suitable habitats for foraging, feeding, and correlated behaviour. Dry rainforest habitat in Project generally in poor condition. Areas of thick regrowth shrub may provide suitable habitat for the species. Many known occurrences in Buffer area in Bunya Mountains National Park and surrounds, in Tarong State Forest, Yarraman, and Kingaroy.
Mammal						
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	Require areas of sandstone cliffs/ escarpments to provide roosting habitat adjacent to higher fertility sites (box gum woodlands or rainforest corridors useful for foraging). Primarily recorded in high altitude areas in southeast Queensland in tall open forests near rainforest. Possibly roosts in tree hollows in sclerophyll forest, Cyprus-pin dominated forest, tall Eucalypt forests with rainforest sub-canopy, sub-alpine woodland, Brigalow, and sandstone country.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Dasyurus hallucatus</i>	Northern Quoll	C	E	Highly fragmented distribution and found in various habitats, including rocky areas, eucalypt forest, woodlands, sandy lowlands and beaches, rainforests, shrubland, grassland and desert. Prefer habitat with some rocky area or structurally diverse forest for denning and surrounding vegetation for foraging and dispersal.	Unlikely	Some suitable habitats within or surrounding the Project study area but generally limited in extent. No known occurrences within the Buffer area in the last 20 years.
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll	E	E	Found in various habitats, including temperate and subtropical rainforests in mountain areas, wet sclerophyll forest, coastal heathland, scrub and dunes, woodlands, inland riparian and sub-alpine woodlands. They have large home ranges that occupy 90 to 2560 ha in size. Require suitable den sites in hollow logs or trees, rock outcrops or caves.	Unlikely	No suitable habitat within or surrounding the Project study area. No known occurrences within the Buffer area in the last 20 years. One occurrence outside the Buffer area in Elgin Vale Forest Reserve.
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V	V	Distribution is restricted to the Murray-Darling Basin and Brigalow Belt South Bioregion with the most easterly record from the Bunya Mountains National Park. Inhabits a range of inland woodland vegetation types, including Box, Ironbark, Cypress pine, Mallee, Bull-oak, Brigalow, and Belah woodlands. Roosting will occur in crevices, tree hollows, and loose bark. Essential habitat requires large vegetation of 100 to 1000 ha and can fly large distances (>7 km per night) between roosting and foraging areas.	Likely	Suitable habitat is present within the Project study area. Within species distribution. One known occurrence in the surrounding Buffer area in Bunya Mountains National Park. Some records outside Buffer area in Jarrah State Forest.
<i>Petauroides volans</i>	Greater Glider (southern and central)	E	E	Largely restricted to Eucalypt forests and woodland along coastal plains. Often found in tall and moist Eucalypt forests with old trees and hollows. Favours forest with a diversity of Eucalypts because of seasonal variation of preferred trees. Prefer open woodlands with space between trees. Require 2 to 4 live den trees for every 2 ha of suitable forest habitat and have relatively small home ranges (1 to 4 ha).	Likely	Suitable habitats within or surrounding the Project study area. Some known occurrences in surrounding Buffer area in last 20 years, mainly in Bunya Mountains National Park and Yarraman. Some records outside Buffer area in Conendale National Park.
<i>Petaurus australis australis</i>	Yellow-bellied Glider (South-eastern)	V	V	Occurs in tall mature Eucalypt Forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. Feed primarily on plant and insect exudates, including nectar, sap, honeydew and manna with pollen and insects providing protein. Den, often in family groups, in hollows of large trees. Very mobile and occupy large home ranges (20 to 85 ha) to encompass dispersed and seasonally variable food resources.	Likely	Suitable habitats within and surrounding the Project study area. Most recent known occurrences in the surrounding Buffer area are in 1990's. Some records outside Buffer area in Jarrah State Forest and Wondai State Forest.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	V	V	Occurs throughout the Great Dividing Range and relies on rocky habitat, loose boulders, steep rock slopes, cliffs and gorges. Vegetation structure and composition with dense arboreal cover (especially fig trees), such as dense rainforest, wet sclerophyll forest, vine thicket, dry sclerophyll forest, and open forest are important habitat for food and shelter.	Unlikely	No suitable habitat within or surrounding the Project study area. One known record of occurrence within the south of Buffer area below Yarraman.
<i>Phascolarctos cinereus</i>	Koala	E	E	Distributed across several bioregions and a great diversity of habitats. Habitat is broadly defined as those dominated by Koala food tree species, such as <i>Eucalyptus</i> spp., <i>Corymbia</i> spp., <i>Angophora</i> spp., and <i>Lophostemon</i> spp. They prefer habitat with naturally abundant food and shelter trees on fertile clay soils. Known to occur in urban and regenerating vegetation communities.	Known	Suitable habitats within and surrounding the Project study area. Species will utilise all Eucalypt woodland in area. Numerous known occurrences in Project study area and surrounding Buffer area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	C	V	Occurs in a range of vegetation habitats, including rainforests, open forests, closed and open woodlands, <i>Melaleuca</i> swamps and <i>Banksia</i> woodlands. Distribution is directly influenced by food resource availability and is a canopy-feeding species specific to fruit and nectar. Known to occur in urban settings feeding on commercial fruit crops. Roosting occurs near water bodies in rainforests, mangroves, riparian vegetation, and <i>Melaleuca</i> stands.	Likely	Suitable habitats within and surrounding the Project study area for foraging, feeding, and correlated behaviour. Known occurrences in the Project study area and surrounding Buffer area, specifically in Bunya Mountains National Park and Yarraman. Closest Nationally Important Camp (containing >10,000 individuals) near Yarraman.
<i>Tachyglossus aculeatus</i>	Short-beaked Echidna	SL	-	Distribution is widespread across Australia and species will occur in a wide variety of habitats, including open woodlands, forests, shrublands, vine thickets, and agricultural land. Known to occur in both disturbed and undisturbed habitats and prefer locations among rocks, logs, under vegetation or debris, under tree roots or in other species burrows (i.e. wombats, rabbits).	Likely	Suitable habitat within and surrounding the Project study area. Numerous known occurrences within Project study area and in surrounding Buffer area.
Reptile						
<i>Anomalopus mackayi</i>	Five-clawed Worm-skink	E	V	Occurs in remnant and non-remnant woodlands and grasslands, as well as in agriculturally modified land. Prefers areas under leaf litter and debris, rotting tree cavities, logs, and tussock bases. Occurs in Bluegrass (<i>Dichanthium sericeum</i>) and/or Mitchell Grass (<i>Astrebla</i> spp.) grasslands or mixed grasslands. Prefers red-black to black clay loam soils.	Unlikely	No suitable habitat within or surrounding Project study area. No known occurrences within the Buffer area.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Delma torquata</i>	Collared Delma	V	V	Occurs in Eucalypt-dominated woodlands and open-forests with understoreys of native grasses and loose rocks. Prefers woodland of <i>Eucalyptus crebra</i> located on northwest facing slopes. Recorded on rocky areas associated with dry and open forest. Requires the presence of rocks, logs, fallen timber, and leaf litter for shelter and is an essential characteristic of this species habitat.	Likely	Some suitable habitats within and surrounding the Project study area. Suitable habitat such as Eucalypt dominated woodland on rocky hillside with >30% cover. Only known occurrences within the Buffer area are south of the Project study area in Bunya Mountains National Park.
<i>Egernia rugosa</i>	Yakka Skink	V	V	Occurs in open dry sclerophyll forest, woodland, and scrub. Occurs in a wide variety of vegetation types from alluvium to sandstone ranges. Commonly found in Brigalow, Mulga, Bendee, Lancewood, Belah, Poplar Box, Ironbark, and White Cypress Pine. Prefers habitat with cavities under and between rocks, logs, root cavities, and abandoned animal burrows. Known to excavate underground burrows.	Potential	Some suitable habitats within or surrounding the Project study area. Only one known occurrences within the Buffer are, south of the Project study area in Bunya Mountains National Park.
<i>Eseya albagula</i>	White-throated Snapping Turtle	CR	CE	Inhabits riverine habitat of clear and turbid waters. Occurs only in the Fitzroy, Mary and Burnett Rivers and smaller drainages in South Eastern Queensland.	Unlikely	No suitable habitat within or surrounding the Project study area. No known records of occurrence within the Buffer area.
<i>Furina dunmali</i>	Dunmall's Snake	V	V	Occurs in a broad range of habitats within the Brigalow Belt South bioregion to the Nandewar bioregion in NSW. Found at altitudes 200 to 500 m above sea level. Habitats include forest and woodlands on black alluvial cracking clay and clay loams, various open forest and woodlands associated with sandstone derived soils, and the edges of dry vine scrub.	Unlikely	No suitable habitats within or surrounding the Project study area. Although there was some black alluvial cracking clay present it was cultivated land and lacked forest or woodland habitats. No known occurrences within the Buffer area in the last 20 years.
<i>Lampropholis colossus</i>	Bunya Sunskink	NT	-	Occurs in dry rainforest edges adjacent to balds, dry rainforest and savanna woodland containing rainforest elements at high altitudes.	Unlikely	No suitable habitat within or surrounding the Project study area. Only known records of occurrence within the Buffer area are exclusive to Bunya Mountains National Park.
Invertebrates						
<i>Adclarkia cameroni</i>	Brigalow Woodland Snail	V	E	Occurs in a small amount of remnant and scattered <i>Acacia harpophylla</i> (Brigalow) and Eucalypt woodland. They are found specifically on the Condamine River floodplain and in areas around Dalby and Chinchilla.	Unlikely	No suitable habitat within or surrounding Project study area. No known occurrences within the Buffer area. Nearest known occurrences are over 70km further northwest of the Project study area in Barakula State Forest and Chinchilla.



Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
Migratory Marine Birds						
<i>Apus pacificus</i>	Fork-tailed Swift	SL	M	Almost exclusively ab aerial species and flies between 1 m to >300 m above ground. Occur over inland plains and sometimes above foothills, or in coastal areas. Occur over cliffs, beaches, islands, and sometimes out at sea. Prefer to feed among tree-tops in open forests. Also known to occur above urban and city areas.	Likely	Species likely to utilise airspace above Project study area.
Migratory Terrestrial Birds						
<i>Cuculus optatus</i>	Oriental Cuckoo	SL	M	Occur in monsoon forests, wet sclerophyll forests, paperbark swamps, dense open forests, scrubby gullies, mangroves, rainforest edges, river flats, paddocks, and roadsides. Prefers to be in dense vegetation with a closed canopy.	Potential	Some suitable habitats within the Project study area but limited in extent. Known within the Buffer area.
<i>Monarcha melanopsis</i>	Black-faced Monarch	SL	M	Mainly occurs in rainforest ecosystems. These include semi-deciduous vine-thickets, complex notophyll vine-forest, tropical rainforest, subtropical rainforest, mesophyll thicket/shrubland, warm temperate rainforest, dry rainforest, and cool temperate rainforest. May occur in gullies in mountain areas or coastal foothills, softwood scrub dominated by Brigalow and coastal scrub dominated by Coast Banksia.	Unlikely	No suitable habitat within the Project study area.
<i>Motacilla flava</i>	Yellow Wagtail	-	M	Occur in grasslands, short grass, bare ground, swamp margins, sewage ponds, saltmarshes, sports fields, airfields, ploughed land, and urban lawns.	Unlikely	Suitable habitat within Project study area is limited. No known occurrences within Buffer area.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	SL	M	Occurs in tall forests. Prefers wetter habitats but not rainforests. Inhabits vegetated gullies in Eucalypt dominated forests and tall woodlands above the shrub layer. Will occur in coastal forests, woodlands, mangroves, drier woodlands, and open forests or in open country during migration.	Potential	Some suitable habitats within the Project study area but limited in extent. Known within the Buffer area.
<i>Rhipidura rufifrons</i>	Rufous Fantail	SL	M	Occurs in areas that usually have a dense shrubby understorey with ferns, including wet sclerophyll forests and in gullies dominated by Eucalypts such as Tallowood (<i>Eucalyptus microcorys</i>), Mountain grey gum (<i>E. cypellocarpa</i>), Narrow-leaved peppermint (<i>E. radiata</i>), Mountain ash (<i>E. regnans</i>), Alpine ash (<i>E. delegatensis</i>), Blackbutt (<i>E. pilularis</i>) or Red mahogany (<i>E. resinifera</i>). Often the species will occur in areas on secondary regrowth following disturbance. Can occur in parks or gardens during migration.	Known	Suitable habitats within the Project study area and known to occur within the Project study area and Buffer area.

Species name	Common name	NC Act status	EPBC status	Distribution and habitat associations (From DES species profiles 2022 and SPRAT database 2022)	Likelihood of occurrence	Rationale
<i>Symposiachrus trivirgatus</i> as <i>Monarcha trivirgatus</i>	Spectacled Monarch	SL	M	Occurs in areas that can either have dense low understoreys or open understoreys in rainforests, wet gullies and mangroves. Prefers the understory in mountain and lowland rainforest, thick wooded gullied, and waterside vegetation.	Potential	Some suitable habitats within the Project study area but limited in extent. Known within the Buffer area and occurs at Bunya Mountains National Park, Yarraman, Blackbutt, and Kingaroy.
Migratory Wetland Birds						
<i>Actitis hypoleucos</i>	Common Sandpiper	SL	M	Occur in shallow, pebbly, muddy, or sandy edges of rivers and streams. Can be found coastal or inland, by dams, lakes, sewage ponds, margins of tidal rivers, mangrove forest, saltmarshes, mudflats, and beaches.	Unlikely	No suitable habitat within the Project study area.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	SL	M	Occurs in wetlands with muddy edges of shallow fresh or brackish water. Prefers wetlands with inundated sedges, grass, saltmarsh, or other low vegetation such as lagoons, swamps, lakes, waterholes, dams, salt pans, and inland hypersaline salt lakes. They will use intertidal mudflats in sheltered bays, inlets and estuaries or seashores.	Unlikely	No suitable habitat within the Project study area.
<i>Calidris melanotos</i>	Pectoral Sandpiper	SL	M	Occurs in wetlands that are shallow and fresh compared to saline. Found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains, and artificial wetlands. Can sometimes be found further inland within wetlands and/or inundated vegetation.	Unlikely	No suitable habitat within the Project study area.
<i>Gallinago hardwickii</i>	Latham's Snipe	SL	M	Occur in wetlands up to 2,000 m above sea level. Occur in open, freshwater wetlands with low and dense vegetation. These include swamps, grasslands, heathlands, bogs or water bodies. May also occur in modified habitats with saline or brackish water, close to humans or human activity. Preferred foraging areas are covered in mud and have some form of cover. Roosting often occurs near place of foraging. Potentially can occur in Bluegrass (<i>Dichanthium</i>) dominant grasslands if this community is subject to flooding.	Unlikely	No suitable habitat within the Project study area.

Table notes:

EPBC: Australian conservation status of the taxon under the Environment Protection and Biodiversity Conservation Act 1999 (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).

NCA: Queensland conservation status of the taxon under the Nature Conservation Act 1992 (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).

Document prepared by

Aurecon Australasia Pty Ltd

ABN 54 005 139 873

Ground Floor, 25 King Street
Bowen Hills QLD 4006

Locked Bag 331
Brisbane QLD 4001
Australia

T +61 7 3173 8000

F +61 7 3173 8001

E brisbane@aurecongroup.com

W aurecongroup.com

